

Configuration and User's Guide

SMART Board™ 600i2
Interactive Whiteboard System

SMART[™]

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

Register online at www.smarttech.com/registration.

Keep the following information available, in case you need to contact Technical Support:

Serial Number _____

Date of Purchase _____

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Patent No. US5448263; US6141000; US6320597; US6326954; US6337681; US6540366; US6741267; US6747636; US7151533; US7289113; US7283126; and CA2058219. Other patents pending.

Important Information

Read This Section First

IMPORTANT

SMART Technologies frequently updates this document to provide accurate support. For the most recent version of this document, see ([document 118924](#)) on the [SMART Technical Support website](#).

NOTE: If you own a SMART product other than a SMART Board™ 600i2 interactive whiteboard system, refer to the installation guide that came with your product for relevant warnings and maintenance instructions.

In this document, “SMART Board 600i2 interactive whiteboard system” refers to the SMART Board 600 series interactive whiteboard and its Unifi™ 45 projector, accessories and optional equipment. Read the safety warnings and precautions that came with the peripheral products, such as the interactive whiteboard and additional SMART accessories.

Before you install and use the SMART Board 600i2 interactive whiteboard system, read and understand the safety warnings and precautions in this *SMART Board 600i2 Interactive Whiteboard System's Installation Guide* ([document 118923](#)) and the *Important Information Warnings Document* ([document 124023](#)). These safety warnings and precautions describe the safe and correct operation of the SMART Board 600i2 interactive whiteboard system and its accessories, helping you prevent injuries and equipment damage. You must always ensure that the interactive whiteboard system is being used correctly.

The Unifi 45 projector included with your SMART Board 600i2 interactive whiteboard system is designed to work only with certain SMART Board interactive whiteboard models. Contact your [authorized SMART reseller](#) for more information.

Safety Warnings

WARNING



- Make sure that an electrical socket is near to your SMART Board product and remains easily accessible during use.
- Ensure that any cables extending across the floor to your SMART Board product are properly bundled and marked to prevent a trip hazard.
- Failure to follow the installation instructions shipped with your SMART Board product could result in personal injury and damage to the product.
- You must connect the USB cable that came with your SMART Board interactive whiteboard to a computer that has a USB compliant interface and that bears the USB logo. In addition, the USB source computer must be compliant with CSA/UL/EN 60950 and bear the CE mark and CSA and/or UL Mark(s) for CAS/UL 60950. This is for operating safety and to prevent damage to the SMART Board interactive whiteboard.
- To reduce the risk of fire or electric shock, do not expose any component of your SMART Board interactive whiteboard system to rain or moisture.
- Refer to the safety warnings and precautions published by the projector manufacturer. Do not stare (or allow children to stare) directly into the projector's beam of light.
- Do not stand (or allow children to stand) on a chair to touch the surface of your SMART Board product. Rather, wall-mount the product at the appropriate height or use a SMART height-adjustable floor stand.
- Do not climb (or allow children to climb) on any part of your wall-mounted SMART Board interactive whiteboard system.
- Do not climb on, hang from or suspend objects from the Unifi 45 projector's arm.
- To attach the wall tether, use the appropriate hardware for your wall type. Failure to do so could result in injury if the unit detaches from the wall.
- Climbing on the interactive whiteboard or projector arm could result in personal injury or product damage.
- Do not attempt to service the projector other than performing routine lamp replacement and cleaning the mirror. Service should be performed only by an authorized service provider. Other than the lamp module, there are no user serviceable parts inside the unit.
- Do not remove any screws other than those specified in the lamp replacement instructions.
- Do not stare into the beam of light created by the projector. Instruct children not to look in the direction of, or stare at, 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.
- Tell users not to touch the head or lens of the projector, as it can become extremely hot during normal operation.



WARNING

- If the projector is mounted on the arm, the manufacturer recommends contacting your [authorized SMART reseller](#) when the lamp must be exchanged.
- Only qualified personnel should replace the projector lamp. Replacing the lamp in a arm-mounted projector might result in a fall and injury.
- If you continue to use the projector after the replacement message appears, the lamp might shatter or burst, scattering glass throughout the projector head.
- If the lamp has shattered or burst, do not touch the glass fragments because they might cause injury. Leave and then ventilate the area where the lamp shattered or burst. Wash your hands thoroughly if you have come into contact with lamp debris. Thoroughly clean the area around the projector, and discard any edible items placed in that area because they might be contaminated.
- If the lamp has shattered or burst, call a [SMART authorized service representative](#) for instructions. Do not attempt to replace the lamp.
- Remove the projector from the arm before servicing the lamp.
- Complete the procedure described in this document before following the instructions included in your replacement lamp box.
- Uncovering the lamp while the projector is mounted on an arm might lead to product damage or personal injury from falling pieces of glass if the lamp is broken.
- Turn the projector off and wait 15 minutes for the lamp to cool completely before removing the old lamp assembly.
- Wear protective eyewear while changing the lamp. Failure to do so can cause injury or loss of eyesight if the lamp shatters or bursts.
- The lamp used in the Unifi 45 projector contains mercury. Recycle or dispose of it as hazardous waste, in accordance with local regulations.
- 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.
- Use only the SB20 replacement lamp (SMART Part No. 01-00247).
- Never replace the lamp assembly with a previously used lamp assembly.
- When mounting the projector on a framed wall, you must attach both the mounting bracket and safety tether to a stud to safely support the projector's weight. If you only use drywall anchors, the drywall can fail, resulting in product damage and possible personal injury.
- If the two screws supporting the safety tether are removed, the projector boom will be free to swing. Make sure that these two screws are tightened and never remove them from the unit without supporting the projector arm first.
- Two people are required to mount the projector and the interactive whiteboard on a wall because they might be too heavy for one person to maneuver onto their wall-mounting brackets.
- Cleaning a arm-mounted projector may result in a fall and injury.

CAUTION

- Never 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 may condense on the lens and crucial internal parts. Allow the system to stabilize to room temperature before operation to prevent the unit from possible damage.
- In a high altitude location where air is thin, cooling efficiency is reduced so use the projector with fan mode set to High.
- Do not place in hot locations, such as near heating equipment. Doing so could cause a malfunction and shorten the life of the projector.
- Before you clean the Unifi 45 projector, turn off the power button switch on the projector, not the ECP, and allow bulb to cool. Depressing the ECP button at this time would cause the projector to start back up.
- Do not allow liquids or commercial solvents of any kind to flow into the projector base or head. Do not use spray cleaners or solvents near any part of the projector, as it may damage or stain the unit.
- Cycling power to the projector repeatedly can lock or damage the interactive whiteboard system. Allow at least 15 minutes for cooling before sending the ON command after turning off the system.
- After you turn the system off, wait until the system cools completely before turning the system on again. Avoid cycling the system off and on.
- Do not connect your serial cable directly to the projector's RS-232 serial interface. The extended control panel's (ECP's) RS-232 serial interface is the only recommended connection point.

IMPORTANT

- Using the Unifi 45 projector system near a TV or radio may cause interference to the images or audio sound. If this happens, move the TV or radio away from the projector.
- Securing the pen tray can provide theft deterrence for the interactive whiteboard as well. The screws that secure the interactive whiteboard to the wall are located directly behind the pen tray. The pen tray must be removed before you can remove the interactive whiteboard. When you secure the pen tray, you also secure the interactive whiteboard.
- Install your host computer's video output directly to your Unifi 45 projector and not to the ECP. The VGA connector on the ECP is then available for a guest computer connection, such as a laptop. If you will not have guest computers, you can use the VGA connector on the ECP instead.
- Only use the input marked "Computer 2" on your projector to connect the ECP harness cable.
- The 600i2 interactive whiteboard system does not have speakers. Consult your [authorized SMART reseller](#) to determine your audio output options.
- If you have peripheral devices that do not use a 4-pin mini-DIN connectors or an RCA composite video jack, or if your device has an audio connection that does not use RCA jacks, you might need to purchase third-party adapters.
- After you resolve your projector's issue, you must turn your projector's main power switch off and on again to clear the indicator light sequence and reset your projector's status.

Other Precautions

To ensure operating safety and to avoid product damage, observe the following precautions.

- Do not set up or use the interactive whiteboard in an area with excessive levels of dust, humidity and smoke.
- Do not add extra weight or apply pressure to the Unifi 45 projector arm, the wall-mounted interactive whiteboard or its pen tray. SMART Technologies designed the brackets to support only the weight of the components during normal use.
- To reduce the risk associated with leaking batteries:
 - use only AA type batteries
 - do not mix used and new batteries
 - orient the battery's plus (+) and minus (-) terminals according to the markings found on the remote control
 - do not leave the batteries in the remote control for an extended period
 - do not heat, disassemble, short or recharge the batteries, or expose them to fire or high temperature
 - avoid eye and skin contact if batteries have leaked
 - dispose of exhausted batteries and product components in accordance with applicable regulations
- If the interactive whiteboard system requires replacement parts, make sure the service technician uses replacement parts specified by SMART Technologies, or parts with the same characteristics as the original.

Transporting the SMART Board 600i2 Interactive Whiteboard System

If you need to ship any part of your SMART Board 600i2 interactive whiteboard system, repack it with the original packaging. If the original packaging is no longer available, you may purchase replacement packaging from your [authorized SMART reseller](#).

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

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About Your 600i2 Interactive Whiteboard System

In This Chapter

The SMART Board 600i2 interactive whiteboard system combines the SMART Unifi 45 wall mounted short-throw projector with a SMART Board 600 series interactive whiteboard. These topics describe the components and accessories you can use with your SMART Board 600i2 interactive whiteboard system.

- SMART Board 600i2 Interactive Whiteboard System Features
 - Interactive Whiteboard Features
 - Unifi 45 Projector System Features
- Standard Accessories
 - ECP and Cable
 - Remote Control
 - Pen Tray Tools
 - Eraser
- Optional Accessories
 - Height Adjustable Wall Mount (HAWM-600i3)
 - Mobile Floor Stand (FS600i3)
 - USB Speakers (SBA)
 - GoWire™ SMART Board Software Auto-launch Cable (USB-GW)
 - Active USB Extension Cables (USB-XT)
 - Wireless Bluetooth® Connection (WC6)
 - Cat 5 USB Extender (CAT5-XT)
 - Serial Conversion Module (RS-232)

SMART Board 600i2 Interactive Whiteboard System Features

The SMART Board 600i2 interactive whiteboard system uses the Unifi 45 short throw, high-offset projector. Although the basic operation is the same as in earlier models, SMART has made many improvements to make the SMART Board 600i2 interactive whiteboard system easier to install, use, service and upgrade.



When the Unifi 45 projector displays an image from a computer onto the touch-sensitive interactive whiteboard, you can draw over the image in digital ink using a pen tray pen or your finger. 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 the system with a computer, you can do everything you can do at a computer workstation—open files, conference with others, work on documents, visit websites, play video clips and more—simply by touching the screen.

When you use SMART Notebook software with your 600i2 interactive whiteboard system, you can write over any Ink Aware application in digital ink using a pen tray pen or your finger and then save these notes to a Notebook file for future reference and distribution.

Interactive Whiteboard Features

The SMART Board 600 series interactive whiteboard includes many features of other SMART Board interactive whiteboards, such as a resistive touch screen and a pen tray. The SMART Board 600 series performs best with the Unifi 45 projector because of its exceptional color performance and input response.

