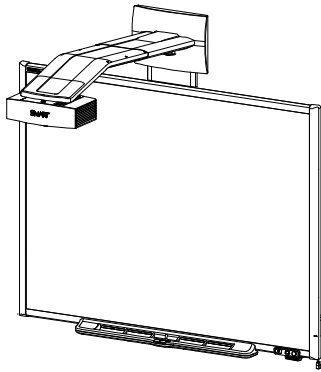


PLEASE THINK BEFORE YOU PRINT



# SMART Board™ 600i4 and D600i4 Interactive Whiteboard Systems

## Configuration and User's Guide

Extraordinary made simple™

**SMART**™

# Product Registration

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

Register online at [www.smarttech.com/us/Product+Registration](http://www.smarttech.com/us/Product+Registration).

Keep the following information available in case you need to contact [SMART Technical Support](#).

Serial Number: \_\_\_\_\_

Date of Purchase: \_\_\_\_\_

#### **FCC Warning**

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the manufacturer's instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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Other patents pending.

08/2010

# Important Information

## Read This Section First

Before you install and use your SMART Board™ 600i4 or D600i4 interactive whiteboard system, read and understand the safety warnings and precautions in this user's guide and the included warnings document. These safety warnings and precautions describe the safe and correct operation of your interactive whiteboard system and its accessories, helping you to prevent injuries and equipment damage. Ensure that your interactive whiteboard system is always being used correctly.

### **NOTE**

If you own a SMART product other than a SMART Board 600i4 or D600i4 interactive whiteboard system, refer to the installation guide for your product for relevant warnings and maintenance instructions.

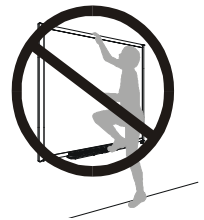
In this document, “SMART Board 600i4 interactive whiteboard system” or “SMART Board D600i4 interactive whiteboard system” refers to your SMART Board 600 or D600 series interactive whiteboard and its SMART UF65 or SMART UF65w projector, accessories and optional equipment.

The SMART UF65 or SMART UF65w projector included with your system is designed to work only with certain SMART Board interactive whiteboard models. Contact your [authorized SMART reseller](#) for more information.

## Safety Warnings, Cautions and Important Information

### WARNINGS – GENERAL

- Failure to follow the installation instructions included with your interactive whiteboard system, or found in this guide, can result in personal injury or product damage.
- To reduce the risk of fire or electric shock, do not expose any component of your interactive whiteboard system to rain or moisture.
- Two people are required to safely mount the projector boom and interactive whiteboard on a wall because the items might be too heavy for one person to safely maneuver. When you lift your interactive whiteboard, you and your assistant should stand on either side of the screen, supporting its weight at the bottom corners while balancing the top with your other hands.
- When mounting the projector boom on a framed or hollow wall, attach both the mounting bracket and 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 product damage and personal injury.
- If you remove the bolt supporting the limit strap, the projector's boom will be free to swing. Make sure that the bolt is tightened, and never remove it from the unit without first supporting the projector boom.
- Do not leave cables on the floor where they can be a tripping hazard. If you must run a cable over the floor, lay it in a flat, straight line and secure it to the floor with tape or a cable management strip of a contrasting color. Handle cables carefully and avoid excessive bending.
- If you are using an RS-232 serial expansion module, a wireless Bluetooth® connection expansion module or a USB audio system, use only the power supply included with that product. These products do not use the same power supplies. Using the wrong power supply might create a safety hazard or damage the equipment. If in doubt, refer to the specification sheet for your product to verify the power supply type.
- Do not climb (or allow children to climb) on any part of your wall-mounted SMART Board interactive whiteboard system.
- Climbing on your interactive whiteboard or on the SMART UF65 or SMART UF65w projector's boom could result in personal injury or product damage. Do not climb on, hang from or suspend objects from the projector's boom.
- Cleaning a boom-mounted projector may result in a fall or injury. Use caution when climbing a ladder.



- There are no user-serviceable parts inside the pen tray. Only qualified personnel should disassemble the pen tray's printed circuit boards, and this procedure must be done with proper electrostatic discharge (ESD) protection.

#### **WARNINGS – PROJECTOR**


- Do not stare (or allow children to stare) directly into the projector's beam of light. Instruct children not to look in the direction of this beam of light. Encourage users to keep their back to the projector when working at the interactive whiteboard. Before they turn to face the audience, users should step sideways, out of the projector's beam.
- Before viewing 3D content with your interactive whiteboard system, read and understand any health precautions in the user's manual included with your 3D compatible content (such as DVDs, video games or computer video files).
- Viewing 3D content from a projector may cause epileptic seizures or strokes. If you or any member of your family has a history of light-sensitive seizures, consult a doctor before viewing 3D content.
- Viewing 3D content while you are consuming alcohol, experiencing sleep deprivation or in poor physical condition may be unsafe.
- Pregnant women and elderly individuals should avoid viewing 3D content.
- Viewing 3D content may cause sickness, including nausea, dizziness, headache, eyestrain, blurred vision or numbness. If you experience any of these symptoms, stop viewing 3D content immediately. If these symptoms persist, consult a doctor.
- Parents and teachers should monitor children and students for adverse effects resulting from viewing 3D content since children and teenagers may be more susceptible than adults to related health risks.
- To avoid adverse effects resulting from viewing 3D content with your interactive whiteboard system, observe the following precautions:
  - Do not use 3D glasses for viewing any material other than 3D content.
  - Maintain a minimum distance of 7' (2 m) from your interactive whiteboard system's screen. Viewing 3D content from too close a distance may result in eyestrain.
  - Avoid viewing 3D content for a prolonged period of time. Take a break of 15 minutes or longer after every hour of viewing.
  - Face the screen squarely when viewing 3D content. Viewing 3D content from an angle may cause fatigue or eyestrain.
- Do not attempt to service the projector other than performing routine lamp replacement. Other than the lamp module, there are no user-serviceable parts inside the unit. Do not open or disassemble the projector, which might cause electric shock.

- This projector detects its remaining lamp life. Replace the lamp when a lamp life warning message appears. If you continue to use the projector after the replacement message appears, the lamp can shatter or burst, scattering glass throughout the projector.
- If the lamp has shattered or burst:
  - Call your [authorized SMART reseller](#) for instructions. Do not attempt to replace the lamp.
  - Do not touch the glass fragments because they can cause injury.
  - Leave and then ventilate the area where the lamp shattered or burst.
  - Wash your hands thoroughly if you have come in contact with lamp debris.
  - Thoroughly clean the area around the projector, and then discard any edible items placed in that area because they could be contaminated.
- You must remove the projector from its boom before servicing the lamp.
  - Two people are required to remove and replace the projector.
  - Replacing the lamp in a boom-mounted projector might result in a fall or injury.
  - Uncovering the lamp while the projector is mounted on the boom might lead to product damage or personal injury from falling pieces of glass if the lamp is broken.
- When replacing the projector lamp:
  - Use only replacement lamps approved by SMART Technologies. Contact your [authorized SMART reseller](#) for replacement parts.
  - Never replace the lamp assembly with a previously-used lamp assembly.
  - Turn the projector off and wait 30 minutes for the lamp to cool completely before removing the projector from the boom.
  - Wear protective eyewear while changing the lamp. Failure to do so can cause injury or loss of eyesight if the lamp shatters or bursts.
  - To prevent premature lamp failure or exposure to mercury, always handle the fragile lamp assembly with care. Use gloves when touching the lamp. Do not touch the lamp with your fingers.
  - Do not remove any screws other than those specified in the lamp replacement instructions.
  - Recycle or dispose of the lamp module as hazardous waste, in accordance with local regulations.

- When returning the projector to the boom, replace all of the screws that you removed when you removed the projector. Failure to do so can result in the projector falling from the boom, causing personal injury or product damage.
- To reduce the risk associated with a leaking battery in your projector's remote control:
  - Use only the specified coin-cell type battery.
  - Orient the battery's plus (+) and minus (-) terminal 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 if the battery has a leak.
  - Dispose of the exhausted battery and product components in accordance with applicable regulations.

#### CAUTIONS

- Do not operate this unit immediately after moving it from a cold location to a warm location. When the unit is exposed to such a change in temperature, moisture can condense on the lens and crucial internal parts. Allow the system to reach room temperature before operation to prevent possible damage to the unit.
- Do not place the unit in hot locations, such as near heating equipment. Doing so could cause a malfunction and shorten the life of the projector.
- Do not set up or use your interactive whiteboard system in an area with excessive levels of dust, dirt, humidity or smoke.
- Do not place your interactive whiteboard system in direct sunlight or near any appliance that generates a strong magnetic field.
- Do not rest your interactive whiteboard on its side or on the top of its frame.
- If you need to lean your interactive whiteboard against a wall before you mount it, make sure that it remains in an upright position, resting on its pen tray brackets, which are designed to sustain your interactive whiteboard's weight.
- For operating safety and to prevent damage to your interactive whiteboard, connect the included USB cable only 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 CSA/UL 60950.

- Do not block the projector's ventilation slots and openings.
- Avoid turning off the projector during the lamp ignition phase because this can lead to premature lamp failure. Keep the projector lamp on for a minimum of 15 minutes before turning it off to preserve the lamp life.
- In a high altitude location over 6000' (1829 m), where the air is thin and cooling efficiency is reduced, use the projector with the fan mode set to High.
- Cycling power to the projector repeatedly can lock or damage your interactive whiteboard system. After you turn off the system, wait at least 15 minutes for cooling before starting the system again.
- 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 whiteboard system.
- Do not adjust any settings in the service menu other than those listed in the following procedures. Changing other settings might damage or affect the operation of your projector and invalidates your warranty.
- If dust or small items prevent pen tray buttons from being pressed or cause constant button contact, remove the obstructions carefully.
- Before you clean the SMART UF65 or SMART UF65w projector, press the **Power**  button twice on the extended control panel (ECP) or remote control to put the projector into Idle mode, and then allow the lamp to cool for 30 minutes.
- Do not spray cleaners, solvents or compressed air near any part of the projector, since 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.
- When transporting your interactive whiteboard system, repack it with as much of the original packaging as possible. This packaging was designed with optimal shock and vibration protection.
- If your interactive whiteboard system requires replacement parts, make sure that the service technician uses replacement parts specified by SMART Technologies, or parts with the same characteristics as the original.



 **IMPORTANT**

- Use the installation instructions included in the SMART UF65 or SMART UF65w projector boom box to install your system. Do not use the instructions in your SMART Board interactive whiteboard box.
- Make sure that an electrical socket is near to your SMART product and remains easily accessible during use.
- Using the SMART UF65 or SMART UF65w projector system near a TV or radio could cause interference to the images or sound. If this happens, move the TV or radio away from the projector.
- If you have peripheral devices that do not use a 4-pin mini-DIN connector or an RCA composite video jack, or if your device has an audio connection that does not use RCA jacks, you may need to purchase third-party adapters.
- There are no projector menu options on the ECP. Keep your remote control in a safe place because the ECP is not a substitute for the remote control.
- Do not disconnect existing USB plugs on the ECP to connect other peripherals, because you could disconnect controls for your interactive whiteboard or host computer.
- Turn off your interactive whiteboard system before cleaning it.
- Follow these guidelines to clean the projector:
  - Wipe the exterior of the projector using 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.
  - Avoid touching the lens. If it is necessary to clean the lens:
    - Use liquids or commercial solvents (such as glass cleaners) to clean the lens, but do not spray them directly on the system.
    - Use protective gloves and dip a lint-free cloth (such as Purestat® PW2004) in an anti-static solvent (such as Hyperclean® EE-6310).
    - Gently wipe the lens from the center to the edge.
- Disconnect the product from its power source when it's not used for a long period.



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## Chapter 1

# About Your Interactive Whiteboard System

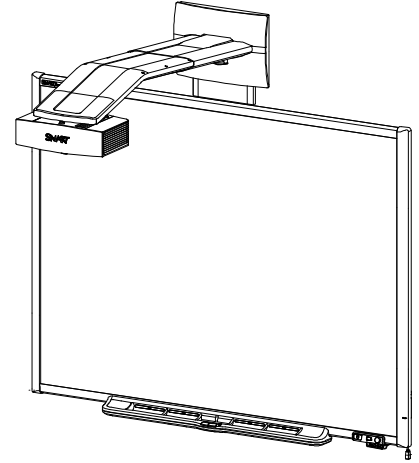
Your SMART Board 600i4 or D600i4 interactive whiteboard system combines the wall-mounted, short-throw SMART UF65 or SMART UF65w projector system with a SMART Board 600 or D600 series interactive whiteboard.

Refer to these topics to learn more about the features of your SMART Board 600i4 or D600i4 interactive whiteboard system and for information about product parts and accessories.

- *SMART Board 600i4 or D600i4 Interactive Whiteboard System Features* on page 2
- *Included Accessories* on page 5
- *Optional Accessories* on page 6

## SMART Board 600i4 or D600i4 Interactive Whiteboard System Features

Your SMART Board 600i4 or D600i4 interactive whiteboard system uses the SMART UF65 or SMART UF65w short-throw, high-offset projector. Although the projector's basic operation is the same as in earlier models, SMART made many improvements to make the SMART Board 600i4 or D600i4 interactive whiteboard system easier to install and use.



When the SMART UF65 or SMART UF65w projector displays an image from your computer on the touch-sensitive interactive whiteboard, you can do everything that you can do at your computer—open and close applications, scroll through files, conference with others, create new documents or edit existing ones, visit websites, play video clips and more—by touching the screen. This projector also supports video and audio connections from a variety of devices, including DVD players, VCRs, document cameras and digital cameras, and can project media from these sources onto the interactive screen.

When you use SMART Notebook™ collaborative learning software with your SMART Board 600i4 or D600i4 interactive whiteboard system, you can write or draw over the projected computer image in digital ink using a pen tray pen or your finger, and then save these notes to a .notebook file or directly into any Ink Aware application.

## Interactive Whiteboard Features

Your SMART Board 600 or D600 series interactive whiteboard includes many features of earlier SMART Board interactive whiteboards, such as a resistive touch screen and a pen tray. The SMART Board 600 or D600 series performs best with the SMART UF65 or SMART UF65w projector because of its exceptional color performance and input response.



Other features of your interactive whiteboard include:

- A pen tray that automatically detects when you pick up a pen tray pen or the eraser
- Pen tray buttons that activate the on-screen keyboard, right-click and Help functions
- A durable hard-coated surface optimized for projection and easily cleaned with whiteboard cleaner
- A standard USB interface to connect your SMART Board interactive whiteboard to the extended control panel (ECP)
- A security cable lock feature that enables you to lock your interactive whiteboard to help safeguard it from theft

For more information about your SMART Board interactive whiteboard, see the [SMART Board 600 and D600 Series Interactive Whiteboard Installation and User's Guide](#).

## Introducing SMART Board D600 Series Interactive Whiteboards

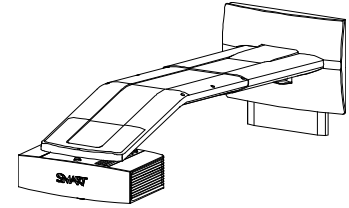
SMART Board interactive whiteboards are now available in two series. The SMART Board 600 series is the standard interactive whiteboard. The SMART Board D600 series offers dual-user capabilities, enabling two users to touch or write simultaneously at the interactive whiteboard using SMART Notebook software. In dual-user mode, SMART Notebook switches to full screen-mode and a line divides the screen into two separate workspaces, each with its own set of tools. The SMART UF65 or SMART UF65w projector is compatible with both standard and dual-touch SMART Board interactive whiteboards.

SMART Board D600 series interactive whiteboards have a unique logo on the lower right hand side of the interactive whiteboard's frame to distinguish them from standard SMART Board 600 series interactive whiteboards.

**SBD600 series**

## SMART UF65 or SMART UF65w Projector System Features

The SMART UF65 or SMART UF65w projector system includes a short-throw projector for use with SMART Board 600 or D600 series interactive whiteboards, an extended control panel (ECP) and a sturdy support system for many different environments.

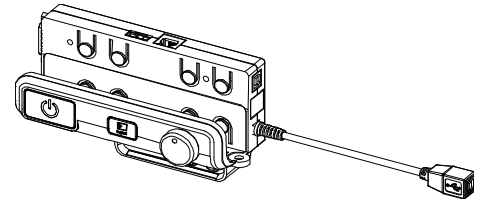


The features of the projector system include:

- A wall-mounted, high-offset projector engine that uses DLP® technology by Texas Instruments™, providing BrilliantColor™ performance and Gamma 2.2 correction with SMART Presentation, Bright Room, Dark Room, sRGB and User modes
  - PAL, PAL-N, PAL-M, SECAM, NTSC, NTSC 4.43 video system compatibility
  - Composite, S-video, and VESA RGB with additional interface support for Component YPbPr and Component YCbCr inputs with proper adapters (not included)
  - WXGA, QVGA, VGA, SVGA, XGA, SXGA, SXGA+ and UXGA video format compatibility
  - Native 1024 × 768 resolution (SMART UF65 projector)
- OR
- Native 1280 × 800 resolution (SMART UF65w projector)
- Remote management via a serial RS-232 interface
  - An alert broadcast feature that enables administrators to send notification messages to network-connected SMART UF65 or SMART UF65w projector systems for immediate on-screen display.
  - 3D ready projector using DLP® Link™ technology ensures compatibility with the emerging 3D content ecosystem
  - A self-protection timer for a hot re-strike of the projector lamp
  - Protected cable routing through the projector housing and a cable cover to prevent tampering and clutter
  - A safety-oriented design that includes boom support with a controlled-collapse feature
  - A secure mounting and installation system that includes:
    - An optional projector padlock ring to safeguard the adjustment knob
    - Mounting hardware for solid masonry or framed wall installations. The system also includes a safety tether and limit strap.
    - Templates and instructions for positioning the system in a safe manner

## Extended Control Panel (ECP)

Your system's fully-labeled ECP attaches elegantly to your interactive whiteboard's bottom frame. The ECP features controls for power, source selection and volume adjustment, as well as an integrated USB hub that enables you to switch seamlessly between two connected computers.



