

Installation and Configuration Guide

**SMART Board™ 600i Series
Interactive Whiteboard System**

Product Registration

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 _____

FCC Warning

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

Trademark Notice

SMART Board, smarttech, Notebook, Unifi and the SMART logo are trademarks or registered trademarks of SMART Technologies ULC in the U.S. and/or other countries. Microsoft and Windows are either trademarks or registered trademarks of Microsoft Corporation in the U.S. and/or other countries. DLP and DMD are registered trademarks of Texas Instruments. Vikuiti is a trademark of 3M company. All other third-party product and company names may be the trademarks of their respective owners.

Copyright Notice

© 2006–2007 SMART Technologies ULC. All rights reserved. No part of this publication may be reproduced, transmitted, transcribed, stored in a retrieval system or translated into any language in any form by any means without the prior written consent of SMART Technologies ULC. Information in this manual is subject to change without notice and does not represent a commitment on the part of SMART.

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

Important Information

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

Before you install and use the 600i SMART Board interactive whiteboard system, please read and understand the safety warnings and precautions in this guide. These safety warnings and precautions describe the safe and correct operation of the 600i interactive whiteboard system and its accessories, helping you prevent injuries and equipment damage. You must always ensure that the system is being used correctly.

In this document, “600i series interactive whiteboard system” refers to the interactive whiteboard and its Unifi™ 35 projector, accessories and options. Please also read the safety warnings and precautions that came with the peripheral products, such as the computer.

The Unifi 35 projector included with your new 600i interactive whiteboard system is designed to work only with SMART Board Model 660 or 680 interactive whiteboards.

Safety Warnings

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.

WARNING



Failure to follow the installation instructions included with the 600i series interactive whiteboard system (and found in this guide) could result in personal injury or damage to the product.

WARNING



To reduce the risk of fire or electric shock, do not expose any component of the 600i series interactive whiteboard system to rain or moisture.

WARNING



Two people are required to mount the projector or the interactive whiteboard on a wall because they may be too heavy for one person to maneuver onto their wall-mounting brackets.

WARNING



Do not climb (or allow children to climb) on any part of the wall-mounted SMART Board 600i series interactive whiteboard system.

Do not climb on, hang from, or suspend objects from the Unifi 35 projector's arm.

Climbing on the interactive whiteboard or projector arm could result in personal injury or product damage.



WARNING

Do not attempt to service the projector other than performing routine lamp replacement. Service should only be performed by an authorized service provider. Aside from 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.

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 leave cables on the floor. If you must run a cable over the floor, lay the cable in a flat, straight line, and secure it to the floor with tape or a cable management strip in a contrasting color. Handle cables carefully and don't bend them excessively.
- Do not add extra weight or apply pressure to the Unifi 35 projector arm, the wall-mounted interactive whiteboard or its pen tray. SMART 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 600i Interactive Whiteboard System

If you need to ship any part of your interactive whiteboard system, repack it with the original packaging. If the original packaging is no longer available, you may purchase replacement packaging from SMART Technical Support (see page 73 for contact information).

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.

If you ship your interactive whiteboard frequently, consider purchasing a more durable, hard shipping case from SMART Technologies. With its foam-lined interior, aluminum edges and valances, and steel-reinforced corners, this shipping case protects your SMART Board interactive whiteboard. The case has dual tilt wheels for ease of transport. To purchase these items, contact the SMART reseller from whom you purchased your 600i interactive whiteboard system.

Table of Contents

Important Information	i
Safety Warnings	i
Other Precautions	ii
Transporting the 600i Interactive Whiteboard System	ii
About 600i Interactive Whiteboard Systems	1
600i Interactive Whiteboard System Features	1
Standard Accessories	3
Optional Accessories	4
Installing 600i Series Interactive Whiteboard Systems	5
Environmental Requirements	6
Before Installing Your 600i Interactive Whiteboard System	7
Installing the 600i Interactive Whiteboard System	8
Adjusting Keystone Alignment Errors.....	20
Securing the Pen Tray and Interactive Whiteboard	24
Upgrading a 600 Series Interactive Whiteboard to a 600i System.....	25
Preparing for the Upgrade.....	26
Updating 600i System Firmware	30
Connecting the 600i System to a Computer	33
Operating Safety and Precautions	33
Connecting with a USB Cable.....	34
Connecting With a Serial (RS-232) Cable.....	36
Connecting a Guest Laptop	39
Orienting the SMART Board 600i Series Interactive Whiteboard	40
Configuring the Room Control Feature	42
Command Summary	43
Finding More Information	44
Using a 600i Series Interactive Whiteboard System	45
The 600i System's Indicators and Controls.....	46
Working with Your 600i Series Interactive Whiteboard System	50
Using a Stand-Alone 600i Series Interactive Whiteboard System	50
Using a 600i Series Interactive Whiteboard System with a Video Source	52
Using a 600i Series Interactive Whiteboard System with a Computer.....	53
Configuring the 600i System Input Options	55
Unifi 35 Projector Configuration	55
Customizing the Input Configuration	56
Maintaining 600i Interactive Whiteboard Systems	57
Tips for Trouble-Free Performance	57
The Pen Tray	59
Servicing the Pen Tray.....	59
Maintaining the Unifi Projector	61
Replacing the Projector Lamp.....	62

Troubleshooting 600i Interactive Whiteboard Systems	65
Resetting the 600i Interactive Whiteboard System	65
General 600i System Troubleshooting	67
Troubleshooting the Unifi Projector	68
Isolating the Interactive Whiteboard from the Unifi Projector	70
Regulatory Compliance	71
Waste Electrical and Electronic Equipment Regulations	71
Restriction of Certain Hazardous Substances (RoHS) Directives	71
Contacting SMART Technologies	73
Online Support	73
Training	73
Contacting SMART Technical Support	73
General Inquiries	73
Registration	73
Index	75

About 600i Interactive Whiteboard Systems

In this Chapter

The SMART Board™ 600i interactive whiteboard systems combine the SMART Unifi 35 wall-mounted short-throw projector with the 660 and 680 model interactive whiteboards. These topics describe the features of the 600i system components and some of the accessories and options you can use with your 600i.

