LightRaise™ 40wi

interactive projector

User's guide

Product registration

If you register your SMART product, we'll notify you of new features and software upgrades.

Register online at smarttech.com/registration.

Keep the following information available in case you need to contact SMART Support.

Serial number:

Date of purchase:

Important information

Read the following warnings carefully. Failure to read the warnings below or to follow the installation instructions included with your SMART product could result in personal injury or product damage and may void your warranty.

⚠️ **WARNING**

- Failure to follow the installation instructions shipped with your SMART product could result in personal injury and damage to the product.

- Ensure that any cables extending across the floor to your SMART product are properly bundled and marked to avoid a trip hazard.

- Make sure an electrical socket is near your SMART product and remains easily accessible during use.

- To reduce the risk of fire or electric shock, do not expose the SMART product to rain or moisture.

- You must connect the USB cable that came with your SMART product to a computer that has a USB compliant interface and that bears the USB logo. In addition, the USB source computer must be compliant with CSA/UL/EN 60950 and bear the CE mark and CSA and/or UL Mark(s) for CAS/UL 60950. This is for operating safety and to avoid damage to your SMART product.

- To attach the wall tether, use the appropriate hardware for your wall type. Failure to do so could result in injury if the unit detaches from the wall.

- Do not touch or replace the projector lamp (which will be very hot) for at least 30 minutes after you turn it off. Failure to do so can cause severe burns.

Contents

Chapter 1
About your interactive projector

This chapter describes the features and components of your LightRaise™ 40wi interactive projector.

LightRaise 40wi interactive projector features

Your LightRaise 40wi interactive projector is a wall-mounted, short-throw projector that transforms any wall or dry-erase whiteboard into an interactive surface.

You can use the pen as a mouse device to interact with your computer and write in digital ink over SMART Notebook™ interactive learning software files.

When the interactive projector projects an image from your computer on a surface, you can do everything that you can do at your computer—open and close applications, scroll through files, hold meetings with others, create new documents or edit existing ones, visit websites, play videos and more—by touching the surface with the interactive pen.

This projector supports video and audio connections from a variety of devices, including DVD/Blu-ray™ players, VCRs, document cameras and digital cameras, and can project media from these sources onto the interactive screen.

When you use SMART software with your interactive projector, you can write or draw over the projected computer image in digital ink, and then save these notes to a .notebook file or directly into any Ink Aware application.

Interactive projector

The features of your projector include the following:

- Wall-mounted, projection engine that uses DLP® technology by Texas Instruments™, providing BrilliantColor™ performance and quality Gamma 2.2 correction with Bright Room, Dark Room, sRGB, User and SMART Presentation modes.

- Interactive features that allow you to use the pen as a mouse device and to write in digital ink

- 3D-ready using DLP Link™ technology

- NTSC, NTSC 4.43, PAL, PAL-N, PAL-M and SECAM video system compatibility

- WXGA 1280 × 800 display resolution

- HD-ready, maximum resolution 720p pixel perfect, 1080i supported

- 16:10 and 16:9 selectable native aspect ratios with support for 4:5 and 4:3 ratios with scaling

- 2900:1 contrast ratio

- 102" (259.1 cm) diagonal maximum interactive area size on a blank wall

- 0.30:1 throw-ratio

- Built-in speaker

- Secure mounting and installation system that includes the following safety features:

  - Optional projector padlock ring to prevent removal of the projector from the boom

  - A safety tether

  - Templates and instructions for positioning the system safely
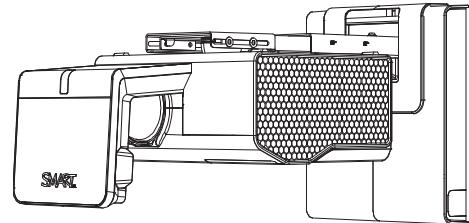
Interactive pen

The interactive pen enables you to interact with your computer and write in digital ink. You can perform a left-click by touching the pen nib to the projection surface. It has a left-click button that enables you to use the pen from a short distance.

Remote control

The projector remote control enables you to access on-screen projector menus and to change projector settings.

Pen holder

Store your interactive pen in the holder when you're not using it and when you're charging it with a USB charging cable. The holder is also a convenient place to store the remote control.

USB charging cable

Charge your interactive pen with the included USB charging cable.

Optional accessories

These accessories aren't included with your projector, but you can order them from your authorized SMART reseller.

Hardware mounting kit

You can order a hardware mounting kit from your authorized SMART reseller. It contains an assortment of screws and wall anchors for several different wall types.

How your interactive projector works

Your interactive projector uses optical and radio frequency signals to detect the position of the pen. It projects patterns that aren't visible to the eye that the pen detects, and then sends this information to the projector. This allows the projector to determine the position of the pen as you move it. Touching the pen to the surface depresses the pen nib, which registers a left-click. If you're using SMART Ink™ or SMART Notebook software, you can write in digital ink.

Your interactive projector has similar features as an interactive whiteboard and allows you and your audience to interact with content and collaborate with each other. Because the interactive technology is in the projector and not the board, almost any surface can be an interactive surface.

Chapter 2
Installing your interactive projector

See the printed installation guide and mounting template that came with your LightRaise 40wi interactive projector for information on installing your projector. You can access these documents by visiting the LightRaise 40wi support page on the SMART website: smarttech.com/SupportLightRaise40wi.

This chapter provides additional details to help you install your interactive projector.

Choosing a location

> ⚠️ **WARNING**
>
> When you mount the projector boom on a framed or hollow wall, attach both the mounting bracket and the safety tether to a stud to safely support the projector's weight. If you use only drywall anchors, the drywall can fail, resulting in possible personal injury, and damage to the product which may not be covered by your warranty.

SMART includes a mounting template with your interactive projector. If you lose this template, contact your authorized SMART reseller. Using this template ensures that you can do the following:

- Determine where to install the projector in relation to the size of the projection surface.

- Mount the projector at a safe height for head space clearance, while maintaining enough space for airflow and installation access above the unit.

Choose a location that's far from bright light sources, such as windows and strong overhead lighting. Bright light sources can cause distracting shadows on the projection surface and can reduce the contrast of the projected image.

Consider what your projection surface is when you're selecting a location for your interactive projector. You can install it so the image falls on an existing dry-erase whiteboard or a wall surface. A dry-erase whiteboard is a flat surface that works well with your interactive projector and allows you to write smoothly in digital ink. The thickness of the whiteboard will affect the maximum size of the projected image. If you select a wall as the projection surface, ensure it is flat and smooth. Choose a white wall to maintain accurate color of the projected image.

> ⚠ **CAUTION**
>
> Writing on the wall with the interactive pen might cause scratches or damage the wall surface. Test the wall surface by writing on it with the pen before you install your interactive projector.

Select an area with sufficient clearance to accommodate your interactive projector. For best presentation alignment, mount your interactive projector in a location that's central to your audience's viewing direction. Consider the general height of your user community when you choose a position for your interactive projector.

Choosing a height

The installation height of your projector depends on the size of the projected image and the available space for it. If you're using a dry-erase whiteboard as the projection surface, the height of the projector depends on the width and height of the board's projection surface. If the projection surface is a wall, the height of the projector depends on the width and height of available wall space. Consider your user community and ensure they'll be able to reach all areas of the projected image with the pen. When determining the size of the projected image, ensure there is room to route the cables around the image and space to install the pen holder.

Using the chart below, which appears on your installation template, determine where to install the mounting bracket for your projector. This measurement is based on the size and location of the projected image.

■ **To determine the height of the projector mounting bracket**

1. Measure the width of the projected image that you want.

   > ℹ **NOTES**
   >
   > ○ Ensure the available width of the projection surface is equal to or greater than the width in the table.

> - If you're using a dry-erase whiteboard as the projection surface, measure inside the
>   frame.

2. Measure the height of the projected image that you want.

> **ℹ NOTES**
>
> - Ensure the available height of the projection surface is equal to or greater than the
>   height in the table.
>
> - If you're using a dry-erase whiteboard as the projection surface, measure inside the
>   frame.

3. Take the image width and height measurements and use the table to determine the installation
   height of the projector mounting bracket in relation to the top of the projected image.

Image width	Image height	Image size	Mounting bracket height (from top of image)
≥ 69 1/2" (176.5 cm)	≥ 43 1/4" (109.9 cm)	82" (208.3 cm)	14" (35.6 cm)
≥ 71 1/4" (181 cm)	≥ 44 1/2" (113 cm)	84" (213.4 cm)	14 1/4" (36.2 cm)
≥ 72 7/8" (185.1 cm)	≥ 45 5/8" (115.9 cm)	86" (218.4 cm)	14 1/2" (36.8 cm)
≥ 74 5/8" (189.5 cm)	≥ 46 5/8" (118.4 cm)	88" (223.5 cm)	14 3/4" (37.5 cm)
≥ 76 3/8" (194 cm)	≥ 47 3/4" (121.3 cm)	90" (228.6 cm)	15" (38.1 cm)
≥ 78" (198.1 cm)	≥ 48 3/4" (123.8 cm)	92" (233.7 cm)	15 1/4" (38.7 cm)
≥ 79 3/4" (202.6 cm)	≥ 49 7/8" (126.7 cm)	94" (238.8 cm)	15 1/2" (39.4 cm)
≥ 81 3/8" (206.7 cm)	≥ 50 7/8" (129.2 cm)	96" (243.8 cm)	15 3/4" (40 cm)
≥ 83 1/8" (211.1 cm)	≥ 52" (132 cm)	98" (248.9 cm)	16" (40.6 cm)
≥ 84 3/4" (215.3 cm)	≥ 53" (134.6 cm)	100" (254 cm)	16 1/4" (41.3 cm)
≥ 86 1/2" (219.7 cm)	≥ 54" (137.2 cm)	102" (259.1 cm)	16 1/2" (42 cm)

Routing the cables

Connect all the cables to your interactive projector and let them hang loose. After you've connected all the cables, connect the power cable to a power outlet and turn on your interactive projector so you can see where the projected image falls. Align the image and make other image adjustments before you route the cables around the projected image. Leave space between the cables and the projected image so you can make image adjustments later. After you've made all your image adjustments, and completed your projector installation, secure the cables to the wall.