Connection receptacles for your source inputs include:

- One USB A receptacle on the front of the ECP for USB storage devices
- Two USB A receptacles behind the interactive whiteboard
- Two RCA jacks on the front of the ECP for dual-channel audio input
- One RCA jack on the front of the ECP for composite video input
- One captive USB B receptacle for your primary computer
- One DB15M receptacle behind the interactive whiteboard for analog video input
- One USB B receptacle behind the interactive whiteboard for connecting a secondary computer
- One RJ11 6-wire jack behind the interactive whiteboard for product control

## Included Accessories

The following accessories are included with your SMART Board 600i4 or D600i4 interactive whiteboard system.

### Remote Control

The remote control enables you to control the system and set up your SMART UF65 or SMART UF65w projector. Use the remote control to access menu options, system information and input selection options.



### Pens

The pens have rubberized grip areas and are colored to match four colors of digital ink: black, red, green and blue.



You can use dry-erase markers to replace the included pens, as long as they're a similar shape, don't scratch or mark your interactive whiteboard's surface and reflect infrared light. If the substitute doesn't reflect infrared light, the pen tray sensors might not detect the presence of the pen.

**i NOTE**

Some of SMART's older pens aren't designed to reflect infrared light and the pen tray sensors might not detect them reliably.

**💡 TIP**

Wrap light-colored tape around a substitute pen to improve the reflection of infrared light and help with tool detection.

## Eraser

The eraser resembles a rectangular chalkboard eraser. You can use a substitute object, as long as it has a similar shape, reflects infrared light and doesn't scratch or mark your interactive whiteboard's surface.



## Optional Accessories

You can add a variety of optional accessories to best meet your specific needs. Purchase these items when you order your interactive whiteboard system, or later from your [authorized SMART reseller](#). For more information about accessories, go to [www.smarttech.com/us/Solutions/Education+Solutions/Products+for+education/Complementary+hardware+products/Accessories](http://www.smarttech.com/us/Solutions/Education+Solutions/Products+for+education/Complementary+hardware+products/Accessories).

## Chapter 2

# Additional Details for Installing Your Interactive Whiteboard System

Consult the included SMART Board 600i4 or D600i4 interactive whiteboard system installation document for instructions on how to install your product and use the mounting template and extended control panel (ECP).

### **IMPORTANT**

Use the instructions included with your SMART UF65 or SMART UF65w projector system to install your interactive whiteboard, projector and ECP. The instructions in your SMART Board interactive whiteboard box do not include instructions for installing the SMART UF65 or SMART UF65w projector or ECP.

Refer to these topics for additional considerations and details for installing your interactive whiteboard system.

- *Environmental Requirements* on page 8
- *Choosing an Installation Location* on page 10
- *Recommended Mounting Heights* on page 10
- *Routing the Cables* on page 11
- *SMART UF65 or SMART UF65w Projector Connection Diagram* on page 12
- *Focusing the Image* on page 14
- *Correcting Alignment Errors* on page 15
- *Tips for Adjusting the Projected Image* on page 16
- *Securing the Pen Tray, Interactive Whiteboard and Projector* on page 17
- *Installing SMART Software* on page 19

## Environmental Requirements

Before installing your SMART Board 600i4 or D600i4 interactive whiteboard system, review the following environmental requirements.

### CAUTION

- Do not operate this unit immediately after moving it from a cold location to a warm location. When the unit is exposed to such a change in temperature, moisture can condense on the lens and crucial internal parts. Allow the system to stabilize to room temperature before operation to prevent possible damage to the unit.
- In a high altitude location over 6000' (1829 m), where the air is thin and cooling efficiency is reduced, use the projector with the fan mode set to High.
- Do not place the unit in hot locations, such as near heating equipment. Doing so could cause a malfunction and shorten the life of the projector.

### IMPORTANT

Using the SMART UF65 or SMART UF65w projector system near a TV or radio could cause interference to the images or sound. If this happens, move the TV or radio away from the projector.



Environmental Requirement	Parameter
Operating temperature	<ul style="list-style-type: none"> <li>• 41°F to 95°F (5°C to 35°C) from 0' to 6000' (0 m to 1829 m)</li> <li>• 41°F to 86°F (5°C to 30°C) from 6000' to 9800' (1829 m to 2987 m)</li> </ul>
Storage temperature	-40°F to 122°F (-40°C to 50°C)
Humidity	<ul style="list-style-type: none"> <li>• 30% to 70% relative humidity, non-condensing</li> <li>• Humidity above 80% might cause slight wrinkling in the screen surface sheet. The wrinkles disappear when the humidity lowers.</li> </ul>
Water and fluid resistance	<ul style="list-style-type: none"> <li>• Intended for indoor use only. Doesn't meet any salt-spray or water ingress requirements.</li> <li>• Don't pour or spray liquids directly onto your interactive whiteboard, the SMART UF65 or SMART UF65w projector or any of its sub-components. See page 78 for detailed instructions on cleaning your interactive whiteboard system.</li> </ul>
Dust	<ul style="list-style-type: none"> <li>• Intended for use in office and classroom environments. Not for industrial use where heavy dust and pollutants can cause malfunctions or impaired operation. Periodic cleaning is required in areas with heavier dust. See page 80 for information on cleaning the SMART UF65 or SMART UF65w projector.</li> <li>• Designed for pollution degree 1 (P1) as per EN61558-1, which is defined as "No pollution or only dry non-conductive pollution".</li> </ul>
Electrostatic discharge (ESD)	<ul style="list-style-type: none"> <li>• EN61000-4-2 severity level 4 for direct and indirect ESD</li> <li>• No malfunction or damage up to 8kV (both polarities) with a 330 ohm, 150 pF probe (air discharge)</li> <li>• Unmated connectors meet no malfunction or damage up to 4kV (both polarities) for direct (contact) discharge</li> </ul>
Cables	All SMART Board 600i4 or D600i4 interactive whiteboard system cables should be shielded to prevent potential accidents and degraded video and audio quality.
Conducted and radiated emissions	EN55022/CISPR 22, Class A

## Choosing an Installation Location

Choose a location for your SMART Board 600i4 or D600i4 interactive whiteboard system that's far from bright light sources, such as windows or strong overhead lighting. Bright light sources can cause distracting shadows on your interactive whiteboard and can reduce the contrast of the projected image.

Select a wall with a flat, regular surface and minimum clearance to accommodate your interactive whiteboard system. Install the projector and your interactive whiteboard on the same flat surface. For best presentation alignment, mount your interactive whiteboard system in a location central to your audience's viewing direction. For mobile installation or adjustable installation options, contact your [authorized SMART reseller](#).

### WARNING

- When mounting the projector boom on a framed or hollow wall, attach both the mounting bracket and safety tether to a stud to safely support the projector's weight. If you use only drywall anchors, the drywall can fail, resulting in product damage and possible personal injury.
- If you remove the bolt supporting the limit strap, the projector's boom will be free to swing. Make sure that the bolt is tightened, and never remove it from the unit without first supporting the projector boom.

## Recommended Mounting Heights

SMART includes a mounting template with each of its SMART Board 600i4 or D600i4 interactive whiteboard systems. If you lose this template, contact your [authorized SMART reseller](#). Using this template ensures that you:

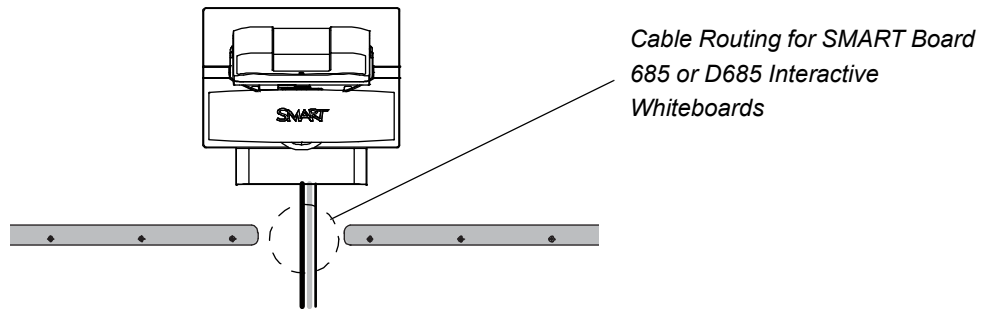
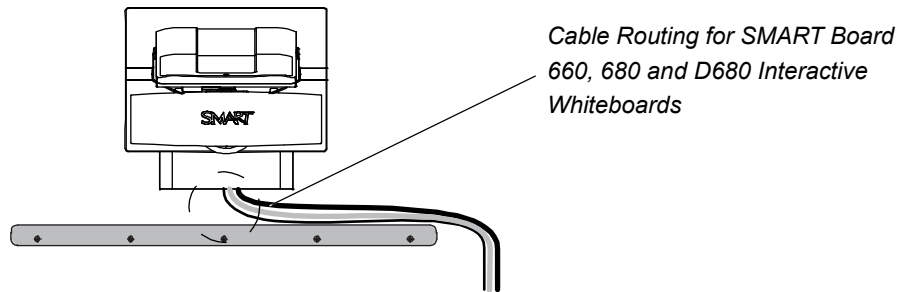
- Mount the projector at a safe height for head space clearance, while maintaining enough space for airflow and installation access above the unit.
- Position the projector at the correct height above your interactive whiteboard to align the projected image with the touch screen.

Dimensions on the template recommend a distance from the floor suitable for adults of average height, although you should consider the general height of your user community when you choose a position for your interactive whiteboard.

## Routing the Cables

When connecting cables from the SMART UF65 projector to SMART Board 660, 680 and D680 interactive whiteboards, make sure that all cables pass along the top of your SMART Board interactive whiteboard's wall-mounting bracket, and then down the right side of your interactive whiteboard.

When connecting cables from the SMART UF65w projector to a SMART Board 685 or D685 interactive whiteboard, make sure that all cables pass between the two SMART Board interactive whiteboard wall-mounting brackets. Space your wall-mounting brackets' innermost screw holes 4 inches (10.2 centimeters) apart to provide full support for your interactive whiteboard's weight.



**i** **NOTE**

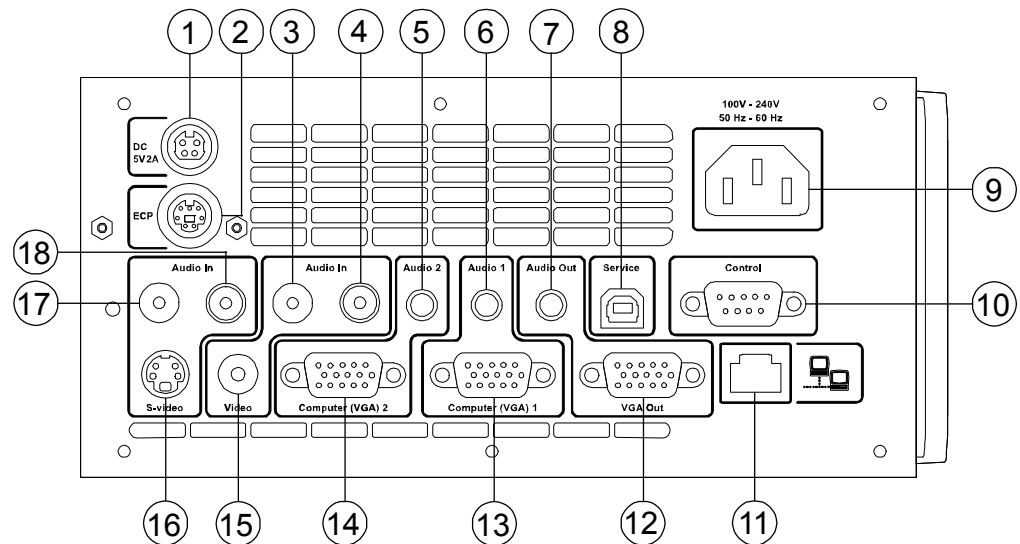
Don't connect the power cable to a power outlet until you've connected all the cables to the projector and ECP.

## SMART UF65 or SMART UF65w Projector Connection Diagram

You can connect a variety of peripheral devices to your projector, including DVD 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**

In some cases you might need to purchase third-party adapters.

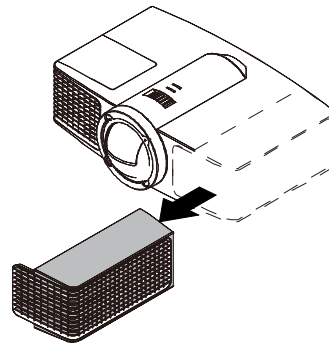


1. 4-pin power-mini-DIN 5V/2A connector (reserved for ECP harness cable)
2. 7-pin mini-DIN connector (reserved for ECP harness cable)
3. Audio-L connector (for composite video connector)
4. Audio-R connector (for composite video connector)
5. Audio-2 input connector (for VGA2-In connector)
6. Audio-1 input connector (for VGA1-In connector)
7. Audio-Out connector
8. USB connector (for service)
9. Power socket
10. RS-232 connector
11. Networking connector RJ45
12. VGA output

13. VGA1-In connector (PC analog signal/component video input)
14. VGA2-In connector (PC analog signal/component video input)
15. Composite video input connector
16. S-video input connector
17. Audio-L connector (for S-video connector)
18. Audio-R connector (for S-video connector)

**i** NOTES

- Remove the cable cover to access the connection panel.



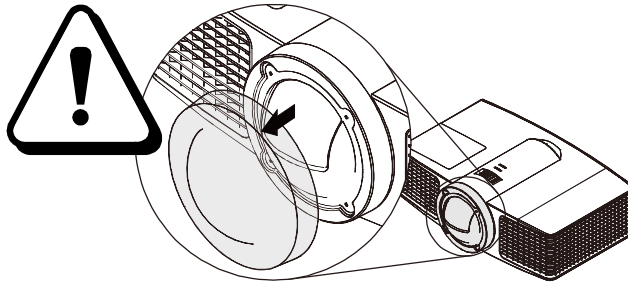
- To connect your SMART Board 600 or D600 series interactive whiteboard, see the [SMART Board 600 and D600 Series Interactive Whiteboard Installation and User's Guide](#).
- To connect accessories to your SMART Board interactive whiteboard, refer to the documents included with the accessories and consult the [SMART Support website](#) for additional information.

## Focusing the Image

To focus the projected image, use the focus ring, located on the bottom of the SMART UF65 or SMART UF65w projector (when the projector is facing downward).

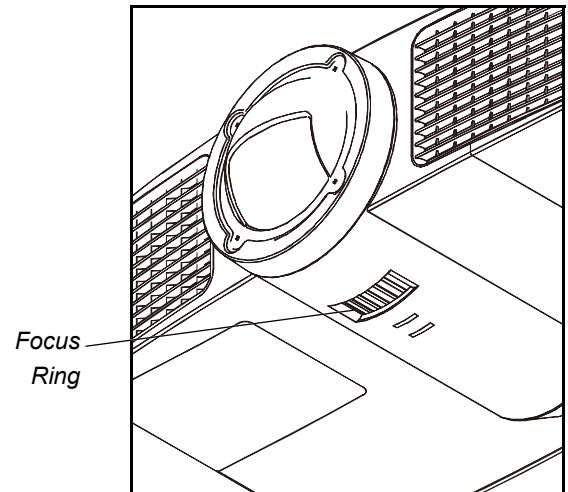
**i** NOTE

Ensure that you remove the projector's plastic lens cover.



**To focus and adjust the image**

Rotate the focus ring right or left until the image is in focus.



## Correcting Alignment Errors

Alignment errors occur when the projected image isn't perpendicular to the screen. Alignment errors can occur when you mount the SMART UF65 or SMART UF65w projector and the SMART Board 600 or D600 series interactive whiteboard on an uneven surface or a wall that has obstructions, or if you swivel the SMART UF65 or SMART UF65w projector too far from your SMART Board 600 or D600 series interactive whiteboard's vertical center.



*From the projector, the image path is shorter along the top.*



*From the projector, the image path is shorter along the bottom.*



*From the projector, the image path is shorter along the right side.*



*From the projector, the image path is shorter along the left side.*

Use the instructions in the included [SMART Board 600i4 and D600i4 Interactive Whiteboard System Installation Instructions](#) to eliminate most image alignment issues.

### **i** NOTES

- If you move your interactive whiteboard system to a new location, you must readjust it.
- If your projector requires service, you must adjust the replacement projector.

## Tips for Adjusting the Projected Image

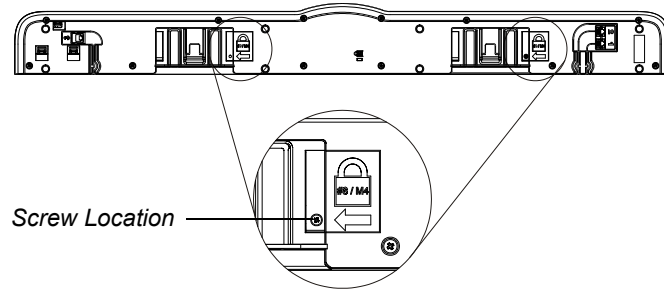
Refer to these notes when adjusting the projected image as described in the included [SMART Board 600i4 and D600i4 Interactive Whiteboard System Installation Instructions](#).