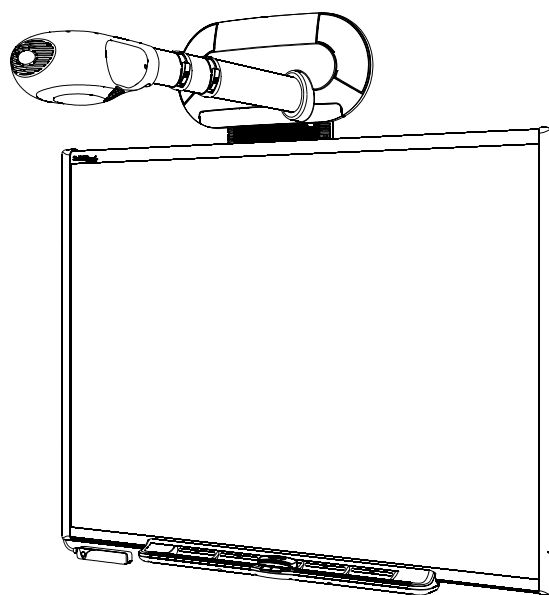
- 600i Interactive Whiteboard System Features (this page)
 - Interactive Whiteboard Features (page 2)
 - Unifi 35 Projector System Features (page 2)
 - Unifi Software Features (page 3)
- Standard Accessories (page 3)
 - Standard SMART USB Cable (page 3)
 - Extended Connection Panel and Cable (page 3)
 - Remote Control (page 3)
 - Computer Connection Cables (page 3)
 - SMART Board 600 Series Pens (page 4)
 - SMART Board 600 Series Eraser (page 4)
- Optional Accessories (page 4)
 - Active USB Extension Cables (page 4)
 - Cat 5 to USB Extender (page 4)
 - GoWire™ SMART Board Software Auto-Launch USB Cable (page 4)

600i Interactive Whiteboard System Features

The SMART Board 600i interactive whiteboard systems use the Unifi 35 short-throw, high-offset projector. This projector supports video, audio and data connections from a variety of devices, including DVD players, VCRs, digital cameras and TV tuners. When the Unifi 35 projects an image onto the touch-sensitive interactive whiteboard, you can draw over the image in digital ink using a pen tray pen or your finger, and then save the image to a USB storage device, without using a computer.

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.

You can also write over any 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 600i system interactive whiteboards include many features of other SMART Board interactive whiteboards, such as analog resistive touch screens and pen trays. Although the basic operation is the same, SMART has made many improvements to make the 600i system look more up-to-date and easier to use, service and install. The two available models, the 660 and 680, are 64" and 77" respectively, measured diagonally.

Other features of the interactive whiteboard systems include:

- a SMART Pen Tray that automatically detects when you've selected 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, compatible with dry-erase markers and easily cleaned with whiteboard cleaner.
- a standard USB interface to connect the SMART Board interactive whiteboard to the Unifi 35 projector.
- a security device to prevent theft of the pen tray or the interactive whiteboard.

Unifi 35 Projector System Features

The Unifi 35 projector system includes:

- a wall-mounted, high-offset projector that uses Vikuiti™ Super Close Projection technology from 3M.
- an integrated 2 × 20 W stereo sound system, with two speakers in the base of the projector assembly.
- VGA/SVGA/XGA/SXGA/MAC (UXGA) computer compatibility.
- native XGA resolution of 1024 × 768
- NTSC, PAL, SECAM, composite, S-video, component (YPbPr / YCbCr), SDTV (480i, 576i), EDTV (480p, 576p) and HDTV (720p and 1080i) video compatibility.
- serial RS-232 interface for connecting a second computer or a room control system.
- 16.7 million colors (24-bit) display.
- automatic image synchronization (auto-tracking/frequency/position adjustment/phase detection).
- automatic saving of user settings.
- self-protection timer for hot re-strike of compact P-VIP lamp.
- a control panel expansion module located in the interactive whiteboard's pen tray, including a connection cable.
- an accessible extended connection panel, including:
 - USB, VGA, S-video, composite video, RCA and 3.5 mm stereo audio inputs.
 - a USB storage device adapter.
- a secure mounting and installation system that includes:
 - a template that positions both the interactive whiteboard and the projector.
 - mounting hardware for framed wall, with metal or wood studs, and concrete wall installations.
 - a security device to prevent projector theft or fall.
- cable routing behind the interactive whiteboard, including a cable cover to hide the cables in the space between the projector and top of the interactive whiteboard.

Unifi Software Features

The projector's firmware has additional features that you can use when the 600i is operating in Stand-alone mode, with a video source or with an attached computer. These features include:

- interactive whiteboard capability with a simplified interface.
- on-screen menu with five languages (English, French, German, Spanish and Italian).
- drawing over projected images from all video sources, including RGB, S-video and composite. You can capture the video images with your notes or drawings as ScratchPad pages, and save them to a USB storage device as PDF, JPEG or Notebook files.
- a built-in online Help menu
- a 9-point orientation tool for aligning the touch screen with the projected image

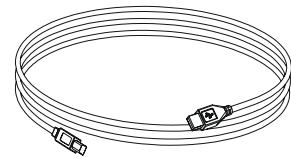
When you use the 600i with a computer, you can also use all of the features of SMART Board software.

Standard Accessories

SMART provides the following accessories with each 600i interactive whiteboard system. If you need to purchase replacements, contact your authorized SMART reseller.