☞ **I M P O R T A N T**

Do not connect the power cable to a power outlet until you have connected all the other cables to the projector.
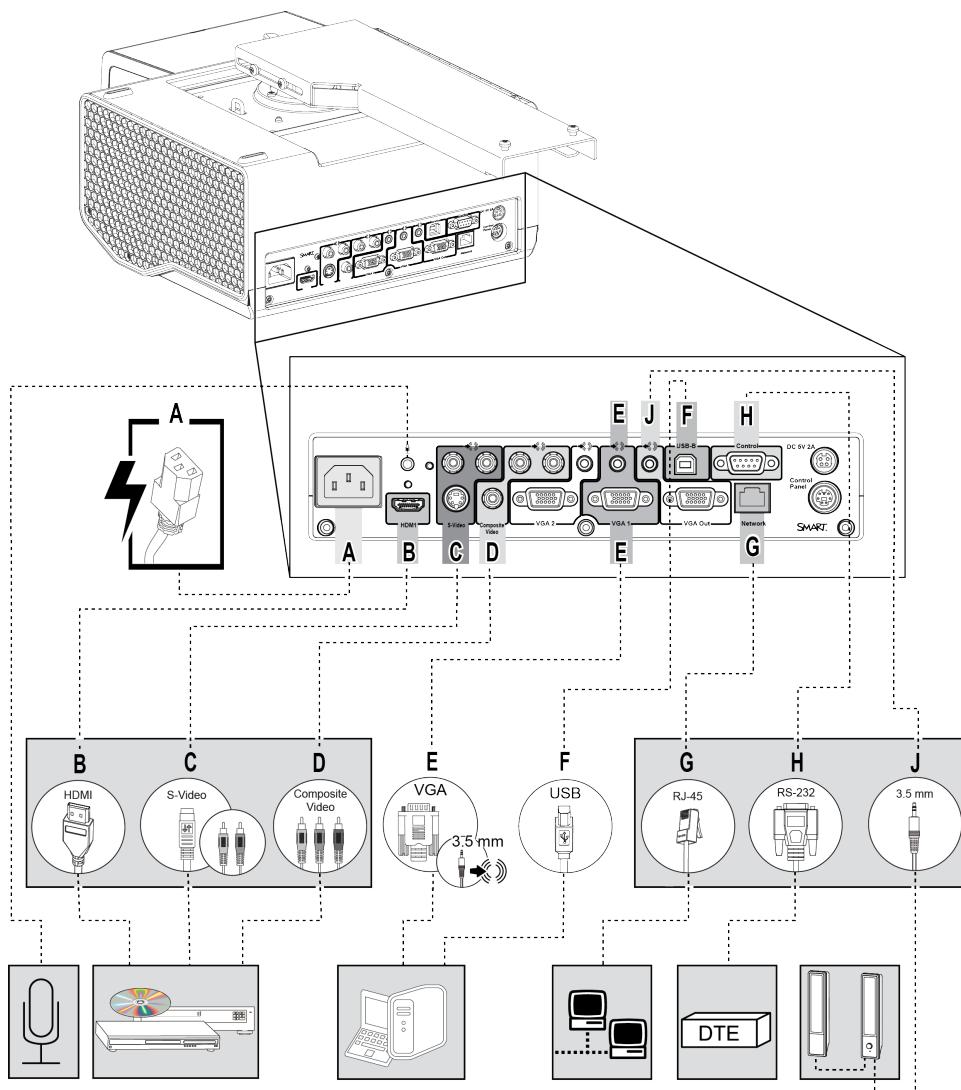
Installing SMART Notebook software

You must install SMART Notebook collaborative learning software on the computer connected to your interactive projector to access all of its features. You can install the software from the DVD that came with your interactive projector and you can visit smarttech.com/software to download software updates.

◼ To install SMART software

Insert the SMART software DVD that came with your interactive projector and follow the on-screen instructions.

Chapter 3
Using your interactive projector

This chapter describes how to use your interactive projector, use your remote control, retrieve system information, access the projector's image adjustment options and integrate your system with peripheral devices.

Using your projector

This section explains how to use your projector and its remote control.

Using the remote control

The projector remote control enables you to access on-screen menus and change projector settings. Use the **Power** ⏻ button on the remote control to put the projector into Standby mode or to turn it on. You can also use the **Input** button on the remote control to switch sources on the projector.
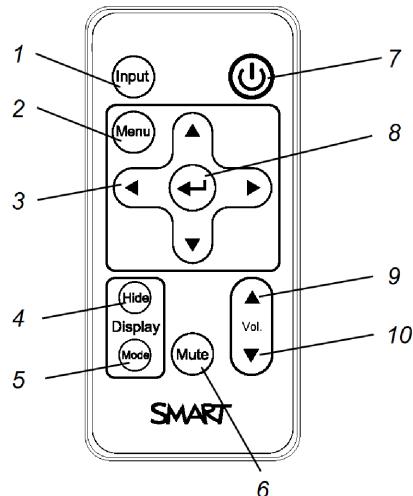
Number	Function	Description
1	Input	Select a video and audio input source.
2	Menu	Show or hide the projector menus.
3	◄ (Left), ► (Right), ▲ (Up) and ▼ (Down) arrows	Change the menu selections and adjustments.
4	Hide	Freeze, hide or display the image: - Press once to freeze the image. For example, you can display a question on the screen while you check your e-mail. - Press again to hide the image and display a black screen. - Press again to return to the live image.
5	Mode	Select a display mode.
6	Mute	Mute audio amplification.
7	⏻ (Power)	Turn on the projector or put it into Standby mode.
8	↵ (Enter)	Accept the selected mode or option.
9	▲ (Volume Up)	Increase audio amplification volume.
10	▼ (Volume Down)	Decrease audio amplification volume.

> ℹ **NOTE**
>
> The **Mute**, **Volume Up** and **Volume Down** buttons work only if there is an audio source and speaker system connected to the projector for the selected input source.

Adjusting projector settings

The remote control's **Menu** button enables you to access the on-screen display to adjust the projector settings.

👉 **IMPORTANT**

Keep your remote control in a safe place because there is no other way to access menu options.

ℹ️ **NOTE**

Some projector settings aren't available for all video sources.

Setting	Use	Notes
🎨 **Image Adjustment menu**		
Display Mode	Indicates the projector's display output (**SMART Presentation**, **Bright Room**, **Dark Room**, **sRGB** and **User**).	The default is **SMART Presentation**.
Brightness	Adjusts projector brightness from 0 to 100.	The default is **50**.
Contrast	Adjusts the difference between the lightest and darkest parts of the image from 0 to 100.	The default is **50**.
Frequency	Adjusts the display data frequency of the projected image from -5 to 5 to match the frequency of your computer's graphics card.	The default is **0**. This setting applies to VGA inputs only.
Tracking	Synchronizes your projector's display timing with your computer's graphics card from 0 to 63.	This setting applies to VGA inputs only.
H-position	Moves the horizontal position of the source video left or right from 0 to 100 (relative to the projected image).	Don't adjust this setting unless you're advised to by SMART Support. Adjust this setting only after you make all physical image adjustments. This setting applies to VGA inputs only and is useful in situations where the source video is cut off.
V-position	Moves the vertical position of the source video up or down from -5 to 5 (relative to the projected image).	Don't adjust this setting unless you're advised to by SMART Support. Adjust this setting only after you make all physical image adjustments. This setting applies to VGA inputs only and is useful in situations where the source video is cut off.

Setting	Use	Notes
White Peaking	Adjusts the image color brightness from 0 to 10 while providing more vibrant white shades.	A value closer to 0 creates a natural image and a value closer to 10 enhances brightness.
Degamma	Adjusts the color performance of the display from 0 to 3.	
Color	Adjusts the Red, Green, Blue, Cyan, Magenta and Yellow colors on the projector from 0 to 100 to provide custom color and luminance output.	Each color has a default value of 100. Color settings are saved to the **User** display mode.

🔊 Audio menu

Setting	Use	Notes
Line volume	Adjusts the projector's line-input volume amplification from -20 to 20.	The default is **0**.
Microphone volume	Adjusts the projector's microphone volume amplification from 0 to 40.	The default is 20.
Mic attenuation	Turns microphone input attenuation **On** or **Off**.	The default is **Off**. Turn it on if your microphone is too sensitive.
System mute	Mutes the projector's audio output.	The default is **off**. If you mute the projector's audio output and then increase or decrease the volume, the volume is restored automatically. You can prevent this from happening by disabling the volume control.
Microphone mute	Mutes the microphone output.	The default is **Off**.
Microphone output switch	Set output to **Line out + speaker**, **Line out** or **Speaker**.	You can select which speakers the microphone input goes to. The default is **Line out + speaker**.
System output	Set output to **Line out + speaker**, **Line out** or **Speaker**.	You can select which speakers the system output source goes to. The default is **Line out + speaker**.
Disable Volume Control	Disables the projector's volume control.	The default is **On**.
Closed Captioning	Turns closed captioning on or off for video sources that support closed captioning.	The default is **Off**.
Closed Captioning Language	Sets the closed captioning language to **CC1** or **CC2**.	Typically, **CC1** displays U.S. English subtitles, while **CC2** displays other regional languages, such as French or Spanish, depending on television channel or media setup.

Setting	Use	Notes
Projector Functions menu		
3D On/Off	Turns the DLP Link technology 3D feature on or off.	The default is **Off**. Using 3D settings with interactive settings will darken the projected image.
3D Format	Displays the current 3D format (**Interleaved** or **Under-over**).	**Interleaved** breaks down the image frame for each eye, alternately displaying a line of visual information from each frame. **Under-over** concurrently displays horizontally stretched image frames for each eye, one above the other.
3D Invert Left-Right	Selects the 3D Invert setting (**L-R** or **R-L**).	**L-R** displays visual data for the left eye first. **R-L** displays visual data for the right eye first.
Auto Signal Detect	Enables or disables signal searching of input connectors.	The default is **off**. Select **On** to have the projector continuously switch inputs until it finds an active video source. Select **Off** to maintain signal detection in one input.
Lamp Reminder	Turns the lamp replacement reminder on or off.	The default is **On**. This reminder appears 100 hours before the recommended lamp replacement.
Lamp Mode	Adjusts lamp brightness to **Standard** or **Economy**.	The default is **Standard**, which displays a high-quality, bright image. **Economy** increases the lamp life by decreasing the brightness of the image.
Auto Power Off (minutes)	Sets the length of the auto power-off countdown timer between 1 and 240 minutes.	The default is **120** minutes. The timer begins to count down when the projector no longer receives a video signal. When the timer finishes, the projector enters Standby mode. Select **0** to turn off the timer.
Zoom	Adjusts the zoom to the center of the image in or out from 0 to 30.	The default is **0**. Zooming in cuts off the outer edges of the source video.
Projector ID	Displays the projector's unique ID within your organization's network.	You can refer to this number when using the network remote management feature (see *Remotely managing your interactive projector* on page 53).

Setting	Use	Notes
Keystone	Adjusts image keystone settings	The default is **0**. The keystone can be adjusted from -40 to +40. Use this setting only after you make all physical image alignment adjustments to straighten the vertical lines of the image.
Aspect Ratio	Adjusts the image output to **Fill Screen**, **Match Input** or **16:9**.	The default is **Fill Screen**. **Fill Screen** produces an image that fills the entire screen by stretching and scaling the source video to match the projector's native resolution and aspect ratio. **Match Input** displays the source video in its native resolution and aspect ratio. As a result, unused space could appear along the top and bottom edges of the screen (letterbox format) or along the left and right edges of the screen (pillarbox format). **16:9** displays the source video in 16:9 aspect ratio. As a result, unused space appears along the top and bottom edges of the screen. This is recommended for use with HDTV and DVD/Blu-ray discs enhanced for wide-screen televisions. See *Video format compatibility* on page 27 for descriptions of each mode.
Startup Screen	Selects the type of startup screen (**SMART**, **Capture User Startup Screen** or **Preview Startup Screen**).	This screen displays when the projector lamp is starting and a video source signal isn't displayed. **SMART** displays the default SMART logo on a blue background. **Capture User Startup Screen** closes the on-screen display menu and captures the entire projected image. The captured image is displayed the next time the on-screen display opens. (The capture can take up to one minute, depending on the complexity of the background graphic.) **Preview Startup Screen** enables you to preview the default or captured startup screen.

Setting	Use	Notes
Set to Default?	Resets projector settings to their default values.	If you select **Yes**, all projector settings reset to their defaults, reversing any menu changes you made. This action is irreversible. Don't adjust this setting unless you want to reset all of the applied settings, or unless you're advised to by a SMART Support specialist.
USB1 Source	N/A	This setting is applicable only to SMART Board™ interactive whiteboard systems with extended control panels (ECPs).
USB2 Source	N/A	This setting is applicable only to SMART Board interactive whiteboard systems with ECPs.
Native DLP Resolution	Selects **16:10** or **16:9**.	The default is **16:10**. When you select **16:10**, the projector's native resolution is 1280 × 800. When you select **16:9**, the projector's native resolution is 1280 × 720.
Interactive settings menu		
Interactive	Turns interactive pen features on or off.	The default is **On**.
Channel	**Auto** allows the projector to automatically select the best radio frequency (RF) channel. **Manual** lets you select a channel within the 2.4 GHz band.	The default is **Auto**.
Channel Information	Displays the RF channel that the projector is using.	You can select the channel when the Channel setting above is set to **Manual**.
Pen Pairing	Sets the interactive pen so that it only works with a specific interactive projector. The pen will only work with the projector that it's paired with until you release the pen pairing by following the steps below.	Follow the on-screen instructions to pair the pen.
Release Pen Pairing	Resets the pen pairing so it can be used with other LightRaise 40wi interactive projectors.	Follow the on-screen instructions to release pen pairing.