- Project a computer image (set to the proper resolution) while adjusting the image. If you don't have a computer, use the projector's default background so that you can see the full projected image clearly.
- Don't use the projector's on-screen menu options to make image adjustments. Instead, use the mechanical adjustments described in the installation document.
- Don't loosen the wingnut on the top of the ball joint too much or the projector won't hold the adjustments.
- As you tilt the projector up or lower its mounting boom to raise the image, the entire projected image may increase slightly in size during this process, and more at the bottom of the projected image than at the top.
- Don't pay attention to the position of the left and right edges relative to your interactive whiteboard when you move the projector left or right until both the top and bottom edges of the image are horizontal.
- When you move the projector forward or backward on the boom to make the image larger or smaller, you may need to tilt or turn the projector slightly to keep the image square.
- To fine-tune the image, you may need to repeat all steps described in the installation document in smaller increments.



## Securing the Pen Tray, Interactive Whiteboard and Projector

Since you can remove the pen tray without tools, you might want to securely attach it to its brackets. To do this, insert two No. 8/M4 screws (not included) into the holes indicated in the following illustration.



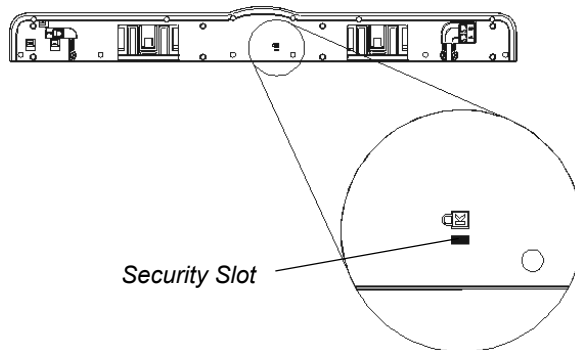
### Locking the Pen Tray to Your Interactive Whiteboard

Because your SMART Board interactive whiteboard's pen tray is detachable, you might want to safeguard it—and your interactive whiteboard—by anchoring it with a security cable.

**i** **NOTE**

Securing the pen tray can provide theft deterrence for your interactive whiteboard because the screws that secure your interactive whiteboard to the wall are located directly behind the pen tray, and cannot be removed without detaching the pen tray. When you secure the pen tray, you also secure your interactive whiteboard.

Underneath the pen tray, you'll find a security slot that accommodates a security cable, such as a Kensington® lock.



**h** **IMPORTANT**

Security cable locks are not designed to be a solid protection measure because the lock can be torn out. However, potential thieves might be reluctant to try to sell a product with a broken lock hole, which would readily identify it as a stolen item.

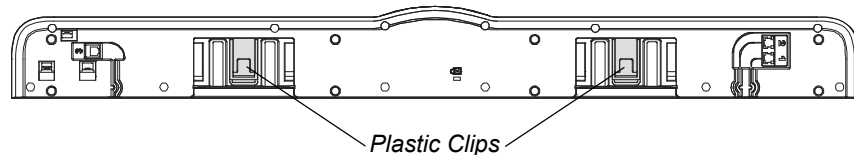
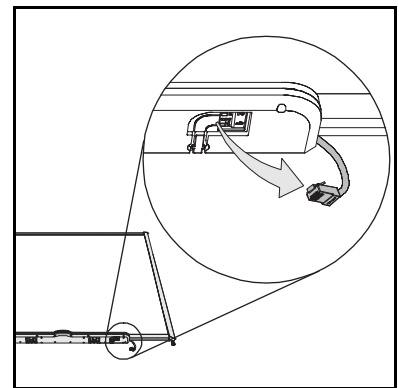
If you already secured your pen tray brackets to the wall, you might need to remove the pen tray before you lock it with a security cable.

**i NOTE**

You don't need to wear ESD protection when performing the following procedure.

**To remove the pen tray**

1. Turn off your interactive whiteboard by disconnecting the USB cable to your computer or by disconnecting the expansion module's power supply, as appropriate.
2. Remove the pens and the eraser from the pen tray.
3. Reach under the pen tray and disconnect the modular cable.
4. If you secured the pen tray to its brackets using two screws as described in the previous section, remove these screws.
5. If you secured the pen tray using a Kensington lock or similar device, unlock and remove the lock.
6. Reach under the pen tray and pull down on the two large plastic clips. Because the ends of these clips project slightly downward, they're easy to locate.



*The Pen Tray from the Bottom*

7. While applying downward pressure to the clips, gently slide the pen tray toward you until it detaches from the two L-shaped metal brackets.

**To lock the pen tray to your interactive whiteboard**

1. Before you secure your pen tray brackets to the wall, loop your security cable behind the brackets.
2. Thread the lock end of the cable through the loop end of the cable.
3. Verify that the cable is tight enough that you can't remove the pen tray while the lock is in place, and then install the pen tray.
4. Insert the prong end of the security cable into the security slot, and then complete the pen tray installation by securing it to the wall.

## Securing the Projector to the Boom

To learn how to secure the SMART UF65 or SMART UF65w projector to the boom, see the included [SMART Board 600i4 and D600i4 Interactive Whiteboard System Installation Instructions](#).

## Installing SMART Software

When you connect a computer running SMART Product Drivers and SMART software to your system, you can control your computer from your interactive whiteboard's screen, write in digital ink over your projected desktop or directly into any Ink Aware application, and then save your notes to a .notebook file. You can also connect the video output of a hardware device, such as a VCR or DVD player, to your interactive whiteboard system's ECP to display the video signal on your system.

Refer to the included [SMART Board 600i4 and D600i4 Interactive Whiteboard System Installation Instructions](#) to initially set up and connect your interactive whiteboard system. You must then install SMART software for either Mac OS or Windows® operating systems to access all of your interactive whiteboard system's features.

Download SMART software (including SMART Product Drivers and online Help) from [www.smarttech.com/us/Support/Browse+Support/Download+Software](http://www.smarttech.com/us/Support/Browse+Support/Download+Software). These pages also list the minimum hardware requirements for each software version. If SMART software is already installed on your computer, take this opportunity to upgrade your software to ensure compatibility.



## Chapter 3

# Using Your Interactive Whiteboard System

This chapter describes the basic operation of your interactive whiteboard system, and also explains how to set up your remote control, retrieve system information, access the projector's image adjustment options and integrate your interactive whiteboard system with peripheral devices.

- *Using Your Remote Control* on page 22
- *Using Your Interactive Whiteboard* on page 31
- *Using the Extended Control Panel (ECP)* on page 31
- *Video Format Compatibility* on page 34

## Using Your Remote Control

The SMART UF65 or SMART UF65w projector remote control enables you to access on-screen projector menus and change projector settings.

### Installing the Remote Control Battery

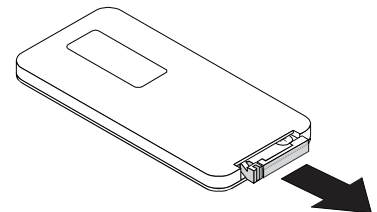
Follow this procedure to use the remote control for the first time or to replace the remote control battery.

#### WARNINGS

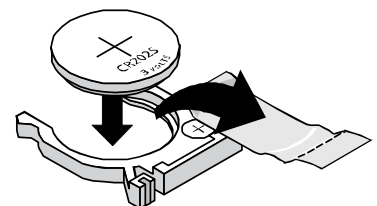
- Reduce the risk associated with a leaking battery in the projector's remote control by following these practices:
  - Use only the specified coin-cell type battery.
  - Orient the battery's plus (+) and minus (-) terminals according to the markings on the remote control.
  - Remove the battery when 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 if the battery has a leak.
- Dispose of the exhausted battery and product components in accordance with applicable regulations.

#### To access or 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 plastic sheet inside the battery holder, and then insert a CR2025 coin cell battery into the battery holder.





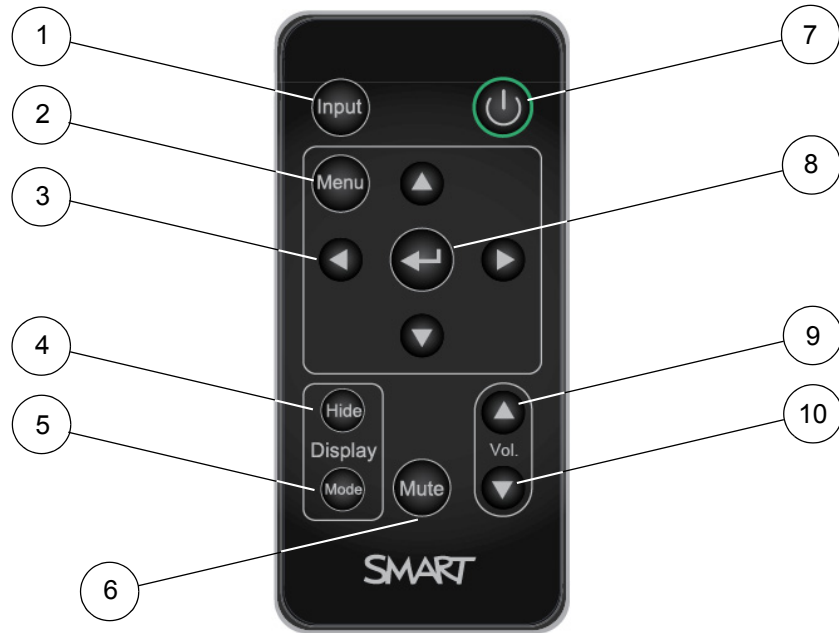
#### TIP

Make sure that the positive (+) and negative (-) signs on the battery terminals align with the correct signs on the battery holder.





3. Re-insert the battery holder into the remote control.

## Remote Control Buttons

The projector remote control enables you to access on-screen menus and change projector settings. Use the remote control's **Power**  button (or the ECP's **Power**  button) to turn the projector system on or off. You can also use the remote control's **Input** button (or the ECP's **Input** button) to switch sources on the projector.



Number	Function	Description
1	Input	Select an input source
2	Menu	Show the projector menus
3	◀ (Left), ▶ (Right), ▲ (Up) and ▼ (Down) arrows	Change the menu selections and adjustments
4	Hide	Freeze, hide or display the image <ul style="list-style-type: none"> <li>• Press once to freeze the image. For example, you can display a question on the screen while you check your e-mail.</li> <li>• Press again to hide the image, that is, display a black screen.</li> <li>• Press again to return to the live image.</li> </ul>
5	Mode	Select a display mode
6	Mute	Control mute settings from your audio output device (not included)

Number	Function	Description
7	 (Power)	Turn on or turn off the projector
8	 (Enter)	Accept the selected mode or option
9	 (Volume Up)	Increase the volume
10	 (Volume Down)	Decrease the volume


## Adjusting Projector Settings

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

### NOTES



- There are no projector menu options on the ECP. Keep your remote control in a safe place because the ECP is not meant to substitute for the remote control.
- The menu heading at the top of all settings is **SMART UF65 Settings** or **SMART UF65w Settings**.


### Menu Options

Menu Heading	Settings	Description
Image Adjustment 	Display Mode	Indicates the projector's display output ( <b>SMART Presentation, Bright Room, Dark Room, sRGB and User</b> ).
	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. The default is 0. Applies to VGA inputs only.
	Tracking	Synchronizes your projector's display timing with your computer's graphics card from 0 to 63. Applies to VGA inputs only.






Menu Heading	Settings	Description
Image Adjustment, cont'd	H-position	<p>Moves the projected image's horizontal position left or right from 0 to 100.</p> <p><b>i NOTE</b> Don't adjust this option unless you're advised to by a certified <a href="#">SMART Technical Support Specialist</a>. You can apply these settings only after you make all boom adjustments. Applies to VGA inputs only.</p>
	V-position	<p>Moves the projected image's vertical position up or down from -5 to 5.</p> <p><b>i NOTE</b> Don't adjust this option unless you're advised to by a certified <a href="#">SMART Technical Support Specialist</a>. You can apply these settings only after you make all boom adjustments. Applies to VGA inputs only.</p>
	Saturation	<p>Adjusts the image from black and white to saturated color from 0 to 100. Applies to S-video and composite video inputs only.</p>
	Sharpness	<p>Adjusts the projected image's sharpness from 0 to 31. Applies to S-video and composite video inputs only.</p>
	Tint	<p>Adjusts the image color balance of red and green from 0 to 100. Applies to S-video and composite video inputs only.</p>
	White Peaking	<p>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.</p>
	Degamma	<p>Adjusts the color performance of the display from 0 to 3.</p>
	Color	<p>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 <b>User</b> mode.</p>

Menu Heading	Settings	Description
Audio 	Volume	Increases and decreases the projector's volume from -20 to 20.
	Mute	<b>On</b> mutes the projector's audio output. <b>Off</b> turns off mute.
	Disable Volume Control	<b>On</b> disables the projector's volume control and the ECP's volume control knob. <b>Off</b> enables the volume control and volume control knob.
	Closed Captioning	<b>On</b> turns on closed captioning. <b>Off</b> turns off closed captioning.
	Closed Captioning Language	Sets the closed captioning language to <b>CC1</b> or <b>CC2</b> . Typically, <b>CC1</b> displays American English subtitles, while <b>CC2</b> displays other regional languages, such as French or Spanish, depending on television channel or media setup.
Default 	3D On/Off	Turns the 3D feature <b>On</b> or <b>Off</b> .
	3D Format	Displays the current 3D format ( <b>Interleaved</b> or <b>Under-over</b> ). <ul style="list-style-type: none"> <li>• <b>Interleaved</b> breaks down the image frame for each eye, alternately displaying a line of visual information from each frame.</li> <li>• <b>Under-over</b> concurrently displays horizontally stretched image frames for each eye, one above the other.</li> </ul>
	3D Invert Left-Right	Selects the 3D Invert setting ( <b>L-R</b> or <b>R-L</b> ). <ul style="list-style-type: none"> <li>• <b>L-R</b> displays visual data for the left eye first.</li> <li>• <b>R-L</b> displays visual data for the right eye first.</li> </ul>
	Auto Signal Detect	Enables or disables signal searching of input connectors. <ul style="list-style-type: none"> <li>• Select <b>On</b> to have the projector continuously switch inputs until it finds an active video source.</li> <li>• Select <b>Off</b> to maintain signal detection in one input.</li> </ul>
	Lamp Reminder	Select <b>On</b> to show or <b>Off</b> to hide the lamp replacement reminder when it appears. This reminder appears 100 hours before the recommended lamp replacement.

Menu Heading	Settings	Description
Default, cont'd	Lamp Mode	Adjusts lamp brightness to <b>Standard</b> or <b>Economy</b> . <b>Standard</b> displays a high-quality, bright image. <b>Economy</b> 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 timer begins to count down when the projector no longer receives a video signal. The timer finishes when the projector enters <b>Idle</b> 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. These settings affect image adjustments done mechanically to the boom.
	Projector ID	Displays the projector's unique ID number (from 0 to 99) within your organization's network.
	Aspect Ratio	<p>Adjusts the image output to <b>Fill Screen</b>, <b>Match Input</b> or <b>16:9</b>.</p> <ul style="list-style-type: none"> <li>• <b>Fill Screen</b> produces an image that fills the entire screen with stretching and scaling.</li> <li>• <b>Match Input</b> matches the projector's aspect ratio to the input's aspect ratio, with black bands appearing along the top and bottom edge of the screen horizontally, in letterbox format, or with black bands appearing along the left and right edge of the screen vertically, in pillarbox format.</li> <li>• <b>16:9</b> changes the output to 16:10 by letterboxing the image, which is recommended for use with HDTV and DVDs enhanced for wide-screen television.</li> </ul> <p> <b>NOTE</b> See <i>Video Format Compatibility Tables</i> on page 34 for appearance descriptions in each mode.</p>

Menu Heading	Settings	Description
Default, cont'd	Startup Screen	<p>Press <b>Enter</b> to access the startup screen menu. You can then select the type of startup screen (<b>SMART</b>, <b>Capture User Startup Screen</b> or <b>Preview Startup Screen</b>). This screen displays when the projector lamp is starting and an image isn't displayed. Press <b>Exit</b> to return to the Default menu.</p> <ul style="list-style-type: none"> <li>• <b>SMART</b> displays the default SMART logo on a blue background.</li> <li>• <b>Capture User Startup Screen</b> closes the on-screen display menu and captures the entire projected interactive whiteboard image. The captured image is displayed the next time that the on-screen display opens.</li> </ul> <p><b>i NOTE</b> The capture can take up to one minute, depending on the complexity of the background graphic.</p> <ul style="list-style-type: none"> <li>• <b>Preview Startup Screen</b> enables you to preview the default or captured startup screen.</li> </ul>
	Set to Default?	<p>Press <b>Enter</b> to access the reset menu. Select <b>Yes</b> to confirm the reset or <b>No</b> to cancel it. If you select <b>Yes</b>, all projector settings reset to their defaults, reversing any menu changes you made. This action is irreversible.</p> <p><b>i NOTE</b> Don't adjust this option unless you want to reset all of the applied settings, or unless you're advised to by a certified <a href="#">SMART Technical Support Specialist</a>.</p>


Menu Heading	Settings	Description
Network 	Network and VGA Out	The VGA out and Network features are <b>Off</b> by default. Select <b>On</b> to activate these features.
	Status	Displays the current network status as <b>Connected</b> , <b>Disconnected</b> or <b>Off</b> .
	DHCP	Displays the status of the network's Dynamic Host Control Protocol (DHCP) as <b>On</b> or <b>Off</b> . <ul style="list-style-type: none"> <li>• <b>On</b> automatically assigns the DHCP server's IP address to the projector.</li> <li>• <b>Off</b> enables an administrator to assign an IP address manually.</li> </ul>
	Password Reminder	E-mails the network password to the mail recipient. See page 61 in the section on <i>Web Page Management</i> to set up a destination e-mail address.
	IP Address	Displays the projector's IP address in values between 0.0.0.0 and 255.255.255.255.
	Subnet Mask	Displays the projector's subnet work mask number in values between 0.0.0.0 and 255.255.255.255.
	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).
	Projector Name	Displays the projector's name as set by an administrator (maximum 12 characters).
	Location	Displays the projector's location as set by an administrator (maximum 16 characters).
	Contact	Displays the contact name or number for projector support as set by an administrator (maximum 16 characters).