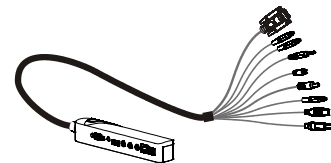
Standard SMART USB Cable

Your 600i interactive whiteboard comes with a 16' (5 m) USB cable. Use this cable to connect the SMART Board 660 or 680 interactive whiteboard to the Unifi projector's USB receptacle.



Extended Connection Panel and Cable

The extended connection panel cables provides convenient access to the audio, video and USB inputs to your 600i system. The extended connection panel includes VGA-HD, S-video and composite video inputs, 3.5 mm stereo and RCA audio jacks, a USB-B receptacle to connect your computer and a USB-A receptacle to connect a USB storage device.



Remote Control

The remote control that accompanies the 600i provides an alternate way to control the system and set up your Unifi projector. All of the functions of the remote control are duplicated in the Unifi projector's on-screen menus.



Computer Connection Cables

SMART provides a set of computer connection cables with your 600i system. The set includes a 6' (1.8 m) VGA-HD cable, a 6' (1.8 m) 3.5 mm stereo phone cable, and a 6' (1.8 m) USB cable.

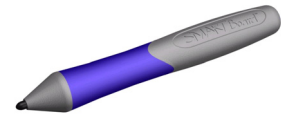


SMART Board 600 Series Pens

The pens have a rubberized grip area, colored to match the four colors of electronic ink: black, green, red and blue.

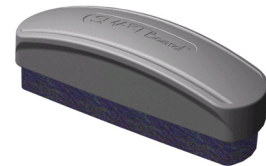
You can use dry-erase markers instead of the supplied pens, as long as they are a similar shape, do not scratch or mark the surface of the interactive whiteboard and are reflective to infrared light. If the pens you provide don't reflect infrared light, the pen tray sensor might not detect the presence of the pen. EXPO® markers make excellent substitutes.

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, helping with tool detection.



SMART Board 600 Series 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

You can purchase these optional accessories when you order your interactive whiteboard, or you can purchase them later from your authorized SMART reseller.

Active USB Extension Cables

You can connect up to three 16' (5 m) USB active extension cables (Part No. USB-XT) to extend the USB connection to a maximum of 64' (20 m). See page 35 for more information.



Cat 5 to USB Extender

You can use the SMART Cat 5 to USB extender (Part No. CAT5-XT) shown to extend the USB connection up to 120' (36.6 m) using RJ45 Cat 5 cable (purchased separately).

The extender includes two 6' (1.8 m) USB cables to connect your computer and the Unifi projector to the extender units. Don't connect the Cat 5 to USB extender to the extended connection panel (ECP). For more information, see page 35.



GoWire™ SMART Board Software Auto-Launch USB Cable

The GoWire cable contains SMART Board software and launches it automatically, providing full access to all software tools without installing SMART Board software on your computer.



Installing 600i Series Interactive Whiteboard Systems

In this Chapter

Before installing your 600i interactive whiteboard system, review the topics below. In addition to installation instructions, this chapter contains environmental and safety information.

- *Environmental Requirements* (page 6)
 - *Temperature* (page 6)
 - *Humidity* (page 6)
 - *Water and Fluid Resistance* (page 6)
 - *Dust and Scratching* (page 6)
 - *Electrostatic Discharge (ESD)* (page 6)
 - *Conducted and Radiated Emissions* (page 6)
- *Before Installing Your 600i Interactive Whiteboard System* (page 7)
 - *Recommended Heights for Mounting* (page 7)
 - *Tools required* (page 7)
 - *Preparing the Installation Template* (page 8)
- *Installing the 600i Interactive Whiteboard System* (page 8)
 - To mount the SMART Board 600i projector bracket on a framed wall*
 - To mount the SMART Board 600i projector bracket on a concrete wall*
 - To mount the projector on the bracket*
 - To connect the extended connection panel and cables*
 - To prepare for mounting the interactive whiteboard*
 - To mount the interactive whiteboard and align the image*
 - To install the control module*
 - To install the pen tray*
 - To install the wire cover*
 - To complete the installation*
- *Adjusting Keystone Alignment Errors* (page 20)
 - *About Correcting Keystone Errors* (page 20)
 - *Aligning the Interactive Whiteboard* (page 20)
 - To prepare to align the interactive whiteboard*
 - To adjust the projected image if it is wider at the bottom*
 - To adjust the projected image if it is wider at the top*
 - *Aligning the Unifi 35 Projector Boom* (page 22)
 - To adjust the Unifi 35 projector boom alignment*
- *Securing the Pen Tray and Interactive Whiteboard* (page 24)
 - To lock the pen tray to the interactive whiteboard*
 - To secure the pen tray to the pen tray brackets*
- *Upgrading a 600 Series Interactive Whiteboard to a 600i System* (page 25)
 - *Upgrade Checklist* (page 25)

- *Preparing for the Upgrade* (page 26)
 - To remove the existing interactive whiteboard* (page 26)
 - To position the projector above the interactive whiteboard — framed wall*
 - To position the projector above the interactive whiteboard — concrete wall*
- *Updating 600i System Firmware* (page 30)
 - *Updating the Unifi Projector Firmware* (page 30)
 - *Updating the Interactive Whiteboard's SC9 Firmware* (page 30)
 - To update the SC9 firmware*

Environmental Requirements

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

Temperature

SMART Board 600i series interactive whiteboard systems can operate in a temperature range of 50°F to 95°F (10°C to 35°C). The product can withstand storage temperatures from -22°F to 120°F (-30°C to 50°C) with 90% humidity, non-condensing.

Humidity

SMART Board 600i series interactive whiteboard systems can operate between 5% and 80% (20–80% humidity, non-condensing) relative humidity non-condensing. Humidity above 80% might cause slight wrinkling in the sheet. The wrinkles disappear once the humidity lowers.

Water and Fluid Resistance

SMART Board 600i series 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 projector or any of its sub-components. These liquids might get into areas where they could damage sensitive electronic components. Refer to (page 58) for detailed instructions on cleaning your system's components.