Other features of the interactive whiteboard include:

- a SMART Pen Tray that automatically detects when you pick up a pen tray pen or the eraser
- pen tray buttons that activate Help functions and, when used with a computer, activate the on-screen keyboard and right-click functions
- a durable hard-coated polyester surface that is tear proof, optimized for projection and compatible with dry-erase markers, and that cleans easily with whiteboard cleaner
- a standard USB interface to connect the SMART Board interactive whiteboard to the host computer
- a security device to prevent theft of the pen tray or the interactive whiteboard



Unifi 45 Projector System Features

The Unifi 45 projector system includes a short-throw projector for use with SMART Board 600 series interactive whiteboards, an extended control panel (ECP) and a sturdy support system for classroom environments. The features of the projector system include:

- a wall-mounted, high-offset TDP-SB20 projector engine that uses DLP® technology by Texas Instruments™ and provides quality Gamma 2.2 correction with Bright, Standard and True Color modes
- safety-oriented design that includes a boom support with a controlled-collapse feature
- PAL, PAL-B, PAL 60, PAL-N, PAL-M, SECAM, NTSC, NTSC 4.43 video system compatibility
- composite, S-video and VESA RGB video interface compatibility (with interface support for component YPbPr/YCbCr input with proper adaptors, not included)
- QVGA, VGA, SVGA, XGA, SXGA, SXGA+, UXGA video format compatibility
- native 1024 × 768 resolution
- serial RS-232 interface on the ECP for connecting a room control system
- self-protection timer for hot re-strike of projector lamp
- an accessible extended control panel, which includes the following receptacles: VGA input, S-video receptacle, composite video jack, stereo 3.5 mm audio input and stereo RCA jacks
- protected cable routing through the projector housing and a cable cover to prevent tampering and clutter
- a secure mounting and installation system that includes:
 - optional security screws on the projector plate and an optional lockable ring for the tilt knob
 - mounting hardware for solid masonry or hollow framed and masonry wall installations
 - templates and instructions for positioning the system in a safe manner



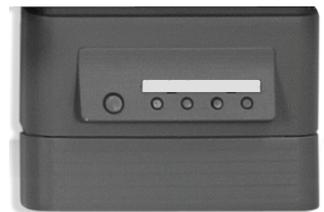
Standard Accessories

SMART provides the following accessories with your SMART Board 600i2 interactive whiteboard system. If you need to purchase replacements, contact your [authorized SMART reseller](#).

ECP and Cable

The new interactive whiteboard system ECP features connectors for three inputs and control for four inputs, including the direct HD-DB15 RGB connection to the projector. Direct inputs supported include:

- a single HD-DB15 (RGB) input connector and associated audio (3.5 mm jack) for RGB or component video and HDTV sources (YPbPr/YCbCr with proper adaptors, not included)
- S-video (4-pin mini-DIN) and associated audio (two RCA jacks)
- composite video (RCA jack) and associated audio (two RCA jacks)



Output to the projector is through a specialized harness cable provided by SMART.

Remote Control

The remote control provides an alternative way to control the system and to set up your Unifi 45 projector. Use the remote control to access menu options, system information and input selection options.



Pen Tray Tools

The pen tray tools include four pens and an eraser. The pens have a rubberized grip area, colored to match the four colors of digital ink: black, green, red and blue. You can use dry-erase markers instead of the supplied pens, as long as they are a similar shape, do not scratch or mark the surface of the interactive whiteboard and reflect infrared light. If the pens you provide don't reflect infrared light, the pen tray sensor might not detect the presence of the pen. EXPO® markers make excellent substitutes.



NOTE: Pens from earlier interactive whiteboards weren't designed to reflect infrared light, so the sensors may not detect them reliably. You can wrap light-colored tape around the pen to improve the reflection of infrared light and to help with tool detection.



Eraser

The eraser resembles a rectangular chalkboard eraser. You can use a substitute eraser, provided it has a similar shape, does not scratch or mark the surface of the interactive whiteboard and reflects infrared light.

Optional Accessories

For more information on optional accessories, contact your [authorized SMART reseller](#).

Height Adjustable Wall Mount (HAWM-600i2)

Your interactive whiteboard system installed on a HAWM-600i2 can be lowered to young students' reaching range and raised for teachers or taller students. Maximum vertical travel on the wall mount is 20" (51 cm). The wall mount locks at its highest point.

Mobile Floor Stand (FS600i2)

You can use the floor stand with your interactive whiteboard system for travelling or mobile presentations. Assemble the mobile stand free-standing or tethered to the wall. To move the floor stand, partially disassemble the unit, install the casters and roll it to a different location.

USB Speakers (SBA)

Your interactive whiteboard system requires an audio system to deliver presentations with sound. The audio system consists of a pair of 15-watt, stereo-amplified speakers with a two-port USB hub and a volume control knob. You need an RCA plug to 3.5 mm audio jack cable long enough for your installation conditions (not included).



NOTE: SBA speakers are not directly compatible with the HAWM-600i2 and should not be installed on the wall mount. SBA speakers must be installed directly on the wall in a manner that does not interfere with the wall mount.

GoWire SMART Board Software Auto-launch Cable (USB-GW)

Your GoWire cable contains SMART Board software and launches it automatically on a guest computer, providing full access to all interactive whiteboard software tools without installing SMART Board software.

Active USB Extension Cables (USB-XT)

You can connect up to four 16' (5 m) active USB extension cables to extend your interactive whiteboard's USB connection to a maximum of 64' (20 m).

Wireless Bluetooth® Connection (WC6)

This accessory eliminates the need for a USB cable between the computer and your interactive whiteboard. The included 7V DC switching power supply provides power to the module and to your interactive whiteboard.

Cat 5 USB Extender (CAT5-XT)

Use the SMART Cat 5 USB extender to extend your interactive whiteboard's USB connection up to 120' (36.6 m) using RJ45 Cat 5 cable (not included). The extender includes two 6' (1.8 m) USB cables to connect your computer and your interactive whiteboard to the extender units.

Serial Conversion Module (RS-232)

Use the RS-232 module to convert your interactive whiteboard's USB connection to a serial connection.



Before Installing Your 600i2 Interactive Whiteboard System

In This Chapter

For instructions on installing your product, consult the SMART Board 600i2 interactive whiteboard system installation documents that came with your product, the mounting template and the ECP mounting template. Use these materials, found in the Unifi 45 boxes, to install your system, and don't use the instructions included in the SMART Board interactive whiteboard product box.

This chapter includes additional information, optional installation procedures and tips to consider before you install a SMART Board 600i2 interactive whiteboard system.

- Environmental Requirements
- Before Installing Your 600i2 Interactive Whiteboard System
- After Installing Your 600i2 Interactive Whiteboard System

Environmental Requirements

Before installing your SMART Board 600i2 interactive whiteboard system, review the following environmental requirements.

SMART Board 600i2 interactive whiteboard systems can operate in a temperature range of 41°F to 95°F (5°C to 35°C) from sea level to an altitude up to 6000' (0 m to 1829 m) and in a temperature range of 41°F to 86°F (5°C to 30°C) from 6000' to 9800' (1829 m to 2987 m). The product can withstand storage temperatures from -40°F to 122°F (-40°C to 50°C).

CAUTION



- Never 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 may condense on the lens and crucial internal parts. Allow the system to stabilize to room temperature before operation to prevent the unit from possible damage.
- In a high altitude location where air is thin, cooling efficiency is reduced so use the projector with fan mode set to High.
- Do not place in hot locations, such as near heating equipment. Doing so could cause a malfunction and shorten the life of the projector.

Humidity

SMART Board 600i2 interactive whiteboard systems can operate between 30% and 70% humidity, non-condensing. Humidity above 80% might cause slight wrinkling in the sheet of the SMART Board 600 series interactive whiteboard. The wrinkles disappear once the humidity lowers.

Water and Fluid Resistance

SMART Board 600i2 interactive whiteboard systems are for indoor use only and do not meet any salt-spray or water ingress requirements. Do not pour or spray any liquids directly onto the interactive whiteboard, the Unifi 45 projector or any of its sub-components. These liquids might get into areas where they could damage sensitive electronic components. Refer to the chapter on maintenance (page 31) for detailed instructions on cleaning your system's components.

Dust and Scratching

SMART Board 600i2 interactive whiteboard systems are for use in office and classroom environments and are not for industrial use, where heavy dust and pollutants can cause malfunctions or impaired operation. The design is for pollution degree 1 (P1) as per EN61558-1, which is defined as “No pollution or only dry non-conductive pollution.”

Electrostatic Discharge (ESD)

SMART Board 600i2 interactive whiteboard systems meet the requirements of EN61000-4-2 severity level 4 for direct and indirect ESD. No malfunction or damage up to 8kV (both polarities) with a 330 ohm, 150 pF probe (air discharge). Unmated connectors meet 4kV (both polarities) for direct (contact) discharge.

Cables

All SMART Board 600i2 interactive whiteboard system cables should be shielded, to prevent potential accidents and degrading video and audio quality.

Conducted and Radiated Emissions

The narrowband radiated electric field from SMART Board 600i2 interactive whiteboard systems meets the limits for Class A performance as defined in EN55022/CISPR 22.

IMPORTANT



Using the Unifi 45 projector system near a TV or radio may cause interference to the images or audio sound. If this happens, move the TV or radio away from the projector.

Before Installing Your SMART Board 600i2 Interactive Whiteboard System

Choose a location for your SMART Board 600i2 interactive whiteboard system that's far from a bright light source, such as windows or overhead lighting. Bright light sources can cause distracting shadows on the interactive whiteboard and can reduce the contrast of the projected image.

Locate a wall with a flat, regular surface and minimum clearance to accommodate your interactive whiteboard system. Make sure that the Unifi 45 projector and the SMART Board interactive whiteboard are installed on the same flat surface. For best presentation alignment, SMART recommends that you mount your interactive whiteboard system in a location that is central to your audience's viewing direction. For mobile installation or adjustable installation options, contact your [authorized SMART reseller](#). If the mounting surface is slightly irregular or the interactive whiteboard system cannot be directly mounted on a stud, consult *Mounting SMART Board 600i2 Series Interactive Whiteboard Systems and Unifi 45 Projectors on a Back Board* ([document 119764](#)) on the [SMART Technical Support website](#).

Recommended Heights for Mounting

SMART includes a mounting template with each of its 600i2 interactive whiteboard systems. If you lose this template, contact your [authorized SMART reseller](#). Using this template ensures that you:

- mount the Unifi 45 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 the 600 series interactive whiteboard to make sure that the projected image aligns with the touch screen.

Dimensions on the template recommend a distance from the floor that is suitable for adults of average height. Although you should consider the general height of your user community when you choose a position for the interactive whiteboard, consult your local regulations before mounting the unit.

WARNING



- When mounting the projector on a framed wall, you must attach both the mounting bracket and safety tether to a stud to safely support the projector's weight. If you only use drywall anchors, the drywall can fail, resulting in product damage and possible personal injury.
- If the two screws supporting the safety tether are removed, the projector boom will be free to swing. Make sure that these two screws are tightened and never remove them from the unit without supporting the projector boom first.

Preparing the Unifi 45 Projector Boom Height and Mirror for Alignment

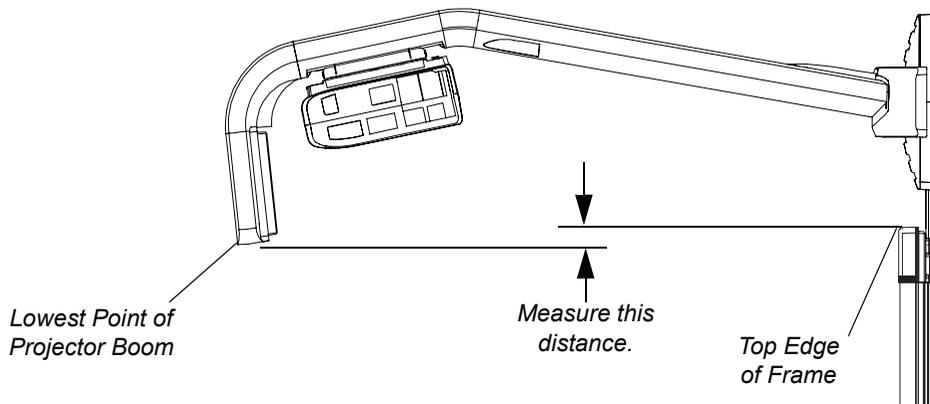
To set the projector boom's height

Before you adjust the projector's alignment and focus, set the projector boom to the optimal starting height.

