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PROJECTOR OWNER'S MANUAL

Boxlight

PREMIERE 50HD

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USER'S GUIDE

PREMIERE 50HD HOME THEATER PROJECTOR

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Table of Contents

Chapter 1
Introduction

Package Contents 2
Features 2
Components 3
Front View 3
Top View 4
Rear View 5
Remote Control 6

Chapter 2
Connections

Before Setting Up 7
Connections 7
Power 7
Device Connections 8
Wired Remote Control 11
+12VDC Outlet 11
Turning On/Off 12
Turning Off 13

Chapter 3
Operation

Operating the Control Panel and Remote Control 14
Zoom and Focus 14
Power 14
Input 15
Menu 15
Color Temperature 15
Navigation Buttons 16
The Remote Control 16
Setting Up the Projector 17

Chapter 4
OSD Menus

About the OSD Menus 18
Main Menu 18
Input Signals 19
Picture (Video Only) 19
Advanced 22
Video System 23
FLI De-interlacing 23
RS232 Baud Rate 23
Geometry 26
Aspect Ratio 27
Language 28
Factory Default 28

Appendix A
Specifications

Product Specifications 29

Appendix B
Maintenance

Maintenance 30
Lamp Maintenance 30
Cleaning the Air Filters 33
Troubleshooting 34

Appendix C
The Gamma Manager Utility

About the Gamma Manager Utility 35
Required Hardware and Software 35
Connecting the Projector to the PC 36
Connecting the Projector to a PC 36
Installing the Software 37
Uninstalling the Software 39
Using the Gamma Manager Utility 40

Appendix D
Throw Ratio

About the Throw Ratio 47

Desktop Installation 47
Ceiling Mount Installation 50

Appendix E
RS-232 communication

RS-232C communication. 53
Communications setting 53
Computer (Windows) - HyPer Terminal 53
Command Or Read command 53
Computer (Windows) - RS232ControlAP.exe 54
Command data chart 55

About this manual

This manual is designed for use with the PREMIERE 50HD DLP Projector. Information in this document has been carefully checked for accuracy; however, no guarantee is given to the correctness of the contents. The information in this document is subject to change without notice.

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FCC COMPLIANCE

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference.

(2) This device must accept any interference received, including interference that may cause undesired operation.

Federal Communications Commission (FCC) Statement

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 the receiver.
- Connect the equipment to 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.

NOTICES

Warning! To meet FCC requirements, a shielded power cord is required in order to prevent interference. It is essential that only the supplied power cord be used. Use only shielded cables to connect I/O devices to this equipment. You are cautioned that changes or modifications not approved by the party responsible for compliance could void your authority to operate the equipment.

Warning! The projector cooling fan continues to run for approximately two minutes after the projector is turned off using the Power button on the control panel or remote control. Never turn off the projector using the power switch on the projector while the lamp is lit. This can damage the lamp or power supply.

Warning! High brightness light source. Do not stare into the beam of light, or view directly. Do not allow children to stare directly into the beam of light.

Warning! To reduce the risk of fire or electric shock, do not expose this product to rain or moisture.

Caution!
For minimal servicing and to maintain high image quality, we recommend that you use the projector in an environment that is smoke and dust free. When used in areas where there is a lot of smoke or dust, the filter and lens should be cleaned often to lengthen the service life of the projector.

Warning! The ventilation slots, lamp, and objects next to them may get extremely hot during operation. Do not touch these areas until they have sufficiently cooled down.

Warning! When replacing the lamp, turn off the power switch and disconnect the input power. Allow the lamp to cool at least 15 minutes prior to opening the lamp door.

Warning! Be careful when removing the lamp. In the event of a lamp rupture there may be small fragments of glass in the lamp housing and the projector. Clean out the fragments as much as possible taking care not to touch the fragments. Alternately, you can contact Technical Support to have the projector serviced.

Precautions

When using the projector, refer to the following instructions :

- Read and follow all instructions and warnings provided.
- Save these instructions for future use.
- When servicing or replacement parts are required, ensure work is done by a qualified technician.
- Do not use this unit near water or in a rainy/moist environment, or near heat sources such as radiators, stoves, or space heaters.
- Use supplied cables only.
- Never insert any objects through ventilation holes.
- The projector power cable is equipped with a three-prong plug for grounding. Do not alter the plug and defeat this safety feature. If your outlet does not accommodate a three-prong grounding type plug, contact an electrician to replace it.
- Only mount the projector on a tabletop or ceiling as recommended by the manufacturer.
- Do not place the projector on an unstable cart or stand.
- Allow at least 0.3 foot (10 cm) space between the ventilation slots and the nearest object or wall.
- When the ventilation slots are obstructed, the projector lamp automatically turns off as a safety precaution. When this happens, the over temperature alarm LED will light. Remove the obstruction and push the power button again to return the projector to normal operating condition.

Any electrical equipment is hazardous if handled improperly. Ensure that you follow the preceding safety instructions to avoid harm to yourself and damage to the unit.

Note: The projector has an over temperature warning LED on the control panel. If the projector overheats because of a dirty filter or other problem, the LED will flash, and the projector lamp will turn off, after which a 2-minute cooling off period occurs. If, after correcting the over temperature condition and restarting the projector, the projector still doesn't function properly, contact technical support to arrange for service.

Chapter 1

Introduction

Congratulations on selecting the Premiere 50HD DLP Projector.

The Premiere 50HD DLP is the first mainstream projector to offer Silicon Optix AnyPlace™ technology, which provides flexibility in projector placement while displaying a high-definition image.

The projector is equipped with a full set of I/O connectors, enabling you to attach a wide variety of input devices including Composite Video, S-Video, Digital Video Interface (DVI), Computer VGA, and Component Video.

The control panel and remote control enable you to easily set up functions such as input source, aspect, gamma correction, and color temperature. The keystone feature provides maximum flexibility in projector placement while still providing a flat image.

The menu driven OSD (On-Screen Display) provides a suite of functions that enable you to set such items such as the source input device, gamma, brightness, contrast, clock, and phase. The RS-232 port enables easy upgrades to ensure that the projector firmware is always up-to-date.

The Silicon Optix image processor is incorporated in the design with its unique AnyPlace™ technology, which adjusts for the vertical and horizontal projection angles to the screen, allowing users to place the projector anywhere in the room and still display a perfect image. This eliminates the need for room remodelling, and enables the projector to naturally blend into a room. In addition to AnyPlace placement flexibility, the Premiere 50HD DLP projector delivers superior keystone and scaling image quality.

The Premiere 50HD DLP Projector is supported by a standard two-year limited warranty.

Package Contents

Open the package and ensure that you have the following items:

- Power Cord
- Remote control and two AAA alkaline batteries
- Warranty Card
- Cables
  - Remote wired cable
  - RCA cable for composite video
  - VGA cable
- User's manual
- Quick Guide
- CD installation kit

If anything is missing or appears damaged, contact your dealer immediately. Do not discard the packing materials in the event you need to ship the unit for service.

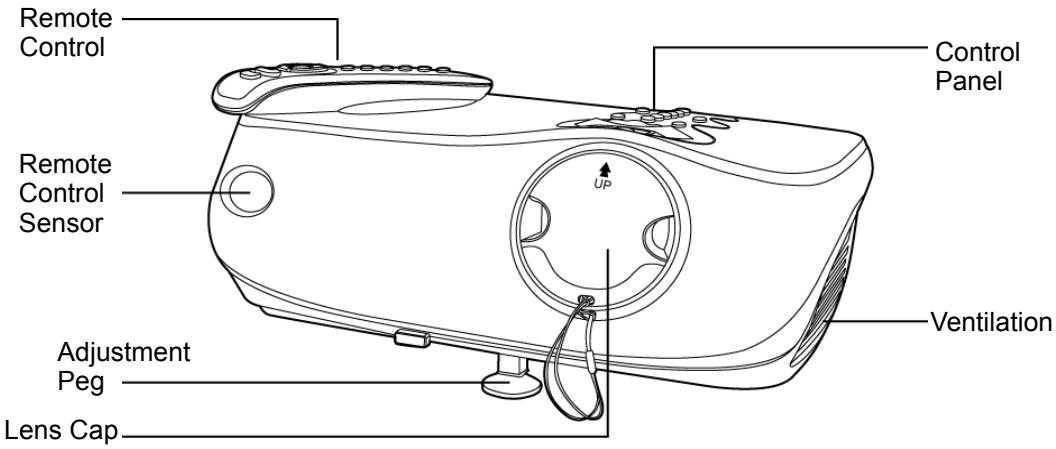
Features

The Premiere 50HD DLP Projector comes with the following advanced features:

- 1280 x 720 native resolution
- Super high contrast ratio (1700 & above), providing enhanced image depth
- Brightness control allows for excellent film viewing in different ambient lighting conditions
- TI DLP™ Technology Premiere 50HD DMD providing superior image quality
- 5X speed color wheel with 6 color segments provides outstanding color reproduction
- Native 16:9 aspect ratio
- Faroudja video de-interlacing chip incorporates enhanced 3:2 pull down and DCDi, providing you with crystal clear, high-resolution picture performance
- Anyplace™ scaling technology provides the ability to perform simultaneous horizontal and vertical keystone (Diagonal-keystone-correction™). This technology enables the projector to be positioned almost anywhere in a room
- Wide-angle optical system design and Anyplace™ technology perform all scaling functions, real-time geometry processing, and distortion correction
- Professional quality video conversion eliminates the image distortion that occurs when standard television content (4:3 aspect ratio) is displayed on a 16:9 HDTV front projection display system
- User friendly backlit remote control and control panel

Components

Front View



Remote Control: Enables you to control the projector. There are infrared sensors on the front and rear of the projector allowing you to control the color temperature, input device, gamma correction, OSD menu items, and turn the projector on and off. You can also connect the remote control to the Wire Remote Control jack on the back panel. See "Wired Remote Control" on page 11.

Control Panel: The control panel enables you to adjust the focus and zoom of the projector lens, set the input device, gamma, and color temperature, access the OSD menus, and turn the projector on and off.

Remote Control Sensor: Point the remote control at this sensor to operate the projector with the remote control. There is another sensor at the rear of the projector.

Lens Cap: The lens cap protects the projector lens when the projector is not in use.

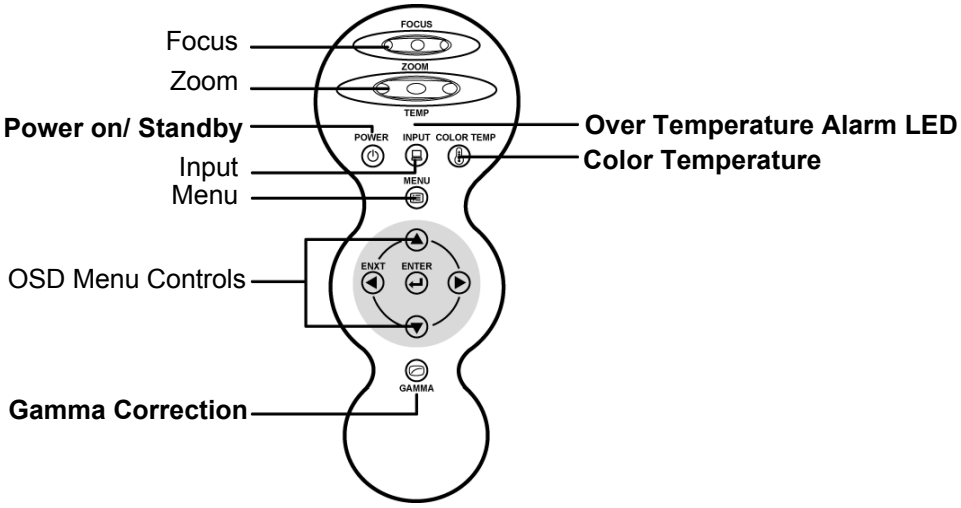
Ventilation: The projector has a strong fan to keep the lamp from becoming too hot.

Adjustment Peg: The adjusment peg enables you to adjust the image height.

Note: Ensure that the ventilation slots have enough space around them for proper air flow.

Warning!
Because the projector lamp becomes extremely hot, air coming from the ventilation slots can be uncomfortably hot.

Top View



Focus: Turn this dial to focus the projected image on the screen.
Zoom: Turn this dial to adjust the size of the projected image on the screen.
Over Temperature Alarm LED: This LED flashes when the projector lamp becomes too hot.

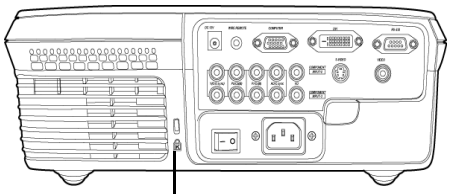
Warning! When this LED flashes, the lamp will shut off and the cooling fans will continue to run for approximately two minutes. Check the air intakes and filter to make sure they are not clogged or blocked. Refer to "Cleaning The Air Filters" on page 34 for further information about cleaning the Air Filters. Refer to "Turning Off" on page 13 for proper power down procedures.

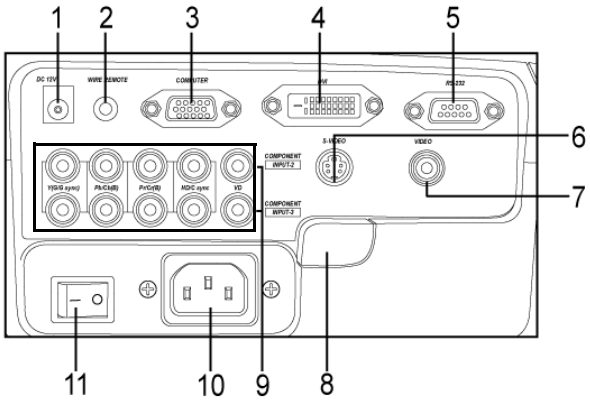
Power on/ Standby: Press this button to put the projector into or bring it out of standby mode.

Note: The Power button does not turn all power off. The power switch at the rear of the projector turns it off. See "Turning Off" on page 13 for proper power down procedures.

Input: Press this button to select the input source (for example S-Video or DVI).
Color Temperature: Enables you to set the image color temperature. You can set it to Native, 5500, 6500, or 9300 K, or User Mode for fine adjustment.
Menu: Press this button to enter the OSD menus.
Menu Controls: These buttons enable you to navigate the menus. The up and down arrows scroll up and down through the menus, while the left and right arrows scroll left and right. Press the Enter button to enter a value, setting, or to go into a submenu. Press the left button ◀ to exit the OSD menus or submenus.
Gamma: Enables you to set the gamma correction. Default setting is gamma 2.2. Gamma curves for all input sources can be set using the gamma user mode. Users can use the Gamma Manager utility to adjust or create gamma curves as desired. The Gamma Manager can be found on the bundled CD installation kit or downloaded from our Web site. Refer to appendix C for more information about this utility.

Rear View





Back panel I/O and controls

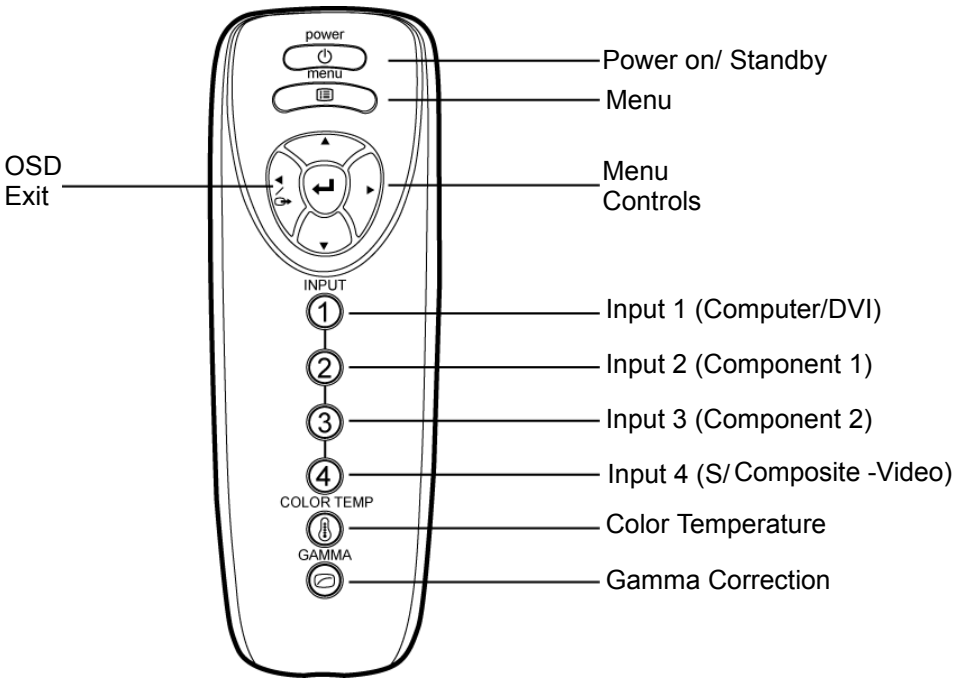
Ventilation: This fan provides ventilation to the lamp. Ensure that you do not obstruct this opening.