Dust and Scratching

SMART Board 600i series 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 600i series interactive whiteboard systems meet the requirements of EN61000-4-2 severity level 4 for direct and indirect ESD. No malfunction or damage up to 15kV (both polarities) with a 330 ohm, 150 pF probe (air discharge). Un-mated connectors meet 8kV for direct (contact) discharge.

Conducted and Radiated Emissions

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

Before Installing Your 600i Interactive Whiteboard System

Choose a location for your SMART Board 600i 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 reduce the contrast of the projected image.

Recommended Heights for Mounting

SMART includes a mounting template with each of its 600i interactive whiteboard systems. Using this template ensures that you:

- mount the Unifi projector at a safe height, while maintaining enough space for airflow above the unit.
- position the projector at the correct height above the 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 your 600i interactive whiteboard, consult your local regulations before mounting the unit lower.

IMPORTANT



You must follow the instructions in this guide carefully to safely install the 600i interactive whiteboard system. Failure to follow these instructions may result in product damage and personal injury.

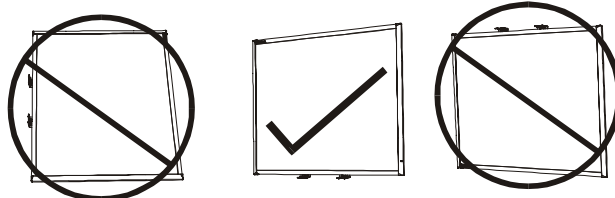
Tools required

- Phillips® No. 1 and No. 2 screwdrivers
- a ruler or tape measure
- a carpenter's level
- a pencil or other marking device
- an electric drill with a variety of drill bits, including:
 - 1/8" (3 mm) drill bit for pilot holes
 - 5/16" (8 mm) drill bit for wooden stud drywall mounting
 - 7/16" (11 mm) drill bits for metal stud and concrete wall mounting
- a stud finder, if mounting on a framed wall

CAUTION



If you need to lean the interactive whiteboard against a wall before you mount it, make sure it remains in an upright position, resting on the pen tray brackets, which can sustain the weight of the interactive whiteboard.



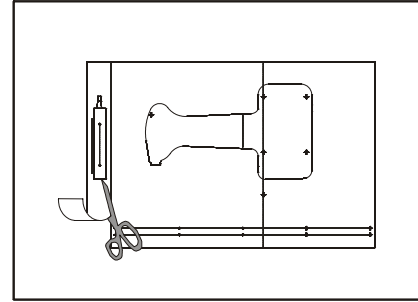
Do not rest the interactive whiteboard on its side or on the top of the frame.

Preparing the Installation Template

You must position and install the Unifi projector before you mount and adjust the position of the interactive whiteboard. SMART provides the installation template to help you mount the projector and the interactive whiteboard correctly.

Before starting the installation, cut the extended connection panel part from the included installation template and reserve it for a later step. If you are installing the projector close to the ceiling, cut along the template's top line.

The first procedure in the following section illustrates the mounting of the 600i interactive whiteboard system onto a framed wall surfaced with gypsum or drywall. If you are mounting your 600i system on a concrete wall, go to the *To mount the SMART Board 600i projector bracket on a concrete wall* procedure page 10.



Installing the 600i Interactive Whiteboard System

WARNING

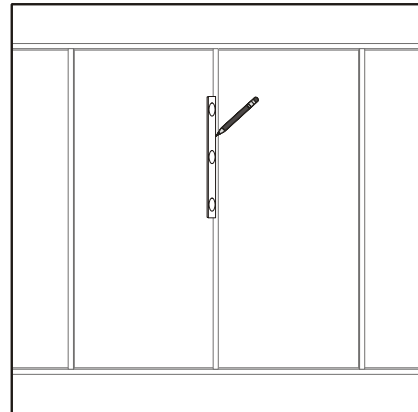


Two people are required to safely mount the 600i interactive whiteboard system on a wall.

NOTE: To mount the Unifi projector safely on a framed wall, you must attach the mounting plate to a stud. If the wall doesn't have a stud in a suitable location, you can secure a sheet of 1/2 " (13 mm) or thicker plywood to the wall, and then mount the projector on it.

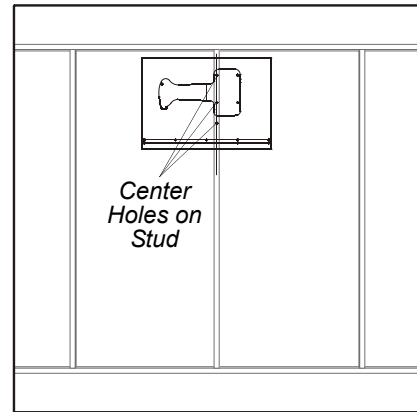
To mount the SMART Board 600i projector bracket on a framed wall


1. Locate a stud near the center of the area where you want to mount the 600i interactive whiteboard system using a stud finder.
2. Draw a vertical line on the wall marking the centerline of the stud using a pencil and a carpenter's level.



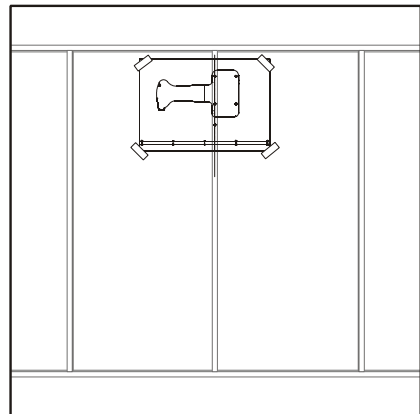
3. Position the installation template on the wall with the three indicated holes centered on the stud.
4. Slide the template up or down the wall until it is at the desired height as recommended by the line at the bottom of the template using a measuring tape or ruler. Use a carpenter's level to ensure that the template is level.