Setting	Use	Notes
System Functionality	Set to **Presenter** or **Whiteboard** mode.	The default is **Presenter** mode. In Presenter mode, the pointer follows the pen as you point it at the projected image and move it. In **Whiteboard** mode, the pointer only moves when you press the pen tip against the projection surface, or you press the left-click button on the pen.
Battery Capacity	Displays the interactive pen battery level.	In order for the battery level, RF strength and Pen version, to display; the interactive pen's status light must be blinking green. It blinks green under the following conditions:
RF Strength	Displays the strength of the RF connection between the interactive pen and the projector.	● The pen is turned on and pointed at the projected image (not the SMART logo screen).
Pen Version	Displays the firmware version of the interactive pen.	● The pen isn't paired with a different interactive projector.

Network menu

Setting	Use	Notes
Network and VGA Out	Activates the projector's VGA Out and RJ45 connector and network features.	The default is **off**.
Status	Displays the current network status (**Connected**, **Disconnected** or **Off**).	
IP Address	Displays the projector's current IP address in values between 0.0.0.0 and 255.255.255.255.	To change the projector's IP address, use the RS-232 connector (see *Network controls* on page 70) or use a DHCP server to assign a dynamic IP address, and then set a static IP address using the network remote management feature (see *Remotely managing your interactive projector* on page 53).
Subnet Mask	Displays the projector's subnet mask number in values between 0.0.0.0 and 255.255.255.255.	

Setting	Use	Notes
Gateway	Displays the projector's default network gateway in values between 0.0.0.0 and 255.255.255.255.	
DNS	Displays the projector's primary domain name number in values between 0.0.0.0 and 255.255.255.255.	
MAC Address	Displays the projector's MAC address in xx-xx-xx-xx-xx-xx format.	
Group Name	Displays the projector's workgroup name as set by an administrator (maximum 12 characters).	You can set the projector's workgroup name using the remote management features (see *Remotely managing your interactive projector* on page 53).
Projector Name	Displays the projector's name as set by an administrator (maximum 12 characters).	You can set the projector's name using the remote management features (see *Remotely managing your interactive projector* on page 53).
Location	Displays the projector's location as set by an administrator (maximum 16 characters).	You can set the projector's location using the remote management features (see *Remotely managing your interactive projector* on page 53).
Contact	Displays the contact name or number for projector support as set by an administrator (maximum 16 characters).	You can set the contact name or number using the remote management features (see *Remotely managing your interactive projector* on page 53).
🌐 **Language menu**		
Language	Selects language preference.	Projector menu support is available in English (default), Chinese (Simplified), Chinese (Traditional), Czech, Danish, Dutch, Finnish, French, German, Greek, Italian, Japanese, Korean, Norwegian, Polish, Portuguese (Brazil), Portuguese (Portugal), Russian, Spanish and Swedish.
🛈 **Information menu**		
Lamp Hours	Displays the current number of lamp usage hours from 0 to 4000 hours from when it was last reset.	Always reset the lamp hours after you replace a lamp, because lamp service reminders are based on the current hours of use. See *Resetting the lamp hours* on page 36 for details on the lamp hours reset procedure.
Input	Displays the current video input source (**VGA-1**, **VGA-2**, **Composite**, **S-Video** or **HDMI**).	

Setting	Use	Notes
Resolution	Displays the projector's most recently detected video source signal resolution and refresh rate.	If there is no current video input source signal, this setting displays the last known source signal resolution and refresh rate.
Firmware Version	Displays the projector's digital display processor (DDP) firmware version in x.x.x.x format.	
MPU Version	Displays the projector microprocessor unit (MPU) firmware version in x.x.x.x format.	
Network Version	Displays the projector's network communications processor firmware version in x.x.x.x format.	
Model Number	Displays the projector's model number.	
Serial Number	Displays the projector's serial number.	

Focusing the image

To focus the projected image, use the focus lever located on the projector lens.

▇ To focus and adjust the image

Move the focus lever up or down until the image is in focus.
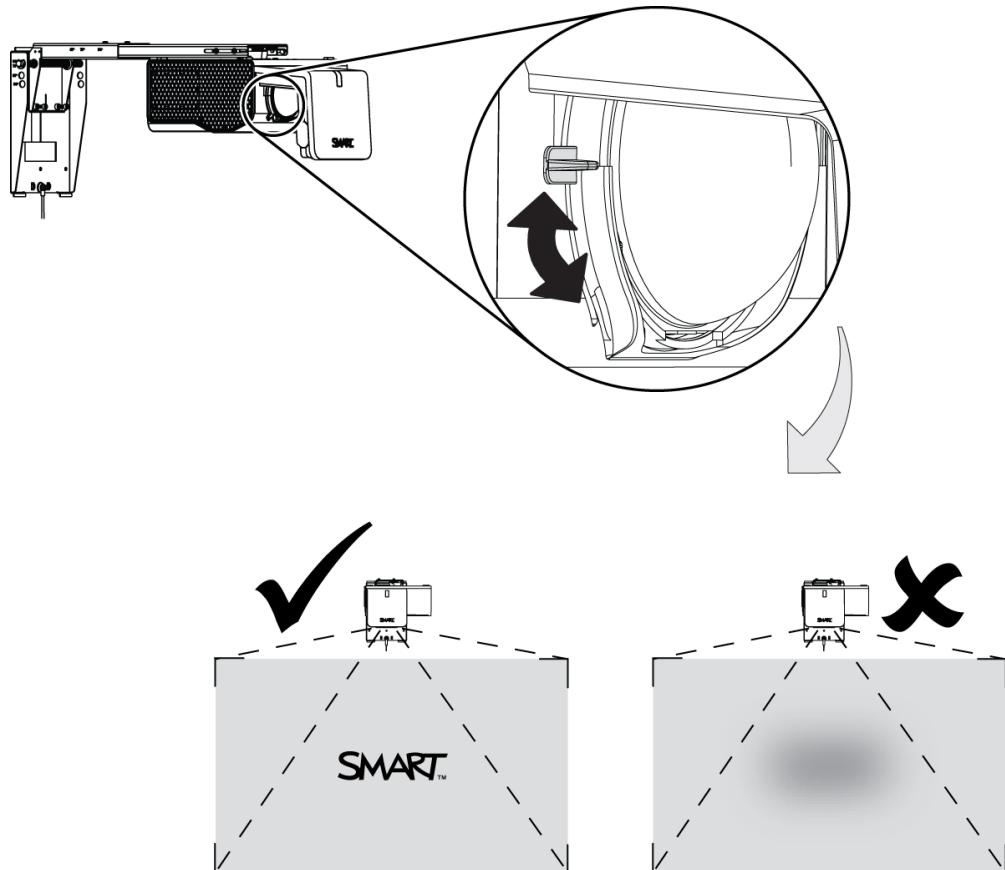
Adjusting the image

- While adjusting the projected image size, shape and location, use the projector's default background so that you can see the full projected image clearly. Don't use other images, which might be cropped or scaled by the projector and could result in a misleading projected image size, shape and location.

- Use the mechanical adjustments described in the installation document to make all physical image adjustments. Don't use the projector's on-screen menu options during the projector alignment process.

- Be aware that as you tilt the projector up or lower its mounting boom to raise the image, the entire projected image increases or decreases in size, especially at the bottom of the projected image.

- When adjusting keystone (tilt), ensure that the top and bottom edges of the image are horizontal before you position the left and right edges of the image relative to your interactive whiteboard.

- When you move the projector forward or backward on the boom to make the image larger or smaller, you might need to tilt or turn the projector slightly to keep the image square. Loosen the focus lever slightly to aid in this adjustment.

- To fine-tune the image, you might need to repeat all steps described in the installation document in smaller increments.

Projector connection diagram

You can connect a variety of peripheral devices to your projector, including DVD/Blu-ray players, VCRs, document cameras, digital cameras and high-definition sources, as well as peripheral device outputs, such as a secondary projector or a flat-panel display and powered speakers.

> **ℹ NOTE**
>
> You might need to purchase third-party adapters to connect certain peripheral devices.
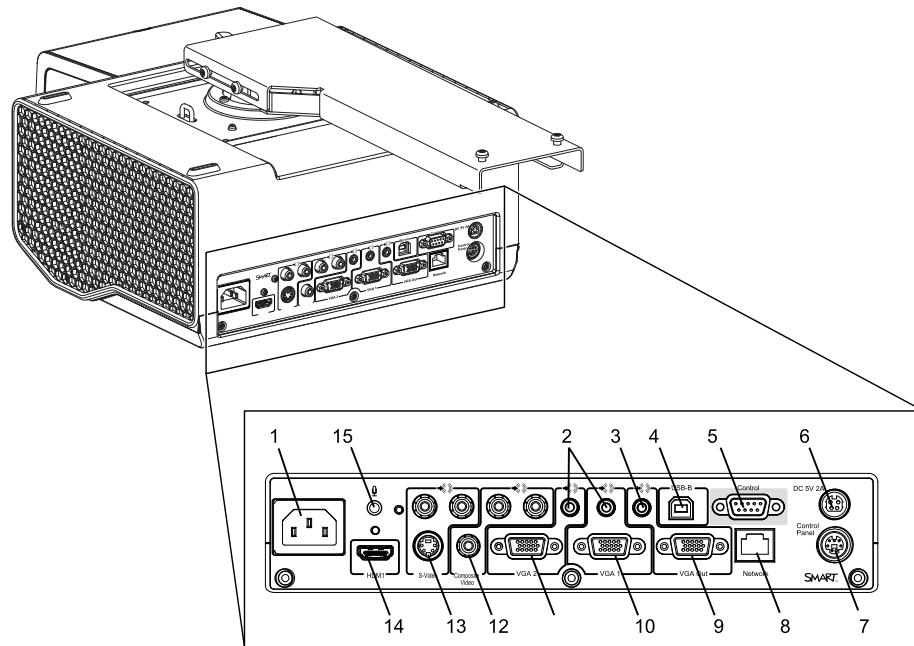
Letter	Connector	Connect to:
1	Power	Mains power supply
2	3.5 mm phone jack audio input (×2)	Audio sources associated with primary and secondary computers
3	3.5 mm phone jack audio output	Speakers (not included)
4	USB B	Computer (enables interactive features)
5	DB9 RS-232F	Room control system or other terminal device (not included)
6	4-pin power mini-DIN 5V/2A output	[Not used]
7	7-pin mini-DIN	[Not used]
8	RJ45	Network (for web page management and SNMP access)
9	DB15F RGB video output (VGA Out)	Secondary display (not included)
10	DB15F RGB video input (VGA 1)	Video source (not included)
11	DB15F RGB video input (VGA 2)	Video source (not included)
12	RCA Composite video input (and left and right RCA audio input)	Video source (not included)
13	4-pin mini-DIN S-video input (and left and right RCA audio input)	Video source (not included)
14	HDMI input	High-definition media source (not included)
15	Microphone input	Microphone

Using your interactive pen

You can use the pen to interact with your computer and write in digital ink. The pen has a power switch, a left-click button and status lights to help you understand its status.

Interacting with your computer

There are two interactive modes that you can select in the on-screen display (OSD) menu: Presenter and Whiteboard mode. In Presenter mode, you can interact with your computer from a distance. In Whiteboard mode, you interact with your computer by touching the pen nib against the surface or by pressing the left-click button on the pen.

To interact with your computer in Presenter mode

Point the pen at the projected image and do any of the following:

- Move the pointer by moving the pen.
- Left-click by touching the pen tip to the surface.
- Left-click from a distance by pressing the pen's left-click button.
- Right-click by touching and holding the pen against the surface for about two seconds.