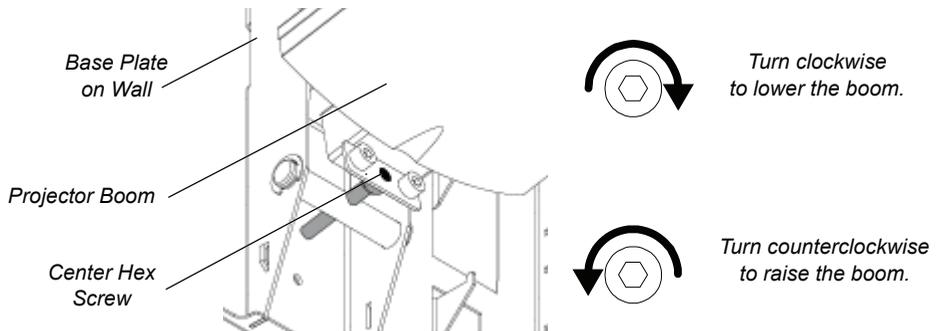
1. If the floor below the projector boom is level, measure the distance between the lowest point of the projector boom and the floor.
2. Measure the distance between the top edge of the interactive whiteboard's frame and the floor.

For the model 660 interactive whiteboard, the lowest point of the projector boom should be 3 5/8" (92 mm) lower than the top edge of the top frame.

For the model 680 interactive whiteboard, the lowest point of the boom should be 2 3/4" (70 mm) lower than the top edge of the top frame.



NOTE: If the distance isn't correct, adjust the center hex screw at the base of the projector boom to raise or lower the angle of the boom.



TIP



You may find it easier to turn the height adjustment screw if an assistant lifts up the installed boom.

After Installing Your 600i2 Interactive Whiteboard System

Adjusting Keystone Alignment

When you use standard projectors, keystone errors occur when the projected image isn't parallel to the screen.



From the projector mirror, the image path is shorter across the top.



From the projector mirror, the image path is shorter across the bottom.

The image appears wider at the bottom when the image path's distance from the projector mirror to the top of the screen is shorter than the distance to the bottom of the screen. The image appears wider at the top when the image path's distance from the projector mirror to the bottom of the screen is shorter than the distance to the top of the screen. Vertical keystone errors can occur when you mount the Unifi 45 projector and the SMART Board 600 series interactive whiteboard on an uneven surface or a wall that has obstructions.

Horizontal keystone errors can occur when you mount the Unifi 45 projector too far from the SMART Board 600 series interactive whiteboard's vertical center, when you mount the projector and the interactive whiteboard on an uneven surface, or if the board is slightly closer to the projector on one side than the other.



From the projector mirror, the image path is shorter across the right side.



From the projector mirror, the image path is shorter across the left side.

The image appears taller on the left side when the distance from the projector mirror to the right of the screen is shorter than the distance to the left of the screen. The image appears taller at the right side of the image when the distance from the projector mirror to the left of the screen is shorter than the distance to the right of the screen.

Position the center of the interactive whiteboard so that it aligns with the center of the projector, as illustrated in the installation document. This eliminates many keystone errors. If your installation environment prevents you from moving the interactive whiteboard, you can adjust the projector boom and the mirror for optimum image alignment.

NOTES

- Before you adjust the image alignment, ensure that the interactive whiteboard's pen tray isn't secured to the wall or a floor stand so that you can move the interactive whiteboard left or right to center the image.
- If you move the interactive whiteboard system to a new location, you must re-align it.
- If your projector requires service, you must adjust the replacement projector.

WARNING

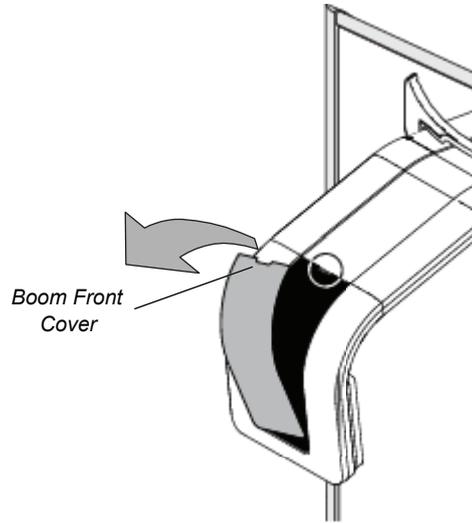


Two people are required to safely lift the interactive whiteboard on or off of its wall mount bracket.

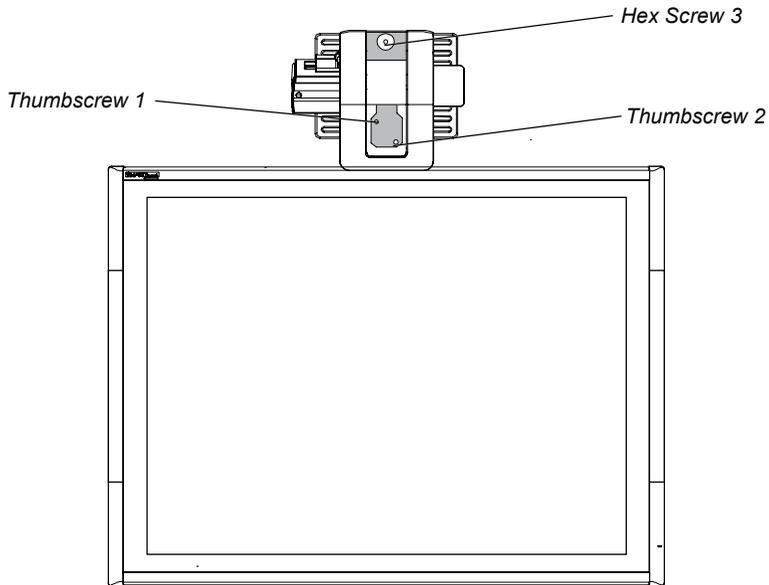
To adjust the mirror's depth and vertical angle for alignment

NOTE: This procedure sets the mirror to a neutral position. However, further adjustments will be required.

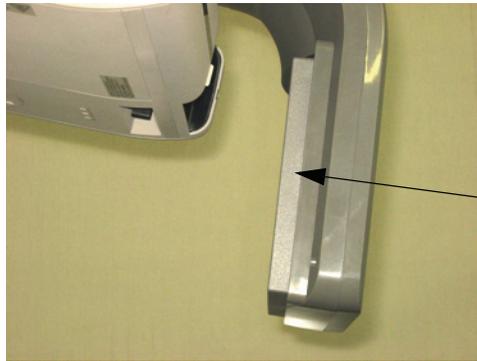
1. Remove the boom's front cover.



You can now access the adjustment screws.



- Using the included hex key, adjust hex screw 3 to adjust the mirror's depth for your model of interactive whiteboard.



Model 660: 5/8" (15 mm)
Model 680: 5/8" (15 mm)

- Adjust thumbscrew 1 to center the mirror's vertical angle.



Angle Too Low



Angle Too High

Make sure that the mirror isn't angled too low or too high.

To adjust the horizontal angle for alignment

1. Adjust thumbscrew 2 to center the mirror's horizontal angle.



NOTE: These images show the mirror from below.

Make sure that the mirror isn't angled too far left or too far right.



Angle Too Far Left



Angle Too Far Right

Focusing and Aligning the Image

To focus and align the image, project either a computer image or the projector's SMART Technologies logo onto your SMART Board interactive whiteboard.

To display the SMART Technologies logo

If you don't have a computer connected and you don't see the SMART Technologies logo, perform the following steps to display the logo.

1. Point the remote control at the infrared (IR) sensor on the front of the projector and then press the **MENU** button.
2. Press the left and right buttons on the remote to select **Display Settings** (third menu from the left).
3. Press the up and down buttons to access the **Background** settings.
4. Press the right button to display the **Background** options.
5. Press the up and down buttons to select **Logo**.

The SMART logo displays on the screen.

IR Sensor



To focus the image

Use the focus adjustment lever to focus the image.

*Focus
Lever*

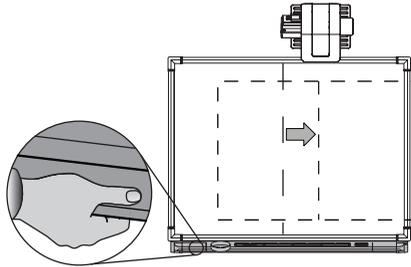


To perform an image alignment

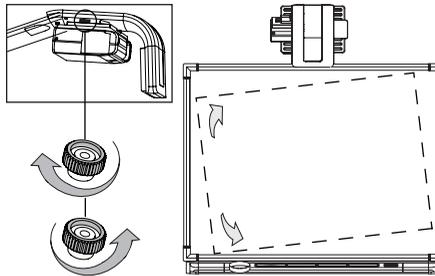
Use this procedure to obtain a rectangular image that is slightly smaller than the interactive whiteboard's screen.

NOTES

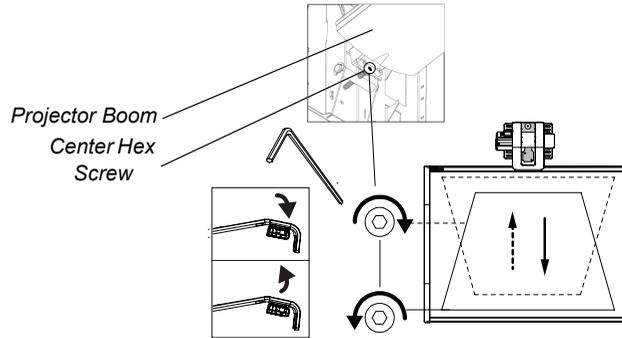
- We recommend that you project a computer image while performing the following steps. If you don't have a computer, use the projector's **MENU** (see instructions on page 15) to change the background to blue so that you can see the full projector image clearly.
 - Complete the procedures on the preceding pages before performing this alignment procedure.
1. Move your SMART Board interactive whiteboard left or right to center the image horizontally on the interactive whiteboard.



2. Adjust the thumbscrew on top of the projector until the image is horizontal.

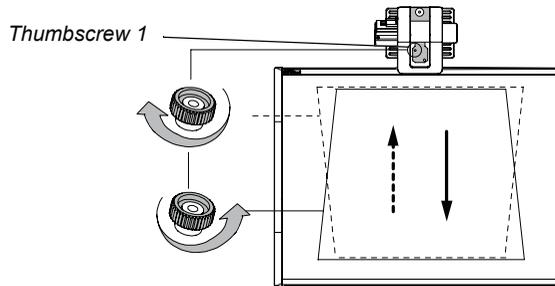


3. Adjust the center hex screw at the projector boom's base to adjust the vertical keystone until the left and right side of the image are parallel.



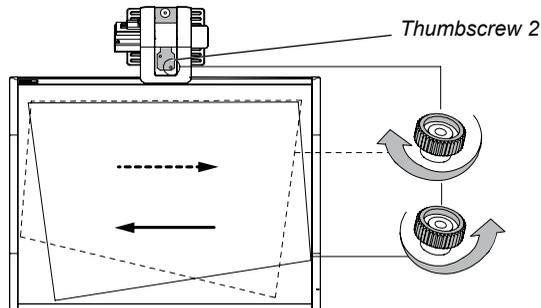
NOTE: When you adjust the center hex screw, the top of the image moves up and down slightly and the bottom of the image's width changes.