NOTE: Be sure to position the projector bracket at least 5" (12.7 cm) from the ceiling to provide adequate airflow around the projector.

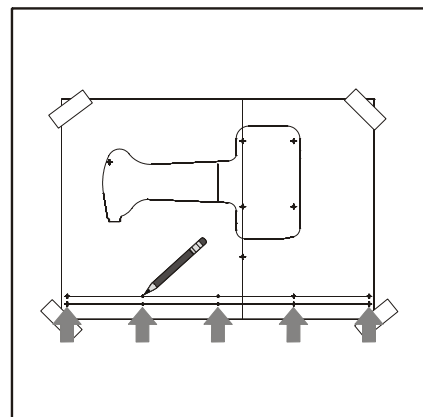


IMPORTANT  When mounting the projector on a framed wall, you must attach the mounting bracket to a stud to safely support the projector's weight. If you use drywall anchors only, the anchors or the drywall can fail, resulting in product damage and possible personal injury.

5. Pin or tape the template to the wall.



6. Locate the row of marks on the template that identify the location of the bracket mounting holes for your model of interactive whiteboard. Mark the wall at each anchor location using a pencil.

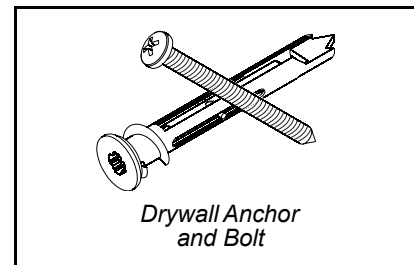
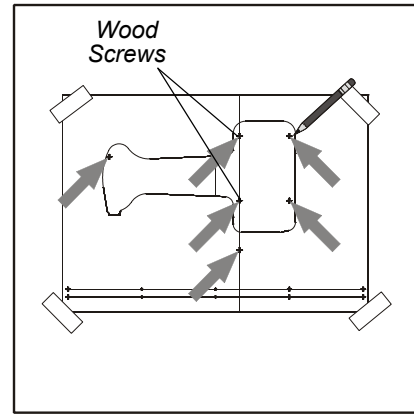


7. Mark the six holes for the projector mounting plate anchors and the security cable anchor, and then remove the template from the wall.
8. For a **wooden** stud wall, drill a 1/8" (3 mm) pilot hole at the center three marks, and then screw in one of the included pan-head wood screws with a washer into each of the top two holes in the center column, leaving the heads about 1/4" (6 mm) from the wall surface. Don't screw in the security cable screw at this time.

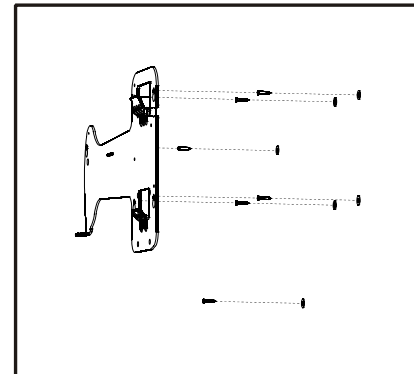
For a **metal** stud wall, drill 7/16" (11 mm) holes through the drywall and the stud at each of the two center marks and the security cable mark.

Drill 5/16" (8 mm) holes at the remaining three marks.

9. Insert the included drywall anchors into all of the drilled holes, and screw them in until they are flush with the drywall surface. Do not use a hammer to insert the anchors.

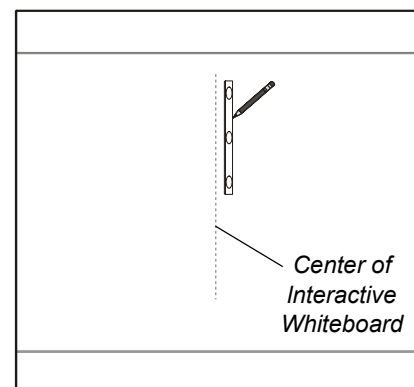


10. Screw the anchor bolts with washers into the bracket anchors, leaving the heads about 1/4" (6 mm) from the wall surface. Don't screw in the bolt for the security cable at this time.
11. Hang the projector bracket on the five screws and anchor bolts, use a carpenter's level to ensure that the bracket is level, and then tighten the screws and bolts securely.



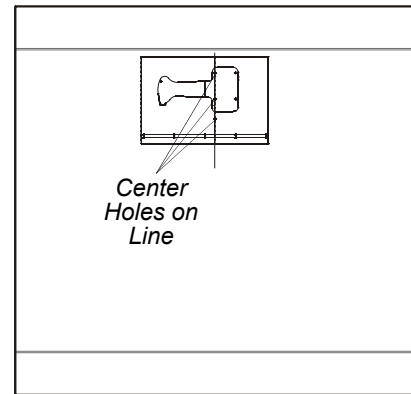
To mount the SMART Board 600i projector bracket on a concrete wall

1. Draw a vertical line on the wall about 2" (5 cm) to the right of the center of the interactive whiteboard's planned position using a pencil and a carpenter's level.

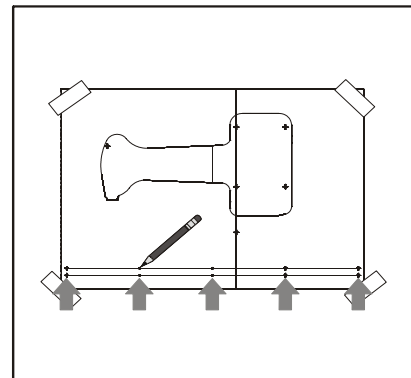


2. Position the installation template on the wall with the three indicated holes centered on the line.
3. Slide the template up or down the wall until it is at the desired height as recommended by the line at the bottom of the template using a measuring tape or ruler. Use a carpenter's level to ensure that the template is level.