Menu Heading	Settings	Description
Language 	Language	Selects language preference.  Projector menu support is available in English (default), Brazilian Portuguese, Czech, Danish, Dutch, Finnish, French, German, Greek, Iberian Portuguese, Italian, Korean, Japanese, Norwegian, Polish, Russian, Simplified Chinese, Spanish, Swedish and Traditional Chinese.
Information 	Lamp Hours	Displays the current number of lamp usage hours from 0 to 4000 hours from when it was last reset.  <b>i NOTE</b> Always reset the Lamp Hours after you exchange a lamp. Lamp service reminders are based on the current hours of use. See <i>To reset the lamp timer</i> on page 94 for details on the lamp hour reset procedure.
	Input	Displays the current input source: <b>VGA1</b> , <b>VGA2</b> , <b>Composite</b> , <b>S-Video</b> or <b>None</b> .
	Resolution	Displays the projector's current display resolution.
	Firmware Version	Displays the projector's firmware version in x.x.x.x format.
	MPU Version	Displays the projector microprocessor's firmware version in x.x.x.x format.
	Network Version	Displays the projector's network card version in x.x.x.x format.
	Model Number	Displays the projector's model number.
	Serial Number	Displays the projector's serial number.

## Using Your Interactive Whiteboard

Refer to the [SMART Board 600 and D600 series Interactive Whiteboard Installation and User's Guide](#) for more information on using your interactive whiteboard.



When you connect your SMART Board interactive whiteboard system to a computer with SMART Product Drivers and SMART software installed, you can access the software's full capabilities. SMART Notebook enables you to capture and save your notes to a SMART Notebook file, or write directly into any Ink Aware application. The full capabilities of SMART Notebook include SMART Board Tools and a wide range of digital content.

The SMART Notebook Help Center contains links to a wide range of information, including procedures, concepts, help with applications, SMART Notebook tool descriptions, troubleshooting hints and more. Access the Help Center by pressing the **Help** button on the pen tray or from the **SMART Board** icon  in the Windows notification area or Mac Dock.

For more resources, visit [www2.smarttech.com/st/en-US/Country/](http://www2.smarttech.com/st/en-US/Country/), and then select your country. In the Support section of this site, you'll find up-to-date, product-specific information, including setup instructions and specifications. The [Training Center](#) also has free learning resources, hands-on lessons and information on how to get more training.

## Using the Extended Control Panel (ECP)

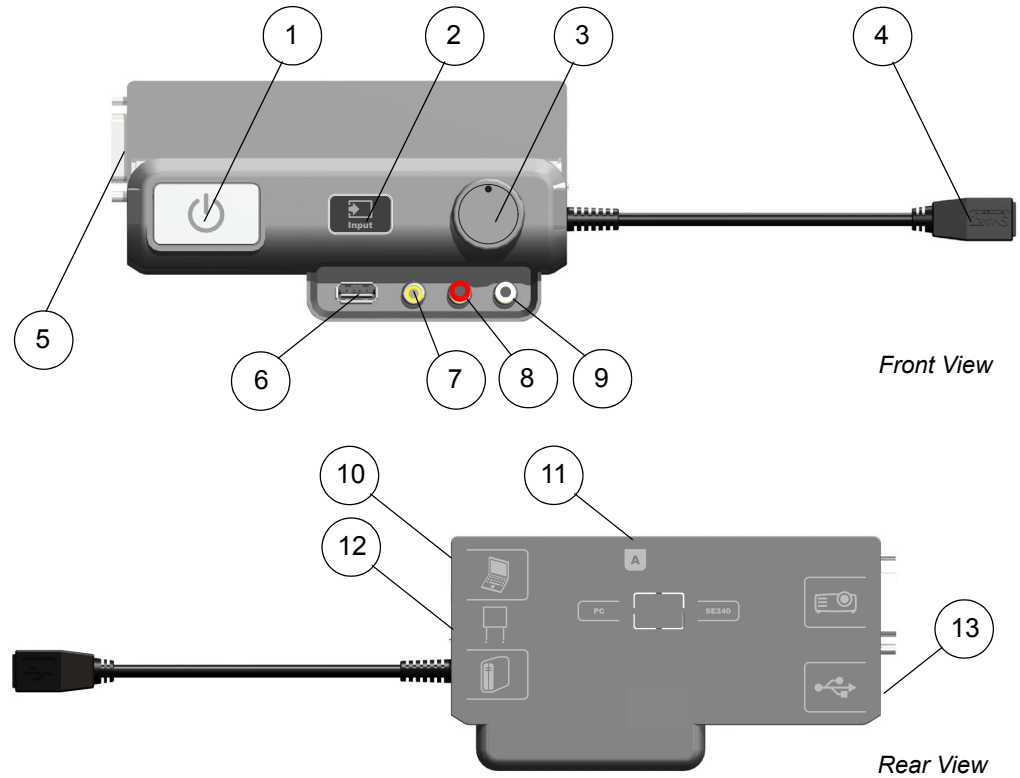
### Understanding ECP Functions

The ECP gives you control of your interactive whiteboard system's basic options. Additionally, you can connect peripheral device sources (or outputs) directly to the ECP, as described on page 33. You can use the ECP's **Power**  button (or the remote control's **Power**  button) to turn on or turn off the projector system. You can use the **Input** button (or the remote control's **Input** button) to switch sources on the projector.

#### **IMPORTANT**

- There are no projector menu options on the ECP. Keep your remote control in a safe place because the ECP is not a substitute for the remote control.
- Do not disconnect existing USB plugs on the ECP to connect other peripherals, because you could disconnect controls for your interactive whiteboard or host computer.

## ECP Connection Diagram



Number	Function
1	🔌 Power and status LED
2	Input
3	Volume control
4	USB B receptacle (for your primary computer)
<p><b>i NOTE</b> This USB receptacle is active only when you select VGA1 as the projector input source.</p>	
5	DB15 socket (ECP harness cable only)
6	USB A receptacle (for USB storage devices)
7	RCA jack composite video input (for peripheral devices such as a DVD or Blu-ray Disc™ player)
8	RCA jack audio-right input
9	RCA jack audio-left input



Number	Function
10	USB B receptacle (for secondary computers such as a laptop)
	<p><b>i NOTE</b> This USB receptacle is active only when you select VGA2 as the projector input source.</p>
11	RJ11 6-wire jack (for USB controller connector cable)
12	USB A receptacle (SMART Board interactive whiteboard only)
13	USB A receptacle (for any USB peripheral, up to 500mA)

## Attaching Peripheral Sources and Outputs to the ECP

Follow these instructions if you have a peripheral device to connect to your interactive whiteboard system for a short time, such as a DVD player or a USB device.

### **i NOTES**

- 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 tripping hazard.
- Don't disconnect any existing cables, because some receptacles are reserved for the ECP harness cable and your interactive whiteboard.
- Don't connect SMART Board Audio (SBA) USB speakers to the ECP. Connect these speakers to the projector connection panel using a dual-channel (left and right) RCA plugs to 3.5 mm cable (not included).
- The composite video connector and associated dual channel audio inputs on the ECP are for input only. These RCA jacks don't provide an output signal.

### To attach a peripheral source or output to your projector

1. If you have speakers installed, turn the volume dial on the ECP all the way down to prevent buzzing or a spark.
2. Connect your peripheral device's input cables or USB interface to the ECP.
3. Switch input sources to the peripheral device by pressing the **Input** button on the ECP or remote control.

### **i NOTE**

If your USB device does not work, the device may be malfunctioning or incompatible, or the USB port may be disabled. See Appendix A: *Disabling USB Communications* on page 95.

4. Restore the volume on the ECP's volume dial.

## Video Format Compatibility

Both the SMART UF65 and SMART UF65w projectors have a native video format and various video format compatibility modes. You can change image appearances for certain formats and compatibilities.

### Native Video Format

The following table lists the native VESA RGB video formats for the SMART UF65 and SMART UF65w projector.

Projector	Resolution	Mode	Aspect Ratio	Refresh Rate (Hz)	Horizontal Frequency (kHz)	Pixel Clock (MHz)
<b>SMART UF65</b>	1024 × 768	XGA	4:3	60	48	63.5
<b>SMART UF65w</b>	1280 × 800	WXGA	16:10	60	48	83.5

### Video Format Compatibility Tables

The following tables list the projectors' compatible VESA RGB video formats, by resolution that you can adjust by using the aspect ratio commands described on page 27.

#### SMART UF65 Projector

Resolution	Mode	Aspect Ratio	Refresh Rate (Hz)	“Match Input” Appearance
720 x 400	720x400_85	1.8:1	85.039	Letterbox
640 x 480	VGA 60	4:3	59.94	Full screen
640 x 480	VGA 72	4:3	72.809	Full screen
640 x 480	VGA 75	4:3	75	Full screen
640 x 480	VGA 85	4:3	85.008	Full screen
800 x 600	SVGA 56	4:3	56.25	Full screen
800 x 600	SVGA 60	4:3	60.317	Full screen
800 x 600	SVGA 72	4:3	72.188	Full screen
800 x 600	SVGA 75	4:3	75	Full screen
800 x 600	SVGA 85	4:3	85.061	Full screen
832 x 624	MAC 16"	4:3	74.55	Full screen

<b>Resolution</b>	<b>Mode</b>	<b>Aspect Ratio</b>	<b>Refresh Rate (Hz)</b>	<b>“Match Input” Appearance</b>
1024 x 768	XGA 60	4:3	60.004	Full screen
1024 x 768	XGA 70	4:3	70.069	Full screen
1024 x 768	XGA 75	4:3	75.029	Full screen
1024 x 768	XGA 85	4:3	84.997	Full screen
1024 x 768	MAC 19"	4:3	74.7	Full screen
1152 x 864	SXGA1 75	4:3	75	Full screen
1280 x 768	SXGA1 75	1.67:1	60	Letterbox
1280 x 800	WXGA	16:10	60	Letterbox
1280 x 800	WXGA	16:10	58.2	Letterbox
1280 x 960	Quad VGA 60	4:3	60	Full screen
1280 x 960	Quad VGA 85	4:3	85.002	Full screen
1280 x 1024	SXGA3 60	5:4	60.02	Letterbox
1280 x 1024	SXGA3 75	5:4	75.025	Letterbox
1280 x 1024	SXGA3 85	5:4	85.024	Letterbox
1400 x 1050	SXGA+	4:3	59.978	Full screen
1600 x 1200	UXGA	4:3	60	Full screen

#### **SMART UF65w Projector**

<b>Resolution</b>	<b>Mode</b>	<b>Aspect Ratio</b>	<b>Refresh Rate (Hz)</b>	<b>“Match Input” Appearance</b>
720 × 400	720×400_85	9:5	85.039	Letterbox
640 × 480	VGA 60	4:3	59.94	Pillarbox
800 × 600	VGA 72	4:3	72.809	Pillarbox
800 × 600	VGA 75	4:3	75	Pillarbox
800 × 600	VGA 85	4:3	85.008	Pillarbox
800 × 600	SVGA 56	4:3	56.25	Pillarbox
800 × 600	SVGA 60	4:3	60.317	Pillarbox
800 × 600	SVGA 72	4:3	72.188	Pillarbox
800 × 600	SVGA 75	4:3	75	Pillarbox
800 × 600	SVGA 85	4:3	85.061	Pillarbox

Resolution	Mode	Aspect Ratio	Refresh Rate (Hz)	“Match Input” Appearance
832 × 624	MAC 16"	4:3	74.55	Pillarbox
1024 × 768	XGA 60	4:3	60.004	Pillarbox
1024 × 768	XGA 70	4:3	70.069	Pillarbox
1024 × 768	XGA 75	4:3	75.029	Pillarbox
1024 × 768	XGA 85	4:3	84.997	Pillarbox
1024 × 768	MAC 19"	4:3	74.7	Pillarbox
1152 × 864	SXGA 75	4:3	75	Pillarbox
1280 × 768	WXGA 60	1.67:1	60	Letterbox
1280 × 960	Quad VGA 60	4:3	60	Letterbox
1280 × 960	Quad VGA 85	4:3	85.002	Letterbox
1280 × 960	SXGA3 60	5:4	60.02	Pillarbox
1280 × 1024	SXGA3 75	5:4	75.025	Pillarbox
1400 × 1050	SXGA3 85	5:4	85.024	Pillarbox
1600 × 1200	SXGA+	4:3	59.978	Pillarbox
1600 × 1200	UXGA_60	4:3	60	Pillarbox

## HD and SD Signal Format Compatibility

The following tables list the projectors' high definition and standard definition format signal compatibility that you can adjust by using the aspect ratio commands described on page 27.

### SMART UF65 Projector

Signal Format	Aspect Ratio	Horizontal Frequency (kHz)	Vertical Frequency (Hz)	“Match Input” Appearance
480i (DVD player) (640 × 480)	4:3	15.73	59.94	Full screen
567i (DVD player) (720 × 576)	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

**SMART UF65w Projector**

Signal Format	Aspect Ratio	Horizontal Frequency (kHz)	Vertical Frequency (Hz)	“Match Input” Appearance
480i (525i)	4:3	15.73	59.94	Full screen
480p (525p)	4:3	31.47	59.94	Full screen
576i (625i)	5:4	15.63	50	Pillarbox
576p (625p)	5:4	31.25	50	Pillarbox
720p (750p)	16:9	45	59.94	Letterbox
720p (750p)	16:9	37.5	50	Letterbox
1080i (1125i)	16:9	33.75	59.94	Letterbox
1080i (1125i)	16:9	28.13	50	Letterbox
1080p (1125p)	16:9	67.5	59.94	Letterbox
1080p (1125p)	16:9	56.25	50	Letterbox

**Video System Signal Compatibility**

The following tables list the projector’s video system signal compatibility, particularly those delivered over S-Video and Composite video connectors that you can adjust by using the aspect ratio commands described on page 27.

** NOTE**

The **Match Input** and **16:9** commands deliver all video modes with black bands along the top and bottom edge of the screen, in letterbox format.

**SMART UF65 Projector**

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 <sub>ob</sub> ) 4.06 (f <sub>or</sub> )

**SMART UF65w Projector**

<b>Video Mode</b>	<b>Aspect Ratio</b>	<b>Horizontal Frequency (kHz)</b>	<b>Vertical Frequency (Hz)</b>	<b>Color Signal (MHz)</b>
NTSC	4:3	15.73	59.94	3.58
PAL	4:3	15.63	50	4.43
SECAM	4:3	15.63	50	4.25 and 4.41
PAL-M	4:3	15.73	59.94	3.58
PAL-N	4:3	15.63	50	3.58
PAL-60	4:3	15.73	59.94	4.43
NTSC 4.43	4:3	15.73	59.94	4.43

## Chapter 4

# Remotely Managing Your Interactive Whiteboard System

This chapter includes detailed instructions on how to set up your computer or room control system to remotely manage your SMART Board 600i4 or D600i4 interactive whiteboard system settings through an RS-232 serial interface.

- *Connecting Your Room Control System to the SMART UF65 or SMART UF65w Projector* on page 40
- *Projector Programming Commands* on page 42
- *Simple Network Management Protocol (SNMP)* on page 55
- *Web Page Management* on page 55

## Connecting Your Room Control System to the SMART UF65 or SMART UF65w Projector

By connecting a computer or room control system to the SMART UF65 or SMART UF65w projector's RS-232 serial interface, you can select video inputs, start up or shut down your interactive whiteboard system and request information such as projector lamp use, current settings and network addresses.

### Pin Configuration on the Projector's RS-232 Connector

The following table provides the pin configuration on the SMART UF65 or SMART UF65w projector. This pin configuration follows a three-wire connection so that a straight-through male to female RS-232 serial cable connects to the projector's serial interface in the following arrangement:

Pin Number	Projector's Female RS-232 Connector
2	Transmit
3	Receive
5	Signal Ground

### Serial Interface Settings

The SMART UF65 or SMART UF65w projector's serial interface acts as a Data Communications Equipment (DCE) device and its settings can't be configured. You must configure your computer's serial communication program (such as Microsoft® HyperTerminal) or your room control system's serial communication settings with the following values:

Setting	Value
Data Rate	19.2 kbps
Data Bits	8
Parity	None
Stop Bits	1
Flow Control	None



**i NOTES**

- Asynchronous mode is disabled by default in the projector.
- All commands should be in ASCII format. Terminate all commands with a carriage return.
- All responses from the projector are terminated with a command prompt. Wait until you receive the command prompt, indicating that the system is ready for another command, before proceeding.
- The room control feature of the projector is always on.

**To configure  
your computer's  
serial interface**

1. Turn on your computer, and then start your serial communications program or terminal emulation program.
2. Connect your computer to the serial connection cable you previously attached to the projector.
3. Configure your serial interface settings using the values in the table in the previous section, and then press ENTER.

An “invalid cmd= ? for help” message appears, and the > character appears as a command prompt on the following line.

**i NOTE**

If no message or an error message appears, your serial interface configuration isn't correct. Repeat step 3.