4. Rotate thumbscrew 1 until the left and right sides of the image are parallel.



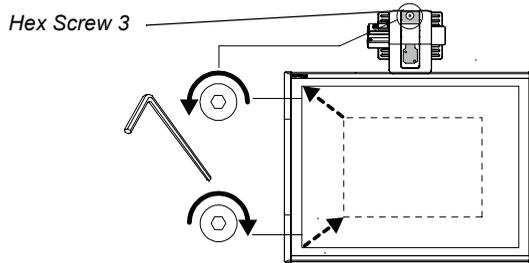
NOTE: The image moves up and down when you adjust the thumbscrew. Use thumbscrew 1 in combination with the hex screw adjustment at the base of the boom (see step 3).

5. Rotate thumbscrew 2 to adjust the horizontal keystone, until the top and the bottom of the image are parallel and the image appears rectangular.



NOTE: This thumbscrew also rotates and moves the image to the left or right. Use thumbscrew 2 in combination with the thumbscrew on the top of the projector (see step 2) to align the image.

- Use the included hex key to adjust hex screw 3 to change the size of the image.



NOTE: Adjusting this screw may affect the other adjustments.

- Repeat steps 1 through 6, using smaller increments. Adjust the image so that the top corners of the projected image fit into the top corners of the interactive whiteboard's screen.
- When you are finished adjusting the image size, adjust the focus if necessary.

Securing the Pen Tray and Interactive Whiteboard

Because the pen tray that comes with your SMART Board interactive whiteboard is detachable, you may want to safeguard it—and the interactive whiteboard at the same time—by anchoring it with a security cable (not included).

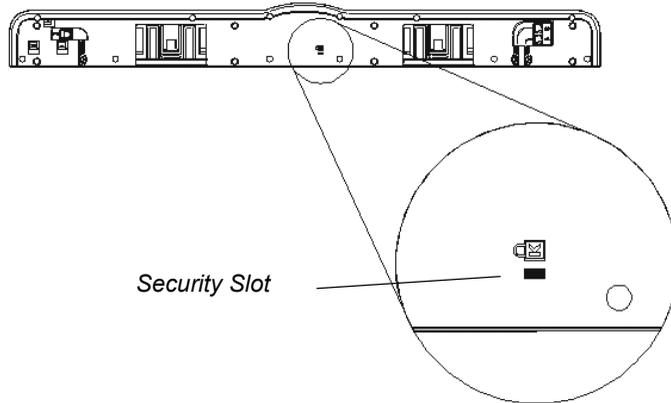
IMPORTANT



Securing the pen tray can provide theft deterrence for the interactive whiteboard as well. The screws that secure the interactive whiteboard to the wall are located directly behind the pen tray. The pen tray must be removed before you can remove the interactive whiteboard. When you secure the pen tray, you also secure the interactive whiteboard.

To lock the pen tray to the interactive whiteboard

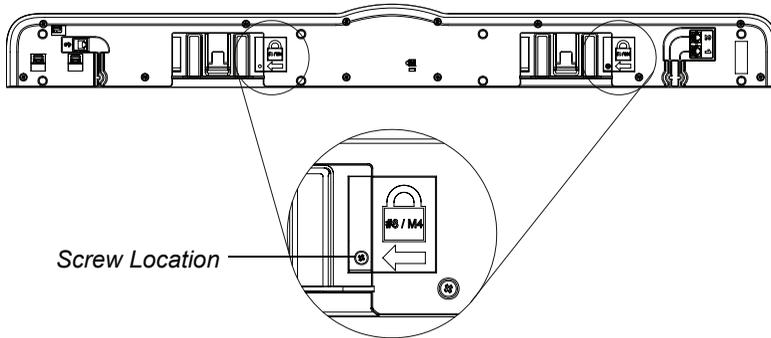
Underneath the pen tray, there is a Kensington® security slot that accommodates a security cable, such as a Kensington® lock.



Loop the security cable behind the pen tray brackets before you screw them to the wall, and then thread the lock end of the cable through the loop end of the cable. Verify that the cable is tight enough to prevent you from removing the pen tray while the lock is in place. Install the pen tray. Insert the prong end of the security cable into the security slot, and then complete the pen tray installation.

To secure the pen tray to the pen tray brackets

Because you can remove the pen tray without tools, you may want to securely attach it to its brackets. To do this, you can insert two No. 8/M4 screws (not included) into the holes shown in the illustration below. Note that older pen trays don't have this feature.



Connecting Your 600i2 Interactive Whiteboard System

In This Chapter

Refer to your installation document to perform initial connection setup on your SMART Board 600i2 interactive whiteboard system. This chapter includes software installation instructions, precautions to follow and methods to use when installing a new device into your interactive whiteboard system. When you connect a computer with SMART Board Notebook software, you can display and interact with Ink Aware programs on your SMART Board 600i2 interactive whiteboard system. After you connect the video output of a hardware device, such as a VCR or DVD player, to the ECP, you can display this video signal on your system.

- Installing SMART Notebook Software
 - To install the software from the installation CD
- Connecting One or More Computers
 - Connecting your resident computer to your interactive whiteboard system
 - Connecting a guest computer to your interactive whiteboard system
- Connecting Your Visual or Audio Visual Peripheral Devices

To connect your 600 series interactive whiteboard, refer to your see the *Installation and User's Guide* ([document 1414](#)). To connect accessories to your SMART Board interactive whiteboard, refer to the documents included with the accessories and consult the [SMART Technical Support website](#) for additional instructions. When connecting both a guest computer and a host computer to your interactive whiteboard system, make sure that the computer in use for the presentation is connected to your SMART Board interactive whiteboard's USB cable connector.

Installing SMART Notebook Software

Your interactive whiteboard system includes a software CD shipped in the box with the 600 series interactive whiteboard. You must install the software before you can use your SMART Board interactive whiteboard system's features. Check [SMART Technical Support website](#) for the latest version of your software. If your software CD includes an older version of the software, you will need to download a newer version.

To install the software on the installation CD

1. Insert the software CD in your computer's CD drive.
2. Follow the on-screen instructions.

NOTE: If SMART Board software or SMART Notebook software is already installed on your computer, you can use this opportunity to upgrade your software to ensure compatibility. SMART Notebook software upgrades and online help are available at www.smarttech.com/support/software/index.asp. This page also lists the minimum software requirements for each software version.

You can now pick up a pen tray pen and write on the interactive screen in digital ink and capture your notes into any Ink Aware application. For a list of Aware applications, click on the SMART Board icon in the notification area (Windows computers) or dock (Mac computers), click **Control Panel**, and **Ink Aware application settings**.

Connecting Your Computer to the Interactive Whiteboard System

You must connect your computer video and audio outputs to your Unifi 45 projector. Use only one set of the following instructions for your specific installation.

Connecting Your Host Computer's Audio/Visual Outputs to the Projector Inputs

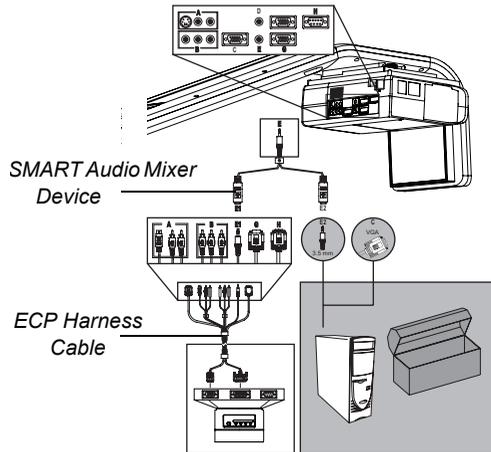
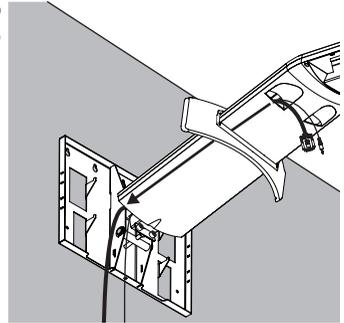
IMPORTANT



- Install your host computer's video output directly to your Unifi 45 projector and not to the ECP. The VGA connector on the ECP is then available for a guest computer connection, such as a laptop. If you won't have guest computers, you can use the VGA connector on the ECP instead.
- Use only the input marked "Computer 2" on your projector to connect the ECP harness cable.

To connect your host computer's video (and optional audio) outputs to your projector input

1. Make sure that you have a shielded VGA cable (not included) and audio cable with 3.5 mm plugs (optional, not included) that are long enough to connect your computer to your Unifi 45 projector.
2. Pass your VGA and audio cables from your projector into the cable channel's upper end on the projector boom. Pass your cables down through the cable channel's lower end, and then pass them behind the SMART Board interactive whiteboard to your computer.
3. Connect your VGA cable to the input marked "Computer 2" on your projector.
4. Connect the SMART audio mixer device to your projector's 3.5 mm audio input, and then connect your ECP harness cable's 3.5 mm audio plug to one of the two inputs on the SMART audio mixer device. You don't need to use the other input on the SMART audio mixer device for this installation.
5. If you're using an audio cable from your computer, on your projector, connect your audio cable with a 3.5 mm plug to the other input jack on the SMART audio mixer device.
6. Connect the other end of your VGA cable to your computer's video output connector.
7. Connect the other end of your audio cable to your computer's audio output.



Connecting Audio/Visual Outputs from Your Guest Computer to Your Interactive Whiteboard System's ECP Input

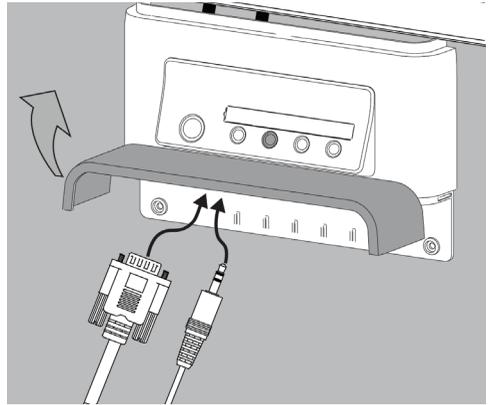
IMPORTANT



It is recommended that you reserve the VGA connector on the ECP to install your guest computer's video output. If you do not have guest computers, you can use the VGA connector on the ECP to install your host computer's video output.

To connect your guest computer's video or audio output to your ECP input

1. Make sure that you have a shielded VGA cable (not included) and an audio cable with 3.5 mm plugs (optional, not included) that are long enough to connect your guest computer to your ECP.
2. Connect the VGA cable to the VGA input on the bottom of your ECP.
3. If you're connecting audio, connect your audio cable to the audio input next to the VGA input.
4. Connect the other end of your VGA cable to your computer's video output.
5. Connect the other end of the audio cable to your computer's audio output.



IMPORTANT



Your interactive whiteboard system does not include speakers. To hear sound, you need to connect an audio system to the projector's audio output. Consult your [authorized SMART reseller](#) to determine your audio output options.