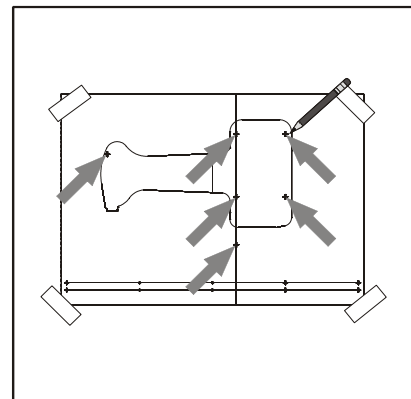
NOTE: Position the projector bracket at least 5" (12.7 cm) from the ceiling in order to ensure adequate airflow around the projector.



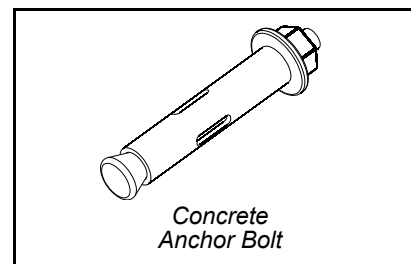
4. Locate the row of marks on the template that identify the location of the bracket mounting holes for your model of interactive whiteboard. Use a pencil to mark the wall at each anchor location.



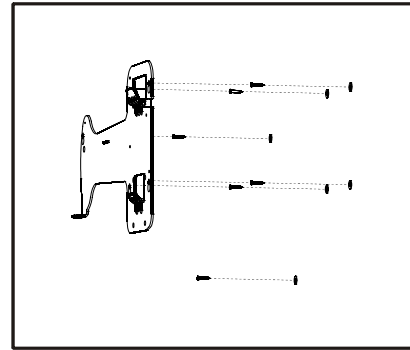
5. Mark the six holes for the projector mounting plate anchors and the security cable anchor, and then remove the template from the wall.
6. At each of the marks (including the security cable mark) drill 5/16" (8 mm) holes into the concrete wall.



7. Insert the included concrete anchors into all of the drilled holes, pushing them in until the sleeve is flush with the wall surface. Tighten the nuts to secure the anchor in the wall, and then remove the nuts.

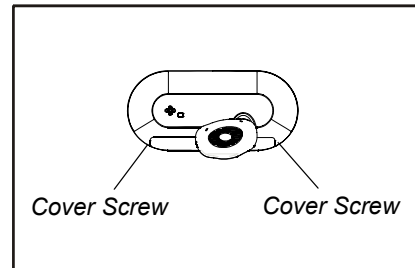


8. Place a washer on each bolt, and then replace the nuts, leaving them about 1/4" (6 mm) from the wall surface. Don't screw in the bolt for the security cable at this time.
9. Hang the projector bracket on the five anchor bolts, use a carpenter's level to ensure that the bracket is level, and then tighten the nuts securely.

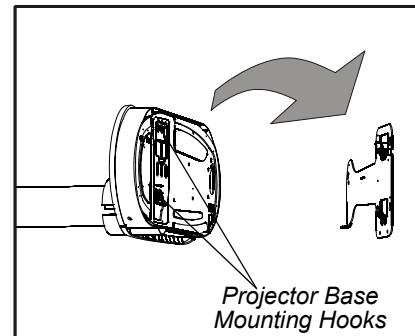


To mount the projector on the bracket

1. Remove the two screws from the lower corners of the projector base using a Phillips No. 1 screwdriver, and then remove the connection panel cover.



2. Mount the Unifi projector on the projector bracket, ensuring that both hooks are fully engaged.

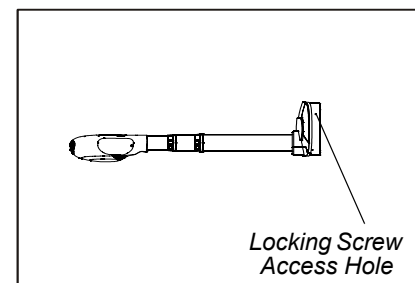


WARNING



Make sure that both mounting hooks are fully engaged before releasing the projector. Failure to do so can result in product damage and personal injury.

3. Tighten the locking screw through the access hole located on the right side of the projector base using a Phillips No. 2 screwdriver.

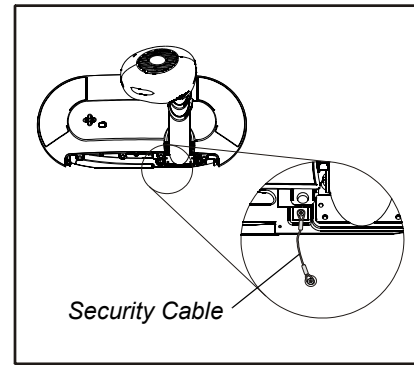


WARNING



The locking screw contributes to the structural integrity of the projector's mounting system. You must use it. It prevents the removal of the projector from the mounting bracket. Make sure that the locking screw is fully inserted and tightened. Failure to do so can result in image alignment problems, product damage, personal injury or theft.

- Attach the security cable to the wall using the included large washer and the remaining screw (for a wooden stud) or anchor bolt (for a metal stud or concrete wall).