Kensington Lock: Connect a Kensington MicroSaver Security System to this aperture. Refer to the information that came with the system for instructions on how to use it to secure the projector from theft.

Back Panel I/O: The back panel I/O provides input and control connections. The following describes each control or I/O port.

1. **+12VDC Outlet:** Power outlet for an external device such as an automatic screen. This output is energized when the projector is turned on. Before using this feature, ensure that the polarity of the external device matches the projector and the current rating is less than 200 mA to avoid damage to the projector.
2. **Wired Remote:** Connecting the remote control directly to the projector allows the remote control to work over greater distances and without interference from external sources such as fluorescent lighting.
3. **Computer/Input 1:** Connect a computer's VGA output to this RGB 15-pin D-sub port to project the computer display.
4. **DVI-D/Input 1:** Connect a Digital Video Interface device to this port.
5. **RS-232:** Connect a serial cable to this 9-pin D-sub port and your computer to perform firmware upgrades or to control the projector using RS232 commands (See Appendix E).
6. **S-Video/Input 4:** Connect an S-Video source to this 4-pin mini-DIN port.
7. **Composite Video/Input 4:** Connect a standard RCA video cable to this port.
8. **Rear Remote Infrared Sensor:** Point the remote control at this sensor to control the projector.
9. **Component / Input - 2&3:** Attach component device cables to these RCA ports. Component Video will provide the best image quality.
10. **AC Power Socket:** Connect the power cable to this socket.
11. **Power Switch:** Turns the power to the projector on and off. Note that you must press the Power button on the top control panel to put the projector in operating mode. Do not set this switch to off if the projector lamp is on. Always place the projector into standby mode prior to setting this switch to off.

Remote Control



Power: Press this button to put the projector into or bring it out of standby mode.

Note: The Power button does not turn all power off. The power switch at the rear of the projector turns it off. See "Turning Off" on page 13 for more information.

Menu: Press this button to enter the OSD menus.

Menu Controls: These buttons enable you to navigate the menus. The up and down arrows scroll up and down through menus, while the left and right arrows scroll left and right. Press the Enter button to enter a value or setting.

Color Temperature: Enables you to set the image color temperature. You can set it to Native, 5500, 6500, 9300 K or User Mode.

Input: Press this button to select the type of input signal connected to the projector

- Input 1 – computer or DVI
- Input 2&3 – component 1&2
- Input 4 – S-Video/composite Video

Gamma: Enables you to set the gamma correction. Default setting is gamma 2.2. There is gamma user mode for users to define their own gamma curve for all input sources. Users can use the Gamma Manager utility to adjust or create gamma curves as desired. The Gamma Manager can be found on the bundled CD installation kit or downloaded from our Web site. Refer to appendix C for more information about this utility.

This concludes this chapter. The next chapter explains how to connect the projector to power and different types of input devices.

Connections

Before Setting Up

The Premiere 50HD DLP Projector is extremely flexible when considering installation locations. The keystone feature enables you to place the projector at an angle to the screen and digitally corrects the distortion of the skewed image. You can configure the image for rear, mirror, or ceiling mounted projection.

When positioning the projector, follow these tips and precautions:

- Place the projector on a stable surface. When mounting the projector on the ceiling, ensure that it is securely fastened to the ceiling mount.
- Ensure that the projector has enough space around it to provide proper ventilation.
- Place the projector so that the power cable and device cables are out of the way of foot traffic.
- Ensure that the infrared ports are unobstructed to ensure that you have maximum range with the remote control.

Connections

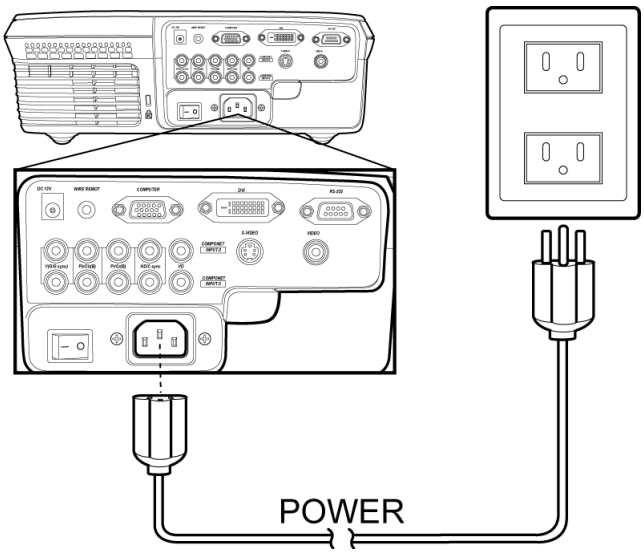
This section covers connecting devices to the I/O sockets and ports on the rear panel. See “Rear View” on page 5 for the location of the ports.

Power

The projector’s power supply is a universal input (100-240VAC)

Connecting Power

Connect the power cable to the AC socket on the rear panel.



Device Connections

The following section describes device connections. The projector supports connections to a wide variety of multimedia output devices. Refer to the illustration on the next page for device connection locations.

Computer Graphics Compatibility

The following table lists the supported input signals and corresponding resolutions.

Keystone	Input	Resolution	V. FREQ (Hz)
Standard	NTSC	720 x 480	—
	PAL	720 x 580	—
	VGA	640 x 480	60/72/75/85
	SVGA	800 x 600	56/60/72/75/85
	XGA	1024 x 768	60/70/75/85
	SXGA	1280 x 1024	60
Letterbox	NTSC	720 x 480	—
	PAL	720 x 580	—
Virtual Wide	NTSC	720 x 480	—
	PAL	720 x 580	—
Anamorphic	NTSC	720 x 480	—
	PAL	720 x 580	—
	VGA	640 x 480	60/72/75/85
	SVGA	800 x 600	56/60/72/75/85
	XGA	1024 x 768	60/70/75/85
	720P	1280 x 720	—
	1080i	1920 x 1080	—
Pixel to Pixel	VGA	640 x 480	60/72/75/85
	SVGA	800 x 600	56/60/72/75/85
	XGA	1024 x 768	60/70/75/85

Computer/Input 1

The computer port enables you to connect your computer to the projector using a standard 15-pin D-sub VGA cable.

DVI input/Input 1

The projector supports connection to a DVI (Digital Visual Interface), which enables you to connect any device with DVI-D (Digital Only) output.

RS-232

The standard RS-232 port enables you to connect the projector to a PC and upgrade the projector firmware through a PC or control the projector using RS232 commands. See Appendix E for more information about RS232 controls.

Note: The firmware upgrade is located on the CD that came bundled with the projector. Contact your dealer for information on future upgrades.

Component/ Input 2 & 3

The projector supports two component video devices (Input 2&3). Component video is typically transmitted in either YPbPr/YCbCr or RGB (Red/Green/Blue) formats. Component video connections provide the best picture quality and are preferable to S-Video and Composite Video connections.

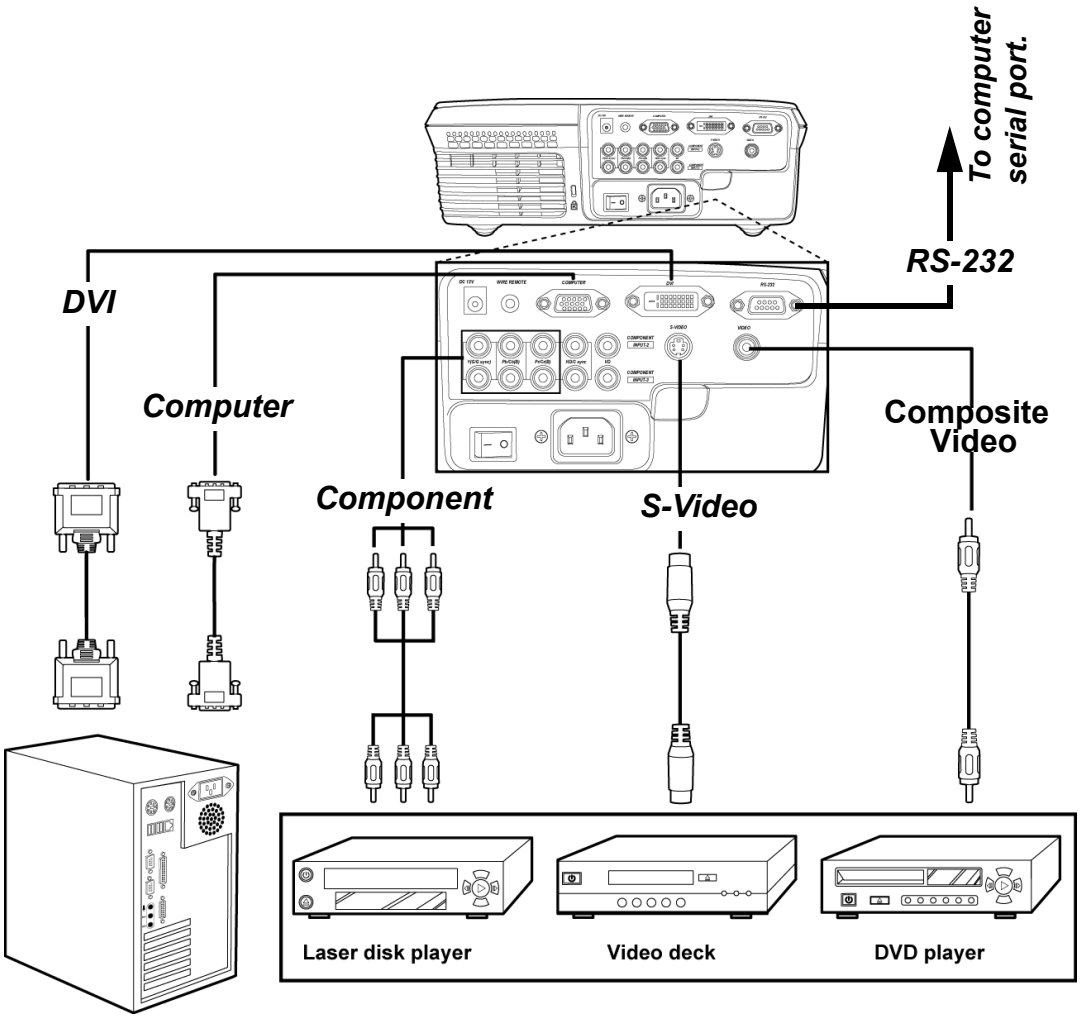
Note: The PbPc/YCbCr color model is used for encoding video. Pb/Cb is the luminosity of the black and white signal. Pb/Cb and Pr/Cr are color difference signals. Pb/Cb is blue minus Y (B-Y), and Pr/Cr is red minus Y (R-Y). The Premiere 50HD DLP Projector provides three standard RCA phono plugs (x 2) to support YPbPc/YCbCr component video output.

S-Video/Input 4

Connect a DVD, VCR, or DTV decoder source device with the S-Video cable to this socket. S-video separates pictures into chrominance and luminance signals providing a high quality image that is preferable to a composite video connection.

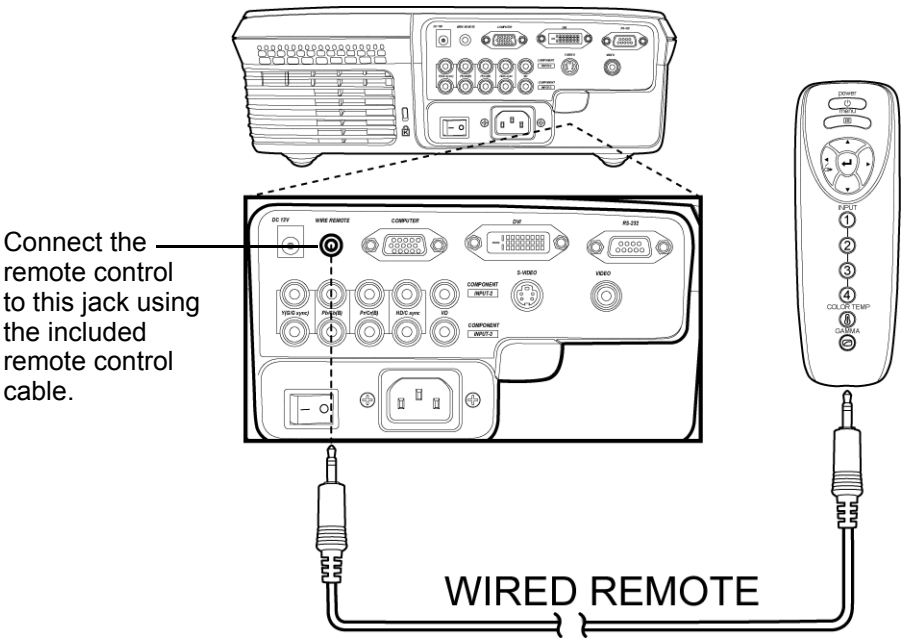
Composite Video/Input 4

Connect a DVD, VCR, or DTV decoder source device to this socket.


To computer serial port.
RS-232
DVI
Computer
Component
S-Video
Composite Video
Laser disk player
Video deck
DVD player

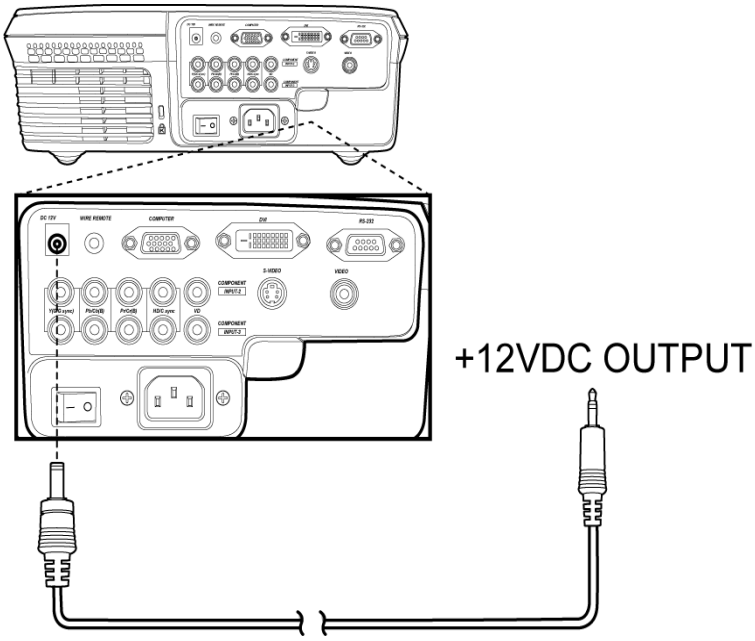
Wired Remote Control

The wired remote control jack enables you to connect the remote control to the projector using the included cable. When using the wire remote control feature, you do not have to be in the line of sight of the IR sensors to operate the projector. Also, the remote control is powered by the projector which saves battery power.