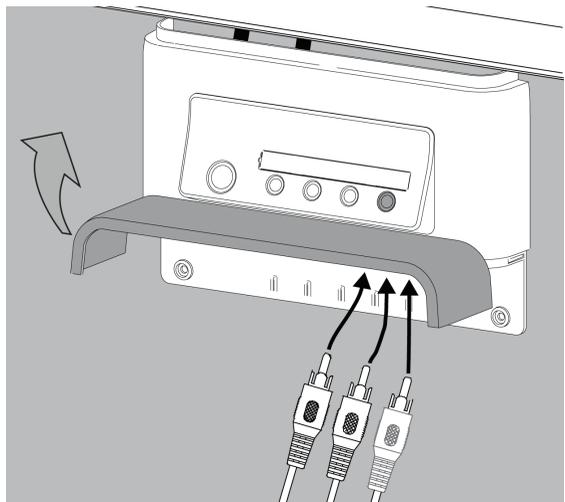
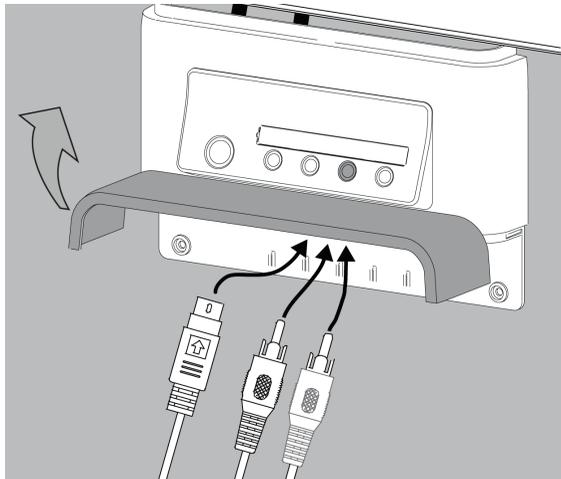
Connecting Peripheral Visual or Audio-Visual Devices

To connect a DVD player, VCR, document camera, digital camera or other visual or audio-visual peripherals to the SMART Board interactive whiteboard system, you must connect your peripheral's video and audio outputs to the ECP. You can have up to three peripheral devices and a host computer connected at one time.

To connect S-video, composite and other audio-visual inputs for peripheral devices

IMPORTANT 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 might need to purchase third-party adapters.

1. Turn off your SMART Board interactive whiteboard system.
2. Connect the device's video cables to the ECP using the appropriate inputs. Input 2 is the VGA connector, input 3 is the S-video 4-pin mini-DIN connector and input 4 is the composite video input.
3. For each peripheral device, connect the device's audio cables to the associated red and white RCA jacks next to the appropriate video input.



Using Your 600i2 Interactive Whiteboard System

In This Chapter

This chapter describes the basic operation of your interactive whiteboard system, how to retrieve system information and how to access the projector's image adjustment options.

- After Completing the Installation
- Using Your ECP
- Using Your Interactive Whiteboard
- Using Your Unifi 45 Projector
- Adjusting Your Projector Settings
 - Image Adjustment Options
 - Position Adjustment Options
 - Setting Display
 - Default Setting 1
 - Default Setting 2
 - Status Display

After Completing the Installation

Make sure that you turn on your projector using the master **Power** switch (on the side of the projector nearest to the interactive whiteboard). This will turn on your SMART Board 600i2 interactive whiteboard system, which will not operate fully unless you turn this switch to the **on** position. Don't turn this switch off unless maintenance work is being done, your system won't be used for a long period of time, or you have been instructed to do so by an accredited SMART Technical Support Specialist. To regularly turn your interactive whiteboard system on and off, use the ECP's **Power** button instead of the projector's master Power *switch*. The ECP's Power button includes a cool down function that will extend the lamp's life span.

When you connect your interactive whiteboard system to a computer with SMART Board or SMART Notebook software installed, you can access the full capabilities of the software. The computer interprets your touch on the interactive screen and moves the pointer to the corresponding point on the computer's screen. You can also use the pen tray tools to add or remove digital ink on the interactive whiteboard screen.

NOTE: For more information on SMART Board or SMART Notebook software and Ink Aware applications, see the software's online Help menu.

Using Your ECP

Your ECP includes a **Power** button and four **Input Selection** buttons. You can connect up to three peripheral devices and one host computer at the same time.

To power up the interactive whiteboard system and select an input

1. Press the ECP's **Power** button or an **Input Selection** button to turn the system on.
2. Press an **Input Selection** button to change the video source.

NOTE: Depending on the video source, it may take several seconds for the video signal to change.

- When you are finished, press the ECP's **Power** button twice to turn the system off.

CAUTION



After you turn the system off, wait until the system cools completely before turning the system on again. Avoid cycling the system off and on.

TIP



Consider leaving the system on between lessons. Repeatedly turning the system on and off can reduce the lamp's life span. Allow the system to turn off and cool completely before restarting it.

Using Your Interactive Whiteboard

Refer to your 600 series *Installation and User's Guide* ([document 1414](#)), for information about all the features of your interactive whiteboard.

Using Your Unifi 45 Projector

WARNING



- Do not stare into the beam of light created by the projector. Instruct children not to look in the direction of, or stare at, 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.
- Tell users not to touch the head or lens of the projector, as it can become extremely hot during normal operation.

The Unifi 45 projector includes a master **Power** switch and three status indicators.

Flip the projector's master **Power** switch (on the side of the projector nearest to the interactive whiteboard) to turn on the SMART Board 600i2 interactive whiteboard system. You can view the **LAMP**, **ON/STANDBY** and **TEMP** status indicators on the projector's underside to determine the projector status and to troubleshoot unexpected behavior.

Using Your Remote Control

The Unifi 45 projector system remote control enables you to open on-screen projector menus and change the projector settings. You can also use the remote control's **ON/STANDBY** button to turn the projector system on or off.

You can access the adjustment options through the remote control's **MENU** button. To switch between menu headings, press the **left**  and **right**  buttons. To access a menu option, press the **up**  or **down**  button and choose the relevant menu option. To cycle between menu option settings, press the **left**  or **right**  button. Press the **enter**  button when you are satisfied with the settings. Press **RETURN** to go to the previous screen.

Menu Options

MENU HEADING	IMAGE ADJUSTMENT	POSITION ADJUSTMENT	SETTING DISPLAY
Menu Options	Contrast	Phase	Screen Size
	Brightness	Frequency	Language Support
	Color	H-Position	Background
	Tint	V-Position	Icon
	Sharpness	Clamp Pulse 1	Start-up Screen
	Picture Mode	Clamp Pulse 2	User Logo
	Advanced		

MENU HEADING	DEFAULT SETTING 1	DEFAULT SETTING 2	STATUS DISPLAY
Menu Options	Keystone	Projection Mode	Input
	Blackboard Mode	Fan Mode	Mode Name
	No Signal Power-Off	Lamp Power	Resolution
	Auto Input Search	Reset All	Frequency
	Beep		Sync
	Power On		Lamp Time
			Lamp Reset Count
			Total Time
			Version

Adjusting Your Projector Settings

Image Adjustment Options

Contrast

This option adjusts projector contrast, from -16 to 16.

Brightness

This option adjusts projector brightness, from -16 to 16.

Color, Tint and Sharpness

Use these options to adjust your NTSC, SECAM or PAL video signal. You can't use these options to change your computer RGB signal settings.

Picture Mode

This option adjusts the projector output to **Bright**, **Standard** and **True Color** mode.

Advanced

Noise Reduction – This option reduces projected noise from 1 to 3.

Red Level – This option adjusts input red levels, from -16 to 16.

Green Level – This option adjusts input green levels, from -16 to 16.

Blue Level – This option adjusts input blue levels, from -16 to 16.

Position Adjustment Options

Phase

This option adjusts the reception phase, for correcting waveform issues on your graphics card, from 0 to 63.

Frequency

This option adjusts the projected frequency of the image from -64 to 64.

H-position

This option adjusts the horizontal position of the projected image from -64 to 64. Do not adjust this option unless advised to do so by a certified SMART Technical Support Specialist.

V-position

This option adjusts the vertical position of the projected image from -32 to 0. Do not adjust this option unless advised to do so by a certified SMART Technical Support Specialist.

Clamp Pulse 1 and Clamp Pulse 2

These options allow performance calibration for graphics card issues and long VGA input cables, from 0 to 255.

Setting Display

Screen Size

This option adjusts the projector picture size to **Normal**, **Full** and **Thru** settings.

Language Support

Projector menu support is available in English (default), French, German, Italian, Spanish, Portuguese, Russian, Swedish, Turkish, Polish, Norwegian, Finnish, Czech, Hungarian, Greek, Danish, Dutch, Romanian, Japanese, modern Chinese, traditional Chinese and Korean.

Background

This option sets the background: **Logo** (displays the SMART Technologies logo), **Blue** (displays a blue screen) or **None** (displays no background).

Icon

This option turns the icon display **On** or **Off**.

Start-Up Screen

This option turns the start-up screen **On** or **Off**.

User Logo

Logo Registration – This option performs a logo change, based on the image being projected. You can change the start-up logo to reflect your school or company logo, provided it fits in the template area.

Display Style – This option selects a **Large** (full screen) or **Small** (partial screen) logo size.

Default Setting 1

Keystone

This option adjusts the vertical keystone on the projector unit from -60 to 60 (depending on your firmware version, positive settings may not be accessible). Do not adjust this option unless advised to do so by a certified SMART Technical Support Specialist.

Blackboard Mode

Blackboard mode is a quick adjustment setting for the display color temperature of the projector. The default setting is **Off**. SMART recommends that you keep this setting when using your Unifi 45 projector with your interactive whiteboard system. Do not adjust this option unless advised to do so by a certified SMART Technical Support Specialist.

No Signal Power Off

The projector detects when there is no input connected. Select **Off** if you want the projector to wait for your instruction to turn itself off, or select **30 Min** if you want the projector to wait 30 minutes before shutting off automatically.

Auto Input Search

Select **On** to automatically switch to a newly connected input, or select **Off** to use button selection to change to a new input.

Beep

Select **On** to hear an audible beep when you press or select menu options.

Power On

This option sets the Power On setting to **Manual** or **Auto**. Selecting **Auto** automatically starts up the projector when the main power is activated.

Default Setting 2

Projection Mode

This option allows you to choose from various projection positions. The factory has applied a default setting. Do not adjust this option unless advised to do so by a certified SMART Technical Support Specialist.

Fan Mode

Select **Standard** mode for use in environments up to 6000' (1829 m) in elevation, and select **High** mode for use in environments between 6000' (1829 m) and 9800' (2987 m).

Lamp Power

To reduce energy usage and to extend lamp life, select the **Standard** setting. For brighter projection at higher power draw and decreased lamp life, select the **High** setting.

Reset All

This option resets all your projector settings to their factory defaults. Do not adjust this option unless you want to reset all applied settings, or unless you are advised to do so by a certified SSMART Technical Support Specialist.

Status Display

This screen is for reference purposes. No adjustable options exist in this menu, but you can use it to troubleshoot problems with your system.

Input

This field shows your current active input setting: Computer 1, Computer 2, S-video or composite.

Mode Name

This field shows the name of your current display mode.

Resolution

This field shows your current display resolution.

Frequency

This field shows your current refresh rate frequency.

Sync

This field shows your current synchronization rate.

Lamp Time

This field shows the duration of your projector lamp's use.

Lamp Reset Count

This field shows the number of times the lamp count has been reset.

Total Time

This field shows how long your interactive whiteboard system has been in use since initial startup.

Version

This field shows your projector firmware version.

Maintaining Your 600i2 Interactive Whiteboard System

In This Chapter

This chapter includes methods to prevent damage to, and to properly clean your SMART Board 600i2 interactive whiteboard system. Follow the additional instructions and recommendations see your *Installation and User's Guide* ([document 1414](#)) to properly maintain your interactive whiteboard

- Preventing Damage to Your Interactive Whiteboard
- Cleaning the Interactive Whiteboard
- Cleaning the Pen Tray
- Cleaning the Unifi 45 Projector
- Preparing to Replace the Projector Lamp

Preventing Damage to Your Interactive Whiteboard

Although the SMART Board 600 series interactive whiteboard surface is very durable, take these precautions to prevent damage to the interactive screen and to other components.