4. Type commands to configure your settings.

**i NOTES**

- To see a list of available commands, type ? and then press ENTER.
- When you're using a terminal emulation program, turn on your program's local echo setting if you want to see characters as you type them.

## Projector Programming Commands

### Projector Powerstate Controls

The SMART UF65 or SMART UF65w projector responds to commands only at certain power levels and times. There are five projector power states:

- Powering (startup)
- On (operating)
- Cooling
- Confirm off
- Idle

### Command Inventory

The SMART UF65 or SMART UF65w 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.

#### NOTES

- Send a command after the projector sends a command prompt.
- Commands aren't case sensitive. Type commands exactly as they appear in the left column of the tables, with the proper value or setting in the center column.
- 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 avoid buffer overrun, don't send another command until you receive the next command prompt.

### 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 example 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 on page 45 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'll receive an invalid command response. The operational parameters are VGA1, VGA2, Composite or S-Video.

The following examples set the brightness of VGA1, regardless of whether it's the current source or not.

```
>set brightness vga1=65  
brightness vga1=65
```

```
>set brightness vga1-7  
brightness vga1=58
```

## Powerstate Controls

These commands turn on or turn off the projector and request the projector's current powerstate. The projector's powerstate determines whether or not certain commands are available at that time. These settings are always available, even when the projector is off.

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

### Powerstate Command Description

Command	Description
on	Turns on the projector.
off	Starts the shutdown process. A dialog box appears with the message, "Press Power Button to Turn off Projector." You must send a second <b>Off</b> command within 10 seconds to completely turn off the projector.
off now	Shuts down the projector immediately. You can't delay or cancel this command.
get powerstate	Indicates the projector's current powerstate.

### Powerstate Response Field Description

Field	Description
Powering	The projector is turning on.
On	The projector is on.
Cooling	The projector is cooling.
Confirm off	<b>Confirm off</b> is a non-selectable powerstate that is returned during stage one of the two-button <b>off</b> sequence.
Idle	The projector is off but still receiving power (standby).

## Source Selection Controls

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

Command	Response	Available When Powered Off
get input	input=[field]	yes
set input [field]	input=[field]	no

### Source Selection Response Field Description

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. If you installed your interactive whiteboard system according to the instructions, this is the relay from the ECP.
S-Video	Switches source to the S-Video input connector.
None	A non-selectable value that appears when you enter a “get input” command while the projector is in Idle mode.

## General Source Controls

The following source controls apply to all input sources. These controls are unavailable when the projector is off. You can specify custom color values for all inputs.

### Source Information Commands

These commands inform you of the current source settings.

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

Command	Response
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]

### Source Control Commands

These commands control the appearance of your source. These settings are unavailable when the projector is off, or when the source is disconnected. See page 42 for setting absolute and adjustment commands.

Command	Command Target Range	Response
set displaymode [target]	=SMART Presentation =Bright Classroom =Dark Classroom =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]

## Additional VGA Source Controls

Your VGA source supports all the general source controls described on page 45, as well as the commands listed in this section. These settings are unavailable when the projector is off, or when the VGA sources are disconnected.

### NOTE

Some of these commands are invalid with composite video sources.

### VGA Source Information Commands

These commands inform you of the current VGA source settings.

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

### VGA Source Control Commands

These commands control the appearance of your VGA source. These settings are unavailable when the projector is off, or when the VGA source is disconnected. See page 42 for setting absolute and adjustment commands.

Command	Command Target Range	Response
set frequency [value]	=-5 to =5	frequency=[value]
set tracking [value]	=0 to =63	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 off, or when the composite video source is disconnected.



### NOTE

Some of these commands are invalid with VGA video sources.

### Composite Video Source Information Commands

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]

### Composite Video Source Control Commands

These commands control the appearance of your composite video source. See page 42 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 Output Controls

These commands control your projector's audio output to your audio system (not included). Audio output controls aren't defined by the video source. These settings are unavailable when the projector is off.

### Audio Output Information Commands

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]
get cc	cc=[current closed captioning language setting]

### Audio Output Control Commands

These commands control your audio output settings. See page 42 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 cc [target]	=cc1 =cc2 =off	cc=[target]

#### NOTE

Typically, **CC1** displays American English subtitles, while **CC2** displays other regional languages, such as French or Spanish, depending on television channel or media setup.

## Network Controls

These commands control your projector's network status and settings. These settings are always available, even when the projector is off.

### Network Information Commands

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 work mask number]
get gateway	gateway=[current network gateway]
get primarydns	primarydns=[current primary domain name number]
get macaddr	macaddr=[current MAC address]

### Network Control Commands

These commands control your network settings.

Command	Command Target Range	Response
set dhcp [target]	=on =off	dhcp=[current]
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

Enables you to switch system settings and access system information.

### System Information Commands (Active)

These commands inform you of the current system settings. These commands are unavailable when the projector is off.

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 setting]
get vposition	vposition=[current vertical position setting]
get aspectratio	aspectratio=[current projector aspect ratio]
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 3denable	3denable=[current 3D feature setting]
get 3dinvert	3dinvert=[current 3D invert setting]
get 3dformat	3dformat=[current 3D format]
get emergencyalertmsg	emergencyalertmsg=[current emergency alert message]
get emergencyalert	emergencyalert=[current emergency alert setting]

### System Information Commands (Passive)

These commands inform you of the current system settings. These commands are always available, even when the projector is off.

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 fwverecp	fwverecp=[current ECP firmware version]
get vgaoutnetenable	vgaoutnetenable=[current]

### System Control Commands (Active)

These commands control the current system settings. These commands are unavailable when the projector is off. See page 42 for setting absolute and adjustment commands.

Command	Command Target Range	Response
set autosignal [target]	=on =off	autosignal=[target]
set lampreminder [target]	=on =off	lampreminder=[target]
set highbrightness [target]	=on =off	highbrightness=[target]
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]
set aspectratio [target]	=fill =match =16:9	aspectratio=[target]

Command	Command Target Range	Response
set projectionmode [target]	=front =ceiling =rear =rear ceiling	projectionmode=[target]
set startupscreen [target]	=smart =usercapture =preview	startupscreen=[target]
set language [target]	=Brazilian Portuguese =Czech =Danish =Dutch =English =Finnish =French =German =Greek =Iberian Portuguese =Italian =Korean =Japanese =Norwegian =Polish =Russian =Simplified Chinese =Spanish =Swedish =Traditional Chinese	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]

Command	Command Target Range	Response
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]
set 3denable [target]	=on =off	3denable=[target]
set 3dinvert [target]	=leftright =rightleft	3dinvert=[target]
set 3dformat [target]	=interleaved =overunder	3dformat=[target]
set emergencyalertmsg [description]	Enter a descriptor no more than 60 characters long.	emergencyalertmsg=[description]
set emergencyalert [target]	=on =off	emergencyalert=[target]

### System Control Commands (Passive)

These commands control the current system settings. These commands are always available, even when the projector is off.

Command	Command Target Range	Response
set restoredefaults	[none]	restoredefaults=done
set lamphrs [target]	=0	lamphrs=0
set vgaoutnetenable [target]	=on =off	vgaoutnetenable=[target]

### NOTE

The VGA Out and Network settings features are **Off** by default. Select **On** to activate these features.

## Simple Network Management Protocol (SNMP)

SMART UF65 and SMART UF65w projectors support a list of SNMP commands as described in the [management information base \(MIB\) file](#).

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.

## Web Page Management

In addition to SNMP and RS-232 controls, you can access advanced setup features via the projector's web page. This web page enables you to access and manage the projector from a remote location using any computer connected to your intranet.

### NOTE

To access the web page, your browser must support JavaScript™. Most commonly used browsers, such as Internet Explorer® or Firefox®, support JavaScript.

### Accessing Web Page Management

Before accessing the web page, you must attach the network cable to your projector (see the *SMART UF65 or SMART UF65w Projector Connection Diagram* on page 12). When you first connect your projector to a network, an IP address appears on the on-screen display.

### NOTE

You can also view the IP address by accessing the projector's Network Settings menu page, as described on page 60.

### To use the management web page

- 
1. Start your Internet browser.
  2. Enter the IP address into the address line field, and then press ENTER.  
  
The *SMART UF65 Projector Settings* (or *SMART UF65w Projector Settings*) window appears.
  3. Select the menu options in the left pane to access the settings on each page.
  4. Select settings or type them with your computer's keyboard, and then press the **Submit** or action button next to each setting you change.
-

## Home

The Home menu page displays basic projector information and enables you to select the on-screen display language.

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 Idle (standby) mode. Select the <b>Power ON</b> or <b>Power OFF</b> button.
Restore All Projector Defaults	Returns projector settings to default values or refreshes the current settings. Select <b>Submit</b> or <b>Refresh</b> .
<p><b>i NOTE</b> The <b>Submit</b> option is irreversible and resets all values.</p>	
Volume	Increases and decreases the projector's volume from -20 to 20.
Mute	Turns the mute settings <b>On</b> or <b>Off</b> . Select <b>On</b> to mute the projector's sound and <b>Off</b> to turn off mute.
Volume Control	Enables volume control on the ECP. Select <b>On</b> to enable volume adjustment and select <b>Off</b> to disable volume adjustment if you prefer to use your audio system or speaker (not included) controls.
Closed Captioning	Turns the closed captions feature <b>On</b> or <b>Off</b> .
Language	Sets the closed captioning language to <b>CC1</b> or <b>CC2</b> . Typically, <b>CC1</b> displays American English subtitles, while <b>CC2</b> displays other regional languages, such as French or Spanish, depending on television channel or media setup.





Submenu Setting	Description
Display Mode	<p>Adjusts the display output to <b>SMART Presentation</b>, <b>Bright Room</b>, <b>Dark Room</b>, <b>sRGB</b> and <b>User</b> modes so you can project images from various sources with consistent color performance:</p> <ul style="list-style-type: none"> <li>• <b>SMART Presentation</b> is recommended for color fidelity.</li> <li>• <b>Bright Room</b> and <b>Dark Room</b> are recommended for locations with those conditions.</li> <li>• <b>sRGB</b> provides standardized accurate color.</li> <li>• <b>User</b> enables you to apply your own settings.</li> </ul>
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 63.
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 <b>User</b> mode.
Auto Signal Detect	<p>Enables or disables signal searching of input connectors.</p> <ul style="list-style-type: none"> <li>• Select <b>On</b> to have the projector continuously switch inputs until it finds an active video source.</li> <li>• Select <b>Off</b> to maintain signal detection in one input.</li> </ul>

Submenu Setting	Description
Lamp Reminder	Select <b>On</b> to show or <b>Off</b> 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 <b>Standard</b> or <b>Economy</b> . <b>Standard</b> displays a high-quality, bright image. <b>Economy</b> 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 <b>Idle</b> 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 projected image's horizontal position left or right from 0 to 100.
V-position (RGB input)	Moves the projected image's vertical position up or down from -5 to 5.
Aspect Ratio	Adjusts the image output to <b>Fill Screen</b> , <b>Match Input</b> or <b>16:9</b> . <ul style="list-style-type: none"> <li>• <b>Fill Screen</b> produces an image that fills the entire screen with stretching and scaling.</li> <li>• <b>Match Input</b> matches the projector's aspect ratio to the input's aspect ratio, with black bands appearing along the top and bottom edge of the screen horizontally, in letterbox format, or with black bands appearing along the left and right edge of the screen vertically, in pillarbox format.</li> <li>• <b>16:9</b> changes the output to 16:10 by letterboxing the image, which is recommended for use with HDTV and DVDs enhanced for wide-screen television.</li> </ul>

**i NOTE**

See *Video Format Compatibility* on page 34 for appearance descriptions in each mode.

Submenu Setting	Description
Startup Screen	Selects the type of startup screen to <b>SMART</b> or <b>User</b> . The <b>SMART</b> screen is the default SMART logo on a blue background. The <b>User</b> screen uses the saved picture from the Capture User Startup Screen function.
Video Mute	Turns the video mute setting <b>On</b> or <b>Off</b> . Select <b>On</b> to hide the display and <b>Off</b> to show it again.
High Speed Fan	Adjusts the speed of the projector's fan. Select <b>High</b> to set the fan to high speed. Select <b>Normal</b> to set the fan to normal speed.
	<p> <b>NOTE</b> Use the High setting when the projector's temperature is high or the altitude is above 6000' (1829 m).</p>
Projector Mode	Selects the projection mode ( <b>Front</b> , <b>Ceiling</b> , <b>Rear</b> or <b>Rear Ceiling</b> )
	<p> <b>IMPORTANT</b> SMART recommends that you never change this setting from the <b>Ceiling</b> projection mode.</p>
Source	Selects the input source ( <b>VGA1</b> , <b>VGA2</b> , <b>Composite</b> or <b>S-Video</b> ).
VGA1	Assigns an alternative name to your VGA1 input. This name appears when you select the VGA1 input.
VGA2	Assigns an alternative name to your VGA2 input. This name appears when you select the VGA2 input.
S-Video	Assigns an alternative name to your S-video input. This name appears when you select the S-video input.
Composite	Assigns an alternative name to your composite video input. This name appears when you select the composite video input.
Emergency Alert	Turns the on-screen alert broadcast message <b>On</b> or <b>Off</b> . When enabled, this message displays over the current projected image.
Alarm Message	Displays an on-screen emergency notification message (maximum 60 characters).

## 3D Settings

This menu allows you to enable or disable 3D image display and set the format.

Submenu Setting	Description
3D On/Off	Turns the 3D feature <b>On</b> or <b>Off</b> .
3D Invert	Selects the 3D Invert setting ( <b>L-R</b> or <b>R-L</b> ). <ul style="list-style-type: none"> <li>• <b>L-R</b> displays visual data for the left eye first.</li> <li>• <b>R-L</b> displays visual data for the right eye first.</li> </ul>
3D Format	Selects the 3D format ( <b>Interleaved</b> or <b>Under-over</b> ). <ul style="list-style-type: none"> <li>• <b>Interleaved</b> breaks down the image frame for each eye, alternately displaying a line of visual information from each frame.</li> <li>• <b>Under-over</b> concurrently displays horizontally stretched image frames for each eye, one above the other.</li> </ul>

## Network Settings

This menu allows you to enable or disable Dynamic Host Control Protocol (DHCP) and set the network related addresses and names.

Submenu Setting	Description
DHCP	Turns the network's DHCP <b>On</b> or <b>Off</b> . <ul style="list-style-type: none"> <li>• <b>On</b> automatically assigns the DHCP server's IP address to the projector.</li> <li>• <b>Off</b> enables you to assign an IP address manually.</li> </ul>
IP Address	Displays the projector's IP address in values between 0.0.0.0 and 255.255.255.255.
Subnet Mask	Displays the projector's subnet work mask number in values between 0.0.0.0 and 255.255.255.255.
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.
Group Name	Displays the projector's workgroup name (maximum 12 characters).
Projector Name	Displays the projector's name (maximum 12 characters).

Submenu Setting	Description
Location	Displays the projector's location (maximum 16 characters).
Contact	Displays the contact name or number for projector support (maximum 16 characters).
SNMP	Turns the SNMP's MIB function <b>On</b> or <b>Off</b> .
Read-Only Community	This option is a password sent with each SNMP Get-Request and enables access to the device.
	<p><b>i NOTE</b> The default for Read-Only Community is public.</p>
Read/Write Community	This option is a password sent with each SNMP Set-Request and enables access to the device.
	<p><b>i NOTE</b> The default for Read/Write Community is private.</p>
Trap Destination Address	Displays the projector's trap destination address 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 receive and handle unsolicited data generated by projector trap events, such as power down, power up 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	Select <b>Enable</b> or <b>Disable</b> to turn on or turn off the E-mail Alert function.
To	Defines the e-mail address of the e-mail alert recipient.
Cc	Defines the e-mail address of the e-mail alert "copy to" recipient.
From	Defines the e-mail address of the user who sends the e-mail alert.
Subject	Displays the e-mail alert subject.

Submenu Setting	Description
Outgoing SMTP server	Defines the Simple Mail Transfer Protocol (SMTP) server.
Username	Defines the SMTP server user name.
Password	Defines the SMTP server password.
Alert Condition	Sends e-mail alerts whenever <b>Lamp Warning</b> , <b>Low Lamp Life</b> , <b>Temperature Warning</b> and <b>Fan Lock</b> conditions occur. Select the settings you want, and then press <b>Submit</b> .

**i NOTE**

The projector sends an alert e-mail (SMART Alert) to your e-mail address. Press **E-mail Alert Test** to confirm your e-mail address by sending a test e-mail (SMART Alert-Test Mail).

## Password Settings

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

Submenu Setting	Description
Password	Access Web Management for the first time by pressing the <b>Enable</b> button and entering a password. When the password function is enabled, the administrator password is required to access Web Management. Select <b>Disable</b> to turn the projector on without a password.

**i NOTES**

- The first time you use the password settings, the default password value is four numbers, for example, 1234.
- The maximum allowable password length is four numbers or letters.
- If you forget the projector password, refer to *Retrieving Your Password* on page 76.

## Chapter 5

# Troubleshooting Your Interactive Whiteboard System

This chapter provides basic troubleshooting information for your interactive whiteboard system. For issues not covered in this section, contact your [authorized SMART reseller](#) or consult the [SMART Support website](#).

- *System Status and Warning Lights* on page 64
- *Interactive Whiteboard Indicators and Controls* on page 64
- *Projector Ready Lights and Projector Status* on page 66
- *Projector Error States* on page 67
- *Troubleshooting Standard Use Issues* on page 70
- *Accessing the Service Menu* on page 76

## System Status and Warning Lights

This section describes your SMART Board 600i4 or D600i4 interactive whiteboard system's three status and warning light regions and their patterns. Refer to these tables to troubleshoot your interactive whiteboard, ECP or projector. If you're unable to restore the system to a normal operating state, record the behavior of the lights, and then call your [authorized SMART reseller](#).