To interact with your computer in Whiteboard mode

Point the pen at the projected image and do any of the following:

- Left-click by touching the pen tip to the surface.
- Left click by pressing the pen's left-click button.
- Right-click by touching and holding the pen to the surface for about two seconds.

> **TIP**
>
> The optical sensor in the tip of the interactive pen needs "to see" the projected image. Ensure that the pen's optical sensor isn't blocked and that the projected image isn't blocked by objects creating a shadow on the surface.

Understanding pen status lights

Your interactive pen has a green light and an amber light. Use the table below to determine the status of the pen.

Status light		Description
Green	**Amber**	
Flashing (0.3 sec off, 1 sec on)	Off	Pen is ready to use. It's pointed at the projected image and connected with the projector. You can interact with your computer if the USB connection between the projector and computer is working.
Off	Flashing (0.3 sec off, 1 sec on)	The amber light flashes when you're unable to interact with content. It flashes in the following scenarios: - Pen is pointed away from the projected image and not connected with the projector. - Pen is starting up and connecting with your projector. - Pen is unable to communicate with the projector. - The projector is displaying the logo screen and not a source video image.
Off	On	The USB cable is connected and the pen is charging.
Off	Flashing slowly (1 sec off, 1 sec on)	The pen battery level is less than 20 percent.
Off	Off	The pen's power switch is off. If the pen is on, it's been inactive for 3 minutes and is in sleep mode.
Flashing (in unison, 0.3 sec off, 1 sec on)	Flashing (in unison, 0.3 sec off, 1 sec on)	Pen is in pairing mode. This occurs when you select **Pen Pairing** under *Interactive settings* from the OSD menu. You're unable to interact with content while in this mode. Turn off the pen's power switch to exit this mode.
On	Off	The pen is releasing its paired connection with the projector. This occurs when you select **Release pen pairing** under *Interactive settings* from the OSD menu.

Charging your interactive pen

The pen has a rechargeable lithium-ion battery that lasts at least 20 hours on a full charge. You can charge the pen in 2.5 hours.

To charge your interactive pen

1. Turn the pen off.
2. Connect the USB charging cable to your computer, and then connect it to the pen.

> **ℹ NOTE**
>
> If the pen's power switch is on when you charge the pen, a message might appear asking you to install USB device drivers. If this occurs, ignore the message and close the message window.

Writing or drawing with SMART Ink

SMART Ink enables you to write or draw digital ink over open application files, folders, websites and any other open window on your computer. You can write with your interactive product's tools or with the drawing tools in the SMART Ink toolbar.

To write with SMART Ink pen tools

1. Select a pen color ■ and a line thickness ∿ from the SMART Ink toolbar.

2. Write over an open file, folder or website.

   > **💡 TIP**
   >
   > The ink becomes an object that you can move and manipulate.

3. Press **Select** ⬉ on the toolbar when you're done. Otherwise, your interactive product continues interpreting screen touches as pen strokes.

To write with calligraphic ink

1. Select a pen color ■ and a line thickness ∿ from the SMART Ink toolbar.

2. Select the **Calligraphic Ink** check box.

3. Write over an open file, folder or website.

   > **💡 TIP**
   >
   > The ink becomes an object that you can move and manipulate.

4. Press **Select** ⬉ on the toolbar when you're done. Otherwise, your interactive product continues interpreting screen touches as pen strokes.

Chapter 4
Integrating other devices

This chapter provides information on integrating your LightRaise 40wi interactive projector with peripheral devices.

Video format compatibility

The following table lists the projector's compatible VESA® RGB video formats by resolution, which the projector adjusts automatically when you use the aspect ratio commands described in *Adjusting projector settings* on page 13.

Resolution	Mode	Aspect ratio	Refresh rate (Hz)	Match Input appearance (16:10 aspect ratio mode)	Match Input appearance (16:9 aspect ratio mode)
720 × 400	720×400_85	9:5	85.039	Letterbox	Letterbox
640 × 480	VGA 60	4:3	59.94	Pillarbox	Pillarbox
800 × 600	VGA 72	4:3	72.809	Pillarbox	Pillarbox
800 × 600	VGA 75	4:3	75	Pillarbox	Pillarbox
800 × 600	VGA 85	4:3	85.008	Pillarbox	Pillarbox
800 × 600	SVGA 56	4:3	56.25	Pillarbox	Pillarbox
800 × 600	SVGA 60	4:3	60.317	Pillarbox	Pillarbox
800 × 600	SVGA 72	4:3	72.188	Pillarbox	Pillarbox
800 × 600	SVGA 75	4:3	75	Pillarbox	Pillarbox
800 × 600	SVGA 85	4:3	85.061	Pillarbox	Pillarbox
832 × 624	MAC 16"	4:3	74.55	Pillarbox	Pillarbox

Resolution	Mode	Aspect ratio	Refresh rate (Hz)	Match Input appearance (16:10 aspect ratio mode)	Match Input appearance (16:9 aspect ratio mode)
1024 × 768	XGA 60	4:3	60.004	Pillarbox	Pillarbox
1024 × 768	XGA 70	4:3	70.069	Pillarbox	Pillarbox
1024 × 768	XGA 75	4:3	75.029	Pillarbox	Pillarbox
1024 × 768	XGA 85	4:3	84.997	Pillarbox	Pillarbox
1024 × 768	MAC 19"	4:3	74.7	Pillarbox	Pillarbox
1152 × 864	SXGA 75	4:3	75	Pillarbox	Pillarbox
1280 × 720		16:10	60		
1280 × 768	WXGA 60	1.67:1	60	Letterbox	Pillarbox
1280 × 800		16:9	60		
1280 × 960	Quad VGA 60	4:3	60	Pillarbox	Pillarbox
1280 × 960	Quad VGA 85	4:3	85.002	Pillarbox	Pillarbox
1280 × 960	SXGA3 60	5:4	60.02	Pillarbox	Pillarbox
1280 × 1024	SXGA3 75	5:4	75.025	Pillarbox	Pillarbox
1400 × 1050	SXGA3 85	5:4	85.024	Pillarbox	Pillarbox
1600 × 1200	SXGA+	4:3	59.978	Pillarbox	Pillarbox
1600 × 1200	UXGA_60	4:3	60	Pillarbox	Pillarbox

Native video format

The following table lists the native VESA RGB video formats for the projector.

Projector	Resolution	Mode	Aspect ratio	Refresh rate (Hz)	Horizontal frequency (kHz)	Pixel clock (MHz)
LightRaise 40wi (16:10 mode)	1280 × 800		16:10	60		
LightRaise 40wi (16:9 mode)	1280 × 720		16:9	60		

HD and SD signal format compatibility

Signal format	Aspect ratio	Horizontal frequency (kHz)	Vertical frequency (Hz)	Match Input appearance
480i	4:3	15.73	59.94	Full screen
567i	5:4	15.63	50	Letterbox
720p	16:9	44.96	59.94	Letterbox
720p	16:9	35	50	Letterbox
1080i	16:9	33.7	59.94	Letterbox
1080i	16:9	28.1	50	Letterbox

ℹ NOTE

Your projector is HD ready. Its native resolution supports a pixel-perfect display of 720p source content when it's in 16:9 mode. However, because the projector compresses 1080i source content to fit the projector's native resolution, it doesn't support a pixel-perfect display of 1080i source content.

Video system signal compatibility

ℹ NOTE

The *16:9* on-screen display (OSD) menu setting delivers all video modes with black bands along the top and bottom edges of the screen. The *Match Input* OSD setting might deliver video modes with black bands along the top and bottom edges of the screen, depending on the input resolution.

Video mode	Aspect ratio	Horizontal frequency (kHz)	Vertical frequency (Hz)	Color signal (MHz)
NTSC	4:3	15.73	29.96	3.58
PAL	4:3	15.62	25	4.43
SECAM	4:3	15.62	25	4.25 (f_{ob})
				4.06 (f_{or})

Connecting peripheral sources and outputs

Follow these instructions if you have a peripheral device to connect to your interactive whiteboard system, such as a DVD/Blu-ray player.

> ⚠ **WARNING**
>
> Measure the distance between the projector and the peripheral device you want to connect. Make sure each cable is long enough, has plenty of slack and can be placed safely in your room without presenting a trip hazard.

■ **To connect a peripheral source or output to your projector**

1. Connect your peripheral device's input cables to the projector.

2. Switch input sources to the peripheral device by pressing the **Input** button on the remote control.

Chapter 5
Maintaining your interactive projector

This chapter describes how to clean and prevent damage to your LightRaise 40wi interactive projector.

Follow this procedure to replace the remote control battery.

> ⚠️ **WARNING**
>
> - Reduce the risk associated with a leaking battery in the projector's remote control by following these practices:
>
>   - Use only the specified type of coin-cell battery.
>
>   - Orient the battery's positive (+) and negative (–) terminals according to the markings on the remote control.
>
>   - Remove the battery when the remote control is unused for an extended period.
>
>   - Do not heat, disassemble, short or recharge the battery, or expose it to fire or high temperatures.
>
>   - Avoid eye and skin contact with the battery if it has a leak.
>
> - Dispose of the exhausted battery and product components in accordance with applicable regulations.

■ **To replace the remote control battery**

1. Hold down the side release on the left side of the battery holder and pull the battery holder completely out of the remote control.
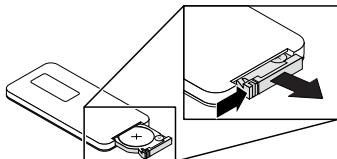
2. Remove the old battery from the battery holder and replace it with a CR2025 coin-cell battery.

👉 **IMPORTANT**

Align the positive (+) and negative (–) signs on the battery terminals with the correct signs on the battery holder.

3. Insert the battery holder into the remote control.

Cleaning the projector

⚠ **WARNING**

Cleaning a wall-mounted projector can result in a fall or injury. Use caution when climbing a ladder, and consider removing the projector from its wall-mounting bracket to clean it.

⚠ **CAUTION**

-   Never touch the mirror with your hands or a brush, and do not scrub the surface of the mirror with a cleaning cloth. Instead, use a cleaning cloth to clean the mirror with a light touch, and do not put any cleaning solvents on the cloth or the mirror. Do not apply pressure to the projector lens or mirror.

-   Do not spray cleaners, solvents or compressed air directly on the projector. Do not use spray cleaners or solvents near any part of the projector because they can damage or stain the unit. Spraying the system could spread a chemical mist on some of the projector's components and lamp, resulting in damage and poor image quality.

-   Do not allow liquids or commercial solvents of any kind to flow into the projector base or head.

> ☞ **IMPORTANT**
>
> - When cleaning the interactive projector
>
>   - Wipe the exterior of the projector with a lint-free cloth.
>
>   - If necessary, use a soft cloth moistened with a mild detergent to clean the projector housing.
>
> - Do not use abrasive cleaners, waxes or solvents.

When cleaning the projector's mirror

- Use a bellows bulb or air blower bulb (commonly found in audio-visual supply stores) to blow off dust. Never touch the mirror with your bare hands or a brush.

- If wiping the mirror is unavoidable, wear protective gloves and gather the cleaning cloth into a ball. Gently run the cleaning cloth across the mirror like you would a feather duster. Don't apply any pressure to the lens or mirror.

When cleaning the projector's lens

- Use a bellows bulb or air blower bulb (commonly found in audio-visual supply stores) to blow off dust. Never touch the lens with your bare hands or a brush.

- If wiping the lens is unavoidable, wear protective gloves and gather the cleaning cloth into a ball. Gently run the cleaning cloth across the lens from the center to the edge, using the cleaning cloth like you would a feather duster. Don't apply any pressure to the lens or mirror.

Replacing the projector lamp module

Eventually the lamp will dim and a message will appear reminding you to replace it. Make sure you have a replacement lamp module before proceeding with the following instructions.