+12VDC Outlet

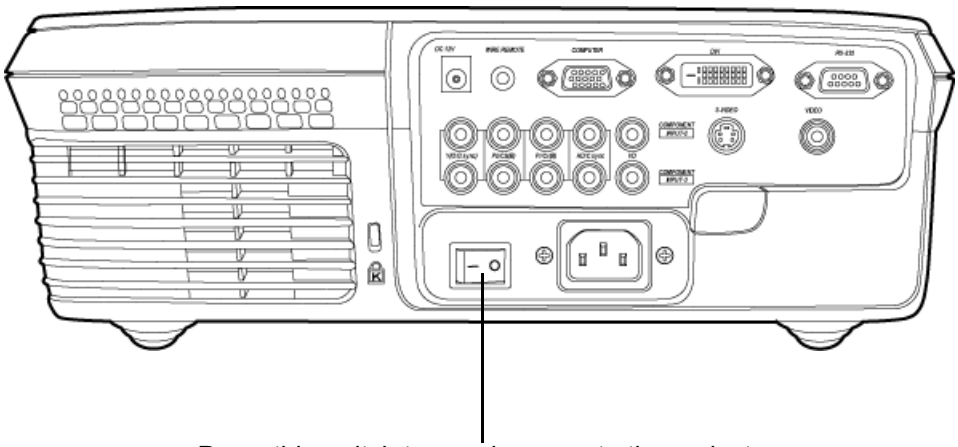
The +12VDC Outlet jack enables you to trigger an external device when the projector power is turned on. The maximum output current is 200mA. Please use an adaptor plug with "+" polarity 2.5 mm inside diameter and "-" polarity 5.5 mm outside diameter and cable length as needed.



Turning On/Off

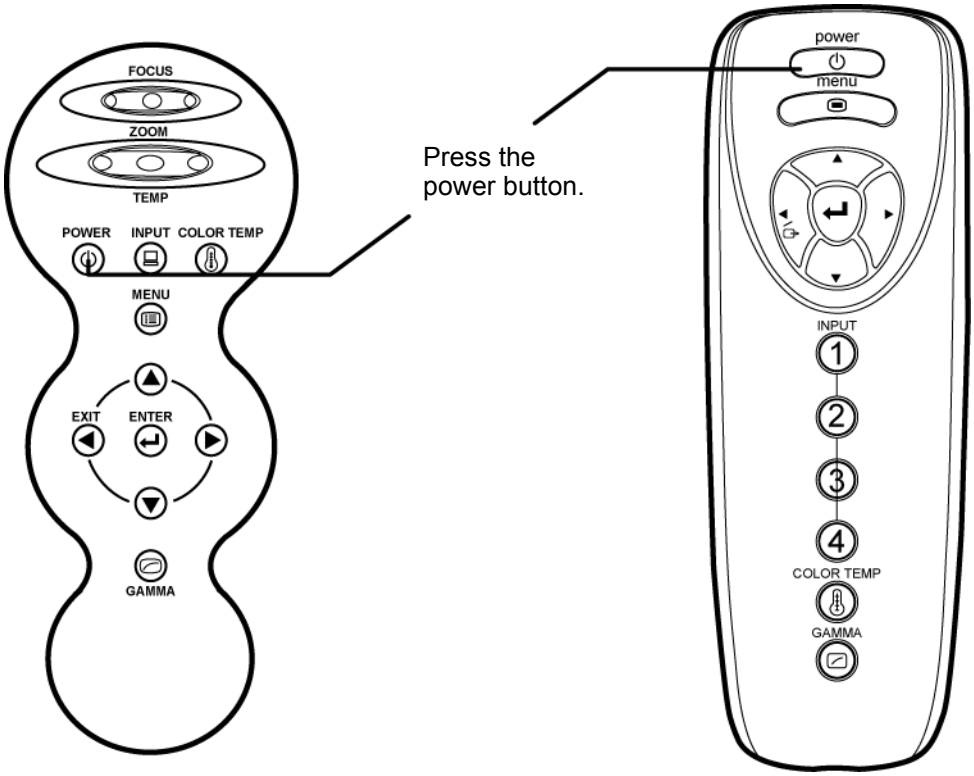
Follow these instructions to turn on projector.

1. Press the power switch on the rear panel to supply power to the projector.



Press this switch to supply power to the projector.

2. Press the Power button on the control panel or remote control.



The fan starts running and the projector warms up. After the projector warms up, (approximately 30 sec.) the image appears on the screen.

Turning Off

Warning!
Follow these procedures exactly as written to avoid damage to the lamp and projector.

1. **Press the power button on the control panel or remote to open the Power Down Menu. Select Yes and and press Enter. Alternately, you can press the power button three times.**
2. **The lamp shuts off and the cooling fans continue to run for approximately two minutes to cool-down the lamp. During this cool-down period, the control panel LEDs flash.**
3. **After the fans shut off and the control panel LEDs stop flashing, the projector is in standby mode. The projector can be left in this state or you can set the rear panel power switch to "o" to remove all power from the projector.**

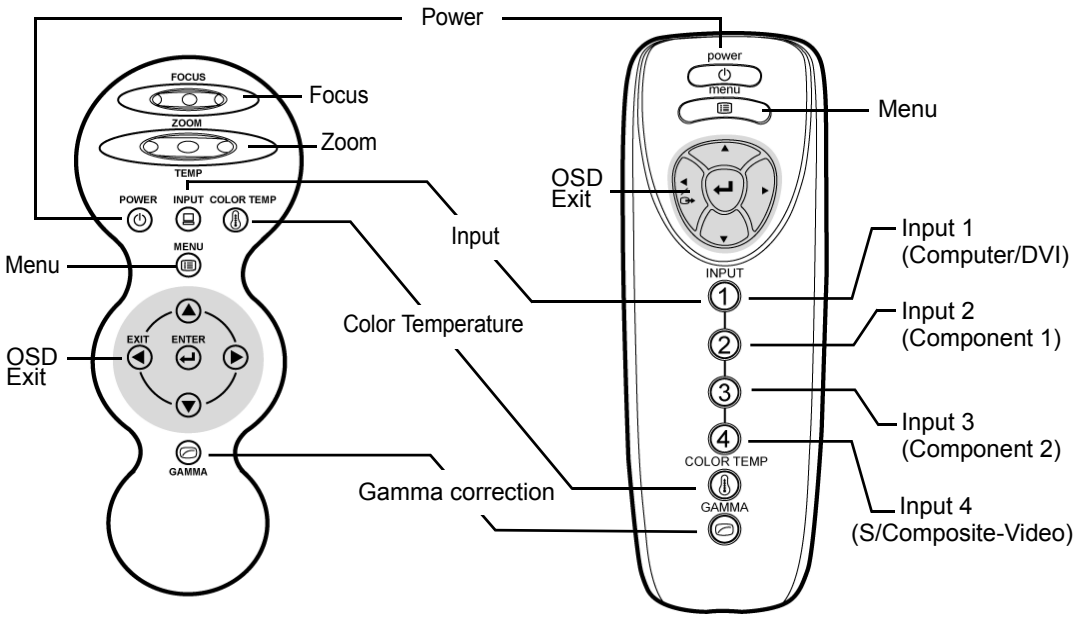
This concludes this chapter. The next chapter describes operation of the projector.

Operation

The projector can be operated using the top control panel or the remote control. This chapter describes using the control panel and the remote control.

Operating the Control Panel and Remote Control

This section describes the functions available on the top control panel and the remote control.



Zoom and Focus

The control panel has two dials to adjust the Zoom and Focus.

Zoom

Rotate the zoom dial to change the size of the image.

Focus

Rotate the focus dial to focus the image.

Power

Press the Power button to turn on the projector or to put the projector into standby mode.

Input

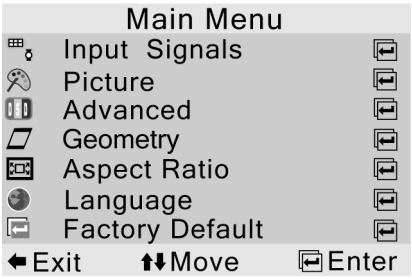
Press the input button on the control panel to switch between the inputs. On the remote control, press the number corresponding to the source mode you want:

- Input 1 – computer or DVI Mode
- Input 2 & 3 – component video 1&2
- Input 4 – S-Video/Composite Video

A screen at the bottom of the image shows which mode is currently selected. See “Input Signals” on page 19 for more information.

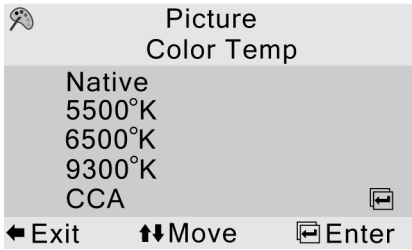
Menu

Press this button to open the OSD menus. Refer to Chapter 4 for a full description of the OSD menu functions.



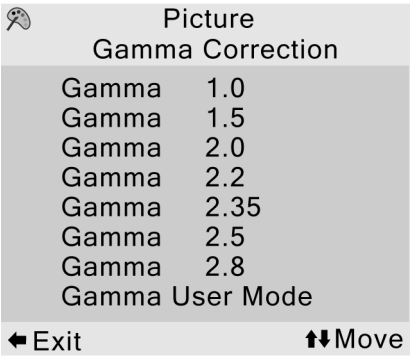
Color Temperature

Press this button to set the color temperature of the image. See “Color Temp” on page 20 for more information.



Gamma

Press the Gamma button on the remote control to adjust the gamma correction. See “Gamma Correction” on page 21 for more information.



Navigation Buttons

Press the up and down arrow buttons to scroll vertically through the menus. Press the Enter button to open submenus and enter. Use the Exit ◀ button to go to the previous menu.

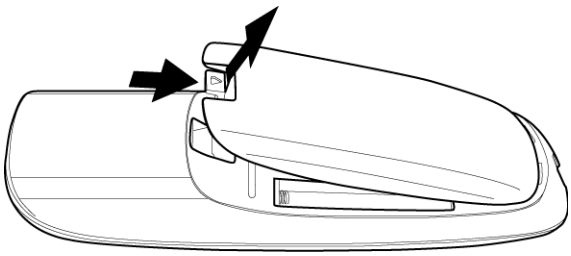
The Remote Control

The remote control provides a convenient way to control the projector.

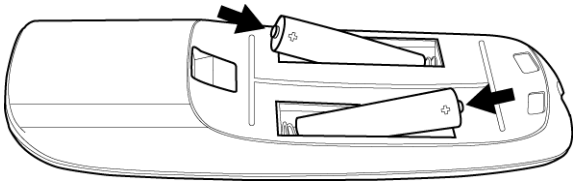
Installing Remote Control Batteries

Refer to the following illustrations and instructions on installing the remote control batteries.

1. Press the battery cover latch and pull the battery cover open.



2. Insert two AAA batteries into the battery compartment, observing the polarity marks in the battery compartment casing.



Using as a Wired Remote Control

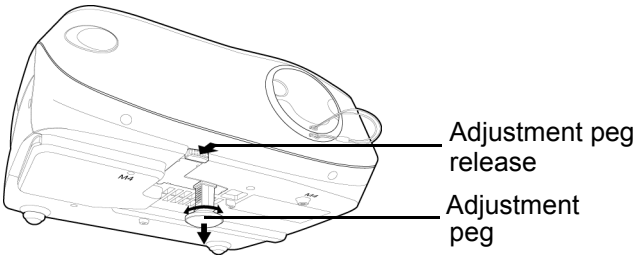
To save battery power and use the remote control when line-of-sight access to the remote control sensors is inconvenient, connect the included remote control cable between the remote control and the projector using the Wire Remote jack on the rear panel. Refer to “Wired Remote Control” on page 11.

Setting Up the Projector

Follow these tips when setting up the projector.

Adjustment Peg

Use the adjustment peg on the base of the projector to adjust the height of the projected image.



1. Push and hold the adjustment peg release.
2. Raise the front of the projector.
3. Let go of the peg release to secure the adjustment peg.
4. Turn the adjustment peg foot pad to fine tune the height.

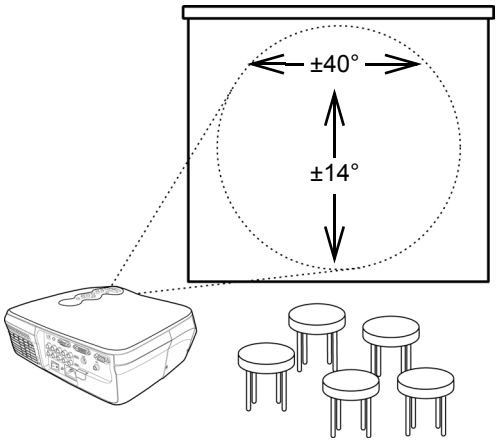
Keystone Correction

Choose the keystone function in the Geometry submenu to adjust the image shape when the projector is at an angle to the screen.

Adjusting the Projection Distance

Position the projector perpendicular to the screen with all feet flat to achieve optimal image quality.

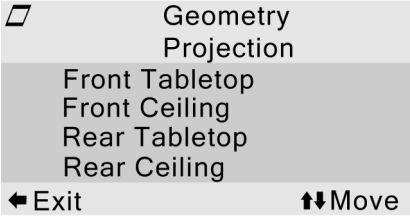
Move the projector forward if the edges of the image are distorted. Ensure that the distance from the projector to the screen is between 0.9 to 10.6 meters.



- Slide Shot (Left and Right)
- Provides ±40° horizontal and ±14° vertical keystone correction.

Geometry Projection

Ensure that you have selected the best mode for your environment.



- Front Desktop: projecting forward from a desktop or table.
- Front Ceiling: projecting forward from a ceiling mount. Inverts the image vertically.
- Rear Tabletop: projecting from a table onto a rear projection screen. Inverts the image Horizontally.
- Rear Ceiling: projecting from a ceiling mount onto a rear projection screen. Inverts the image horizontally and vertically.

This concludes this chapter. The next chapter covers the On-Screen Display (OSD) menus.

OSD Menus

About the OSD Menus

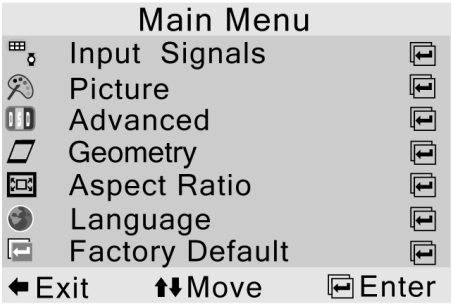
You can configure the Premiere 50HD DLP Projector by using the On Screen Display (OSD) Menus. The OSD menus enable you to set advanced features of the projector, including setting the input signal type, brightness, contrast, sharpness, color tint, and display language, among other things.

To access the OSD Menus, press the OSD Menu button on your remote control unit or the control panel. You can navigate through the OSD Menus by using the Up, Down, Right and Left buttons. Currently selected items are highlighted in yellow. There is an OSD Background menu that enables you to change the OSD Menu color scheme.

Configuration settings are saved automatically when selected on the screen.

Main Menu

The Main Menu allows you to access the various submenus as shown below.



The following sections cover each submenu in the Main Menu:

Input Signals **page 19**

Picture **page 19**

Advanced **page 22**

Geometry **page 26**

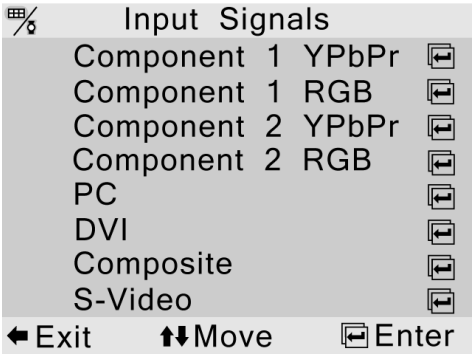
Aspect Ratio **page 27**

Language **page 28**

Factory Default **page 28**

Input Signals

The Input Signals menu lets you specify the signal type for the input into your projector. The following input signal types are available.



Component 1&2 YPbPr

Select a YPbPr, SDTV, or HDTV component input source.

Component 1&2 RGB

Select an RGB, RGBH+V, or RGBHV input source.

PC

Use this option to select the computer input.

DVI

Use this option to select the DVI input.