### ECP Power Button Status LED

The ECP's main power button also functions as a status LED.

ECP Status LED	Status
Off	The projector system isn't receiving power. Confirm that the projector is on, and that the power cable is connected. Confirm that your power supply is on and active. At the projector, check your power cable and the ECP's 4-pin powered-mini-DIN connection. At the ECP, check the DB15 connector. If nothing changes after you check your connectors and power supply, call your <a href="#">authorized SMART reseller</a> .
Solid amber	The projector is receiving power but is turned off.
Flashing green	The projector is receiving power and is turning on.
Solid green	The projector is on, and the ECP is receiving power and is communicating with the projector.
Flashing amber	Your interactive whiteboard system is about to turn off.

## Interactive Whiteboard Indicators and Controls

Your SMART Board 600 or D600 series interactive whiteboard includes the following indicators and controls:

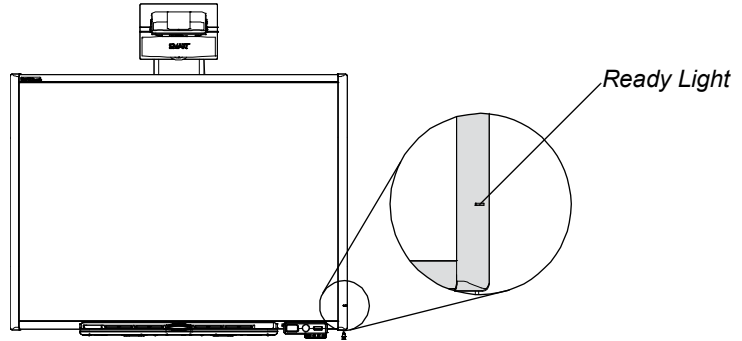
- An LED Ready light
- Pen tray buttons, LEDs and sensors
- The controller module's reset button

For more information about your interactive whiteboard's indicators and controls, and to resolve common issues, see the [SMART Board 600 and D600 Series Interactive Whiteboard Installation and User's Guide](#).



## Integrated Interactive Whiteboard Ready Light Status

Your interactive whiteboard's LED Ready light is in the lower-right corner of the frame. This light indicates the operational state of the controller module. If your interactive whiteboard behaves erratically or becomes unresponsive, or if the LED displays a color other than green when it's on, try resetting the power by disconnecting the USB connection to your computer.



Adding a SMART UF65 or SMART UF65w projector and an ECP changes the standard behavior of the interactive whiteboard Ready light. The following status light explanations only occur when you connect a computer source to your interactive whiteboard system's VGA1 or VGA2 ports, and the USB input and the input source are both active.

Interactive Whiteboard Ready Light	Status
Off	Your interactive whiteboard isn't receiving power. Confirm that the projector is on. Confirm that your interactive whiteboard's USB cable is connected to the ECP. On the projector's input/output panel, check the ECP's 4-pin powered-mini-DIN connection. If nothing changes after you check your connectors, call your <a href="#">authorized SMART reseller</a> .
Solid red	Your interactive whiteboard is receiving power but isn't communicating with a computer. On the projector's input/output panel, check the ECP's 7-pin mini-DIN connections. Confirm that the projector input selection is set to the correct video input source (VGA1 for primary computer, VGA2 for secondary computer). Confirm that the USB connection from the computer is connected to the appropriate computer connection on the ECP.
Solid green	Your interactive whiteboard is on and communicating with your computer.

Interactive Whiteboard Ready Light	Status
Flashing green	Your interactive whiteboard is on and communicating with your computer, but it's in Mouse mode. Confirm that SMART Product Drivers is installed on your computer.
Flashing amber	Your interactive whiteboard system is turning on, is in service mode or has detected a firmware error. On the projector's input/output panel, check the ECP's 4-pin powered-mini-DIN connection. If nothing changes after you check your connectors, call your <a href="#">authorized SMART reseller</a> .


## Projector Ready Lights and Projector Status

The SMART UF65 or SMART UF65w projector's two indicator LED lights (Power and Service) are located on the boom-mounted projector. Specific light sequences convey information about the state of the projector, including errors.



### IMPORTANT

After you resolve the projector's issue, disconnect and then reconnect the projector power cable to clear the indicator light sequence, and then reset the projector's status.

Power LED (Green/Amber)	Service LED (Red)	Message
Solid amber	Off	The projector is off but still receiving power (Idle mode). Press the power button  on the ECP to turn it on.
Flashing green	Off	The projector is in the powering (startup) power state. Wait for the projector to finish powering on.
Solid green	Off	The projector is in the operating (on) power state. Press the power button on the ECP twice to turn it off.
Flashing amber	Off	The projector is in the cooling power state. Wait for the projector to finish cooling.
Off	Flashing red	The projector is overheating. The projector might shut down automatically. See <i>The "Projector Overheated" Message Appears</i> on page 68 to troubleshoot the projector.

Power LED (Green/Amber)	Service LED (Red)	Message
Off	Solid red	The projector has a fan issue. The projector might shut down automatically. See <i>The “Fan Failure” Message Appears</i> on page 68 to troubleshoot the projector.
Off	Solid red	The projector has a color wheel issue. See <i>The “Color Wheel Failure” Message Appears</i> on page 69 to troubleshoot the projector.
Solid amber	Flashing red	The projector has a lamp issue. See <i>The “Lamp Failure” Message Appears</i> on page 69 to troubleshoot the projector.
Off	Off	The projector isn’t receiving power. See <i>The Ready Light Isn’t Lit</i> on page 70 to troubleshoot the projector.

## Projector Error States

System administrators can solve or troubleshoot the following projector error states on their own prior to contacting technical support. Performing an initial troubleshooting on your projector will reduce the time of a support call.

### Your Projector Doesn’t Respond to Commands

If your projector doesn’t respond to commands or if it starts to display code after you entered a command, perform the following procedure:

#### To restart an unresponsive projector

1. Turn off the projector, and then wait 15 minutes for it to cool down.
2. Disconnect the power cord from the power outlet. Wait a minimum of 60 seconds.
3. Reconnect the power cord.
4. Restart the projector.

## The “Projector Overheated” Message Appears

If the “Projector Overheated” indicator message appears and the projector turns off during use, one of the following issues is occurring:

- The projector is overheating internally. The projector can overheat because of blocked air vents or an internal temperature over 131°F (55°C).
- The temperature outside the projector is too high.

---

**To resolve the “Projector Overheated” error**

1. Turn off the projector, and then wait 15 minutes for it to cool down.
2. If your room is too hot, lower the ambient temperature if possible, perhaps by changing the thermostat setting.
3. Make sure that nothing is blocking the projector’s air intake and exhaust.
4. Disconnect the power cable from the power outlet. Wait a minimum of 60 seconds.
5. Reconnect the power cable, and then turn on the projector.
6. If the previous steps don’t resolve the issue, disconnect the power cable, and then contact your [authorized SMART reseller](#).

---

## The “Fan Failure” Message Appears

If the “Fan Failure” indicator message appears and the projector turns off during use, one or both of the following issues is occurring:

- The projector is overheating internally.
- One of the fans has failed.

---

**To resolve the “Fan Failure” error**

1. Follow the steps 1 to 5 of *To resolve the “Projector Overheated” error*.
  2. If the lamp doesn’t illuminate, turn off the projector and wait 15 minutes for it to cool down.
  3. Disconnect the power cable, and then contact your [authorized SMART reseller](#).
-

## The “Color Wheel Failure” Message Appears

If the “Color Wheel Failure” error message appears and the projector turns off during use, the projector has a color wheel issue.

---

### To resolve the “Color Wheel Failure” error

1. Turn off the projector, and then wait 15 minutes for it to cool down.
2. Disconnect the power cable from the power outlet. Wait a minimum of 60 seconds.
3. Reconnect the power cable, and then turn on the projector.
4. If the previous steps don’t resolve the issue, disconnect the power cable, and then contact your [authorized SMART reseller](#).

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## The “Lamp Failure” Message Appears

If the “Lamp Failure” indicator message appears and the lamp turns off during use or won’t turn on, one of the following issues is occurring:

- The lamp is over-heating. The lamp can overheat 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. Follow the steps 1 to 5 of *To resolve the “Projector Overheated” error*.
  2. If the lamp doesn’t illuminate, turn off the projector and wait 15 minutes for it to cool down.
  3. Disconnect the power cable.
  4. Replace your lamp according to the instructions on page 87.
  5. If the projector still doesn’t turn on or it continues to display the lamp error message, disconnect the power cable, and then contact your [authorized SMART reseller](#).
-

## The Ready Light Isn't Lit

If your Ready light isn't lit, 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 your unlit Ready light issue

1. Check the power source, and then make sure 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. Make sure the **Hide Display** feature on the remote is disabled. See page 23.
5. If the previous steps don't resolve the issue, disconnect the power cable and then contact your [authorized SMART reseller](#).

## Troubleshooting Standard Use Issues

Standard use issues may occur during the life of the projector due to normal projector wear or deliberate user changes to your system. These issues can also occur as a result of input equipment wear or other events such as power failures.

### Resolving Network Communication Issues

If you don't have network access, perform the following procedure to troubleshoot your system.

### To resolve network communication issues

1. Ensure that your network's RJ45 cable is properly connected to the modular cable connection on the projector's connection panel.
2. Ensure that the LAN warning light on the projector is green. To activate the LAN, use the "vgaoutnetenable=on" RS-232 command (see page 54) or the "Network and VGA out" projector menu option (see page 29). The network function won't work on the projector until you send one of these commands.
3. Check the IP address by pressing the **Menu** button, and then selecting the **Network Settings** menu. See page 29 for a description of the IP address field. Enter this IP address into your browser or SNMP agent.
4. If you still don't have network access, contact your network administrator. If they are unable to resolve the issue, contact your [authorized SMART reseller](#).

## Resolving Audio Issues

The projector doesn't have integrated speakers, but you can connect an audio system to the audio output connector in the projector's connection panel. If no sound is coming from your audio system, perform the following procedure.

### To resolve audio issues

1. Ensure that the speakers' or audio system's cables are properly connected to the audio output plug on the projector's connection panel.
2. Ensure that Audio Mute is off. Press the **Mute** button on the projector's remote control and, if Audio Mute is on, turn it off.
3. Check the ECP's volume knob or use the projector's remote control to ensure volume isn't set to the lowest position.
4. Ensure your speaker or audio system is on and that volume is enabled.
5. Check that your source input, such as your computer or video device, isn't malfunctioning, that its audio output is on and that its volume isn't set to the lowest position.
6. If the previous steps don't resolve the issue, contact your [authorized SMART reseller](#).

## Resolving Video Issues

If your projector has a frozen image, perform the following procedure.

### To resolve a frozen image

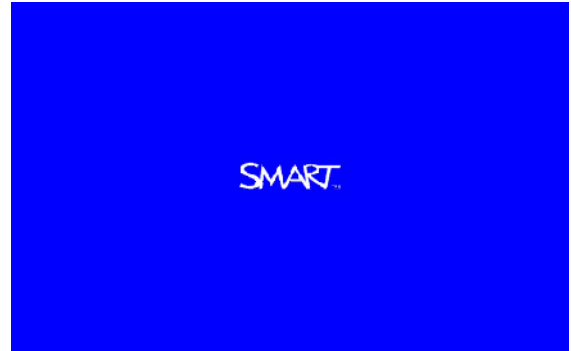
1. Ensure that the **Hide Display** feature is off. Press the **Hide Display** button on the projector's remote control to hide or show the display.
2. Ensure that your source device, such as your DVD player or computer, isn't malfunctioning.
3. Turn off the projector, and then wait 15 minutes for it to cool down.
4. Disconnect the power cord from the power outlet. Wait a minimum of 60 seconds.
5. Reconnect the power cord.
6. Restart the projector.
7. If the previous steps don't resolve the issue, contact your [authorized SMART reseller](#).

## Resolving Image Issues

Computers, peripherals, source inputs and their connection cables may not be set up correctly to transmit their signals to your SMART Board interactive whiteboard system. Refer to *Video Format Compatibility* on page 34 and the following section to help resolve these issues.

### Loss of Signal

If a visual source signal is lost or if 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.



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#### To resolve loss of signal issues

1. Wait approximately 45 seconds for the image to synchronize. Some video signals require a longer synchronization period.
  2. If the image doesn't synchronize, check your cable connections to the projector and the ECP.
  3. Make sure that the image signal is compatible with the projector (see page 34).
  4. If your projector still doesn't show a source signal, contact your [authorized SMART reseller](#).
-



### No Projected Image

If the projector displays no image at all, and the ECP, interactive whiteboard and projector power lights aren't on, perform the following procedure.

#### To resolve projected image issues

1. Ensure that the power cord is connected to the power outlet.
2. Ensure that your cables are correctly and securely connected as described in the included [SMART Board 600i4 and D600i4 Interactive Whiteboard System Installation Instructions](#).
3. Check the power cable and VGA connector pins to make sure they aren't bent or broken.
4. Ensure that the projector lamp is securely installed.
5. Confirm that your projector is turned on and that the projector status lights are illuminated. If the projector displays unusual status light behavior, see *Projector Ready Lights and Projector Status* on page 66 to troubleshoot your system.

### Partial, Scrolling or Incorrectly Displayed Image

#### NOTES

- The following procedure applies to Windows 95, Windows 98, Windows 2000 and Windows XP operating systems on desktop computers only.
- 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 **Settings**.
4. Verify that your display resolution setting is lower than or equal to 1024 × 768 (SMART UF65 projector) or 1280 × 800 (SMART UF65w projector).

#### IMPORTANT

If the projector still does not display the entire image, perform the following procedure to change the monitor display.

**To change the monitor display**

1. Click **Advanced Properties**.
  2. On the *Monitor* tab, click **Change**.
  3. Click **Show all devices**, and then select **Standard monitor types** from the list.
  4. In the *Models* list, select the resolution you need.
  5. Verify that the resolution setting of the monitor display is lower than or equal to 1024 × 768 (SMART UF65 projector) or 1280 × 800 (SMART UF65w projector).
- 

**Your Connected Laptop or PowerBook® Computer Image Isn't Projected**

Laptop and PowerBook computer settings can interfere with projector operations.

Some laptop computers deactivate their own screens when you connect a second display device. Refer to your computer's manual for details on reactivating the display screen.

**Unstable or Flickering Image**

If the projector's image is unstable or flickering, you may have different tracking settings set on your input source.



**IMPORTANT**

Write down your setting values before adjusting any of the settings in the following procedure.

---

**To resolve your unstable or flickering image**

1. Adjust the **Tracking** setting in the on-screen display. See page 24.
2. Change the tracking settings on your computer. Refer to your computer's manual for more information.
3. Optionally, reset the projector as described on page 76 to adjust your tracking to its original value.



**IMPORTANT**

This action resets all values to their defaults.

---

### Your Image Has a Vertical Flickering Bar

If the projector displays a vertical flickering bar, you may have different frequency settings set on your input source.

 **IMPORTANT**

Write down your setting values before adjusting any of the settings in the following procedure.

#### To resolve the vertical flickering bar issue

1. Adjust the **Frequency** setting in the on-screen display. See page 24.
2. Check the display mode of your computer's graphics card. Make sure it matches one of the projector's compatible signal formats (see page 34). Refer to your computer's manual for more information.
3. 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.
4. Optionally, reset the projector as described on page 76 to adjust your frequency to its original value.

 **IMPORTANT**

This action resets all values to their defaults.

### Unaligned Projected Image

Like all mechanical systems, the SMART UF65 or SMART UF65w projector's image may slip if it 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 misaligned:

- Make sure that the installation wall is plumb, square and doesn't move or vibrate excessively.
- Make sure that there are no obstructions behind the projector's wall mount bracket, and that it's firmly secured to the wall according to the installation instructions.
- Make sure that the wingnut on the top of the projector's ball joint is tight.
- Confirm that all cables are held in place with the appropriate cable clip.
- Adjust the projected image. See the included [SMART Board 600i4 and D600i4 Interactive Whiteboard System Installation Instructions](#) and the tips on page 16.

## 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 whiteboard system.
- Do not adjust any settings in the service menu other than those listed in the following procedures. Changing other settings might damage or affect the operation of your projector and invalidates 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 web page's password settings menu (see page 62).

#### 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** and **Up**.
2. Scroll to the *Password Get* field, and then press **Enter** on the remote control.  
The password appears on the screen.
3. Record the password.
4. Scroll to the *Exit* field, and then press **Enter** on the remote control to exit the projector service menu.

### Resetting the Projector

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

### IMPORTANT

This option 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** and **Up**.
2. Scroll to the *Factory Reset* field, and then press **Enter**.
3. Scroll to the *Exit* field, and then press **Enter** to exit the projector service menu.

## Chapter 6

# Maintaining Your Interactive Whiteboard System

This chapter includes methods for preventing damage to and properly cleaning your SMART Board 600i4 or D600i4 interactive whiteboard system.

- *Preventing Damage to Your Interactive Whiteboard* on page 78
- *Keeping the Writing Surface Clean* on page 78
- *Cleaning the Pen Tray* on page 79
- *Cleaning the SMART UF65 or SMART UF65w Projector* on page 80
- *Transporting Your Interactive Whiteboard System* on page 85
- *Contacting SMART Technical Support* on page 85

## Preventing Damage to Your Interactive Whiteboard

Although your SMART Board interactive whiteboard's surface is very durable, take the following precautions to prevent damage to the interactive screen and other components.