> ⚠ **WARNING**
>
> - See smarttech.com/compliance for the projector's material safety data sheet (MSDS) documents.
>
> - Replace the lamp module when the projector becomes dim or displays its lamp life warning message. If you continue to use the projector after this message appears, the lamp can shatter or burst, scattering glass throughout the projector.

- If the lamp shatters or bursts, leave the room. Ventilate the area by opening windows and doors.

  Next, do the following:

    - Avoid touching the glass fragments because they can cause injury.

    - Wash your hands thoroughly if you have come into contact with lamp debris.

    - Thoroughly clean the area around the projector, and discard any edible items placed in that area because they could be contaminated.

    - Call your authorized SMART reseller for instructions. Do not attempt to replace the lamp.

- Replacing the lamp module in a wall-mounted projector can result in a fall or injury. Use caution when climbing a ladder, and consider removing the projector from the wall-mount bracket to replace the lamp module.

- Uncovering the lamp while the projector is mounted on the wall-mount bracket can lead to product damage or personal injury from falling pieces of glass if the lamp is broken.

- When replacing the projector lamp module:

    - Put the projector into Standby mode and wait 30 minutes for the lamp to cool completely.

    - Do not remove any screws other than those specified in the lamp replacement instructions.

    - Wear protective eyewear while changing the lamp module. Failure to do so can cause injuries including loss of eyesight if the lamp shatters or bursts.

    - Use only replacement lamp modules approved by SMART Technologies. Contact your authorized SMART reseller for replacement parts.

    - Never replace the lamp module with a previously used lamp module.

    - Always handle the fragile lamp assembly with care to prevent premature lamp failure or exposure to mercury. Use gloves when touching the lamp module. Do not touch the lamp with your fingers.

    - Recycle or dispose of the lamp module as hazardous waste in accordance with local regulations.

You need a Phillips No. 2 screwdriver and a flat screwdriver to complete these procedures.

To remove the old lamp module

1. Wait at least 30 minutes for the projector to cool down.

2. Disconnect the power cable from the projector.

3. Remove the lamp cover from the projector, and then put it in a safe place.

> **TIP**
>
> If the cover is difficult to remove, insert a flat screwdriver or small coin into the slot on the bottom of the lamp cover to gently pry the cover open.

4. Use the Phillips screwdriver to loosen the two captive screws from the bottom of the lamp module.

> **NOTE**
>
> Don't try to remove these screws. Captive screws can't be removed, but they must be loosened.

5. Use the handle on the bottom of the lamp module to slide it out and remove it from the projector.

To put the new lamp module into the projector

1. Remove the new lamp module from its packaging.

2. Carefully place the lamp module into the projector using the handle on the top of the module. Hold the lamp module vertically and guide it into its slot. Gently press the power end of the lamp module against the projector to ensure the power plug makes contact with the projector's power receptacle.

> **NOTE**
>
> You should be able to place the lamp module into the projector easily without applying much force.

3. Use the Phillips screwdriver to secure the captive screws.

> **CAUTION**
>
> Do not over-tighten the screws.

4. Carefully replace the lamp cover.

5. Connect the power cable to the wall outlet.

6. Put the old lamp module in a secure container, and handle it gently until you recycle it.

CHAPTER 5

■ **To finish the projector lamp module installation**

1. Turn on the projector.

2. Adjust the projector image if necessary (see *Adjusting the image* on page 22).

3. Access the service menu to reset the lamp hours (see *Resetting the lamp hours* below).

4. Activate the projector's alert e-mails and lamp warnings if they've been deactivated (see *E-mail alerts* on page 59 and *Control panel* on page 54).

Resetting the lamp hours

After you replace the lamp module, you need to access the projector service menu and reset the lamp hours. To prevent accidental errors, only a system administrator should perform this procedure.

> 🖝 **I M P O R T A N T**
>
> Always reset the lamp hours after you replace the lamp, because lamp service reminders are based on the current hours of use.

■ **To reset the lamp hours**

1. Using the remote control, press the following buttons quickly to access the service menu: **Down**, **Up**, **Up**, **Left**, **Up**.

   > 🔺 **C A U T I O N**
   >
   > Do not adjust any settings in the service menu other than those listed in this guide. Changing other settings can damage or affect the operation of your projector and may invalidate your warranty.

2. Scroll down to *Lamp Hour Reset*, and then press **OK**.

   Both *Lamp Hour* values (Standard and Economy) reset to zero.

   > 🔺 **C A U T I O N**
   >
   > Do not reset the lamp hours unless you have just replaced the lamp module. Resetting the lamp hours on an old lamp can damage your projector as a result of lamp failure.

   > ℹ️ **N O T E**
   >
   > You're unable to reset the Display Hour value because it's the running total of hours the projector has been in use.

3. Press the **Menu** button on the remote control.

The *SMART [Model] Settings* menu appears.

4. Select to confirm that *Lamp Hour* is reset to zero.

Troubleshooting your interactive projector

This chapter describes how to troubleshoot your interactive projector.

Determining your interactive projector's status

The projector's status lights can help you determine its status. The table below describes the various states of the projector.

> **ℹ NOTE**
>
> Interactive features also depend on the pen status.

⏻ **Projector Power light**	🔧 **Projector Service light**	**Projected image**	**Interactive features**	**Status and related troubleshooting**
Normal operating statuses				
Solid green	Off	Correct	Full control (if the pen is connected to the projector and a USB cable connects the projector and your computer)	The system is operating normally. If image or sound issues occur, see the remaining sections of this chapter for troubleshooting information.
Flashing green	Off	None	None	The system is starting up.
Solid amber	Off	None	None	The system is in Standby mode.
Flashing amber	Off	None	None	The system is entering Standby mode.
Error statuses				
Solid green	Off	Incorrect	Full control (if the pen is connected to the projector and a USB cable connects the projector and your computer)	The video input is not from the computer connected to the projector. Select the correct video input. OR There's an issue with the projected image. See *Resolving image issues* on page 45.

⏻ Projector Power light	🔧 Projector Service light	Projected image	Interactive features	Status and related troubleshooting
Solid green	Off	Correct	None	There's an issue with the interactive features.
Solid amber	Flashing red	None	N/A	There's an issue with the projector lamp. See *The "Lamp Failure" message appears* on page 50.
Off	Flashing red	None	None	The projector's operating temperature has been exceeded. See *The "Projector Overheated," "Fan Failure" or "Color Wheel Failure" message appears* on page 49.
Off	Solid red	None	N/A	There's an issue with the projector's fan or color wheel. See *The "Projector Overheated," "Fan Failure" or "Color Wheel Failure" message appears* on page 49.
Off	Off	None	None	The projector power cable isn't properly connected. OR There's an issue with the mains power supply (for example, the circuit breaker is off).

Determining if your interactive projector is connected to your computer

SMART Product Drivers enables you to view information about your interactive projector and can help you determine if your interactive projector is connected to your computer.

■ **To determine if your computer is connected to the interactive projector**

1. Double-click the SMART Board icon in your computer's notification area for computers with Windows® operating systems, or the Dock for computers with Mac operating system software.

2. Select **SMART Settings**.

   The *SMART Settings* window appears.

   ○ If your interactive projector is connected to your computer and working, the following text appears: *The SMART Board interactive whiteboard is working properly*.

   ○ If your interactive projector isn't connected to your computer, the following text appears: *No SMART Boards are connected*.

Determining your interactive pen's status

Use the table below to determine the status of your interactive pen.

Status light		Description
Green	**Amber**	
Flashing (0.3 sec off, 1 sec on)	Off	Pen is ready to use. It's pointed at the projected image and connected with the projector. You can interact with content if the USB connection between the projector and computer is working.
Off	Flashing (0.3 sec off, 1 sec on)	The amber light flashes when you're unable to interact with content. It flashes in the following scenarios: • Pen is pointed away from the projected image and not connected with the projector. • Pen is starting up and connecting with your projector. • Pen is unable to communicate with the projector. • The projector is displaying the logo screen and not a source video image.
Off	On	The USB cable is connected and the pen is charging.
Off	Flashing slowly (1 sec off, 1 sec on)	The pen battery level is less than 20 percent.
Off	Off	The pen's power switch is off. If the pen is on, it's been inactive for 3 minutes and is in sleep mode.

Troubleshooting issues with interactive features

If you're experiencing issues with the interactive features of your projector, you can troubleshoot the following common issues.

Interactive pen function

Begin by checking the connection between your interactive projector and your computer:

- Ensure that the USB cable is properly connected to your computer.

- Ensure that your computer detects the projector.

- Ensure that the pen's battery is charged.

- Ensure that the pen's green status light is flashing when you point it at the projected image of your computer's display (not at the SMART logo screen)

Ensure that you're pointing the tip of the pen at the projected image of your computer's display (not at the SMART logo screen) and that nothing is blocking the pen's optical sensor located in the tip. The optical sensor must be able to "see" the projected image for the interactive pen to work.

If something is blocking the projected image and creating a shadow on the surface, the interactive pen won't work in the shadow area. When you write on the surface, ensure that your body doesn't create a shadow on the writing area.

Ensure that **Interactive** features are **On** in the on-screen display (OSD) menu. See **SMART SLR40wi settings** in the OSD menu.

Ensure that the pen is not paired to another interactive projector. You can release pen pairing by following the instructions in *Adjusting projector settings* on page 13.

Pointer behavior

Your interactive pen acts like a mouse device and allows you to interact with your computer. If the computer connected to your interactive projector has a mouse connected to it or a track pad, you might experience erratic pointer behavior. Use one mouse device at a time and turn the pen off when you're not using it.

Pointer accuracy

The accuracy of the pen and pointer is based on the pixel locations of the projected image. If your computer modifies the video signal before it goes to the projector, the pointer might not appear where you press the pen. Try the following steps to resolve the issue:

- Press the **Input** button on the remote control to switch it away from the computer input, and then select the computer input again. This re-synchronizes the computer's video signal.

- Ensure your computer display settings match the projector's native resolutions of 1280 × 800 (16:10 aspect ratio) or 1280 × 720 (16:9 aspect ratio).

- Ensure your computer display settings are not stretching, scaling or modifying the video signal.

Double-click function

When you perform a double-click with the interactive pen, ensure that the pen is perpendicular to the surface and that the second touch is in the same place as the first click. If your second click isn't in the same place as the first, the pointer will move and register a new first-click.

Resolving image issues

To resolve common image issues, complete the following tasks:

- Ensure the computer or other video source is on and set to display a resolution and refresh rate supported by the projector (see *Video format compatibility* on page 27). Use the projector's native resolution (1280 × 800 in 16:10 mode, or 1280 × 720 in 16:9 mode) for the best results.

- Ensure the video source is properly connected to the projector.

- Press the **Input** button on the remote control to switch to the correct video source.

If these tasks don't resolve the issue, refer to the following sections for additional troubleshooting information.

Loss of signal

If a video source signal is not detected, out of range of the projector's support video modes or the signal is being switched to a different device or input, the projector doesn't show a source signal and instead displays the SMART logo on a blue screen.
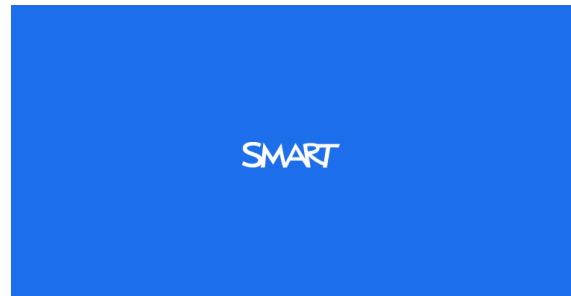
To resolve signal loss issues

1. Wait approximately 45 seconds for the image to synchronize. Some video signals require a longer synchronization period.