Composite

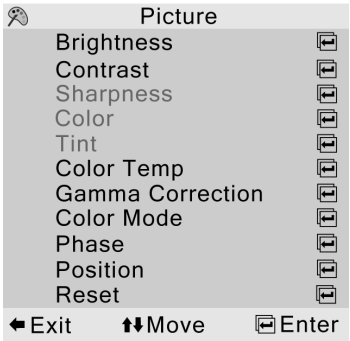
Use this option to select the Composite Video input source.

S-Video

Use this option to select the S-Video input.

Picture (Video Only)

The Picture menu lets you adjust the following options for your image.



Brightness

Use this option to adjust the overall brightness of your image. Use this control in conjunction with contrast to fine-tune the display. The scale is from 0 to 100. The default setting is 50.

Contrast

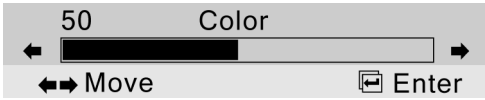
Use this option to adjust the contrast of your image. Use this control in conjunction with brightness to fine-tune the display. The scale is from 0 to 100. The default setting is 50.

Sharpness

Use this option to adjust the clarity and focus of the image. This item is available for both video and graphic sources. The scale is from 0 to 11. The default setting is 9.

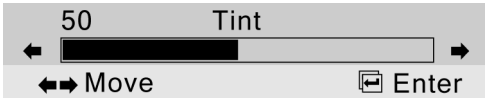
Color

Use this option to adjust the color saturation of the image. This item is only available for video sources. The scale is from 0 to 100. The default setting is 50.



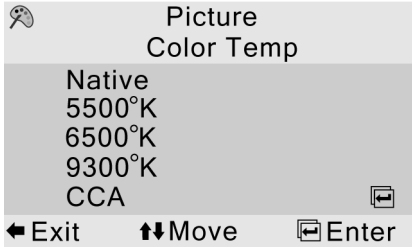
Tint

Use this option to adjust the tint of your image. Press ➡ to make the image more green. Press ⬅ to make the image more purple. This item is only available for video sources. The scale is from 0 to 100. The default setting is 50.



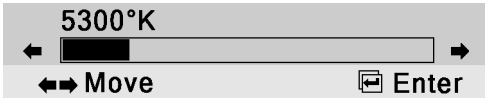
Color Temp

Use this option to adjust the Color Temperature of your image.



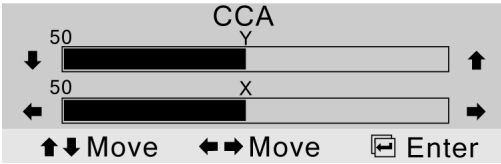
Higher color temperatures make the image look cool with a bluish hue. Lower color temperatures make the image look warmer with a reddish hue. The native color temperature usually falls between 7200-8800 ^{o}K.

Select User Mode and press Enter to adjust the color temperature manually. The default setting is Native.



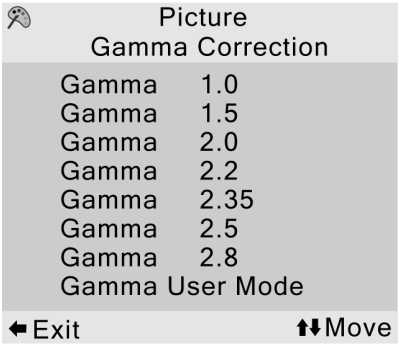
Press ➡ and ⬅ to raise and lower the color temperature in steps of 100 degrees. The minimum value is 4000 degrees; the maximum value is 14000 degrees.

Select CCA and press Enter to adjust the X,Y Color temperature.



Gamma Correction

Use this option to adjust the Gamma Correction of your image. Default setting is gamma 2.2. Gamma curves for all input sources can be set using gamma user mode. Users can use the Gamma Manager utility to adjust or create gamma curves as desired. The Gamma Manager can be found on the bundled CD installation kit or downloaded from our Web site. Refer to Appendix C for more information on installing and using the utility.



Gamma correction provides one linear gamma and six non-linear gamma corrections — 1.0, 1.5, 2.0, 2.2, 2.35, 2.5, 2.8 — default setting is Gamma 2.2.

Color Mode

Use this option to adjust the Color Mode of your image. Four different modes are available with preset values for brightness, contrast, sharpness, color, and tint for video input signals.

The table below shows the presets for the different settings.

	MOVIE	SPORTS	VIVID	NORMAL
Brightness	42	55	35	50
Contrast	58	60	65	50
Sharpness	8	9	11	7

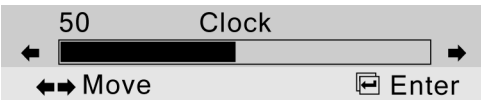
Auto Tune (Computer Source Signal only)

Auto tune automatically adjusts the clock, phase, and position settings to match the PC input. Select Auto Tune and press Enter. The following message is displayed on the screen while the projector adjusts the settings:

Wait for the message to disappear before continuing.

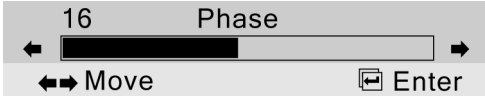
Clock (Computer Source Signal only)

Clock enables you to adjust the display pixel number to help stabilize the display. Use this function in conjunction with phase to adjust the display quality. Scale is from 0 to 100. The default setting is 50.



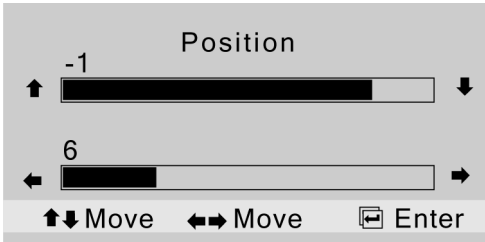
Phase

Phase lets you adjust the focus and clarity of the display. Scale is from 0 to 31.



Position

Position enables you to center the display vertically and horizontally.



Press ⬆ to move the display upward. Press ⬇ to move the display downward. Press ⬅ to move the display to the left. Press ➡ to move the display to the right.

Reset

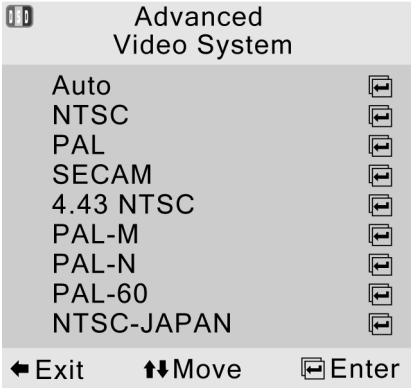
Select Reset and press Enter to reset the picture settings to the factory defaults.

Advanced

The Advanced menu lets you configure the OSD position, reset the lamp timer, set the standby mode, view a status screen, and set other options.

Video System

This option allows you to manually select the video standard for the composite and S-Video inputs.



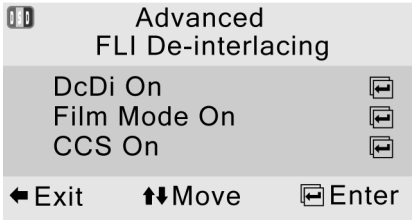
FLI De-interlacing

This option allows you to control how the projector processes video signals.

Setting DcDi to on helps to smooth the edges of objects in progressive scan and interlaced images.

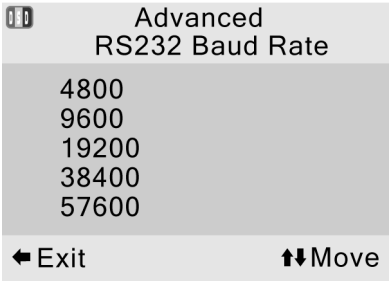
Setting Film Mode to on optimizes how 3:2 and 2:2 pull down conversions are performed.

Setting CCS to on helps prevent the cross color contamination that can be found in some composite and S-Video inputs. By default, all of these settings are on.



RS232 Baud Rate

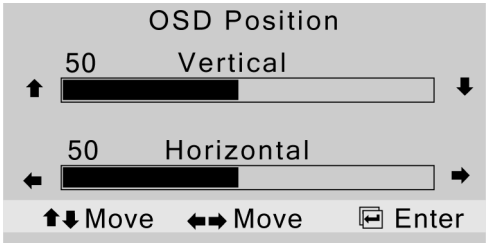
This option allows you to change the RS232 Baud Rate for serial communciations. Refer to Appendix E for more information.



OSD Position

Enables you to set the position of the OSD menu.

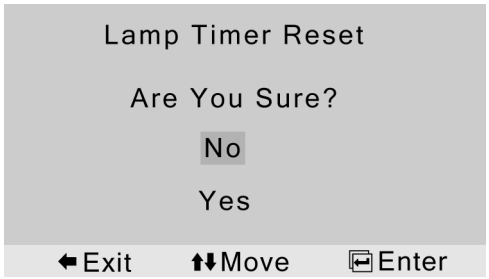
Press ⬆ to move the OSD display upward. Press ⬇ to move the display downward. Press ⬅ to move the display to the left. Press ➡ to move the display to the right. The OSD vertical and horizontal position can be set from 1 to 100 in 5 increment steps.



Lamp Timer Reset

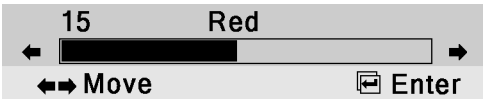
Lamp Timer Reset is used to reset the lamp counter.

You should reset the counter after you install a new lamp. The cumulative lamp usage time is shown in the Status Screen.



Color Matrix

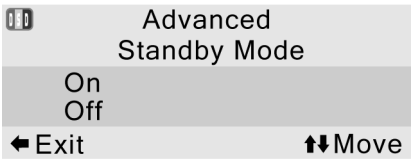
Color Matrix is used to adjust the primary (Red, Green, and Blue) and secondary (Cyan, Magenta, and Yellow) color saturation. The default setting is 30. Select a color and press Enter to view the settings bar:



Press ⬅ to decrease the color saturation. Press ➡ to increase the saturation.

Standby Mode

Standby Mode enables you to set the system to power off automatically if no input is detected.

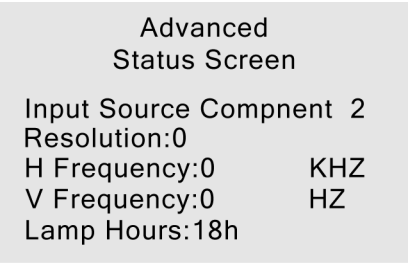


The following options are available:

- **On:** the system goes into standby mode if it does not detect any input signal for 10 minutes, after which a countdown begins. After five minutes the system shuts down.
- **Off:** standby mode function is disabled.

Status Screen

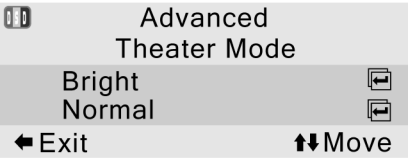
The status screen displays current system configuration parameters.



Theater Mode

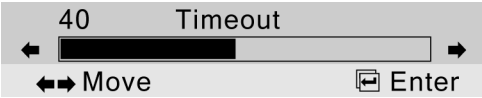
Theater Mode is used to change the brightness of light in white portions of the image.

When Bright mode is selected, the white light is increased 20% more than in normal mode. PC signal and DVI signal = Bright Mode. Video signal = Normal Mode



OSD Timeout

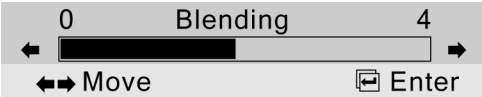
Timeout is used to set how long the OSD will stay open if no buttons are pressed.



Range is from 5 to 100 seconds. The default value is 40 seconds.

OSD Blending

Blending is used to set the transparency of the OSD menu, enabling you to see the image behind the menu (from 0 to 40 in steps of one). The default setting is 0.



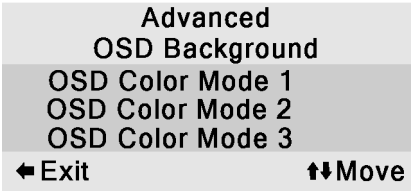
OSD Background

This item enables you to select the OSD color scheme.

OSD Color Mode 1 Background is Green

OSD Color Mode 2 Background is Magenta

OSD Color Mode 3 Background is Black

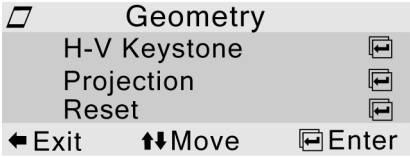


Reset

Select this option to set all items in the Advanced submenu to their factory default values.

Geometry

The Geometry menu lets you configure the horizontal and vertical keystone and projection placement settings.

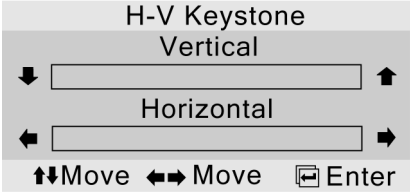


H-V Keystone

This option enables you to set the horizontal and vertical keystone values.

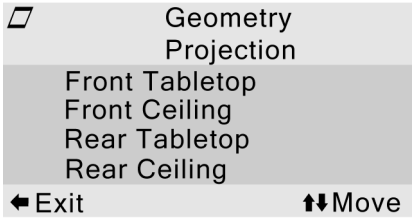
The vertical and horizontal options are as follows:

- Vertical: -7 ~ 7 (±14°)
- Horizontal: -20 ~ 20 (±40°)



Projection

Enables you to configure the projector for reversed image setup and ceiling mounting.



The following options are available:

- Front Tabletop: normal image, used for forward facing projection.
- Front Ceiling: Image inverted vertically. Used for forward-facing, ceiling-mounted projection.
- Rear Tabletop: Image reversed horizontally. This is used for rear projection.
- Rear Ceiling: Image inverted vertically and reversed horizontally. This is used for rear ceiling-mount projection or rear-projection using a mirror.

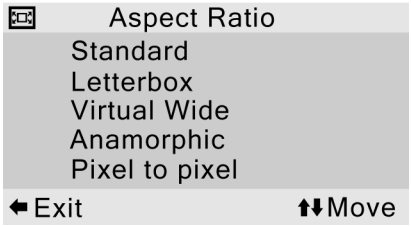
The default setting is Front Tabletop

Reset

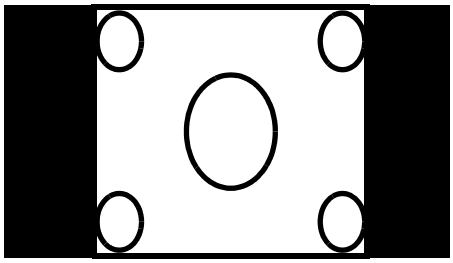
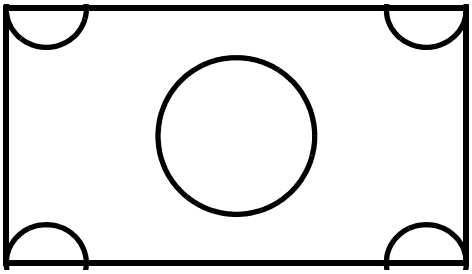
Select this option to set all items in the Geometry submenu to their factory default values.

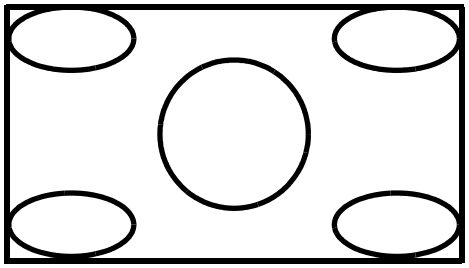
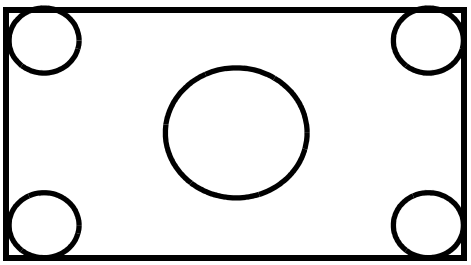
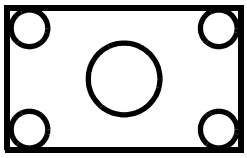
Aspect Ratio

The Aspect menu enables you control how the projector resizes the input image.