- Don't use sharp or pointed objects, such as ballpoint pens or pointers, as writing tools.
- Don't use abrasive erasers or harsh chemicals when cleaning your product.
- Don't leave adhesive tape on the writing surface for extended periods. Lifting the tape might remove the coating on your interactive whiteboard's screen.
- Don't set up and use your interactive whiteboard in an area with excessive levels of dust, humidity or smoke.

## Keeping the Writing Surface Clean



### IMPORTANT

Before you clean your interactive whiteboard, shut down your computer or disconnect the USB cable from your interactive whiteboard so that you do not scramble the desktop icons or inadvertently activate applications when you wipe your interactive whiteboard's screen.

With proper care, your SMART Board interactive whiteboard will provide years of trouble-free service. Follow these tips to keep the screen surface clean:

- Don't use dry-erase markers, which can be very difficult to remove.
- If you use dry-erase markers, erase the ink as soon as possible after use. The longer dry-erase ink stays on your interactive whiteboard's surface, the more difficult it is to remove.
- If erasing doesn't completely remove dry-erase ink, clean the writing surface with a household glass cleaner, such as Windex®, daily, weekly or as required.
- Remove excess dry-erase dust with a damp, lint-free cloth before using a cleaner.
- Use dry-erase marker cleaner, such as Expo® dry-erase cleaner, if you can still see marks after using a household glass cleaner.
- Don't spray cleaner directly onto the screen's surface. Instead, spray a light amount of cleaner on a cloth and then gently wipe the screen.
- Don't allow excess glass or whiteboard cleaner to flow into the crack between the lower frame and the writing surface, or into the pen tray recesses.
- Use isopropyl alcohol to remove stubborn stains and ghosting.

**TIP**

For information on disinfecting your interactive whiteboard, see [Disinfecting Your SMART Board Interactive Whiteboard](#).

## Removing Permanent Marker Ink Stains

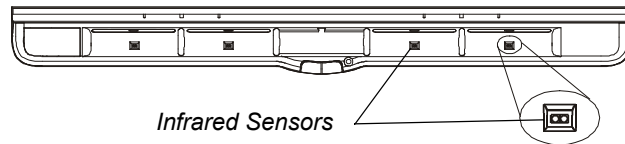
You can use a high-odor dry-erase marker to remove marks from a permanent marker, because dry-erase ink contains solvents that can remove permanent ink. Cover the permanent ink with the dry-erase ink, and then wipe with a lint-free soft cloth while the ink is still wet. If any trace of the ink remains, spray a lint-free cloth with a glass or whiteboard cleaner, and then wipe the area clean.

**TIP**

When removing permanent marker ink, don't use low-odor or non-scented dry-erase markers, which don't contain the appropriate solvents.

## Cleaning the Pen Tray

If the infrared sensors in the bottom of the pen tray's recesses become obstructed by dirt, the sensors won't detect when you remove a pen or the eraser. The recessed LED indicators won't illuminate, and the lifted tool won't work.



To clean a sensor, moisten a cotton swab with a household glass cleaner, such as Windex, and then carefully clean the infrared transmitter and receiver.

**NOTE**


There are no user-serviceable parts inside the pen tray. Only qualified personnel should disassemble the pen tray. If dust or a small object prevents you from pressing a button, or causes a button to stick, remove the object carefully.

## Cleaning the SMART UF65 or SMART UF65w Projector

### **WARNING**

Cleaning a boom-mounted projector may result in a fall and injury. Use caution when climbing a ladder.

### **CAUTION**

- Before you clean the SMART UF65 or SMART UF65w projector, press the **Power**  button twice on the ECP or remote control to put the system into Idle mode, and then allow the lamp to cool for 30 minutes.
- Do not spray cleaners, solvents or compressed air near any part of the projector, since 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.

### **IMPORTANT**

Follow these guidelines to clean the projector:

- Wipe the exterior of the projector using 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.
- Avoid touching the lens. If it is necessary to clean the lens:
  - Use liquids or commercial solvents (such as glass cleaners) to clean the lens, but do not spray them directly on the system.
  - Use protective gloves and dip a lint-free cloth (such as Purestat® PW2004) in an anti-static solvent (such as Hyperclean® EE-6310).
  - Gently wipe the lens from the center to the edge.



## Cleaning the Lamp Module and Projector Vents

This section provides instructions for using a vacuum cleaner to remove accumulated dust from the SMART UF65 or SMART UF65w projector's lamp module, vents and slots. SMART recommends cleaning your projector every 12 months.

To clean the projector you must:

- access the lamp module (page 81)
- vacuum the lamp module and projector vents (page 83)
- replace the lamp module and lamp cover (page 84)

You require a Phillips No. 2 screwdriver to perform the following procedure.

### WARNING

- Read the warnings and other important information at the beginning of this document before attempting this procedure.
- Disconnect the power to the projector before performing the following procedure.


### NOTE

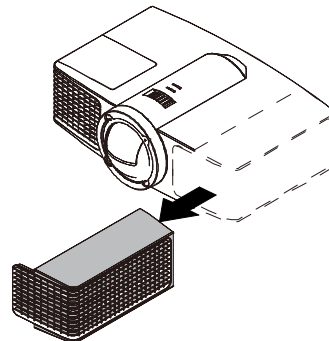
You may find the following procedures easier if you remove the projector from the boom (see *To remove the projector from the boom* on page 88).

### Accessing the Lamp Module

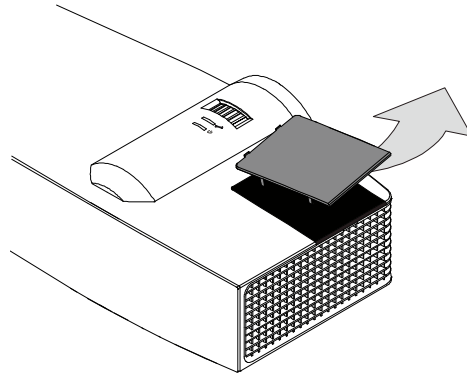
To access the lamp module, remove the lamp cover, and then remove the lamp from the projector.

#### To remove the lamp cover and lamp module

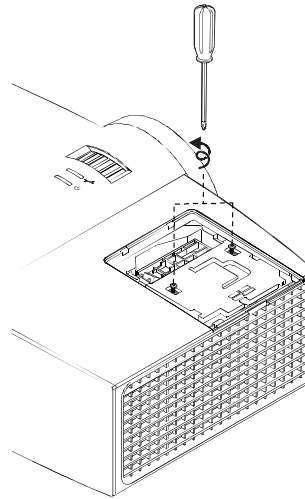
1. Turn off the projector by pressing the **Power**  button twice on the remote control or ECP to put the system into Idle mode.
2. Wait at least 30 minutes for the projector to completely cool down, and then disconnect the power cable from the power outlet.
3. Remove the cable cover, and then disconnect all cables from the projector.



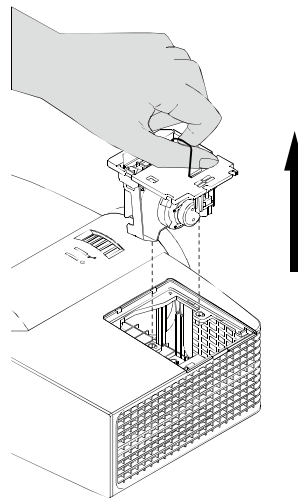
4. Pull off the outer lamp cover with your finger and set it aside.



5. Using a Phillips No. 2 screwdriver, loosen the two screws on the inner lamp module. The screws remain captive inside the lamp module.



6. Pull up on the lamp module's handle, and then remove the lamp.



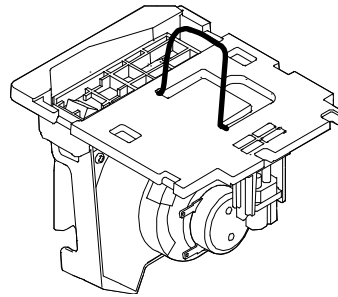
7. Gently place the lamp module on your work area with the handle facing downward.

### Vacuuming the Lamp Module and Projector Vents

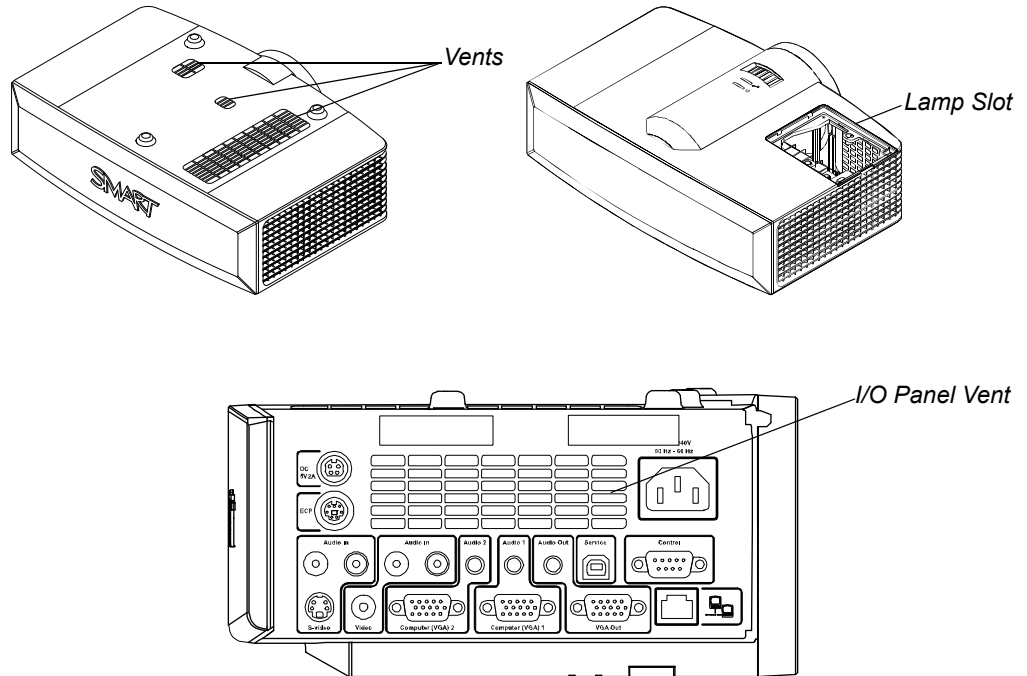
After you remove the lamp cover and lamp module, vacuum the lamp module and projector vents.

#### To vacuum the lamp module and projector vents

1. Use a vacuum cleaner to thoroughly vacuum each side of the lamp module for 10 seconds.



2. Thoroughly vacuum the three top vents, the lamp slot and the I/O panel vent on the projector as indicated in the following images for 10 seconds each.

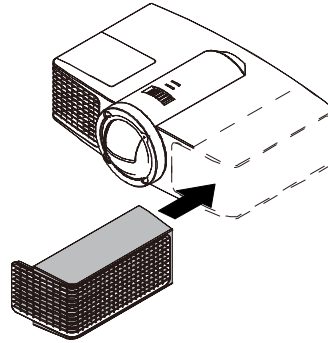



### Replacing the Lamp Module and Lamp Cover

After you vacuum the lamp module and projector vents, replace the lamp module and cover, and then reconnect the cables, attach the cable cover and turn on the projector.

#### To replace the lamp module and lamp cover

1. Place the lamp module back in the lamp slot, push the lamp all the way down, and then tighten the lamp locking screws until they're secure.
2. Replace the outer lamp cover.
3. Connect all cables to the projector, and then attach the cable cover.



4. Connect the power cable to a power outlet.
5. Confirm that the projector is operating and that the lamp module is correctly installed by pressing the **Power**  button once on the remote control or ECP, and then waiting for the projector to turn on completely.

The ECP's power light turns solid green when the system starts.

6. Wait five minutes for the projector to warm up.
7. If you removed the projector from the boom, replace it (see *To replace the projector on the boom* on page 91).

#### NOTE

You may need to adjust the projected image after performing the previous procedures. For more information, see the included [SMART Board 600i4 and D600i4 Interactive Whiteboard System Installation Instructions](#) and the tips on page 16.

## Transporting Your Interactive Whiteboard System

Save your original SMART Board 600i4 or D600i4 interactive whiteboard system packaging so that it's available if you need to transport your interactive whiteboard system. When required, repack it with as much of the original packaging as possible. This packaging was designed with optimal shock and vibration protection. If your original packaging is no longer available, purchase the same packaging directly from your [authorized SMART reseller](#).

If you prefer to use your own packaging materials, make sure you adequately protect your unit. Ship your interactive whiteboard in an upright position to deter shippers from placing heavy objects on it.

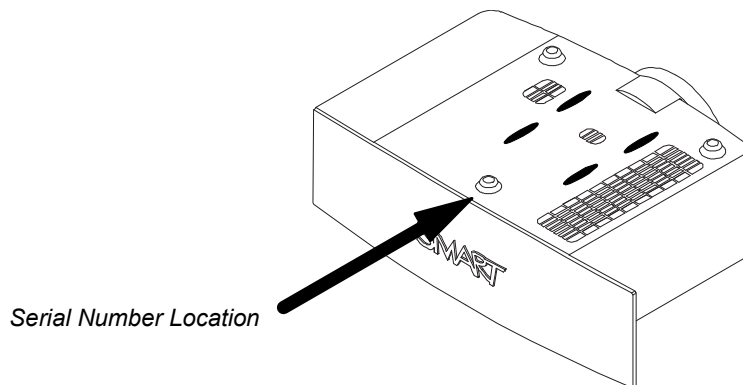
## Contacting SMART Technical Support

See Appendix B: *Customer Support* on page 101 for technical support contact information.

Before contacting SMART Technical Support, make note of the projector's serial number, and then write it down on the inside cover of this manual (if you printed it).

### Locating Your Projector Serial Number

The serial number on the SMART UF65 or SMART UF65w projector is located on the top mounting plate (the side away from the projector's lens).



You can also access the serial number through the projector's on-screen menu. For more information, see "Serial Number" on page 30.



## Chapter 7

# Replacing the SMART UF65 or SMART UF65w Projector Lamp

This chapter provides detailed instructions for replacing the projector's lamp.

- *Removing and Replacing the Projector Lamp Module* (this page)
- *Resetting the Lamp Timer* on page 94

## Removing and Replacing the Projector Lamp Module

If a lamp fails, or if a replacement message appears on the SMART UF65 or SMART UF65w projector's screen, a qualified person can replace the projector lamp module.

### **WARNING**


- Read the warnings and other important information at the beginning of this document before attempting this procedure.
- Disconnect the power to the projector before performing the following procedure.
- Two people are required to remove the projector from the boom.

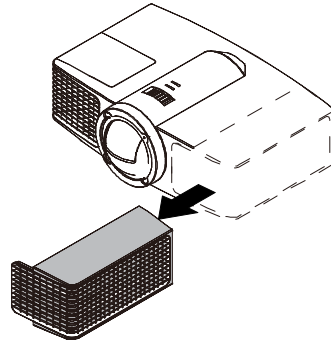
### **IMPORTANT**

Make sure that you have a replacement projector lamp ready before accessing the service panel.

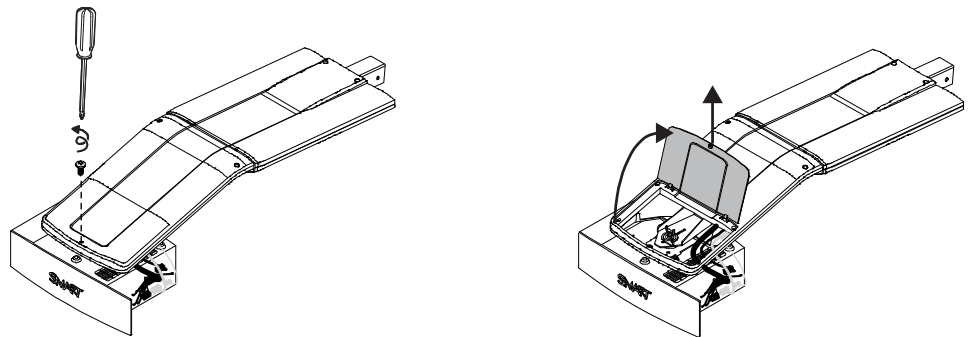
You require a Phillips No. 2 screwdriver to perform the following procedures.

**To remove the projector from the boom**

1. Turn off the projector by pressing the **Power**  button twice on the remote control or ECP to put the system into Idle mode.
2. Wait at least 30 minutes for the projector to completely cool down, and then disconnect the power cable from the power outlet.
3. Remove the cable cover, and then disconnect all cables from the projector.



4. While firmly holding the projector, and without applying pressure or weight to the projector boom, remove the screw holding the projector cover in place with a Phillips® No. 2 screwdriver, and then remove the cover. Place the cover and screw in a safe place.



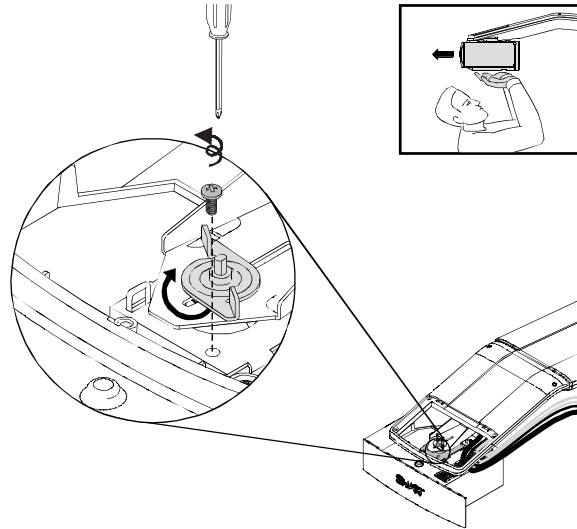
5. If you use a projector padlock, remove it from the locking loop. If you need to access the projector locking screw, loosen the wingnut and slide the projector away from your interactive whiteboard's screen, and then tighten the wingnut.