2. Ensure that the image signal is compatible with the projector (see *Video format compatibility* on page 27).

3. If there are any extension cables, switch boxes, connection wall plates or other devices in the video connection from the computer to the projector, temporarily remove them to ensure they are not causing the video signal loss.

4. If your projector still doesn't show a source signal, contact your authorized SMART reseller.

Partial, scrolling or incorrectly displayed image

> **ℹ NOTE**
>
> This procedure may vary depending on your version of Windows operating system and your system preferences.

To resolve a partial, scrolling or incorrectly displayed image

1. Select **Start > Control Panel**.

2. Double-click **Display**.

   The *Display Properties* window appears.

3. Click the **Settings** tab.

4. Click **Advanced**, and then click the **Monitor** tab.

5. Verify that the screen refresh rate is 60 Hz.

Unstable or flickering image

If the projector's image is unstable or flickering, the frequency or tracking settings on your input source could be different from the settings on your projector.

> ☞ **IMPORTANT**
>
> Write down your setting values before adjusting any of the settings in the following procedure.

█ **To resolve your unstable or flickering image**

1. Check the display mode of your computer's graphics card. Make sure it matches one of the projector's compatible signal formats (see *Video format compatibility* on page 27). Refer to your computer's manual for more information.

2. Configure the display mode of your computer's graphics card to make it compatible with the projector. Refer to your computer's manual for more information.

3. Optionally, reset the projector as described in *Resetting the projector* on next page to adjust the frequency and tracking to their original values.

   > ☞ **IMPORTANT**
   >
   > This action resets all values to their defaults.

4. If the previous steps don't resolve the flickering image, replace the projector lamp (see *Replacing the projector lamp module* on page 33).

Unaligned projected image

Alignment errors occur when the projected image isn't perpendicular to the screen. Alignment errors can occur when you mount your interactive whiteboard system on an uneven surface or a wall that has obstructions, or if you swivel the projector too far from the vertical center of your interactive whiteboard.

The projector image can slip if the projector is moved often or installed in a location prone to vibration, such as next to a heavy door. Follow these precautions to help prevent the image from becoming unaligned:

- Make sure that the installation wall is plumb and square and doesn't move or vibrate excessively.

- Make sure that there are no obstructions behind the projector's wall-mounting bracket and that the bracket is firmly secured to the wall according to the installation instructions.

- Make sure that the projection surface is flat and smooth.

Accessing the service menu

⚠️ **CAUTION**

- To prevent tampering or unintentional changes, only system administrators should access the service menu. Do not share the service menu access code with casual users of your interactive projector.

- Do not adjust any settings in the service menu other than those listed in this guide. Changing other settings can damage or affect the operation of your projector and may invalidate your warranty.

Retrieving your password

If you forget the projector's password, you can retrieve it by accessing the projector service menu directly from the projector or from the password settings menu on your projector's web page (see *Password settings* on page 59).

◾ **To retrieve your password from the service menu**

1. Using the remote control, press the following buttons quickly to access the service menu: **Down**, **Up**, **Up**, **Left**, **Up**.

2. Scroll to *Password Get*, and then press **Enter** on the remote control.

   The password appears on the screen.

3. Write down the password.

4. Scroll to *Exit*, and then press **Enter** on the remote control to exit the projector service menu.

Resetting the projector

At some point during troubleshooting, you might need to reset all projector settings.

👉 **IMPORTANT**

This action is irreversible.

■ **To reset all projector settings**

1. Using the remote control, press the following buttons quickly to access the service menu: **Down**, **Up**, **Up**, **Left**, **Up**.

2. Scroll to *Factory Reset*, and then press **Enter** on the remote control.

3. Scroll to *Exit*, and then press **Enter** on the remote control to exit the projector service menu.

Resolving projector errors

System administrators can resolve the following projector errors on their own prior to contacting SMART Support. Performing initial troubleshooting on your projector will reduce the time of a support call.

Your projector stops responding

If your projector stops responding, perform the following procedure.

■ **To restart an unresponsive projector**

1. Put the projector into Standby mode, and then wait 30 minutes for it to cool down.

2. Disconnect the power cable from the power outlet, and then wait at least 60 seconds.

3. Connect the power cable, and then turn on the projector.

The "Projector Overheated," "Fan Failure" or "Color Wheel Failure" message appears

If the "Projector Overheated," "Fan Failure" or "Color Wheel Failure" message appears and the projector stops projecting an image, one of the following issues is occurring:

*   The temperature outside the projector is too high.

*   One of the fans has failed.

*   The projector has a color wheel issue.

■ **To resolve the "Projector Overheated," "Fan Failure" or "Color Wheel Failure" error**

1. Put the projector into Standby mode, and then wait 30 minutes for it to cool down.

2. If your room is hot, lower the temperature if possible.

3. Ensure that nothing is blocking the projector's air intake and exhaust.

4. Disconnect the power cable from the power outlet, and then wait at least 60 seconds.

5. Connect the power cable, and then turn on the projector.

6. Adjust the fan speed using the service menu.

7. If the previous steps don't resolve the issue, put the projector into Standby mode, disconnect the power cable, and then contact your authorized SMART reseller.

The "Lamp Failure" message appears

If the "Lamp Failure" message appears, one of the following issues is occurring:

- The lamp is overheating, likely due to blocked air vents.

- The lamp has reached the end of its life.

- The projector has an internal problem.

To resolve the "Lamp Failure" error

1. Restart the projector (see *Your projector stops responding* on previous page).

2. If the lamp has more than 2000 hours of use, it might be near the end of its life.

3. Replace your lamp module as described in *Replacing the projector lamp module* on page 33.

4. If replacing the lamp module doesn't resolve the issue, put the projector into Standby mode, disconnect the power cable, and then contact your authorized SMART reseller.

The projector Power and Service lights are off

If the projector Power and Service lights are both off, one of the following issues is occurring:

- There was a power outage or a power surge.

- A circuit breaker or a safety switch was tripped.

- The projector isn't connected to the power source.

- The projector has an internal problem.

To resolve the unlit projector Power and Service lights issue

1. Check the power source, and then make sure that all cables are connected.

2. Confirm that the projector is connected to an active power outlet.

3. Make sure the pins on the connectors aren't broken or bent.

4. Connect the power cable, and then turn on the projector.

5. If the previous steps don't resolve the issue, disconnect the power cable and then contact your authorized SMART reseller.

Troubleshooting audio issues

If the audio isn't working, you can troubleshoot the following common issues.

Microphone function

You might experience issues using balanced microphones with your interactive projector. Ensure you use an unbalanced microphone. For more information, see the *LightRaise 40wi microphone connection addendum* (smarttech.com/kb/170208).

Speaker static

You might experience static noise from your speakers if the microphone cable is routed too close to the other cables. For more information, see the *LightRaise 40wi microphone connection addendum* (smarttech.com/kb/170208).

Static noise can be caused by other video and audio source devices and their connection cables. Isolate these devices and test to see if they are the cause of static noise

Locating the serial number

The serial number identifies your projector and helps SMART support troubleshoot issues. The serial number is on top of the projector in the location shown below:

Remotely managing your interactive projector

This chapter describes how to manage your interactive projector from a remote location.
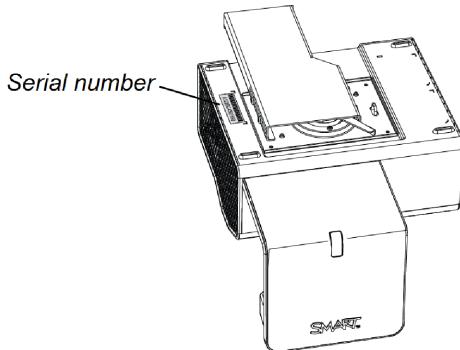
Accessing web page management

Before you can access the remote management web page, you must connect a network cable to your projector and enable the network functions in the on-screen display (OSD) menu (see *Adjusting projector settings* on page 13).

> **ℹ NOTE**
>
> You can view the projector's IP address by accessing the projector's Network Settings menu (see *Network settings* on page 57).

■ **To use the management web page**

1. Start your Internet browser.

2. Type the projector's network IP address in the address bar, and then press ENTER.

3. Select the menu options in the left pane to access the settings on each page.

4. Modify settings using your computer's mouse and keyboard, and then click **Submit** or another action button next to each setting you change.

Home

The Home menu displays basic projector information and enables you to select the OSD language.

> **i NOTE**
>
> You can view basic projector information but you're unable to change it (with the exception of the OSD language) from the Home menu.

Submenu setting	Description
Language	Displays language options
Projector Information	Displays current projector information

Control panel

This menu enables you to manage the projector audio and video status, alerts and appearances using an Internet browser.

Submenu setting	Description
Power	Turns the projector on or puts it into Standby mode. Select the **Power ON** or **Power OFF** button.
Restore All Projector Defaults	Returns projector settings to default values or refreshes the current settings. Select **Submit** or **Refresh**. > **☞ IMPORTANT** > The **Submit** option is irreversible, resets all values and turns off network communication features.
Volume Control	Enables volume control. Select **On** to enable volume adjustment and select **Off** to disable volume adjustment if you prefer to use your audio system or speaker (not included) controls.
Closed Captioning	Turns on or turns off the closed captioning feature.
	Sets the closed captioning language to **CC1** or **CC2**. Typically, **CC1** displays U.S. English subtitles, while **CC2** displays other regional languages, such as French or Spanish, depending on television channel or media setup.
Display Mode	Adjusts the display output to **SMART Presentation**, **Bright Room**, **Dark Room**, **sRGB** and **User** modes so you can project images from various sources with consistent color performance: • **SMART Presentation** is recommended for color fidelity. • **Bright Room** and **Dark Room** are recommended for locations with those conditions. • **sRGB** provides standardized accurate color. • **User** enables you to apply your own settings.

Submenu setting	Description
Brightness	Adjusts projector brightness from 0 to 100.
Contrast	Adjusts the difference between the lightest and darkest parts of the image from 0 to 100.
Frequency	Adjusts the display data frequency of the projected image from -5 to 5 to match the frequency of your computer's graphics card.
Tracking	Synchronizes your projector's display timing with your computer's graphics card from 0 to 31.
Sharpness	Adjusts the projected image's sharpness from 0 to 31.
White Peaking	Adjusts the image color brightness from 0 to 10 while providing more vibrant white shades. A value closer to 0 creates a natural image and a value closer to 10 enhances brightness.
Degamma	Adjusts the color performance of the display from 0 to 3.
Color	Adjusts the Red, Green, Blue, Cyan, Magenta and Yellow colors on the projector from 0 to 100 to provide custom color and luminance output. Each color has a default value of 100. Adjustments to the color settings register to the User mode.
Auto Signal Detect	Enables or disables signal searching of input connectors. • Select **On** to have the projector continuously switch inputs until it finds an active video source. • Select **Off** to maintain signal detection in one input.
Lamp Reminder	Select **On** to show or **Off** to hide the lamp replacement reminder when it appears. This reminder appears 100 hours before the recommended lamp replacement.
Lamp Mode	Adjusts lamp brightness to **Standard** or **Economy**. **Standard** displays a high-quality, bright image. **Economy** increases the lamp life by decreasing the brightness of the image.
Auto Power Off	Sets the length of the auto power off countdown timer between 1 and 240 minutes. The timer begins to count down when the projector no longer receives a video signal. The timer finishes when the projector enters Standby mode. Select **0** to turn off the timer.
Zoom	Adjusts the zoom to the center of the image in or out from 0 to 30.
H-position (RGB input)	Moves the horizontal position of the source video left or right from 0 to 100 (relative to the projected image). **ℹ NOTE** This is useful in situations where the source video is cut off.
V-position (RGB input)	Moves the vertical position of the source video up or down from -5 to 5 (relative to the projected image). **ℹ NOTE** This is useful in situations where the source video is cut off.