The following options are available:

Standard • Resolution 960 x 720 • 4:3 input scaled to fit display height • Width scaled to maintain 4:3 aspect ratio • Black bars on left and right (taking up 25% of the whole display)	
Letterbox • Resolution 1280 x 720 • 4:3 input scaled to fit display width • Height scaled to maintain 4:3 aspect ratio: 1280 x 960 • 25% of the entire image on the top and bottom is cropped	

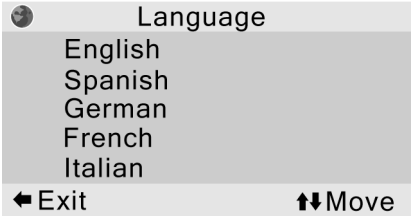
Virtual Wide • Resolution 1280 x 720 • Correct geometry in middle (stretches edges of image)	
Anamorphic • Resolution 1280 x720 • 4:3 input is stretched to fit 16:9 display • Stretches entire image.	
Pixel to Pixel Maintains input signal resolution. May have black borders around image.	

Language

This menu sets the OSD display language.

The following languages are available:

- English
- Spanish
- German
- French
- Italian



Factory Default

This item sets all menu and submenu items to their factory defaults.

This concludes this chapter.

Specifications

Product Specifications

Item	Description	
Model No.	Premiere 50HD DLP Projector	
Display	Single DMD Panel with five-speed six-segment color wheel	
Panel Size	0.8-inch	
Display Type	Single Panel HD2 DMD Chip by Texas Instruments	
Resolution	1280 x 720 dots	
Lens	Manual Zoom & Focus, Zoom ratio: 1:1.2, F/2.4. f=24-28.8 mm	
Lamp	200 W VIP, life = 2,000 hours	
Brightness	1000 ANSI Lumen – Bright Mode 800 ANSI Lumen – Normal Mode	
Contrast Ratio	1700:1 or Above	
Uniformity	90%	
Horizontal Scan Line	720 lines for DTV & 480 lines for NTSC	
Screen Size	30 ~ 300 inches	
Throw Ratio (16:9)	1.34:1 ~ 1.608:1	
Aspect Ratio	16:9 Native, and 4:3 Supports Letterbox, Standard, Virtual Wide, Anamorphic, Pixel to Pixel	
Power Requirement	AC 100V ~ AC 240V, 50/60Hz	
Power Consumption	300W max., 6.0W standby	
Operation Temperature	5°C ~ 35°C	
Storage Temperature	-20°C ~ 60°C	
Acoustic	Whisper quiet ≤ 31 dBA	
Video System	Digital TV(480p/576p/720p/1080i), NTSC-M,N,60,4.43,Japan/PAL-M,N,60/SECAM	
Computer Format	SXGA/XGA/SVGA/VGA/MAC640*480@67 MAC832*624@75/MAC1024*768@75 High Clarity image compression	
I/O Connectors	Component Video (5RCA*2)	• Y,Pb,Pr • Y,Cb,Cr • R, G, B, H, V • R, G, B(Sync on Green)
	Graphic	• DVI-D • PC (VGA 15 pin D-Sub)
	Standard Video	• S-Video • Composite Video
	Others	• RS-232 9 pin D-Sub • Mini Jack for Wire Control • DC12V Output for Motorized Screen Control
IR Receiver	Front & Rear	

Maintenance

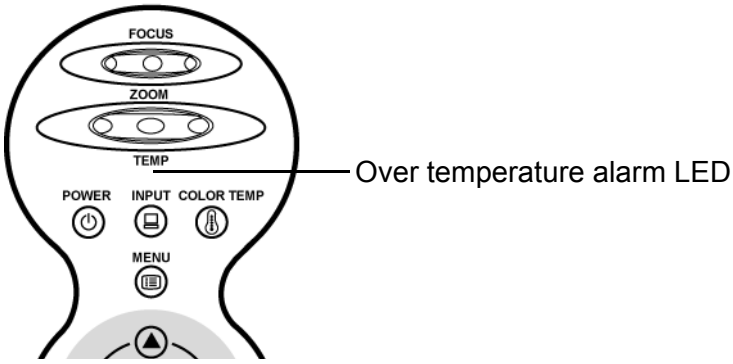
The Premiere 50HD DLP Projector has been constructed to provide years of operation. Refer to the following sections to maintain and troubleshoot your projector.

Lamp Maintenance

The projector lamp has an average life of 2,000 hours. Maintain proper ventilation and keep the air filter clean to keep the lamp operating throughout its lifetime. Do not subject the projector to unnecessary vibration to excessive vibration or shock may rupture the lamp.

Temperature LED

The over temperature alarm LED on the control panel alerts you when the projector lamp becomes too hot.

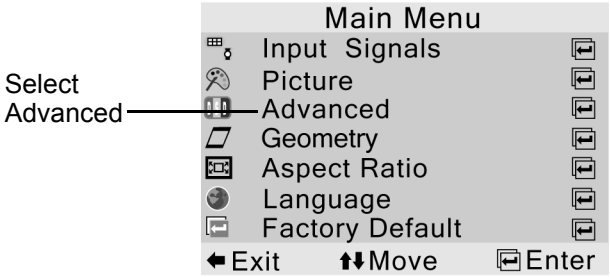


If the LED illuminates during operation, the lamp will shut off and the cooling fans will continue to run for approximatedly two minutes. You should ensure that the airflow around the projector is sufficient, and that the air filters are not clogged to ensure that the projector has proper ventilation.

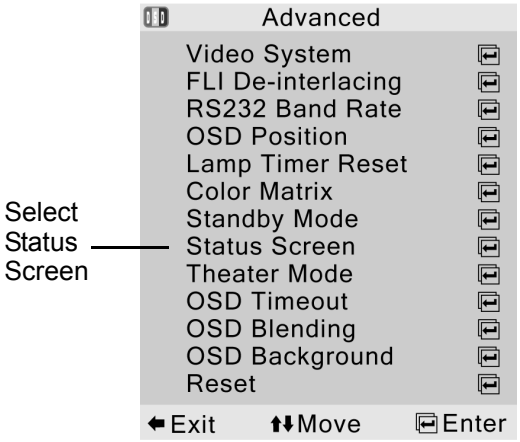
Checking the Lamp Usage Time

The projector lamp has the average life of 2,000 hours. The OSD menus provide you with a utility to monitor the lamp usage time.

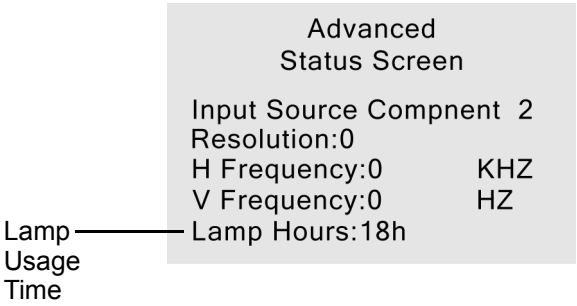
1. Press Menu on the control panel or remote control.
2. Select Advanced.



3. In the Advanced submenu, select Status Screen.



4. The Status Screen displays the number of hours the lamp has been lit.



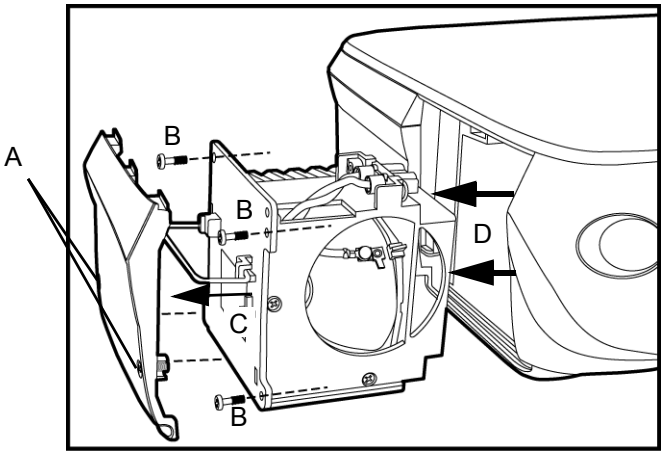
When the lamp usage time reaches 2,000 hours, it is time to replace the lamp.

Replacing the Lamp

Turn off the projector and remove the power cord prior to replacing the lamp. Allow the lamp to cool for at least 15 minutes prior to opening the lamp door. (Please see "Turn Off" on page 13）

Follow these instructions to replace the lamp.

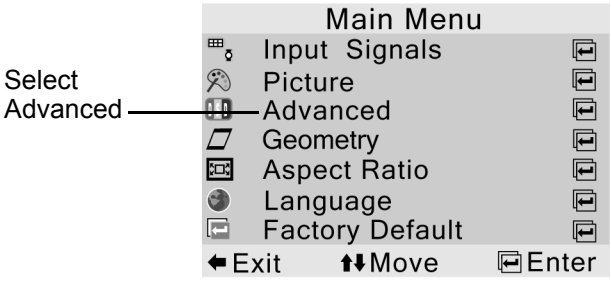
1. Loosen the two screws on the lamp door (**A**).



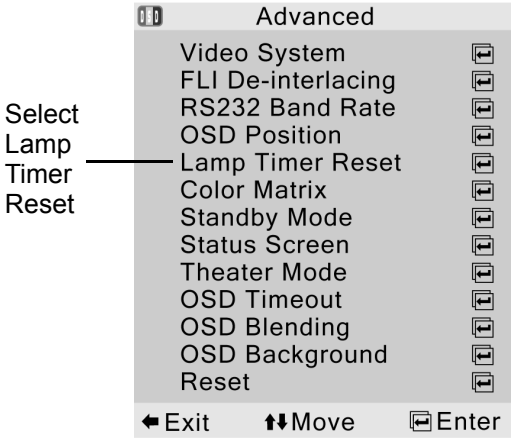
2. Remove the three screws securing the lamp to the chassis (B).
3. Pull the lamp handle (C) to remove the lamp module (D).
4. Reverse the steps above to install the new lamp module.

After you have installed the lamp, reset the lamp usage time in the OSD menus.

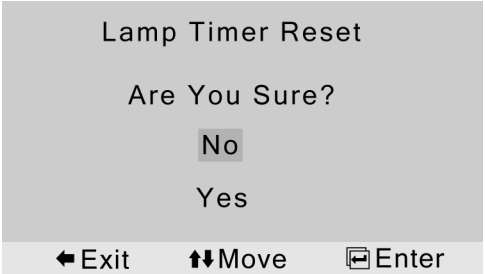
1. Press Menu on the control panel or remote control.
2. Select Advanced.



3. In the Advanced submenu, select Lamp Timer Reset.

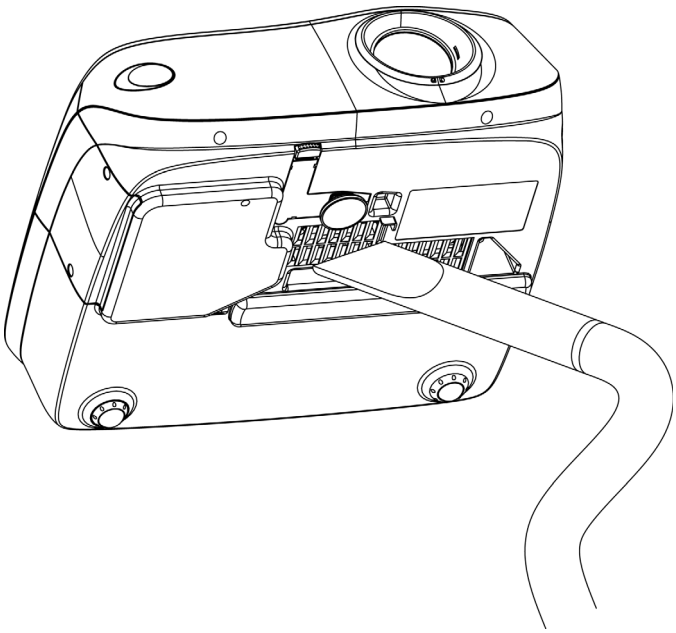


4. In the Lamp Timer Reset submenu, select Yes to reset the timer.



Cleaning the Air Filters

This projector is equipped with air filters to ensure the optimal operating condition of the projector. Periodically clean the air filters by vacuuming them off with a vacuum cleaner. The air filter should be cleaned every 100 hours of use. Clean the filters more often when the projector is used in a dirty or smoky location.



Troubleshooting

Note: If you are having trouble with the display, use the auto sync feature first PC input only (page 21), and reset to the default factory settings (page 28). If the problem persists, adjust the OSD menu for better image quality (Chapter 4).

Problem	Check
No picture appears.	• Ensure that the projector is plugged into the wall outlet. Check to see if the wall outlet is connected to a wall switch and that the wall switch is on. • Ensure the power switch is turned on. (See "Turning On/Off" on page 12) • Ensure that the source setting is correct. (See "Input Signals" on page 19) • Ensure that the source device cables are correctly connected. (See "Connections" on page 7) • If you are using the remote control, ensure that the batteries are good. If necessary, replace the batteries. (See "Installing Remote Control Batteries" on page 16) • Ensure that the contrast and brightness settings are not set to the minimum position. (See "Brightness" and "Contrast" on page 19) • Ensure the lamp is installed.
Color is faded or poor	• Ensure that the color and tint settings are correct. (See "Color" and "Tint" on page 20) • Ensure that the video system settings are correct. (See "Video System" on page 23)
Picture is blurred	• Adjust the zoom and focus. (See "Zoom and Focus" on page 14) • Ensure that the projection distance is not too long or too short to allow for proper focus. (See "Adjusting the Projection Distance " on page 17)
No OSD appears	• Ensure that the projector is plugged in. • If you are using the remote control, ensure that the batteries are good. If necessary, replace the batteries. (See "Installing Remote Control Batteries" on page 16)
Over temperature alarm LED lights up	The projector is overheating. See "Temperature LED" on page 30.
Picture noise appears	• Adjust the phase. (See "Phase" on page 22) • Check the input cables.
Image is green on INPUT 2&3 COMPONENT	Change the component input signal type. (See "Input Signals" on page 19) Ensure the component cables are connected correctly.

The Gamma Manager Utility

About the Gamma Manager Utility

Gamma Manager may be an optional item for your projector, please check with your sales agent.

The Gamma Manager Utility enables you to send user-defined gamma correction values to the projector from your PC. Gamma correction provides more precise control over the brightness, contrast, and color.

This software operates under the Microsoft Windows XP/Me/2000/98SE/98/NT operating systems. This manual references only these Microsoft Windows Operating Systems. Refer to the Microsoft Windows operation manual for details.

Required Hardware and Software

Gamma Manager requires the following hardware and software for operation.

- PC running under Microsoft Windows XP/Me/2000/98SE/98/NT
- 233 MHz Pentium CPU or higher is recommended
- 800 x 600 display capable of displaying 65,536 colors or more
- At least 32 MB of memory
- At least 10 MB hard disk free space
- RS-232C serial port
- CD-ROM drive to install the software

Note: This software may not operate normally if the computer configuration and serial port settings are not set correctly or other serial devices are connected to the computer.

Connecting the Projector to the PC

This software requires the use of an RS-232C serial cable.