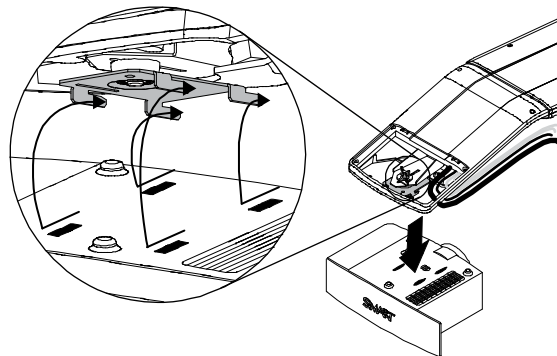
- Using a Phillips No. 2 screwdriver, remove the single screw on the bracket. Place the screw in a safe place.

**▲ CAUTION**

The projector can fall if you move it after you remove this screw.



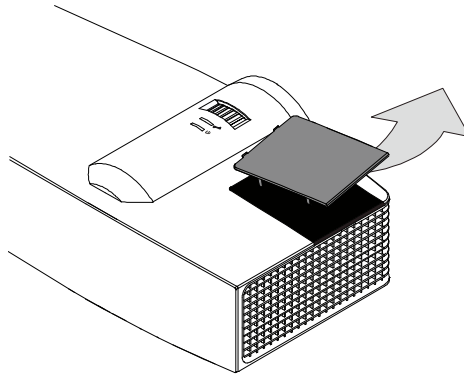
- Using two hands, carefully unhook and remove the projector from the projector boom.



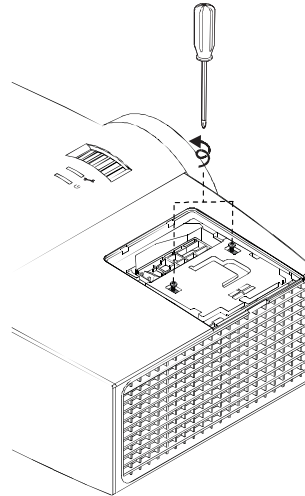
- Lay the projector flat on your work area with the warning lights facing upward.
-

**To remove and replace the projector lamp module**

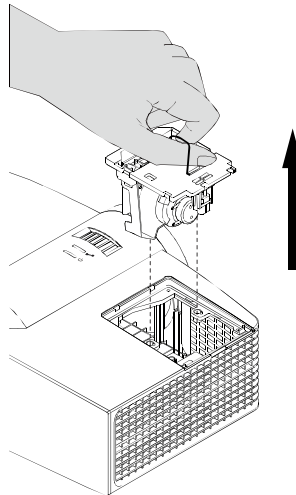
1. Remove the outer lamp cover with your finger and set it aside.



2. Using a Phillips No. 2 screwdriver, loosen the two screws on the inner lamp module. The screws remain captive inside the lamp module.



3. Pull up on the lamp module's handle, and then remove the lamp.



- Put the old lamp in a secure container. Handle the old lamp gently until you recycle or dispose of it.



**IMPORTANT**

Recycle or dispose of the lamp module according to your local waste authority.

- Remove the replacement lamp module from its packaging.



**CAUTION**

Do not touch any part of the lamp module except the housing.

- Place the replacement lamp module in the lamp slot, push the lamp all the way down, and then tighten the lamp locking screws until they're secure.
- Replace the outer lamp cover.

---

When you've replaced the lamp module and lamp cover, replace the projector on the boom.



**WARNING**

Two people are required to replace the projector.

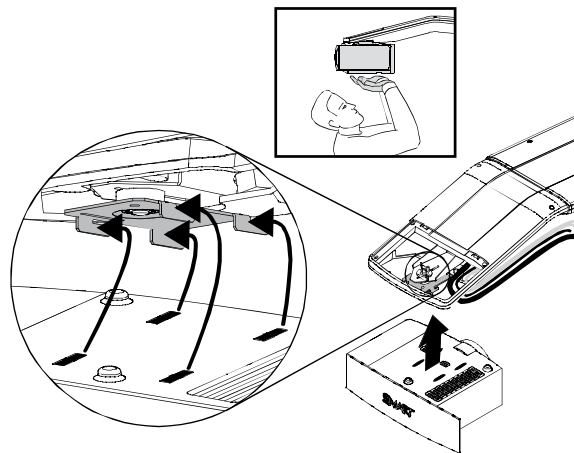
**To replace the projector on the boom**

- Using two hands, put the projector back on the boom by aligning the hooks with the slots on the projector.



**CAUTION**

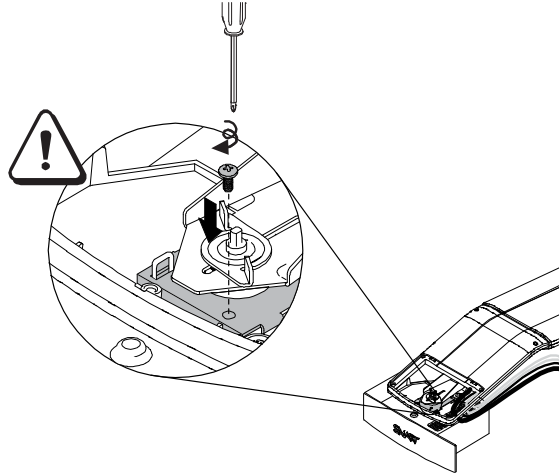
Hold the projector firmly when reattaching it to the boom.



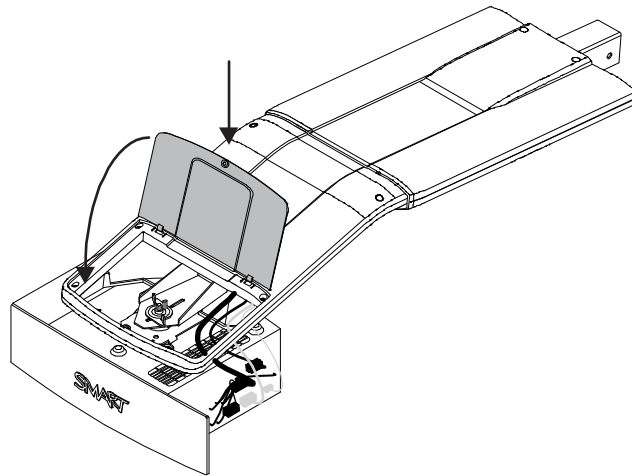
- Secure the projector to the plate with the screw that you retained when you removed the projector from the boom.

**⚠ WARNING**

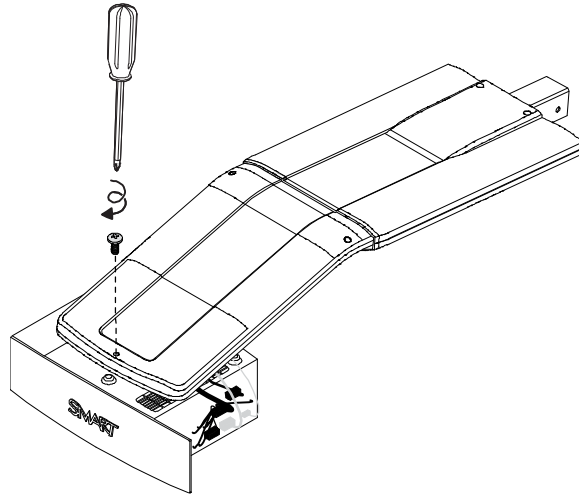
Be sure to replace this screw. Without it, the projector can fall from the boom causing personal injury or damage to the projector.



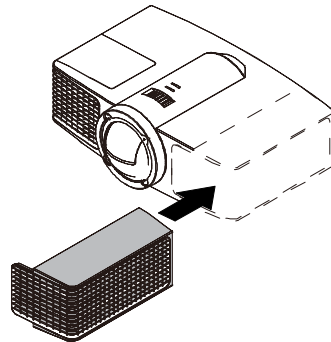
3. If applicable, replace your optional projector padlock.
4. Replace the projector cover on the top of the boom.




5. Without applying pressure to the boom, replace and tighten the cover screw until it's secure.



6. Connect all cables to the projector, and then attach the cable cover.



7. Connect the power cable to a power outlet.
8. Confirm that the projector is operating and that the lamp module is correctly installed by pressing the **Power**  button once on the remote control or ECP, and then waiting for the projector to turn on completely.

The ECP's power light turns solid green when the system starts.

9. Wait five minutes for the projector to warm up.

---

** NOTE**

You may need to adjust the projected image after performing the previous procedures. For more information, see the included [SMART Board 600i4 and D600i4 Interactive Whiteboard System Installation Instructions](#) and the tips on page 16.

## Resetting the Lamp Timer

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

 **NOTE**

Always reset the Lamp Hours after you exchange a lamp. Lamp service reminders are based on the current hours of use.

**To reset the lamp timer**

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

 **CAUTION**

Do not adjust any settings in the service menu other than those listed in this procedure. Changing other settings might damage or affect the operation of your projector and will invalidate your warranty.

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

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

 **CAUTION**

Do not use the Lamp Hour Reset feature unless you have just replaced the lamp. Resetting the lamp hour counter on an old lamp might damage your projector due to lamp failure.

 **NOTE**

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 UF65 Settings* menu appears.

4. Select  to confirm that Lamp Hours has been reset to zero.

Your system is ready for use.

## Appendix A

# Disabling USB Communications

## Disabling the ECP's USB Port

In some situations, you may need to disable the ECP's front USB port. Disabling the USB port prevents users from using or saving documents to USB storage devices using the ECP's front USB receptacle. The other USB receptacles won't be deactivated since they're required for your interactive whiteboard and computer connections to function.

Follow these instructions to remove and cut the case on the ECP, and then remove the USB jumper switch to disable the ECP's USB Port.



### **CAUTION**

Always use an anti-static wrist wrap when working on the ECP.



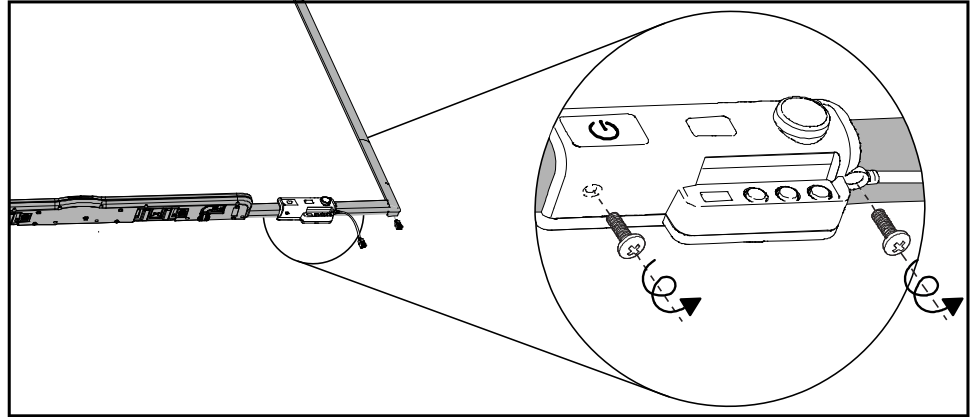
### **IMPORTANT**

Do not perform this operation if you are unfamiliar with using jumper switches.

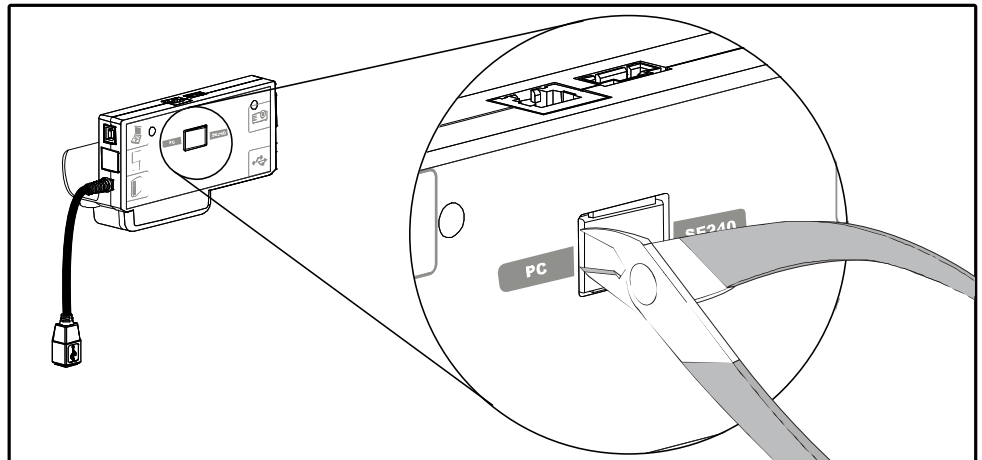
You require a Phillips No. 2 screwdriver, a pair of wire-cutters and a pair of needle-nose pliers to perform the following procedure.

**To remove and cut the case on the ECP**

1. Turn off the projector, and then wait 15 minutes for it to cool down.
2. Disconnect the projector's power cable from the power outlet.
3. While holding the ECP to prevent it from falling, use a Phillips screwdriver to remove the two screws from the bottom of the ECP. Place the screws in a safe place.



4. Remove all cables connected to the ECP.
5. Locate the jumper cover between the "PC" and "SE240" labels on the side of the ECP that faces the wall.
6. Using a pair of wire cutters, cut through the two tabs on the jumper cover and remove it from the ECP. Keep the jumper cover in a safe place.



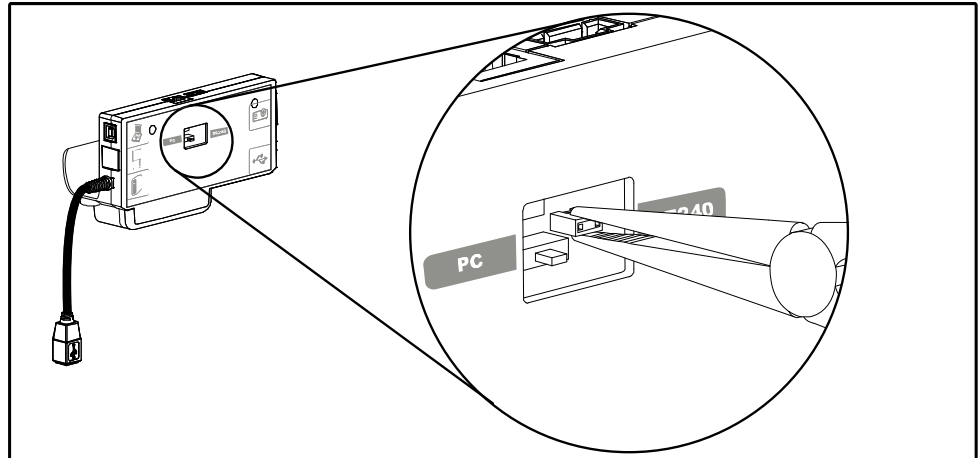


**To remove the USB jumper switch**

1. Locate the USB jumper behind the jumper cover port.
2. Using needle-nose pliers, pull the jumper from the two connection posts, and then place it on a single post.

**IMPORTANT**

Do not discard the jumper. Discarding the jumper makes the USB deactivation difficult to reverse.



3. Insert the USB jumper cover into the USB A port on the front of the ECP.
4. Connect all cables to the ECP. See page 32 for more information.
5. Secure the ECP to your interactive whiteboard with the two screws you removed previously.
6. Connect the projector's power cable to the power outlet.



## Appendix B

# 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 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.

## 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.

## 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.

## *U.S. Consumer Product Safety Improvement Act*

The United States has enacted the *Consumer Product Safety Improvement Act* which limits the lead (Pb) content in products. SMART Technologies is committed to complying with this initiative.

## Appendix C

# Customer Support

## Online Information and Support

Visit [www.smarttech.com/support](http://www.smarttech.com/support) to view and download user's guides, how-to and troubleshooting articles, software and more.

## Training

Visit [www.smarttech.com/trainingcenter](http://www.smarttech.com/trainingcenter) for training materials and information about our training services.

## Technical Support

If you experience difficulty with your SMART product, please contact your local reseller before contacting SMART Technical Support. Your local reseller can resolve most issues without delay.

### NOTE

To locate your local reseller, visit [www.smarttech.com/where](http://www.smarttech.com/where).

All SMART products include online, telephone, fax and e-mail support:

Online	<a href="http://www.smarttech.com/contactsupport">www.smarttech.com/contactsupport</a>
Telephone	+1.403.228.5940 or Toll Free 1.866.518.6791 (U.S./Canada) (Monday to Friday, 5 a.m. – 6 p.m. Mountain Time)
Fax	+1.403.806.1256
E-mail	<a href="mailto:support@smarttech.com">support@smarttech.com</a>

## Shipping and Repair Status

Contact SMART's Return of Merchandise Authorization (RMA) group, Option 4, +1.866.518.6791, for shipping damage, missing part and repair status issues.

## General Inquiries

Address SMART Technologies  
3636 Research Road NW  
Calgary, AB T2L 1Y1  
CANADA

Switchboard +1.403.245.0333 or  
Toll Free 1.888.42.SMART (U.S./Canada)

Fax +1.403.228.2500

E-mail [info@smarttech.com](mailto:info@smarttech.com)

## Warranty

Product warranty is governed by the terms and conditions of SMART's "Limited Equipment Warranty" that shipped with the SMART product at the time of purchase.

## Registration

To help us serve you, register online at [www.smarttech.com/us/Product+Registration](http://www.smarttech.com/us/Product+Registration).

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