Submenu setting	Description
Aspect Ratio	Adjusts the image output to **Fill Screen**, **Match Input** or **16:9**. • **Fill Screen** produces an image that fills the entire screen by stretching and scaling. • **Match Input** matches the projector's aspect ratio to the input's aspect ratio. As a result, black bands might appear along the top and bottom edges of the screen horizontally (letterbox format) or along the left and right edges of the screen vertically (pillarbox format). • **16:9** changes the output to 16:9 by letterboxing the image, which is recommended for use with HDTV and DVDs enhanced for wide-screen television.
Startup Screen	Sets the type of startup screen to **SMART** or **User**. The **SMART** screen is the default SMART logo on a blue background. The **User** screen uses the saved picture from the Capture User Startup Screen function.
Video Mute	Turns the video mute setting on or off. Select **On** to hide the display and **Off** to show it again.
High Speed Fan	Adjusts the speed of the projector's fan. Select **High** or **Normal**.
Projector Mode	Adjusts the projection mode to **Front**, **Ceiling**, **Rear** or **Rear Ceiling**. ☞ **IMPORTANT** SMART recommends that you never change this setting from the **Ceiling** projection mode.
Source	Adjusts the input source to **VGA-1**, **VGA-2**, **Composite**, **S-Video** or **HDMI**.
VGA1	Assigns an alternative name to your VGA 1 input, which appears when you select the VGA 1 input.
VGA2	Assigns an alternative name to your VGA 2 input, which appears when you select the VGA 2 input.
S-Video	Assigns an alternative name to your S-video input, which appears when you select the S-video input.
Composite	Assigns an alternative name to your Composite video input, which appears when you select the Composite video input.
HDMI	Assigns an alternative name to your HDMI input, which appears when you select the HDMI input.
Emergency Alert	Turns the on-screen alert broadcast message on or off. When enabled, this message displays over the current projected image.
Alarm Message	Displays an on-screen emergency notification message (maximum 60 characters).

Control panel II

This menu enables you to manage the 3D features, USB source control, audio features and interactive features.

Submenu setting	Description
3D on/off	Turns the DLP Link technology 3D feature on or off.
3D invert	Selects the 3D Invert setting (**L R** or **R L**).
3D format	Displays the current 3D format (**Interleaved** or **Under-over**).
USB1 source	N/A
USB 2 source	N/A
Line volume	Adjusts the projector's line-input volume amplification from -20 to 20.
Microphone volume	Adjusts the projector's microphone volume amplification from 0 to 40.
Mic attenuation	Enables or disables attenuation of the microphone input.
System mute	Mutes the projector's audio output.
Microphone mute	Mutes the microphone output.
Microphone output switch	Set output to **Line out + speaker**, **Line out** or **Speaker**.
System output switch	Set output to **Line out + speaker**, **Line out** or **Speaker**.
Volume control	Adjusts the volume control.
Interactive	Turns interactive features on or off.
Channel	**Auto** allows the projector to automatically select the best radio frequency (RF) channel. **Manual** lets you select a channel within the 2.4 GHz band.
Channel information	Displays the RF channel that the projector is using and allows you to set it.
System functionality	Allows you to set the interaction mode to **Presenter** or **Whiteboard**.

Network settings

This menu allows you to use or not use Dynamic Host Control Protocol (DHCP) and to set the network-related addresses and names when DHCP is not used.

Submenu setting	Description
DHCP	Determines if the projector's IP address and other network settings are dynamically assigned by a DHCP server or manually set. • **On** allows the network's DHCP server to assign a dynamic IP address to the projector. • **Off** allows you to manually set the projector's IP address and other network settings.

Submenu setting	Description
IP Address	Displays or allows you to set the projector's IP address in values between 0.0.0.0 and 255.255.255.255.
Subnet Mask	Displays or allows you to set the projector's subnet mask number in values between 0.0.0.0 and 255.255.255.255.
Gateway	Displays or allows you to set the projector's default network gateway in values between 0.0.0.0 and 255.255.255.255.
DNS	Displays or allows you to set the projector's IP address for your network's primary domain name server in values between 0.0.0.0 and 255.255.255.255.
Group Name	Displays or allows you to set the projector's workgroup name (maximum 12 characters).
Projector Name	Displays or allows you to set the projector's name (maximum 12 characters).
Location	Displays or allows you to set the projector's location (maximum 16 characters).
Contact	Displays or allows you to set the contact name or number for projector support (maximum 16 characters).
SNMP	Turns the Simple Network Management Protocol (SNMP) agent on or off.
Read-Only Community	Sets a password that is required for each SNMP get request to the device. **NOTE** The default password for Read-Only Community is public.
Read/Write Community	Sets a password that is required for each SNMP set request to the device. **NOTE** The default password for Read/Write Community is private.
Trap Destination Address	Displays or allows you to set the IP address of your network's SNMP TRAP manager in values between 0.0.0.0 and 255.255.255.255. The trap destination address is the IP address of the computer assigned to handle unsolicited data generated by SNMP TRAP events generated by the projector, such as power state changes, projector failure modes, a lamp needing to be replaced or other issues.

E-mail alerts

This menu enables you to enter your preferred address for receiving e-mail alerts and adjust related settings.

Submenu setting	Description
E-mail Alert	Selects **Enable** to turn on or **Disable** to turn off the E-mail Alert function.
To	Displays or allows you to set the e-mail address of the e-mail alert recipient.
CC	Displays or allows you to set the e-mail address of the e-mail alert "copy to" recipient.
From	Displays or allows you to set the e-mail address of the user who sends the e-mail alert.
Outgoing SMTP server	Displays or allows you to set the Simple Mail Transfer Protocol (SMTP) server that you use on your network.
Username	Displays or allows you to set the SMTP server user name.
Password	Displays or allows you to set the SMTP server password.
Alert Condition	Sends e-mail alerts whenever **Lamp Warning**, **Lamp Life Alert**, **Projector Overheated** and **Fan Failed** conditions occur. Select the settings you want, and then click **Submit**. **i NOTE** The projector sends an alert e-mail (SMART Alert) to your e-mail address. Click **E-mail Alert Test** to confirm that your e-mail address and SMTP server settings are correct by sending a test e-mail (SMART Alert-Test Mail). If the settings are not correct, the e-mail alert messages aren't sent or received successfully and no warning or notification message are available to advise of this state.

Password settings

This menu provides a security function that allows an administrator to manage projector use and enable the Administrator Password function.

Submenu setting	Description
Password	When the password function is enabled, the administrator password is required to access Web Management. Select **Disable** to allow remote web management of the projector without requiring a password.

> **NOTES**
>
> - The first time you enable the password settings, the default password value is four numbers, for example, 1234.
>
> - If you forget the projector password, refer to *Accessing the service menu* on page 48 to set the projector setting to factory defaults.

Simple Network Management Protocol (SNMP)

Your interactive projector supports a list of SNMP commands as described in the management information base (MIB) file. You can download this file by browsing to smarttech.com/software and clicking the MIB files link in the *Hardware* section for the LightRaise interactive projector. The SNMP agent supports SNMP version 1. Upload the MIB file to your SNMP management system application, and then use it as described in your application's user guide.

Chapter 8
Connecting your room control system to your interactive projector

By connecting a computer or room control system to the RS-232 serial interface of your interactive projector, you can select video inputs, start or shut down your interactive projector and request information such as projector lamp use, current settings and network addresses.

This chapter documents the projector programming commands.

Command inventory

Your projector responds to the commands in the tables on the following pages. To see a list of valid commands in the projector's current power state, type **?** and press ENTER.

> ☞ **IMPORTANT**
>
> - When entering commands, ensure there is a 10 millisecond delay between characters for reliable operation.

- Type commands exactly as they appear in the left column of the tables, with the proper value or setting in the center column.

ℹ️ NOTES

- Send a command only after the projector sends a command prompt.

- Commands aren't case sensitive.

- Check your entries carefully before entering your commands.

- Press ENTER after typing each command.

- After the projector executes a command, it generates a response.

- To prevent buffer overrun, don't send another command until you receive the next command prompt.

- Turn on the projector so that the details in the command lists are complete.

Value-based command methods

Absolute values and adjustment values

You can use the command's target range to set an absolute value for a command or cause an adjustment to be made to the current value. To create an adjustment command, add a plus (+) or minus (-) symbol instead of the equal symbol (=) before the value change you want to enter. All absolute values you enter must be within the command target range, and all adjustment values must equal a number within the command target range.

See the following examples for adjusting projector brightness.

```
>get brightness

brightness=55
```

```
>set brightness=65

brightness=65
```

```
>set brightness+5

brightness=70
```

```
>set brightness-15

brightness=55
```

Video source specification values

You can use the source input field described in *Source selection controls* on next page in a command to set an absolute value or adjustment value to a source other than the active source. You can do this while the selected source is inactive, but the source device must be connected or you will receive an invalid command response.

```
>set brightness vga1=65

brightness vga1=65
```

```
>set brightness vga1-7

brightness vga1=58
```

Power state controls

These commands put the projector in and out of Standby mode and request the projector's current power state. The projector's power state determines whether certain commands are available at that time. These settings are available even when the projector is in Standby mode.

Command	Response
on	powerstate=[field]
off	powerstate=[field]
off now	powerstate=[field]
get powerstate	powerstate=[field]

This table describes the power state commands.

Command	Description
on	Turns on the projector.
off	Starts the shutdown process. A dialog box appears on the projected image with the message, "Press Power Button to Turn off Projector." You must send a second **Off** command within 10 seconds to put the projector into Standby mode.
off now	Shuts down the projector immediately. You can't delay or cancel this command.
get powerstate	Indicates the projector's current power state.

This table describes the power state fields.

Field	Description
Powering	The projector is turning on.
On	The projector is on.
Cooling	The projector is cooling.
Confirm off	**Confirm off** is a non-selectable power state that is returned during stage one of the two-button **Off** sequence.
Idle	The projector is off but still receiving power (Standby mode).

Source selection controls

These commands switch input sources. The source type determines which commands can be accepted.

Command	Response	Available in Standby mode
get input	input=[field]	Yes
set input=[field]	input=[field]	No

The following table describes the source selection commands:

Command	Description
get input	Returns the projector's current input.
set input=[field]	Sets the input to one of the selectable fields.

This table describes the source selection response fields.

Field	Description
VGA1	Switches source to the VGA 1 input connector.
VGA2	Switches source to the VGA 2 input connector.
Composite	Switches source to the Composite video connector.
S-Video	Switches source to the S-Video input connector.
HDMI	Switches source to the HDMI input port.
None	A non-selectable value that appears when you enter a "get input" command while the projector is in Standby mode.

General source controls

These commands inform you of the current source settings.

Command	Response
get displaymode	displaymode=[current display mode setting]

Command	Response
get brightness	brightness=[current brightness setting]
get contrast	contrast=[current contrast setting]
get whitepeaking	whitepeaking=[current whitepeaking setting]
get degamma	degamma=[current degamma setting]
get red	red=[current red color setting]
get green	green=[current green color setting]
get blue	blue=[current blue color setting]
get cyan	cyan=[current cyan color setting]
get magenta	magenta=[current magenta color setting]
get yellow	yellow=[current yellow color setting]
get videofreeze	videofreeze=[current video freeze setting]
get cc	cc=[current closed captioning language setting]
get displayhide	displayhide=[current]

These commands control the appearance of your source. These settings are unavailable when the projector is in Standby mode or when the source is disconnected. See *Value-based command methods* on page 62 for setting absolute and adjustment commands.