CAUTION

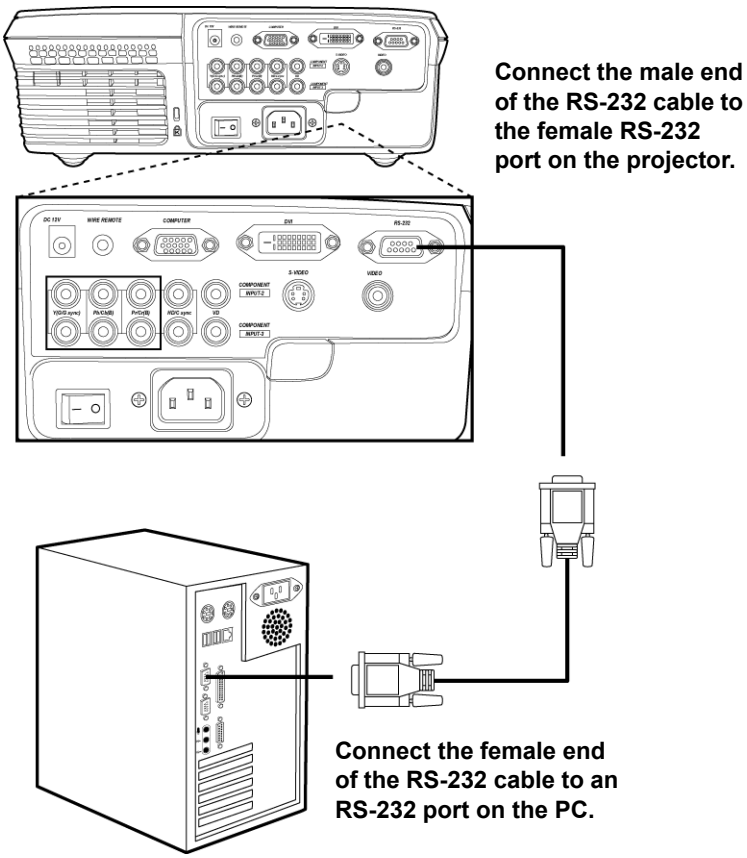
Before connecting, be sure to turn both the projector and the computer off. After making the connection, turn the projector on first. The computer should always be turned on last.

CAUTION

The VGA cable pin NO.11 should be Digital Ground or NO Pin.(D-Sub 15 pin cable) If there is any type of signal on pin 11, the user gamma and other fuctions will not work properly.

Connecting the Projector to a PC

Refer to following illustration to connect the projector to a PC.



Installing the Software

This software can be installed using the installation program on the CD installation kit that came with the projector.

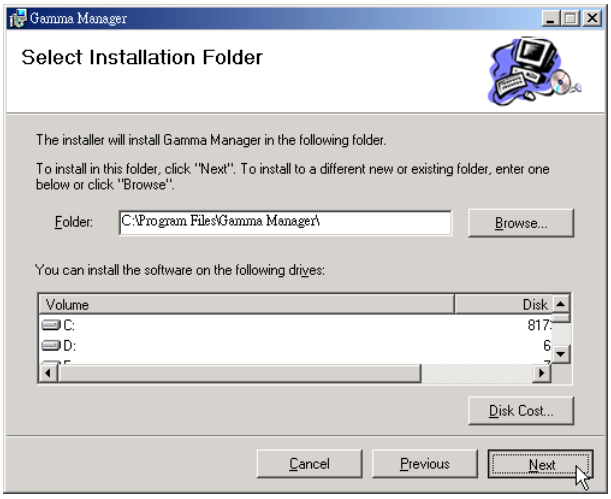
Notes:

- Ensure that your computer meets the required specifications (see “Required Hardware and Software” on page 35).
- Quit all running applications before installing this software.

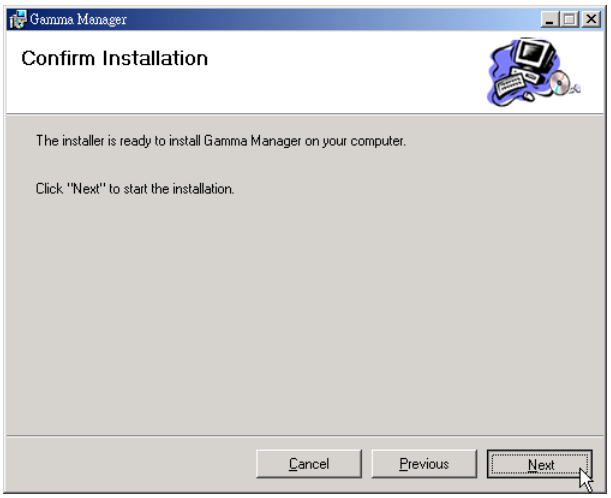
Follow these instructions:

1. Insert the installation kit CD in the CD-ROM drive.
2. Double-click the My Computer icon.
3. Double-click the CD-ROM drive icon.
4. Browse to the Gamma Manager folder.
5. Double-click **Gamma Manager.msi**. The Gamma Manager Setup Wizard opens.

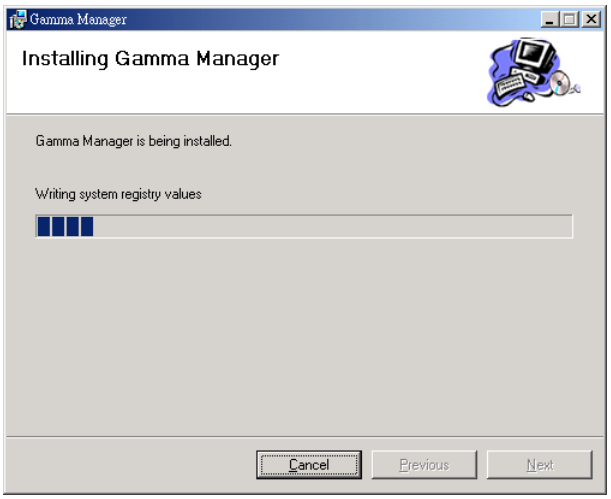
6. Click **Next**. You are prompted to select an installation folder.



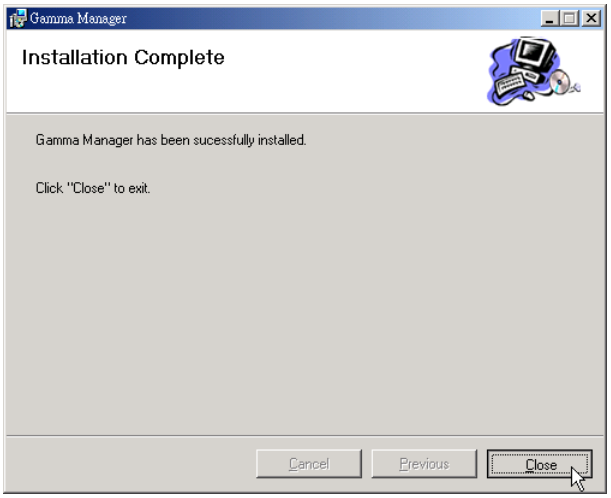
7. Select the default location or browse to an alternate location.
8. Click **Next**. You are prompted to confirm the installation.



9. Click **Next**. The wizard installs the program.



After the Wizard installs the Gamma Manager, the following screen is displayed.



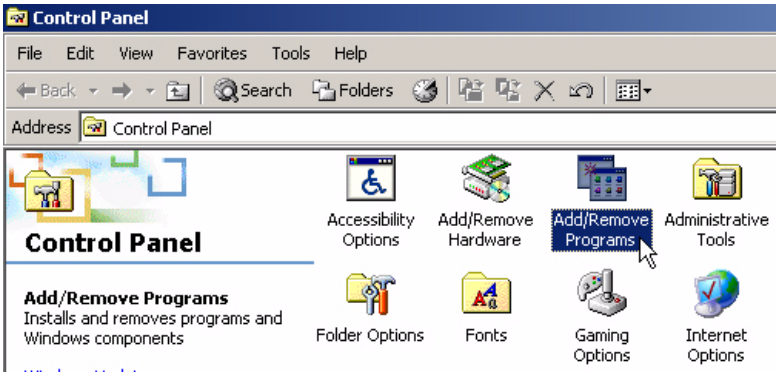
10. Click **Close** to finish the installation.

Uninstalling the Software

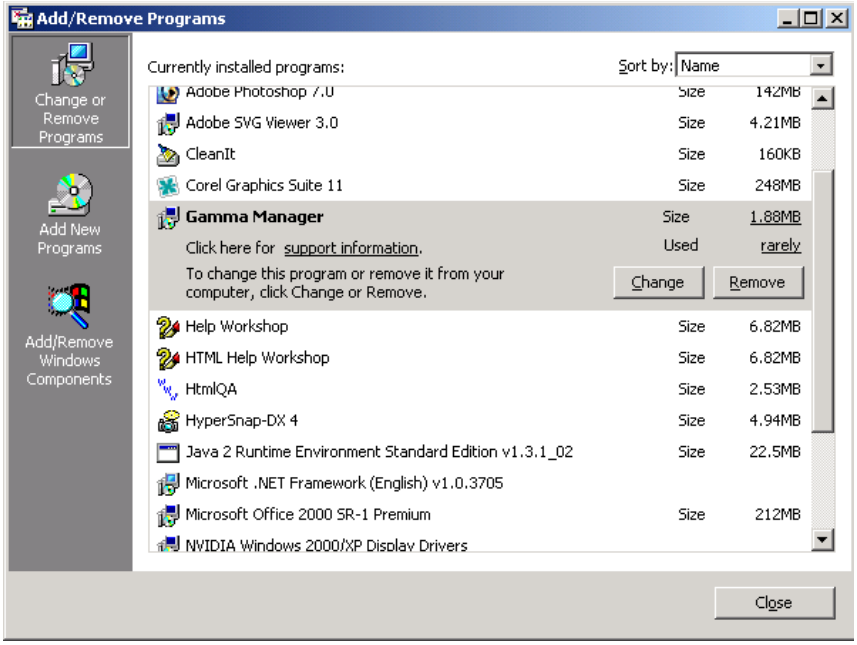
Always uninstall the software before installing an updated version. Ensure that the software is closed before proceeding.

Follow these instructions to uninstall the software.

1. Click **Start**, **Settings**, then select Control Panel.
2. Double-click the Add/Remove Programs icon.



3. Select the NEXGEN Gamma Manager entry.



4. Click **Remove**. You are prompted to confirm uninstall.

5. Click **Yes**. The program is uninstalled.

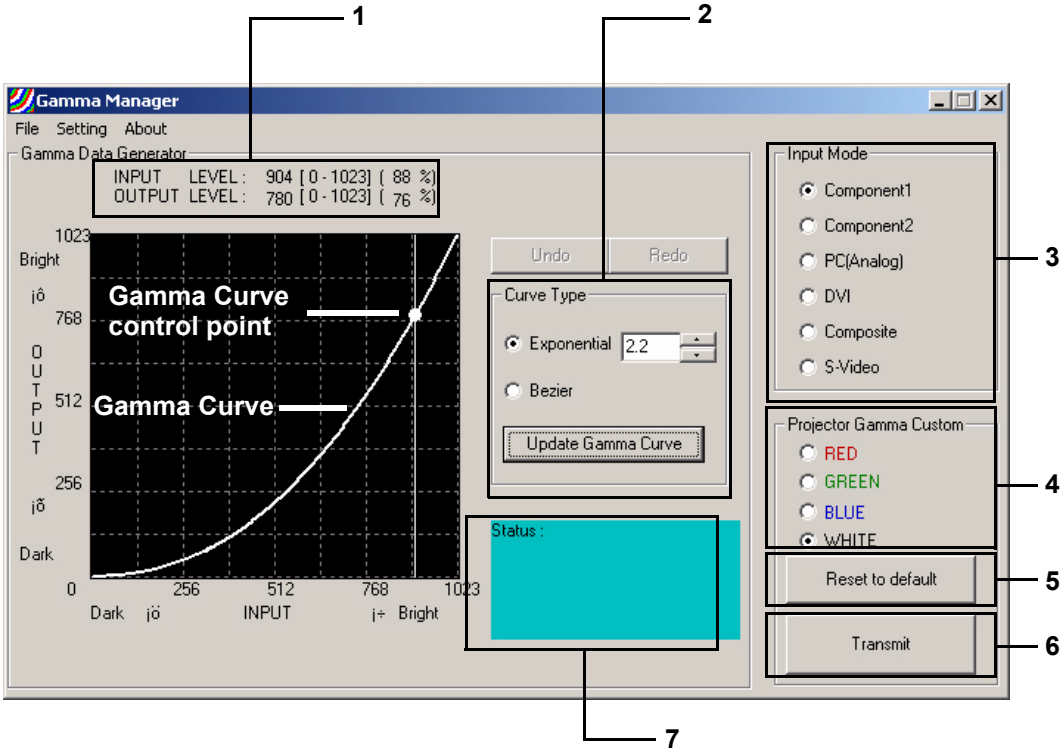
Using the Gamma Manager Utility

This section covers basic Gamma Manager Utility operation. The Gamma Manager enables you to adjust the light intensity of screen images by adjusting the display screen brightness display. Gamma correction is also used to make the projector display match more closely the image from another monitor or other output device such as a printer.

Note: Before starting the software, make sure that the projector and the PC are correctly set up, and ensure that the PC and projector are connected. Refer to “Connecting the Projector to a PC” on page 36.

Starting the Gamma Manager Utility

Click **Start**, **Shortcut to Gamma.exe** to open the Gamma Manager Utility.



1. Displays the gamma input/output levels.
2. Enables you to set the gamma curve type:

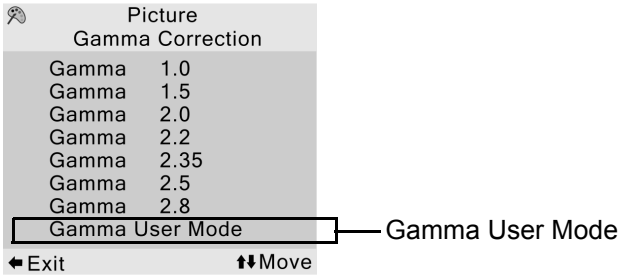
   Exponential: sets the gamma curve based on the function $OUTPUT=INPUT^n$ where n is the number selected from the spin box. Use the up and down arrows to increase or decrease n.

   Bézier: sets the gamma curve based on a mathematical formula that assures continuity with other Bézier curves.
3. Enables you to set the program input signal to that of the projector.
4. Enables you to adjust the red, green, and blue curves or white curves. When white is selected, red, green, and blue are offset.
5. Press this button to reset all values to the factory default setting.
6. Press this button to transmit the adjusted gamma curve to the projector.
7. Displays program status.

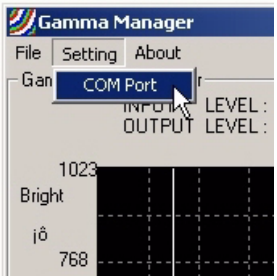
Using the Gamma Manager

Follow these instructions to get started using the Gamma Manager.

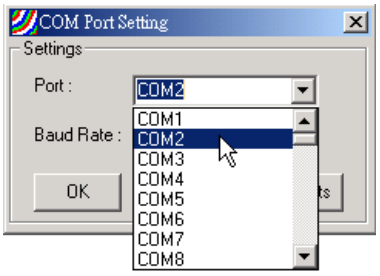
1. Connect the projector and PC using the RS-232 cable. See “Connecting the Projector to a PC” on page 36.
2. Turn on the the projector.
3. Turn on the PC.
4. Set the projector Gamma Correction OSD menu to "Gamma User Mode".



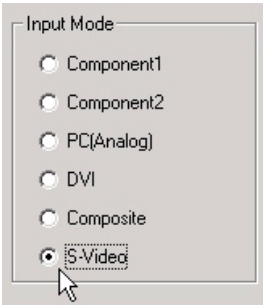
5. Open the Gamma Manager.
6. Click **Setting**, **COM Port**.



7. In the COM Port Setting dialog, select the COM port from the drop-down list that your projector is connected to.

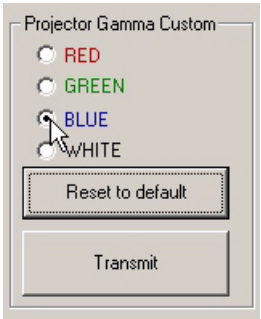


8. Select the input mode



Note: You must select the same input mode that the projector is set at. If you select a different input mode, you will receive the following warning message.

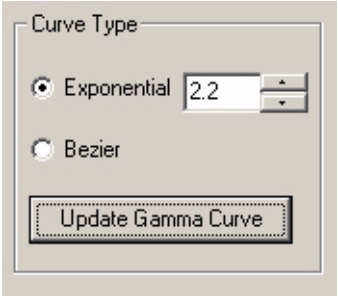
9. Select Projector Gamma Custom to customize the gamma curve for a single color.