- Don't use sharp or pointed objects, such as ballpoint pens or pointers, as writing tools.
- Never use abrasive erasers or harsh chemicals when cleaning.
- Never leave adhesive tape on the writing surface for extended periods. Lifting the tape may remove the coating that provides the interactive whiteboard's dry-erase capability.
- Avoid setting up and using your interactive whiteboard in an area with excessive levels of dust, humidity or smoke.

Cleaning Your Interactive Whiteboard

For additional cleaning instructions, refer to your 600 series *Installation and User's Guide* ([document 1414](#)). With proper care, your SMART Board interactive whiteboard will provide years of trouble-free service. Follow these tips to keep the screen surface clean:

NOTE: Before you clean your 600 series interactive whiteboard, shut down the computer or unplug the USB cable connecting your interactive whiteboard to the computer. Otherwise, you may inadvertently activate applications or scramble an attached computer's desktop icons when you clean the screen.

- Don't use low-odor dry-erase markers such as EXPO2®, because the ink can be very difficult to remove. Use only in well-ventilated areas.
- Erase dry-erase ink as soon as possible after use. The longer dry-erase ink is on the surface, the more difficult it is to remove.
- Remove excess dry-erase dust with a damp lint-free cloth before using a cleaner.
- 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.
- Use dry-erase marker cleaner if ink remains after erasing.

- Don't allow glass cleaner to flow into the crack between the lower frame and the writing surface, or into the pen tray recesses.
- Use isopropyl alcohol for stubborn stains and ghosting.

To remove marks made with a permanent marker, use a cleaner such as the Sanford EXPO Dry Erase Board Doctor. Write directly over the permanent ink stain with the product, allow the solution to dry completely and then wipe clean.

You can also 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 wipe with a lint-free 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 wipe the area clean.

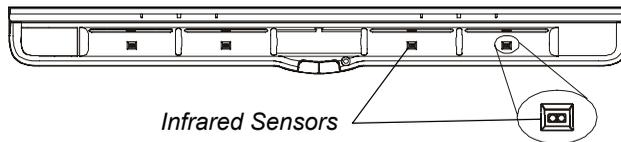
TIP



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

Cleaning the Pen Tray

If the infrared sensors in the bottom of the pen tray's recesses are obstructed, the sensors can't reliably detect when a pen or the eraser is removed or replaced. The recessed LED may remain lit or won't light, and the lifted tool won't work.



To clean a sensor, moisten a cotton swab with a household glass cleaner, such as Windex, and 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 Unifi 45 Projector

WARNING



Cleaning a arm-mounted projector may result in a fall and injury.

CAUTION



Before you clean the Unifi 45 projector, turn off the power button switch on the projector, not the ECP, and allow bulb to cool. Depressing the ECP button at this time would cause the projector to start back up.

Wipe the exterior of the projector using a lint-free cloth.

Avoid touching the mirror located on the end of the projector boom. If necessary, use liquids or commercial solvents (such as glass cleaners) to clean the mirror, but do not spray them directly on the system. Spraying the system or the mirror might spread a chemical mist on some of the projector's components and lamp, resulting in damage and poor image quality. Spray the liquid or commercial solvent onto a soft lint-free cloth to clean the mirror.

Clean the projector lens with a commercially available blower or lens cleaner. Take care not to scratch the lens.

CAUTION



Do not allow liquids or commercial solvents of any kind to flow into the projector base or head. Do not use spray cleaners or solvents near any part of the projector, as it may damage or stain the unit.

Preparing to Replace the Projector Lamp

If a lamp fails or if a replacement message appears on the screen of the Unifi 45 projector, a qualified person can replace the projector lamp. Don't access the service panel without a replacement lamp and instructions in hand.

WARNING



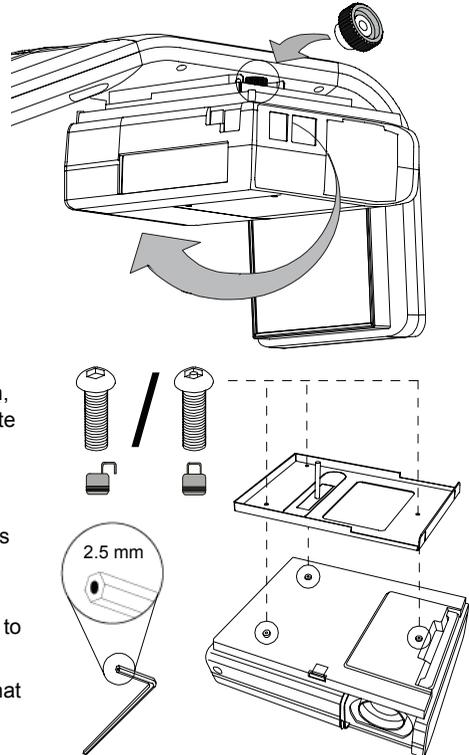
- If the projector is mounted on the boom, the manufacturer recommends contacting your [authorized SMART reseller](#) when the lamp must be exchanged.
- Uncovering the lamp while the projector is mounted on an arm might lead to a product damage or personal injury from falling pieces of glass if the lamp is broken.
- Remove the projector from the arm before servicing the lamp.
- Complete the procedure described in this document instead of the instructions included in your replacement lamp box.
- Only qualified personnel should replace the projector lamp. Replacing the lamp in a boom-mounted projector might result in a fall and injury.
- If you continue to use the projector after the replacement message appears, the lamp might shatter or burst, scattering glass throughout the projector head.
- If the lamp has shattered or burst, do not touch the glass fragments because they might cause injury. Leave and then ventilate the area where the lamp shattered or burst. Wash your hands thoroughly if you have come into contact with lamp debris. Thoroughly clean the area around the projector, and discard any edible items placed in that area because they may be contaminated.

WARNING

- If the lamp has shattered or burst, call a [SMART authorized service representative](#) for instructions. Do not attempt to replace the lamp.
- Turn the projector off and wait 15 minutes for the lamp to cool completely before removing the old lamp assembly.
- Wear protective eyewear while changing the lamp. Failure to do so can cause injury or loss of eyesight if the lamp shatters or bursts.
- Use only the SB20 replacement lamp (SMART Part No. 01-00247).
- The lamp used in the Unifi 45 projector contains mercury. Recycle or dispose of it as hazardous waste, in accordance with local regulations.
- 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.
- Never replace the lamp assembly with a previously used lamp assembly.

To remove the projector plate assembly from the boom

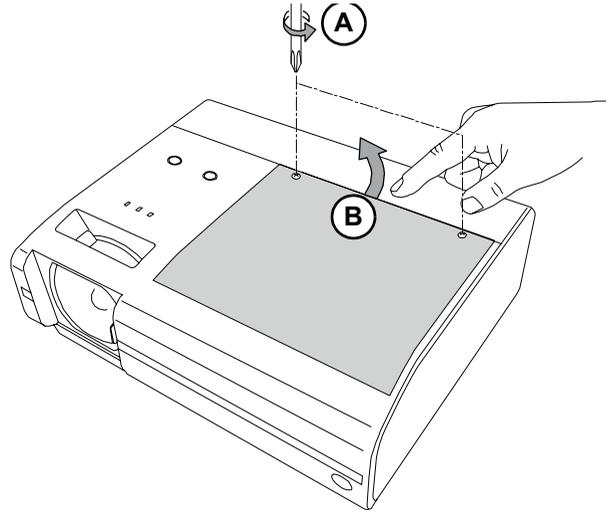
1. Before you remove the Unifi 45 projector, turn off the power button switch on the projector, not the ECP, and allow bulb to cool.
2. Disconnect the power cord and all connected cables.
3. Wait at least 15 minutes for the projector to completely cool.
4. Close the projector lens door to prevent scratching or touching of the lens.
5. While firmly holding the projector with your hand, and without putting pressure or weight on the projector boom, unscrew the thumbscrew that connects the projector plate assembly to the boom.
6. When this thumbscrew is removed, the projector plate assembly swings freely. Put the thumbscrew in a safe place. Carefully disengage the projector plate assembly's hinge channel from the connecting flange hook on the projector boom. Lay the projector flat on your work area.
7. Unscrew the three screws connecting the projector plate to the projector. Put the screws in a safe place.
8. Turn the projector over and lay it on your work area so that the warning lights and setting buttons face upwards.



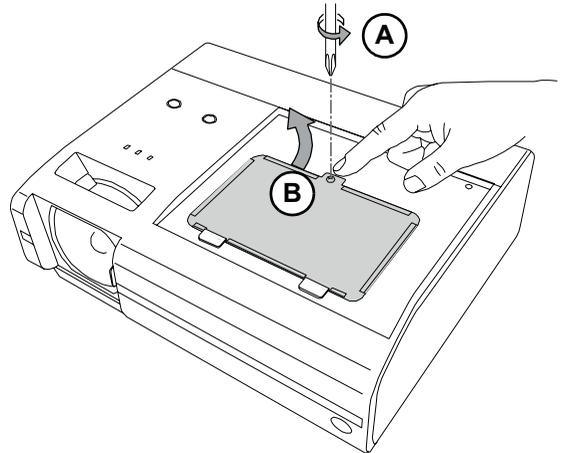
The projector plate assembly includes the projector plate and the Unifi 45 projector.

To replace the lamp

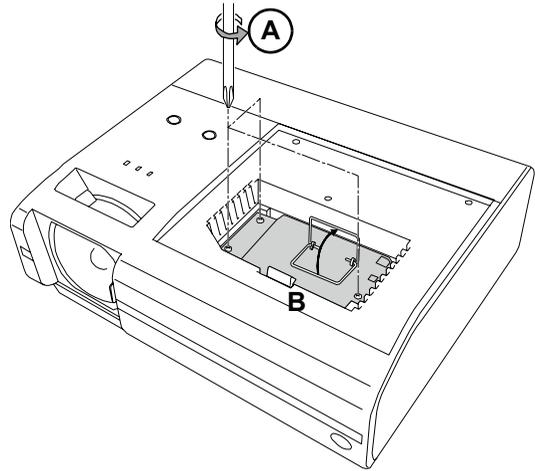
1. Loosen the two screws on the outer lamp cover with a Phillips® No. 2 screwdriver. These screws do not come all the way out of the outer lamp. Raise the outer lamp cover using a flat screwdriver or your finger. Keep the outer lamp cover in a safe place.
2. Allow sufficient time for the lamp and inner lamp cover to cool. They should feel cool enough to touch and to work with easily.



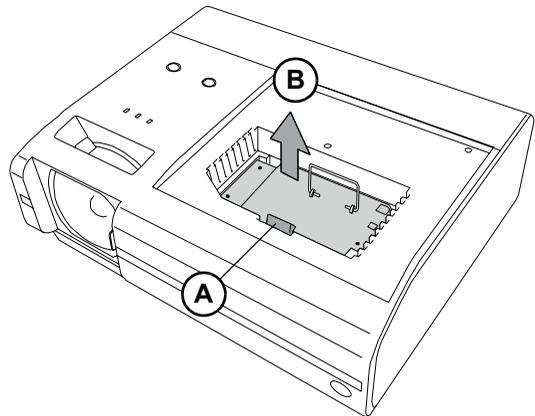
3. Loosen the screw on the inner lamp cover. Remove the screw and raise the inner lamp cover out of the lamp slot using a flat screwdriver or your finger. Keep the inner lamp cover and the screw in a safe place.