Command	Command target range	Response
set displaymode [target]	=SMARTpresentation =brightroom =darkroom =sRGB =User	displaymode=[target]
set brightness [value]	=0 to =100	brightness=[value]
set contrast [value]	=0 to =100	contrast=[value]
set whitepeaking [value]	=0 to =10	whitepeaking=[value]
set degamma [value]	=0 to =3	degamma=[value]
set red [value]	=0 to =100	red=[value]
set green [value]	=0 to =100	green=[value]
set blue [value]	=0 to =100	blue=[value]
set cyan [value]	=0 to =100	cyan=[value]
set magenta [value]	=0 to =100	magenta=[value]
set yellow [value]	=0 to =100	yellow=[value]
set videofreeze [target]	=on =off	videofreeze=[target]
set cc [target]	=cc1 =cc2 =off	cc=[target]
set displayhide	Normal, frozen, muted	displayhide=[current]

> **NOTE**
>
> Typically, **cc1** displays U.S. English subtitles, while **cc2** displays other regional languages, such as French or Spanish, depending on television channel or media setup.

Additional VGA source controls

Your VGA source supports all the general source controls described in *General source controls* on page 64, as well as the commands listed in this section. These settings are unavailable when the projector is in Standby mode or when the VGA sources are disconnected.

> **NOTE**
>
> Some of these commands are invalid with HDMI input and Composite video sources, and will return the response "invalidcmd=[command]".

These commands inform you of the current VGA source settings.

Command	Response
get frequency	frequency=[current frequency offset setting]
get tracking	tracking=[current tracking offset setting]
get saturation	saturation=[current saturation setting]
get tint	tint=[current tint setting]
get sharpness	sharpness=[current sharpness setting]

These commands control the appearance of your VGA source. These settings are unavailable when the projector is in Standby mode or when the VGA source is disconnected. See *Value-based command methods* on page 62 for setting absolute and adjustment commands.

Command	Command target range	Response
set frequency [value]	=-5 to =5	frequency=[value]
set tracking [value]	=0 to =31	tracking=[value]
set saturation [value]	=0 to =100	saturation=[value]
set tint [value]	=0 to =100	tint=[value]
set sharpness [value]	=0 to =31	sharpness=[value]

Additional Composite video source controls

Your Composite video source supports all the general source controls described on the previous page as well as the commands listed in this section. These settings are unavailable when the projector is in Standby mode or when the Composite video source is disconnected.

> **ⓘ NOTE**
>
> Some of these commands are invalid with HDMI input and VGA video sources, and will return the response "invalidcmd=[command]".

These commands inform you of the current Composite video source settings.

Command	Response
get saturation	saturation=[current saturation setting]
get tint	tint=[current tint setting]
get sharpness	sharpness=[current sharpness setting]

These commands control the appearance of your Composite video source. See *Value-based command methods* on page 62 for setting absolute and adjustment commands.

Command	Command target range	Response
set saturation [value]	=0 to =100	saturation=[value]
set tint [value]	=0 to =100	tint=[value]
set sharpness [value]	=0 to =31	sharpness=[value]

Audio controls

These commands control your projector's internal audio amplifier, which affects sound passed through the projector to your external audio system (not included). Audio output controls aren't defined by the video source. These settings are unavailable when the projector is in Standby mode.

These commands inform you of the current audio output settings.

Command	Response
get volume	volume=[current volume setting]
get mute	mute=[current mute setting]
get volumecontrol	volumecontrol=[current volume control setting]

These commands control your projector's audio amplifier settings. See *Value-based command methods* on page 62 for setting absolute and adjustment commands.

Command	Command target range	Response
set volume [value]	=-20 to =20	volume=[value]
set mute [target]	=on =off	mute=[target]
set volumecontrol [target]	=on =off	volumecontrol=[target]
set micvolume [target]	micvolume=[current] No	No

Command	Command target range	Response
get micvolume [target]	micvolume=[current]	No
set micvolumecontrol[target]	micvolumecontrol=[current]	No
get micvolumecontrol	micvolumecontrol=[current]	No
set sysoutputsw[target]	sysoutputsw =[current]	No
get sysoutputsw	sysoutputsw =[current]	No
set micenable[target]	micenable=[current]	No
get micenable	micenable=[current]	No
set speakerenable[target]	spkrenable=[current]	No
get speakerenable	spkrenable=[current]	No
set micboostenable[target]	micboostenable=[current]	No
get micboostenable	micboostenable=[current]	No

Field	Possible Values	Description
target volume	• +val • -val • =-20 to 20	The + or – symbol increases or decreases the volume. If you type a number between -20 and 20, the volume is set to that level.
current volume	-20 to 20	Sets the volume level
target mute	• on • off	Turns the mute on or off
current mute	• on • off	Displays mute state
current volumecontrol	• on • off	Displays volume control
target volumecontrol	• =on • =off	Displays if volume control is on or off
current micvolume	• 0 to 40	Displays current microphone volume

Field	Possible Values	Description
target micvolume	• +val • -val • =0 to 40	The + or – symbol increases or decreases the volume. If you type a number between -20 and 20, the volume is set to that level.
target cc	• =cc1 • =cc2	Displays closed caption states
current cc	• cc1 • cc2 • off	Displays closed caption states
target sysoutputsw	• =line+spkr • =line • =spkr	Sets the system output switch to line out only, speaker only, or both.
current sysoutputsw	• =line+spkr • =line • =spkr	Displays state of output switch
target micenable	• =on • =off	Sets microphone on or off
current micenable	• =on • =off	Displays state of microphone
target micoutputsw	• =line=spkr • line • spkr	Sets the microphone output switch to line out, speaker or both.
current micoutputsw	• =line=spkr • =line • =spkr	Displays state of the microphone output switch
target micattenable	• =on • =off	Displays state of mic attenuation

Network controls

These commands inform you of the current network settings.

Command	Response
get netstatus	netstatus=connected
	netstatus=disconnected
	netstatus=disabled
get dhcp	dhcp=[current DHCP status]
get ipaddr	ipaddr=[current IP address]
get subnetmask	subnetmask=[current subnet mask number]
get gateway	gateway=[current network gateway]
get primarydns	primarydns=[current primary domain server]
get macaddr	macaddr=[current MAC address]

These commands control your network settings.

Command	Command target range	Response
set dhcp [target]	=on	dhcp=[current]
	=off	
set ipaddr [target]	=0.0.0.0 to =255.255.255.255	ipaddr=[current]
set subnetmask [target]	=0.0.0.0 to =255.255.255.255	subnetmask=[current]
set gateway [target]	=0.0.0.0 to =255.255.255.255	gateway=[current]
set primarydns [target]	=0.0.0.0 to =255.255.255.255	primarydns=[current]

System controls

These commands enable you to switch system settings and access system information.

These commands inform you of the current system settings. These commands are unavailable when the projector is in Standby mode.

Command	Response
get autosignal	autosignal=[current auto signal detection setting]
get lampreminder	lampreminder=[current lamp reminder setting]
get highbrightness	highbrightness=[current lamp brightness setting]
get autopoweroff	autopoweroff=[current auto power off setting]
get zoom	zoom=[current zoom setting]
get projectorid	projectorid=[current projector ID number]
get hposition	hposition=[current horizontal position offset setting]
get vposition	vposition=[current vertical position offset setting]
get aspectratio	aspectratio=[current projector aspect ratio]

Command	Response
get projectionmode	projectionmode=[current projection mode]
get startupscreen	startupscreen=[current startup screen setting]
get resolution	resolution=[current input resolution]
get language	language=[current language setting]
get groupname	groupname=[current projector group name]
get projectorname	projectorname=[current projector name]
get locationinfo	locationinfo=[current projector location]
get contactinfo	contactinfo=[current support contact information]
get modelnum	modelnum=[current model number]
get videomute	videomute=[current video mute setting]
get serialnum	serialnum=[serial number]

These commands inform you of the current system settings. These commands are available even when the projector is in Standby mode.

Command	Response
get lamphrs	lamphrs=[current lamp hours of operation]
get syshrs	syshrs=[current projector hours of operation]
get fwverddp	fwverddp=[current projector firmware version]
get fwvernet	fwvernet=[current network firmware version]
get fwvermpu	fwvermpu=[current processor firmware version]
get signaldetected	signaldetected=[true or false]
get prjserialnum	prjserialnum=[current]

These commands control the current system settings. These commands are unavailable when the projector is in Standby mode. See *Value-based command methods* on page 62 for setting absolute and adjustment commands.

Command	Command target range	Response
set autosignal [target]	=on	autosignal=[target]
	=off	
set lampreminder [target]	=on	lampreminder=[target]
	=off	
set highbrightness [target]	=on	highbrightness=[target]
	=off	
set autopoweroff [value]	=0 to =240	autopoweroff=[value]
set zoom [value]	=0 to =30	zoom=[value]
set projectorid [value]	=0 to =99	projectorid=[value]
set hposition [value]	=0 to =100	hposition=[value]
set vposition [value]	=-5 to =5	vposition=[value]

Command	Command target range	Response
set aspectratio [target]	=fill =match =16:9	aspectratio=[target]
set projectionmode [target]	=front =ceiling =rear =rear ceiling	projectionmode=[target]
set startupscreen [target]	=smart =usercapture =preview	startupscreen=[target]
set language [target]	=Chinese (Simplified) =Chinese (Traditional) =Czech =Danish =Dutch =English =Finnish =French =German =Greek =Italian =Japanese =Korean =Norwegian =Polish =Portuguese (Brazil) =Portuguese (Portugal) =Russian =Spanish =Swedish	language=[target]
set groupname [description]	Enter a descriptor no more than 12 characters long.	groupname=[description]
set projectorname [description]	Enter a descriptor no more than 12 characters long.	projectorname=[description]
set locationinfo [description]	Enter a descriptor no more than 16 characters long.	locationinfo=[description]
set contactinfo [description]	Enter a descriptor no more than 16 characters long.	contactinfo=[description]
set videomute [target]	=on =off	videomute=[target]

These commands control the current system settings. These commands are available when the projector is in Standby mode and when it is on.

Command	Command target range	Response
set restoredefaults	[none]	restoredefaults=done
set lamphrs [target]	=0	lamphrs=0

ℹ NOTE

The **Network** and **VGA Out** setting's features are off by default. Select **On** to activate these features.

Appendix A

Hardware environmental compliance

SMART Technologies supports global efforts to ensure that electronic equipment is manufactured, sold and disposed of in a safe and environmentally friendly manner.

Waste Electrical and Electronic Equipment regulations (WEEE directive)

Waste Electrical and Electronic Equipment regulations apply to all electrical and electronic equipment sold within the European Union.

When you dispose of any electrical or electronic equipment, including SMART Technologies products, we strongly encourage you to properly recycle the electronic product when it has reached the end of its life. If you require further information, please contact your reseller or SMART Technologies for information on which recycling agency to contact.

Restriction of Certain Hazardous Substances (RoHS directive)

This product meets the requirements of the European Union's Restriction of Certain Hazardous Substances (RoHS) directive 2002/95/EC.

Consequently, this product also complies with other regulations that have arisen in various geographical areas, and that reference the European Union's RoHS directive.

Batteries

Batteries are regulated in many countries. Check with your reseller to find out how to recycle used batteries.

There are special regulations that must be met when shipping a product that has a lithium ion battery packaged with the product or shipping a lithium ion battery. When returning a SMART Technologies product which contains a lithium ion battery or returning a lithium ion battery, call SMART Technologies RMA for information on the special shipping regulations.

- 1.866.518.6791, Option 4 (U.S./Canada)

- 1.403.228.5940 (all other countries)

Packaging

Many countries have regulations restricting the use of certain heavy metals in product packaging. The packaging used by SMART Technologies to ship products complies with applicable packaging laws.

Covered electronic devices

Many U.S. states classify monitors as covered electronic devices and regulate their disposal. Applicable SMART Technologies products meet the requirements of the covered electronic devices regulations.

China's Electronic Information Products regulations

China regulates products that are classified as EIP (Electronic Information Products). SMART Technologies products fall under this classification and meet the requirements for China's EIP regulations.

Restriction of Certain Chemicals (REACH directive)

The European Union has enacted the REACH directive which restricts the use of certain chemicals in products. SMART Technologies is committed to complying with this initiative.

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