10. Adjust the curve. You can adjust the curve in the Curve Type section, or you can directly adjust it by using the mouse to drag the adjustment point.

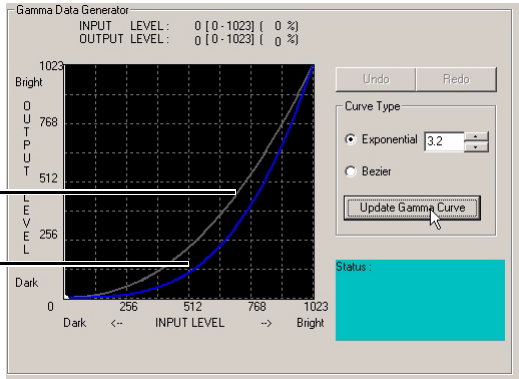
Adjusting the Gamma Curve

You can adjust the gamma curve using an exponential or Bézier function.



Exponential

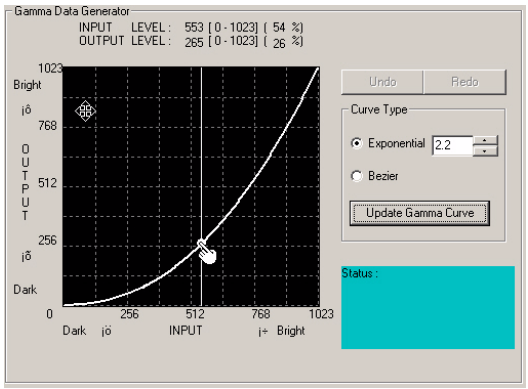
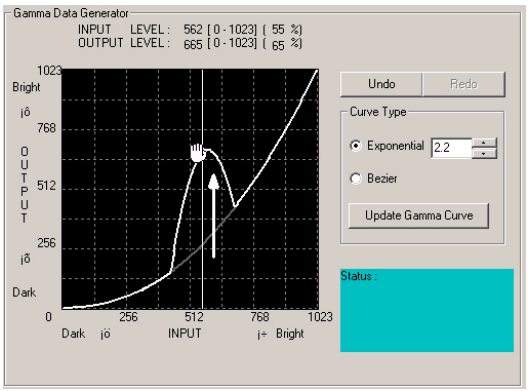
Exponential sets the gamma curve based on the function *OUTPUT=INPUT*^{n} where n is the number selected from the spin box. Use the up and down arrows to increase or decrease n. The following illustration shows what happens when the exponential is set at 3.2 and the color is blue



Previous value (grey)

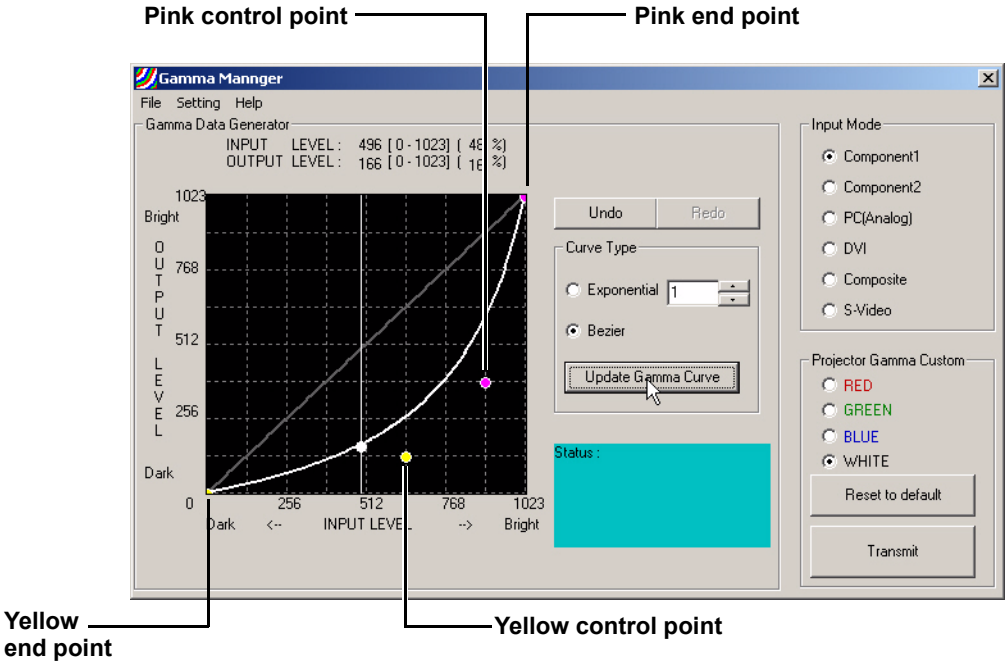
New value (blue)

Click **Update Gamma Curve** to display the new curve. The previous curve is displayed in gray.

To directly adjust the curve, place the cursor over the curve where you want to adjust the gamma value. The cursor turns into a hand:	
Click the line. The cursor becomes a clenched hand. Drag the line up or down to adjust the curve and release.	

Bézier

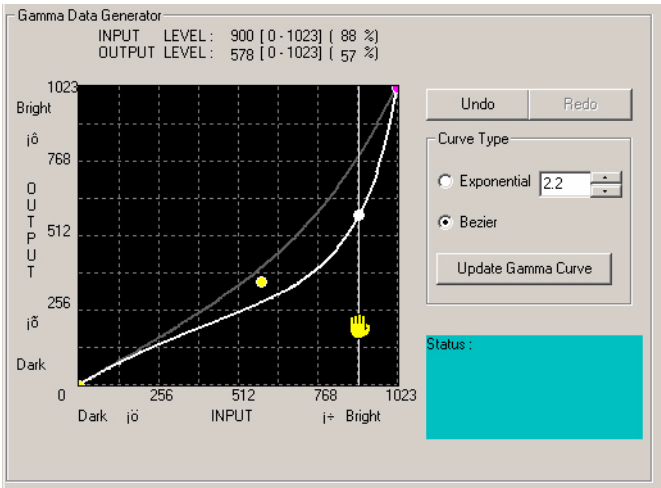
Bézier sets the gamma curve based on a mathematical formula that assures continuity with other Bézier curves. Click **Bézier** and then click **Update Gamma Curve** to view the Bézier adjust screen.



Click and drag the control points to change the curve's starting and ending points.

Note: When clicking the Bézier curve control points and end points, the hand icon turns yellow.

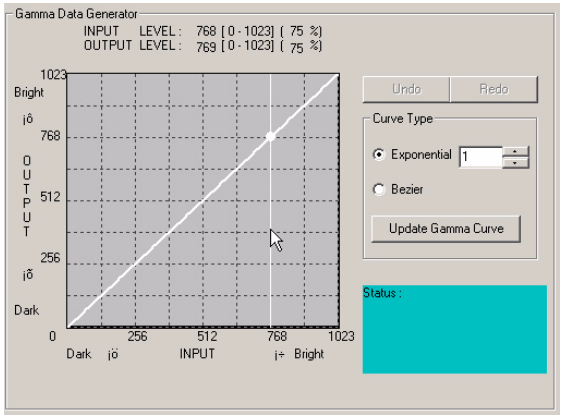
Click the adjustment points and drag them to adjust the shape of the Bézier curve.



Setting a Gamma Curve Range

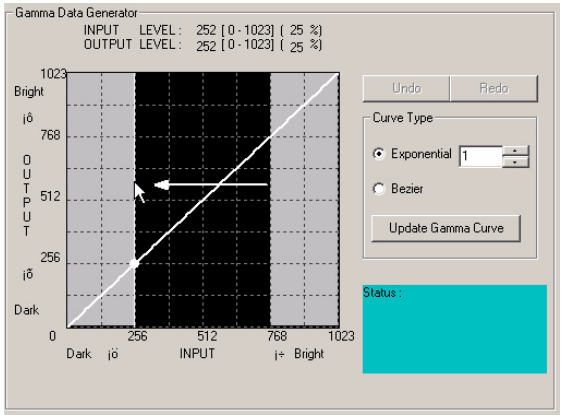
You can set a curve range for adjusting the gamma. When adjusting the gamma, only the defined curve segment is changed.

1. Click the screen where you want to define a region boundary. Do NOT click on the curve.

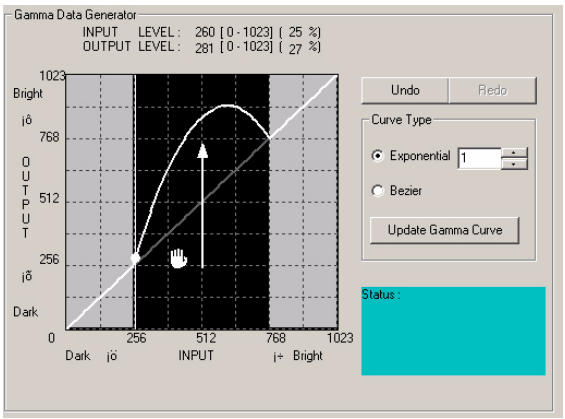


   The output screen turns gray.

2. Drag the cursor to define the other boundary.



3. Adjust the curve by dragging the adjustment. The adjustment only affects the line segment defined by the boundary.



Undoing a Setting

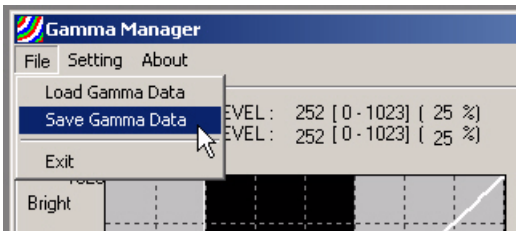
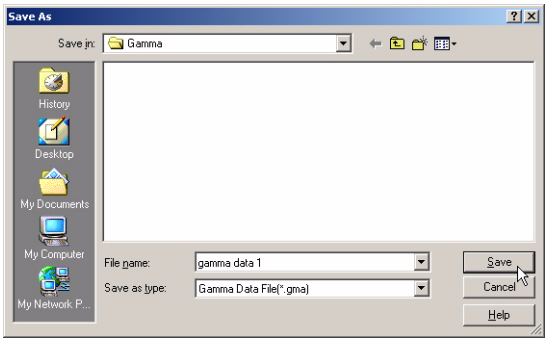
Click Undo to revert the curve to its previous position.

Redoing a Setting

Click Redo to revert the curve to its previous position.

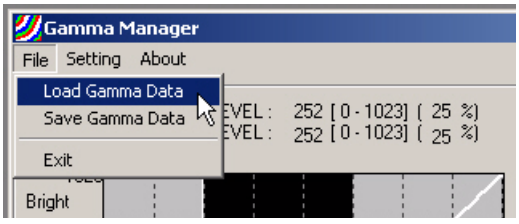
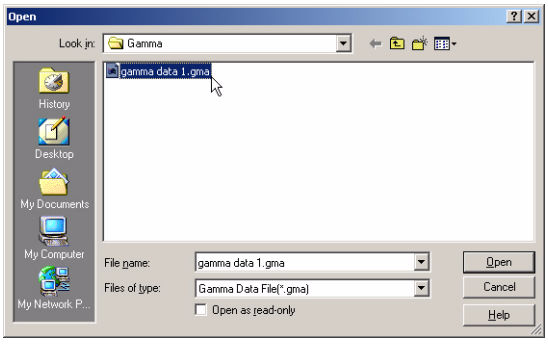
Saving a Gamma Curve Configuration

After adjusting the curve to your satisfaction, you can save the configuration.

Click **File**, **Save Gamma Data**.	
Type a name for the gamma data file. Files are stored in the Gamma Manager subdirectory with a GMA extension.	

Loading a Gamma Curve Configuration

You can load saved gamma curve configurations for editing or sending to the projector. Click **File**, **Load Gamma Data**:

Click **File**, **Load Gamma Data**.	
Click a configuration file and click Open to load the configuration.	

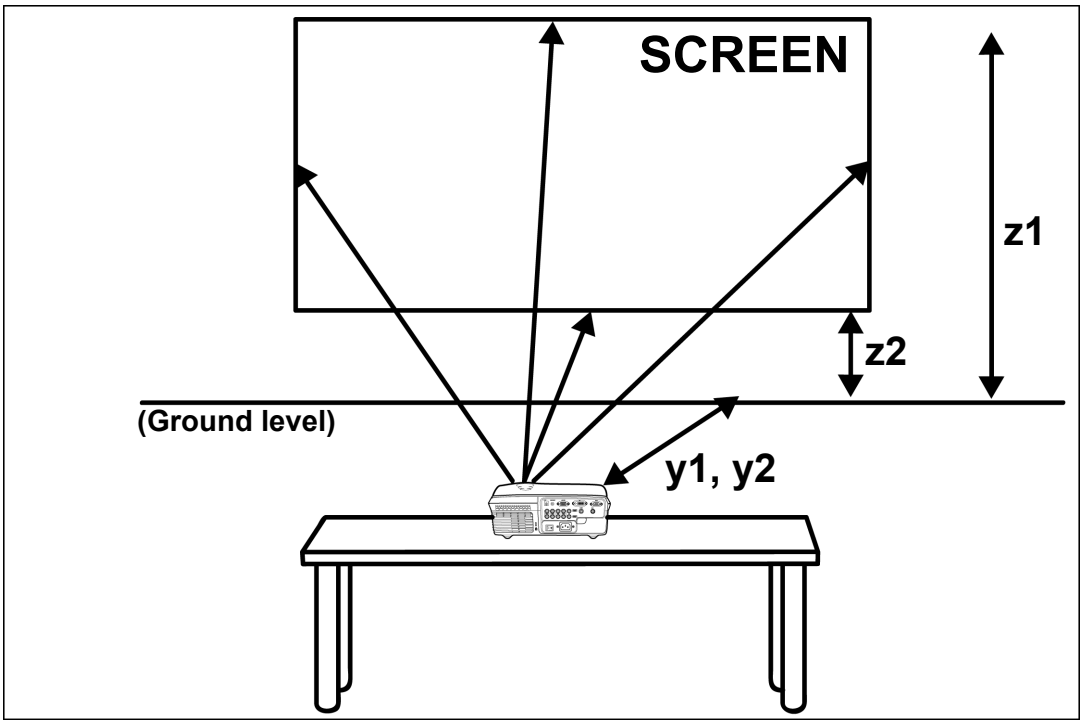
Throw Ratio

About the Throw Ratio

Throw ratio refers to the ratio between the projector's distance from the screen (or throw distance) and the diagonal of the image projected on the screen. The following pages provide throw ratio tables and graphics.

Desktop Installation

The following illustration and tables explain how to calculate the throw ratio for a desktop configuration. The tables provide values for screen ratios of 16:9 and 4:3.