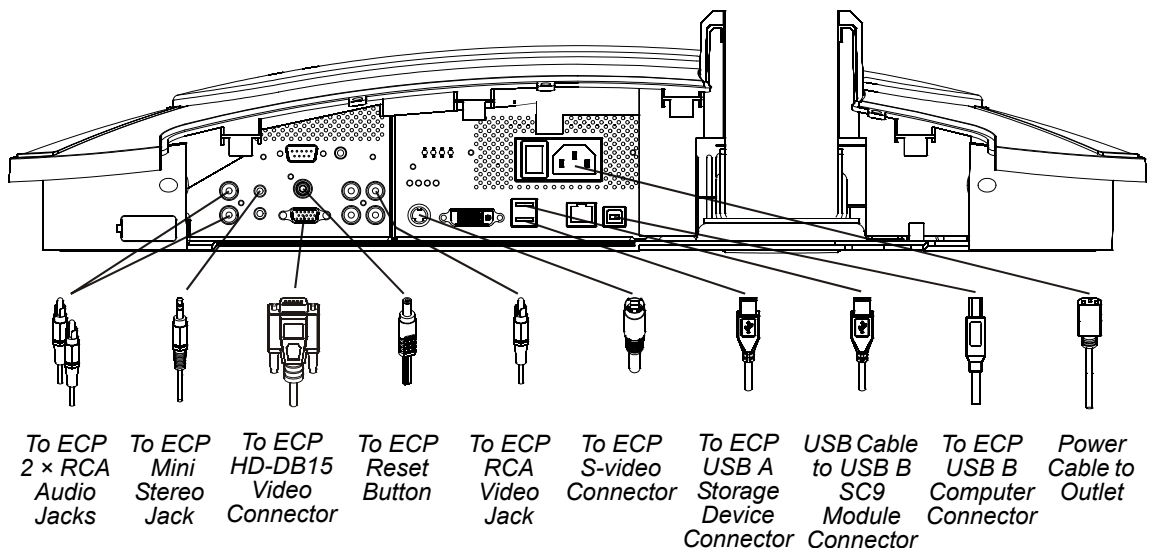
WARNING



Make sure that the security cable is securely attached to the wall. If excessive force placed on the boom causes the projector to break away from the wall, the cable prevents the projector from falling and causing injury.

To connect the extended connection panel and cables

- Plug all the extended connection panel (ECP) cable connectors into their receptacles on the projector base's connection panel, as shown. Don't mount the ECP at this time.



- Connect the Type A connector of the 16' (5 m) USB cable (included with the interactive whiteboard) to the unused Type A USB receptacle on the projector's connection panel.

IMPORTANT



Do not use the shorter 6' (1.8 m) USB cable included with your projector to connect the projector to the interactive whiteboard. Reserve this cable to connect the projector's extended connection panel to your computer.

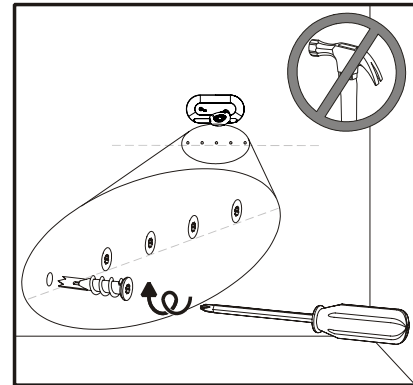
- Connect the power cable to the power connector on the connection panel, and then turn on the master power switch. Don't connect the cable to a power source at this time.

To prepare for mounting the interactive whiteboard

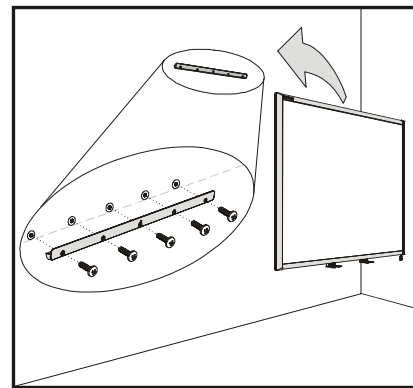
1. **NOTE:** If you're upgrading an existing 600 series interactive whiteboard to a 600i system, go to step 3 below (see page 25).

For a framed wall, screw in one of the included self-tapping wall anchors at each mark. Do not use a hammer to tap these anchors into the wall.

For a concrete wall, drill holes at the marks, and insert concrete anchors (not included) into the holes.



2. Attach the wall mount bracket using the screws included with the anchors.
3. Temporarily hang the interactive whiteboard on the wall mount bracket.



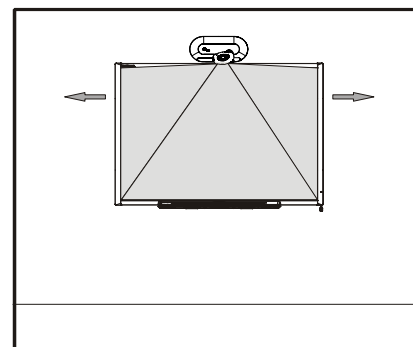
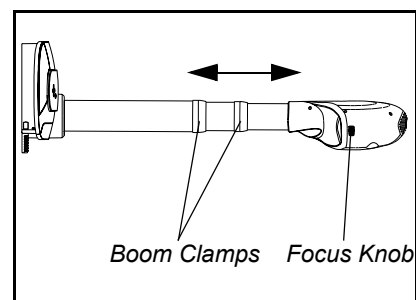
To mount the interactive whiteboard and align the image

IMPORTANT



Leave a 3/8" (1.0 cm) margin between the projected image and each outer edge of the screen's surface. Don't extend the image to the edge of the screen's surface.

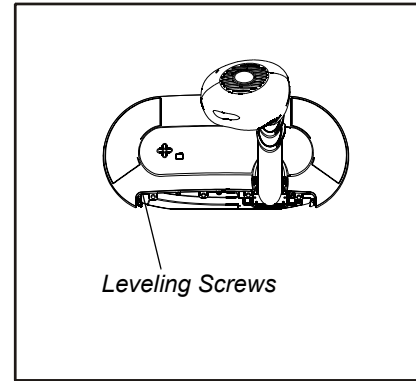
1. Plug the projector's power cable into a wall outlet, and then use the remote control to turn on the projector.
2. Unlatch the projector boom clamp closest to the base, extend the first section completely, and then latch the clamp.
3. To adjust the image size, unlatch the other clamp and extend or contract the last section of the boom.
4. Adjust the projector focus using the knob on the side of the projector head before latching the boom clamp, as focusing the image changes the size slightly.
5. Slide the interactive whiteboard sideways on its bracket to align it with the projected image.