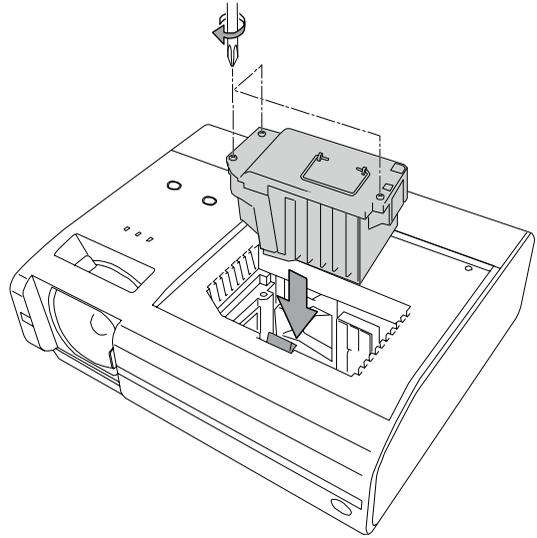
4. Loosen the three lamp locking screws. These screws cannot be removed. Rotate the handle on the old lamp so that it faces upwards.



5. Press on the tab and pull up with the handle on the old lamp. Release the tab. Recycle or dispose of the old lamp according to your local waste authority.



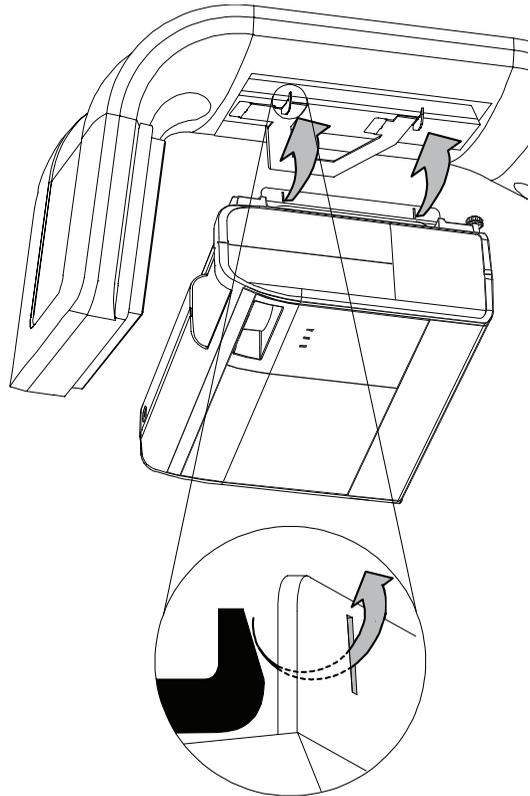
6. Remove the new lamp from all of its packaging. Remove the plastic labeling on the lamp handle. Press the tab, put the new lamp into the lamp slot and push it all the way down. Release the tab.
7. Tighten the lamp locking screws until the new lamp is secure.
8. Put the inner lamp cover back into its original position. Retrieve the inner lamp cover screw from step 3, and then insert it in its slot. Tighten the screw until the inner lamp cover is secure.
9. Put the outer lamp cover back into its original position. Align the cover and tighten the screws until the outer lamp cover is secure.



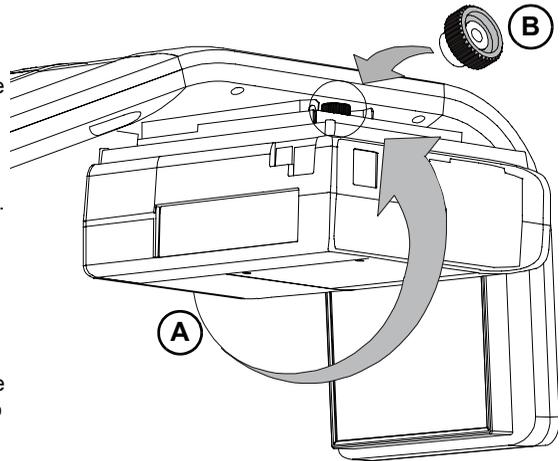
To re-attach the projector plate assembly on the projector boom after lamp replacement

1. Attach the projector plate to the projector using the three screws that you removed when you disassembled the projector.
2. Put the projector plate assembly back on the projector boom by attaching the projector plate hinge channel to the corresponding flange hook on the projector boom.

NOTE: Hold the projector plate assembly firmly when raising the assembly.



3. Retrieve the projector plate thumbscrew that you removed when you took the projector plate from the projector boom. Raise the projector plate assembly while keeping it attached to the flange hook. Pass the threaded rod through the attachment hole on the projector boom, and then secure the projector by attaching and tightening the thumbscrew.
4. Connect the power cord and all the connector cables. Open the projector lens door.
5. Turn on the projector's master power switch, and then press the power button on the ECP or remote control to start up the system. The power button light on the ECP turns green when it starts.
6. You might need to realign the image after you replace the projector plate assembly. Turn the thumbscrew to adjust the level position.
7. If necessary, refer to the *Unifi 45 Projector Image Adjustment* ([document 126964](#)) for instructions on how to adjust the projector image.



To reset the lamp timer

1. Press the power button  on the ECP or remote control twice to put the projector back into Standby mode. The power button light on the ECP turns solid amber when the system is in Standby.
2. Press and hold the **up**  button on the remote control for approximately 10 seconds. When the projector beeps, press and hold the **down**  button on the remote control for approximately 10 seconds. The lamp timer clears after another beep.
3. Press the power button on the ECP or the remote control to start up the system. The power button light on the ECP turns solid green when the system starts.
4. To confirm that the lamp timer has been reset, press the **MENU** button on the remote control. Scroll to the **Status Display** menu heading, and then confirm that **0 h** appears in the **Lamp timer** field. Your lamp reset count has increased by one.
5. Wait five minutes for the projector lamp to warm up.
6. After confirming that the lamp timer has been reset, put the system in Standby by pressing the power button twice on the ECP or the remote control. The power button light on the ECP turns solid amber when the system is in Standby.
7. When you are ready to use the system, press the power button on the ECP to start up the system.

Troubleshooting Your 600i2 Interactive Whiteboard System

In This Chapter

This chapter deals with basic troubleshooting issues for your SMART Board 600i2 interactive whiteboard system that you can easily solve. For more complex issues or issues not mentioned in this section, please contact your [authorized SMART reseller](#) and consult the [SMART Technical Support website](#).

- System Warning Lights
 - ECP Ready Light and System Status
 - Projector Ready Lights and Projector Status
 - Interactive Whiteboard Indicators and Controls

System Warning Lights

ECP Ready Light and System Status

The ECP ready light is located on the ECP's main power button. This button also functions as your status warning light.

Ready light	Status
Off	The projector system is not receiving power. Check your power cord, RS-232 connector at the projector (located below the power cable) and power supply. If nothing changes after checking your power cord, RS-232 connector and power supply, call your authorized SMART reseller .
Solid amber	The projector is receiving power, but it is turned off.
Flashing green	The projector is receiving power and is starting up.
Solid green	The interactive whiteboard system is on.
Flashing orange	The interactive whiteboard system is about to enter Standby mode.

Projector Ready Lights and Projector Status

The Unifi 45 projector's three indicator LED lights (LAMP, ON/STANDBY and TEMP) are located on the boom-mounted projector. Specific light sequences convey information about the state of your projector, including warning messages and issues.

Indicator Light Sequence			Projector Status
LAMP  Off	ON/STANDBY  Solid Orange	TEMP  Off	<p>Your projector is in standby mode.</p> <ul style="list-style-type: none"> The lamp is off. Your projector is waiting for input from you or for an internal command.
LAMP  Off	ON/STANDBY  Flashing Green	TEMP  Off	<ul style="list-style-type: none"> Your projector is turning on. Wait for your projector to finish turning on.
LAMP  Off	ON/STANDBY  Solid Green	TEMP  Off	<ul style="list-style-type: none"> Your projector is on. The lamp is on. Your projector is waiting for input from you or for an internal command.
LAMP  Off	ON/STANDBY  Flashing Orange	TEMP  Off	<ul style="list-style-type: none"> Your projector is preparing to enter standby mode. Wait for your projector to enter standby mode.

The following table describes projector warning messages and issues.

<p>IMPORTANT</p> 	<p>After you resolve your projector's issue, you must turn your projector's main power switch off and on again to clear the indicator light sequence and reset your projector's status.</p>
---	---

Indicator Light Sequence			Projector Issues and Solutions
<p>LAMP ON/STANDBY TEMP</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  Off </div> <div style="text-align: center;">  Off </div> <div style="text-align: center;">  Off </div> </div>	<p>If all of the indicator lights are off and your projector has no power, one of the following issues is occurring:</p> <ul style="list-style-type: none"> There was a power outage or a power surge A circuit breaker or a safety switch was toggled Your projector's master power switch is off Your projector isn't connected to the power source Your projector has an internal problem <p>To resolve the issue, follow these steps:</p> <ol style="list-style-type: none"> 1. Check the power source, and then make sure that all the cables are connected. 2. Confirm that your projector is connected to an active power outlet. 3. If the previous steps don't resolve the issue, unplug the power cord and then contact your authorized SMART reseller. 		
<p>LAMP ON/STANDBY TEMP</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  Flashing Orange </div> <div style="text-align: center;">  Solid Red </div> <div style="text-align: center;">  Off </div> </div>	<p>If you see this indicator light message and your projector turns off during use or won't turn on, the lamp cover isn't properly attached.</p> <p>To resolve the issue, follow these steps:</p> <ol style="list-style-type: none"> 1. Turn off the master power switch, and then unplug the power cord. 2. See <i>Replacing Your Unifi 45 Projector Lamp</i> (document 129338) on the SMART Technical Support website to replace the lamp cover. 		

Indicator Light Sequence			Projector Issues and Solutions
LAMP	ON/STANDBY	TEMP	<p>If you see this indicator light message and the lamp turns off during use or won't turn on, then one of the following issues is occurring:</p> <ul style="list-style-type: none"> The lamp temperature is too high You need a new lamp because the lamp has reached the end of its life Your projector has an internal problem <p>To resolve the issue, follow these steps:</p> <ol style="list-style-type: none"> Turn off the master power switch, unplug the power cord, and then wait a short while. Reconnect the power cord, and then turn on the master power switch. If the previous steps don't resolve the issue, the lamp might be at the end of its life. See <i>Replacing Your Unifi 45 Projector Lamp</i> (document 129338) on the SMART Technical Support website to replace the lamp. If your projector still doesn't turn on, turn off the master power switch, unplug the power cord, and then contact your authorized SMART reseller.
 Flashing Red	 Solid Red	 Off	
OR			
LAMP	ON/STANDBY	TEMP	
 Solid Red	 Solid Red	 Off	
LAMP	ON/STANDBY	TEMP	<p>If you see this indicator light sequence, the  icon appears and your projector turns off during use, one of the following issues is occurring:</p> <ul style="list-style-type: none"> Your projector has overheated internally The temperature outside your projector is too high <p>To resolve the issue, follow these steps:</p> <ol style="list-style-type: none"> Make sure that nothing is blocking the air intake and exhaust. Turn off the master power switch. Unplug the power cord, and then wait a short while. Reconnect the power cord, and then turn on the master power switch. If the previous steps don't resolve the issue and your projector still doesn't turn on, turn off the master power switch, unplug the power cord, and then contact your authorized SMART reseller.
 Off	 Solid Red	 Flashing Red	

Indicator Light Sequence	Projector Issues and Solutions
<p>LAMP ON/STANDBY TEMP</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  Off </div> <div style="text-align: center;">  Solid Red </div> <div style="text-align: center;">  Flashing Green </div> </div>	<p>If you see this indicator light sequence, the  icon appears and your projector turns off during use, your projector is overheating internally.</p> <p>Turn off the master power switch, unplug the power cord, and then contact your authorized SMART reseller</p>
<p>LAMP ON/STANDBY TEMP</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  Off </div> <div style="text-align: center;">  Solid Red </div> <div style="text-align: center;">  Flashing Orange </div> </div>	<p>If you see this indicator light sequence, the  icon appears, and your projector turns off during use, your projector has an internal problem.</p> <p>To resolve the issue, follow these steps:</p> <ol style="list-style-type: none"> 1. Turn off the master power switch. 2. Unplug the power cord, and then wait at least 15 minutes. 3. Reconnect the power cord, and then turn on the master power switch. 4. If the previous step doesn't resolve the issue, turn off the master power switch, unplug the power cord, and then contact your authorized SMART reseller

Interactive Whiteboard Indicators and Controls

The SMART Board 600 series interactive whiteboard includes the following indicators and controls:

- The ready light LED
- The pen tray LEDs and buttons
- The controller module's reset button

The ready light LED is in the lower-right part of the interactive whiteboard's frame. The ready light indicates the operational state of the controller module. If the interactive whiteboard starts responding unusually or if the LED displays colors other than green when it is on, try resetting the power and unplugging the USB connection to your computer. Consult your 600 series *Installation and User's Guide* ([document 1414](#)) to solve common issues. If the issues still continue, refer to *SMART's online diagnosis flowcharts* ([document 117615](#)) on the SMART support website.