Desktop Installation

Desktop Installation — 16:9 Screen Size

Desk top installation						
Screen size (16:9)			Projection Distance (m)		Height Above Desk	
Diag.	Width	Height	Max	Min	Upper	Lower
300”	261”	147”	10.68m	8.9m	4.59m	0.854m
250”	218”	123”	8.9m	7.416m	3.842m	0.729m
200”	174”	98”	7.12m	5.933m	3.095m	0.604m
150”	131”	74”	5.34m	4.45m	2.347m	0.48m
133”	116”	65”	4.735m	3.946m	2.093m	0.437m
106”	92”	52”	3.773m	3.145m	1.69m	0.37m
100”	87”	49”	3.56m	2.967m	1.6m	0.355m
92”	80”	45”	3.275m	2.729m	1.48m	0.335m
84”	73”	41”	2.99m	2.492m	1.361m	0.315m
72”	63”	35”	2.563m	2.136m	1.181m	0.285m
60”	52”	29”	2.136m	1.78m	1.002m	0.255m
40”	35”	20”	1.424m	1.187m	0.703m	0.205m
30”	26”	15”	1.068m	0.89m	0.553m	0.18m

x Screen size

y1 Max projection Distance z1 Upper height from Desk

y2 Min projection Distance z2 Lower height from Desk

y1=x*0.035599019 z1=x*0.014949939+0.105

y2=x*0.029665849 z2=x*0.002496924+0.105

Desktop Installation — 4:3

Desk top installation

Screen size (4:3)			Projection Distance (m)		Height Above Desk	
Diag.	Width	Height	Max	Min	Upper	Lower
300”	240”	180”	13.07m	10.892m	5.594m	1.022m
250”	200”	150”	10.892m	9.076m	4.679m	0.869m
200”	160”	120”	8.713m	7.261m	3.764m	0.716m
150”	120”	90”	6.535m	5.446m	2.849m	0.563m
133”	106”	80”	5.794m	4.829m	2.538m	0.511m
106”	85”	64”	4.618m	3.848m	2.044m	0.429m
100”	80”	60”	4.357m	3.631m	1.935m	0.411m
92”	74”	55”	4.008m	3.34m	1.788m	0.386m
84”	67”	50”	3.66m	3.05m	1.642m	0.362m
72”	58”	43”	3.137m	2.614m	1.422m	0.325m
60”	48”	36”	2.614m	2.178m	1.203m	0.288m
40”	32”	24”	1.743m	1.452m	0.837m	0.227m
30”	24”	18”	1.307m	1.089m	0.654m	0.197m

x Screen size

y1 Max projection Distance

y2 Min projection Distance

z1 Upper height from Desk

z2 Lower height from Desk

y1=x*0.04356608

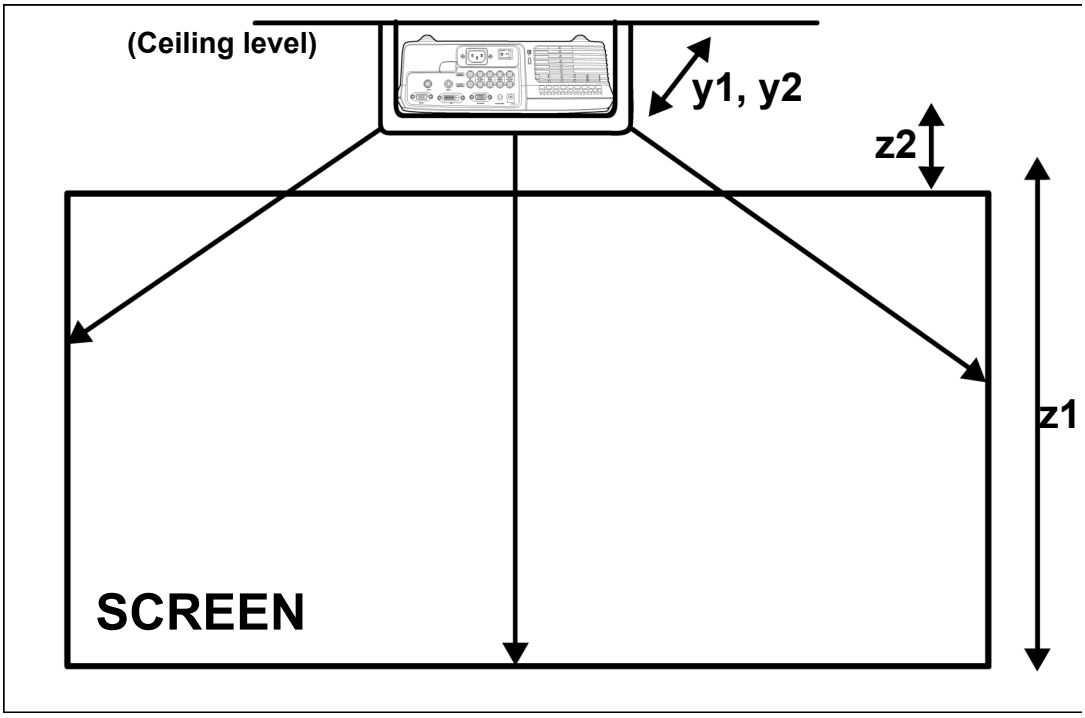
y2=x*0.036305066

z1=x*0.030700699+0.105

z2=x*0.003055736+0.105

Ceiling Mount Installation

The following illustration and tables explain how to calculate the throw ratio for a ceiling mount configuration. The tables provide values for screen ratios of 16:9 and 4:3.



Ceiling Mount Installation — 16:9 Screen Size

Ceiling mount installation

Screen size (16:9)			Projection Distance		Distance from ceiling	
Diag.	Width	Height	Max	Min	Upper	Lower
300”	261”	147”	10.68m	8.9m	0.854m	4.59m
250”	218”	123”	8.9m	7.416m	0.729m	3.842m
200”	174”	98”	7.12m	5.933m	0.604m	3.095m
150”	131”	74”	5.34m	4.45m	0.48m	2.347m
133”	116”	65”	4.735m	3.946m	0.437m	2.093m
106”	92”	52”	3.773m	3.145m	0.37m	1.69m
100”	87”	49”	3.56m	2.967m	0.355m	1.6m
92”	80”	45”	3.275m	2.729m	0.335m	1.48m
84”	73”	41”	2.99m	2.492m	0.315m	1.361m
72”	63”	35”	2.563m	2.136m	0.285m	1.181m
60”	52”	29”	2.136m	1.78m	0.255m	1.002m
40”	35”	20”	1.424m	1.187m	0.205m	0.703m
30”	26”	15”	1.068m	0.89m	0.18m	0.553m

x Screen size

y1 Max projection Distance

y2 Min projection Distance

z1 Long distance from ceiling mount (bottom of the projector)

z2 Shorter distance from ceiling mount

y1=x*0.035599019

y2=x*0.029665849

z1=x*0.014949939+0.105

z2=x*0.002496924+0.105

Ceiling Mount Installation — 4:3 Screen Size

Ceiling mount installation

Screen size (4:3)			Projection Distance		Distance from ceiling	
Diag.	Width	Height	Max	Min	Upper	Lower
300”	240”	180”	13.07m	10.892m	1.022m	5.594m
250”	200”	150”	10.892m	9.076m	0.869m	4.679m
200”	160”	120”	8.713m	7.261m	0.716m	3.764m
150”	120”	90”	6.535m	5.446m	0.563m	2.849m
133”	106”	80”	5.794m	4.829m	0.511m	2.538m
106”	85”	64”	4.618m	3.848m	0.429m	2.044m
100”	80”	60”	4.357m	3.631m	0.411m	1.935m
92”	74”	55”	4.008m	3.34m	0.386m	1.788m
84”	67”	50”	3.66m	3.05m	0.362m	1.642m
72”	58”	43”	3.137m	2.614m	0.325m	1.422m
60”	48”	36”	2.614m	2.178m	0.288m	1.203m
40”	32”	24”	1.743m	1.452m	0.227m	0.837m
30”	24”	18”	1.307m	1.089m	0.197m	0.654m

x Screen size

y1 Max projection Distance

y2 Min projection Distance

z1 Long distance from ceiling mount (bottom of the projector)

z2 Shorter distance from ceiling mount

y1=x*0.04356608

y2=x*0.036305066

z1=x*0.030700699+0.105

z2=x*0.003055736+0.105

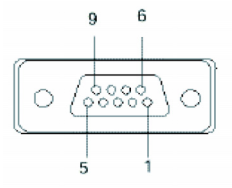
RS-232 communication

RS-232C communication

Connect the computer and projector while both are off and make sure the projector is turned on first. The connector scheme (from left to right) is:

- top (pin 9,8,7,6): not used, not used, not used, not used
- bottom (pins 5,4,3,2,1) : ground, not used, receive data, send data, not used.

RS-232C jack D-sub 9-pin



Communications setting

RS-232 Port Settings	
Setting	**Value**
bits per second	57600
Data bits	8
Parity	None
Stop bits	1
Flow control	None

1.Command data

Command data (3) + Setting value (2).

2.Requesting projector status (Read command)

RS-232 Port Settings		
Function	**Command**	**Response**
Brightness	(BRI ??)	(0-99)
Contrast	(CON ??)	(0-99)

3.Changing the projector settings (Write command)

Write Command Examples		
Function	**Command**	**Response**
Brightness	(BRI 10)	Brightness Write OK
Contrast	(CON 10)	Contrast Write OK

Computer (Windows) - HyPer Terminal

Command Or Read command

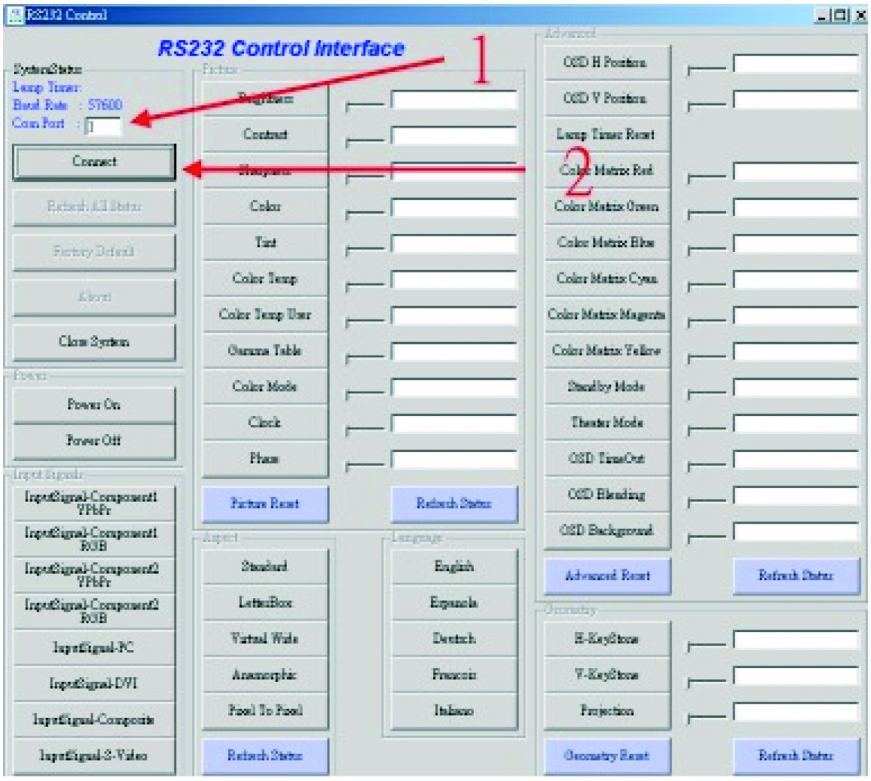
In Hyper Terminal, Press Enter Key
(Ex.BRI 20 Sets the brightness to 20)

Computer (Windows) - RS232ControlAP.exe

Setup RS232ControlAP

1.Setting Com Port

2.Connect System



Command data chart

RS232 Control Function	Command Title	Min Value	Max Value	Default Value	Example	Notes
Input signals-Write	SIG	0	7		Component 1 YPbPr == SIG00	
					Component 1 RGB == SIG01	
					Component 2 YPbPr == SIG02	
					Component 1 RGB == SIG03	
					PC == SIG04	
					DVI == SIG 05	
					Composite == SIG06	
					S-Video == SIG07	
Input Signals-Read	SIG				SIG??	
Brightness-Write	BRI	0	99	50	Brightness 50 == BRI50	
Brightness-Read	BRI				BRI??	
Contrast-Write	CON	0	99	50	Contrast 50 == CON50	
Contrast-Read	CON				CON??	
Sharpness-Write	SHA	0	11	5	Sharpness 5 == SHA50	
Sharpness-Read	SHA				SHA??	
Color-Write	COL	0	99	62	Color 62 == COL62	
Color-Read	COL				COL??	
Tint-Write	TIN	0	99	62	Tint 62 == TIN62	
Tint-Read	TIN				TIN??	
Color Temp-Write	CTE	0	4	0	Color Temp 7800K == CTE00	
					Color Temp 5500K == CTE01	
					Color Temp 6500K == CTE02	
					Color Temp 9300K == CTE03	
					Color Temp User Mode == CTE04	
Color Temp-Read	CTE				CTE	
Color Temp User-Write	CTU	0	99	0	Color Temp User 4000K == CTU00	
					Color Temp User 4100K == CTU01	
					Color Temp User 13900K == CTU99	

RS232 Control Function	Command Title	Min Value	Max Value	Default Value	Example	Notes
color Temp User-Read	CTU				CTU??	
Gamma-Write	TGA	0	7	3	Gamma 1.0 == TGA00	
					Gamma 1.5 == TGA01	
					Gamma 2.2 == TGA02	
					Gamma 2.8 == TGA03	
					Gamma User Mode == TGA04	
Gamma-Read	TGA				TGA??	
Color Mode-Write	CMO	0	3	3	Color Mode Movie == CM000	
					Color Mode Sports == CM001	
					Color Mode VIvid == CM002	
					Color Mode Normal == CM003	
Color Mode-Read	CMO				CMO??	
Clock-Write	CLO	0	99	50	Clock 50 == CLO50	PC Only
Clock-Read	CLO				CLO??	PC Only
Phase-Write	HAS	0	31	0	Phase 0 == HAS	PC Only
Phase-Read	HAS				HAS??	PC Only
Menu Picture Reset MPR	MPR				Menu Picture Reset == MPR00	
OSD H Position-Write	OPH		100	0	OSD H Position 0 == OPH00	
OSD H Position-Read	OPH				OPH??	
OSD V Position-Write	OPV	0	100	0	OSD V Position 0 == OPV00	
Lamp Timer Reset LTR	LTR				Lamp Timer Reset Yes == LTR01	
Color Matrix Red-Write	CMR	0	30	30	Color Matrix Red 30 == CMG30	
Color Matrix Red-Read	CMR				CMR??	
Color Matrix Green-Write	CMG	0	30	30	Color Matrix Green 30 == CMG30	
Color Matrix Green-Read	CMG				CMG??	
Color Matrix Blue-Read	CMB	0	30	30	Color Matrix Blue 30 ==CMB30	
Color Matrix Blue-Read	CMB				CMB??	
Color Matrix Cyan-Read	CMC	0	30	30	Color Matrix Cyan 30 ==CMC30	

RS232 Control Function	Command Title	Min Value	Max Value	Default Value	Example	Notes
Color Matrix Cyan-Read	CMC				CMC??	
Color Matrix Magenta-Read	CMM	0	30	30	Color Matrix Magenta 30 ==CMM30	
Color Matrix Magenta-Read	CMM				CMM??	
Color Matrix Yellow-Read	CMY	0	30	30	Color Matrix Yellow 30 ==CMY30	
Color Matrix Yellow-Read	CMY				CMY??	
Standby Mode-Write	STM	0	1	1	Theater Bright == THM00	
					Theater Normal == THM01	
Theater Mode-Read	THM				THM??	
TimeOut-Write	TIO	0	100	40	TimeOut40 == TIO40	
TimeOut-Read	TIO				TIO??	
Blending-Write	BLE	0	4	0	Blending 0 == BLE00	
Blending-Read BLE					BLE??	
OSD Background-Write	OPA	0	2	0	OSD Background 0 == OPA00	
OSD Background-Read	OPA				OPA??	
Menu Advanced Reset	MAR				enu Advanced Reset == MAR00	
H-KeyStone-Write	HKS	0	40	20	H-KeyStone 0 == HKS00	
H-KeyStone-Read	HKS				HKS??	
V-KeyStone-Write	VKS	0	14	7	V-KeyStone 0 == VKS00	
V-KeyStone-Read	VKS				VKS??	
Projection-Write	TAB	0	3	0	Front Tabletop == TAB00	
					Front Ceiling == TAB01	
					Rear Tabletop == TAB02	
					Rear Ceiling == TAB03	
Projection-Read	TAB				TAB??	
Menu Geometry Reset	MGR				Menu Geometry Reset == MGR00	
Aspect Ratio-Write	ASP	0	4	0	English == LAN00	
					Espanola == LAN01	
					Deutsch == LAN02	
					Francois == LAN03	
					Italiano == LAN04	
Language-Read	LAN				LAN??	
Factory Default	DEF				Factory Default == DEF00	
Power On	ONN				Power On == ONN00	

RS232 Control Function	Command Title	Min Value	Max Value	Default Value	Example	Notes
Power Off	OFF				Power Off == OFF00	
Lamp Timer-Read	LTM				LTM??	

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