Remote Management of Your 600i2 Interactive Whiteboard System

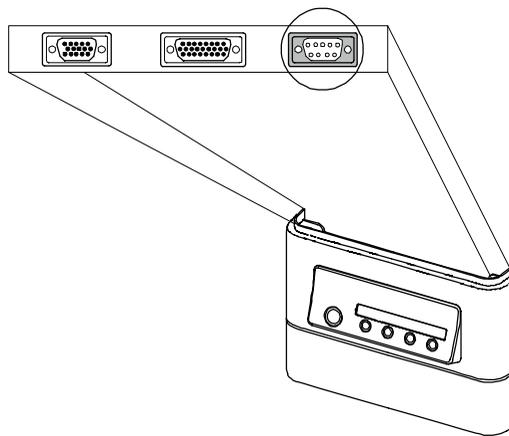
In This Chapter

This chapter has detailed instructions on how to set up your computer or your room control system to manage your SMART Board 600i2 interactive whiteboard system settings.

- Programming Commands for Managing Your 600i2 Interactive Whiteboard System Settings
 - Pin Configuration on the ECP RS-232 Connector
 - Serial Interface Settings
 - Timing and Command Processing
- Command Inventory
 - To allow the ECP to sequence the commands
 - To control the sequence programmatically
 - Query Commands
 - Projector Power Control Commands
 - Set Commands

Programming Commands for Managing Your 600i2 Interactive Whiteboard System Settings

You can externally manage projector settings by connecting a computer or room control system to the serial interface (RS-232) on the ECP for the Unifi 45 projector. Using a computer connection or room control system, you can select video inputs, start up or shut down the interactive whiteboard system and request information, such as projector lamp usage and current settings.



Pin Configuration on the ECP RS-232 Connector

The following table provides the pin configuration on the ECP. This pin configuration follows a three-wire connection, so that a straight-through male to female RS-232 serial cable connects to the ECP serial interface in the following arrangement. Do not connect your serial cable directly to the projector's RS-232 serial interface. The ECP's RS-232 serial interface is the only recommended connection point.

Pin Number	Female Unifi 45 Projector ECP RS-232 Connector
2	Transmit
3	Receive
5	Signal Ground

Serial Interface Settings

You must configure your computer's serial communication program or your room control system's serial communication settings with the following values:

Criteria	Input Value
Data Rate	19,200 bps
Data Bits	8
Parity	None
Stop Bits	1
Flow Control	None

NOTE: Type commands in ASCII format. Terminate all commands and responses with a carriage return.

To configure your serial interface

WARNING



Do not connect your serial cable directly to the projector's RS-232 serial interface. The ECP's RS-232 serial interface is the only recommended connection point.

1. Connect your computer to the ECP serial connector using a straight-through DB9M to DB9F cable.
2. On your computer, start your serial communications program or terminal emulation program.
3. Configure your serial communication parameters by following your program's instructions.
4. Configure your serial interface settings using the values in the table in the previous section, and then press ENTER.

An "Invalid command, ? for help" message appears, and the > character appears as a command prompt on the following line.

NOTE: If no message appears or an error message appears, your serial interface configuration isn't correct. Return to step 3, and then reset your serial interface settings.

5. Type commands to configure your settings.

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.

Timing and Command Processing

The Unifi 45 projector responds to commands only at certain power levels and times. There are four projector power states:

- Idle (standby)
- Powering (startup)
- On (operating)
- Cooling (standby)

The embedded firmware program coordinates command sequencing and is capable of buffering up to 127 commands. In each power state, the buffer accepts valid commands until the program can process them.

Power State	Commands Accepted
Idle	The buffer accepts all valid commands The system processes the get fwver , get bootver , get input , get powerstate and on commands
Powering	<ul style="list-style-type: none">• The buffer accepts all valid commands• The program doesn't process commands
On	<ul style="list-style-type: none">• The buffer accepts all valid commands• The program processes all valid commands
Cooling	<ul style="list-style-type: none">• The buffer accepts all valid commands• The program doesn't process commands

NOTES

- In the On state, a five second delay occurs after every input source change. The program doesn't process commands during this delay.
- In the On state, if the current input source doesn't send a signal, a black screen with the SMART Technologies logo—a "Command Failed" message appears when you type contrast and brightness commands.

Command Inventory

The Unifi 45 projector responds to the commands in the tables on the following pages.

NOTES

- Commands aren't case sensitive.
- Type commands exactly as they appear in the left column of the tables, except for number variables, which are represented by **, and positive/negative variables, which are represented by ±.

- Press ENTER after typing each command.

CAUTION

- Cycling power to the projector repeatedly can lock or damage the interactive whiteboard system. Allow at least 15 minutes for cooling before sending the ON command after turning off the system.
- Check your entries carefully before entering your commands.

IMPORTANT

The system buffer can delay response times. Response times vary.

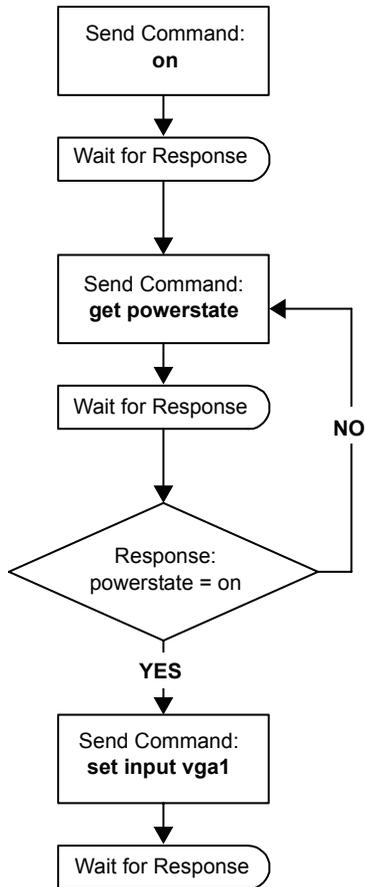
After the projector executes a command, it generates a response. There are two ways to program the command sequence to turn on the system, wait for the powering cycle to finish and select an input source:

- Allow the ECP to sequence the commands
- Control the sequence programmatically

To allow the ECP to sequence the commands

1. Type **on**, and then press ENTER.
2. Type **set input vga1**, and then press ENTER.

To control the sequence programmatically



Query Commands

Command	Result	Response (On-Screen)
get fwver	Displays the ECP's firmware version*	FW version = #
get bootver	Displays the ECP's bootloader version*	Bootloader version = #
get input	Displays the projector's input*	Input = #
get powerstate	Displays the projector's power state (Idle, Powering, On or Cooling)*	Power state = #
get brightness	Displays the projector's brightness setting	Brightness = #
get contrast	Displays the projector's contrast setting	Contrast = #
get volume	Displays the projector's volume setting	Volume = #
get lamphrs	Displays the number of hours the projector lamp has been in use	Lamp hours = #
get syshrs	Displays the number of hours the interactive whiteboard system has been in use	System hours = #
get pjfwver	Displays the projector's firmware version	Projector FW version = #
get pjserial	Displays the projector's serial number	Projector serial number = #

* This command bypasses internal buffering and generates a response immediately.

Projector Power Control Commands

Command	Result	Response (On-Screen)
off now	Turns off the Unifi 45 projector immediately	Turning off
off	Turns off the Unifi 45 projector normally**	Turning off
on	Turns on the Unifi 45 projector normally	Turning on

** You must send the **off** command twice. The first command displays an on-screen message, and the second command shuts off the system. You must send the second command within five seconds of the first, or the first command times out.

Set Commands

Command	Result	Response (On-Screen)
set input vga1	Selects the VGA1 projector input	Input = vga1
set input vga2	Selects the VGA2 projector input	Input = vga2
set input composite	Selects the composite projector input	Input = composite
set input s-video	Selects the S-video projector input	Input = s-video
set brightness +xx (xx is a value between -16 and 16)	Increases the brightness by a value equal to xx	Brightness = #
set brightness -xx (xx is a value between -16 and 16)	Decreases the brightness by a value equal to xx	Brightness = #
set brightness =±xx (xx is a value between -16 and 16). The ± sign represents the value's positive or negative sign, and xx represents the numeric value)	Sets the brightness to an exact value between -16 and 16	Brightness = xx
set contrast +xx (xx is a value between -16 and 16)	Increases the contrast by a positive value equal to xx	Contrast = #
set contrast -xx (xx is a value between -16 and 16)	Decreases the contrast by a negative value equal to xx	Contrast = #
set contrast =±xx (xx is a value between -16 and 16). The ± sign represents the value's positive or negative sign, and xx represents the numeric value.)	Sets the contrast to an exact value between -16 and 16	Contrast = xx
set volume+ (range 0–50)	Increases the volume by a value of 1	Volume = #
set volume- (range 0–50)	Decreases the volume by a value of 1	Volume = #

Regulatory Compliance

Waste Electrical and Electronic Equipment Regulations

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 products, we strongly encourage you to contact your local WEEE recycling agency for recycling and disposal advice.

Your SMART product required the extraction and use of natural resources for its production. It may contain hazardous substances. By disposing of electrical and electronic equipment appropriately, you lower the impact of these substances upon health and the environment and reduce the pressure on natural resources. Recycling agencies can reuse or recycle most of the materials from your product.

Please think about how you intend to dispose of any product that has a WEEE symbol or accompanying WEEE guidelines.



If you need more information on the collection, reuse and recycling of electrical and electronic equipment, please contact your local WEEE recycling agency.

Alternatively, contact your local reseller or SMART Technologies for information on the environmental performance of our products.

Batteries

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

Restriction of Certain Chemicals

The European Union has enacted the EU REACH Directive which restricts the use of certain chemicals in products. Japan has also enacted a similar chemical restriction law. SMART Technologies is committed to complying with this initiative.

Packaging

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

Covered Electronics Devices

Some US states classify monitors as Covered Electronic Devices and regulate their disposal. SMART Technologies meets the requirements of the Covered Electronic Devices for applicable products.

China's EIP 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.

Restriction of Certain Hazardous Substances (RoHS) Directives

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

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

Subsequently, this product also complies with other, less stringent directives that have arisen in various geographical areas, and that incorporate the European Union's RoHS directive as a basis.

For more information, refer to your local regulations or visit www.smarttech.com.

Customer Support

Online Information and Support

Visit 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 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 www2.smarttech.com/st/en-US/Where+to+Buy.

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

Online: www.smarttech.com/contactsupport

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: support@smarttech.com

Shipping and Repair Status

Contact SMART's Return of Merchandise Authorization (RMA) group, Option 5, +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

Registration

To help us serve you, register online at www.smarttech.com/registration.

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.

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99-00850-21 REV B0