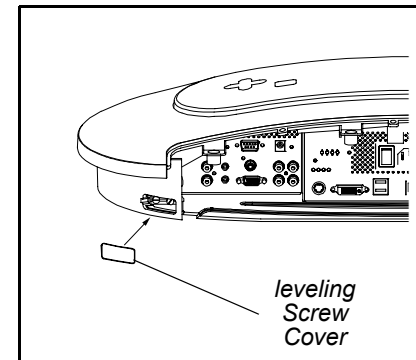
6. If the image isn't level, adjust the projector leveling screws to the left of the projector's connection panel.
7. Repeat steps 3 through 6 until the system is properly aligned.

NOTES

- If the image is wider at the top or the bottom, see page 20 for keystone alignment instructions.
- Do not adjust the projector alignment screws inside the projector head.

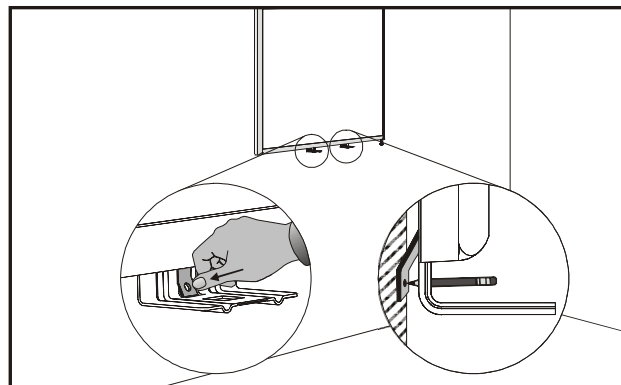


8. Install the leveling screw cover in the lower-left of the projector base.



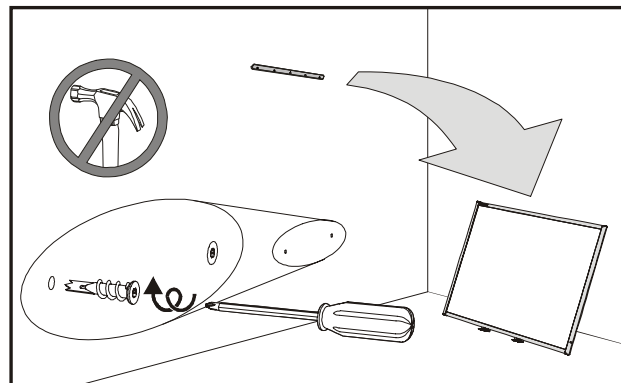
9. Locate the two L-shaped metal brackets below the interactive whiteboard's bottom frame, and push the metal tab in the center of each bracket back until it contacts the wall, and then mark the location of the mounting holes.

NOTE: If you are upgrading an existing 600 series interactive whiteboard to a 600i system, (see page 25) your pencil marks probably won't line up with the existing mounting holes. You must install new anchors (not included) to align the interactive whiteboard correctly.

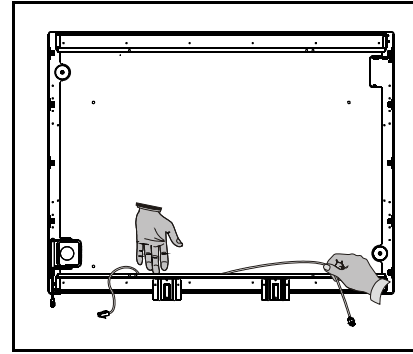


10. Remove the interactive whiteboard from the wall.
11. If you're mounting the system on a framed wall, screw in one of the included self-tapping wall anchors at each mark.

If you're mounting the system on a concrete wall, drill holes at the marks, and insert concrete anchors (not included) into the holes.

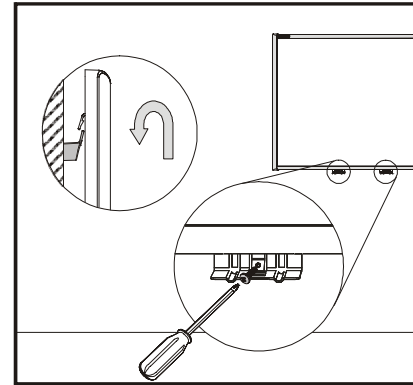


- Place the included control module cable into the track on the back of the interactive whiteboard, leaving the ends hanging near each end of the bottom frame.



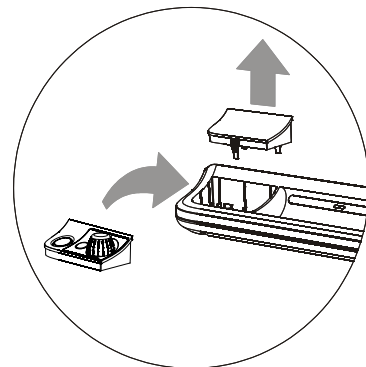
- Put the interactive whiteboard back on the wall mount bracket.
- Screw the L-shaped metal brackets to the wall anchors using the screws included with the anchors.

NOTE: If you want to lock your interactive whiteboard with a security cable, see *To lock the pen tray to the interactive whiteboard* (page 24) before you secure the brackets.



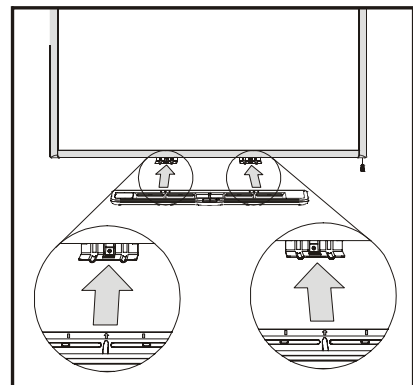
To install the control module

- From the bottom of the pen tray, bend the expansion slot cover's two plastic tabs toward the front of the pen tray, and then push it up to remove it.
- Place the 600i control module into the pen tray's expansion slot and gently push down until it snaps into place.

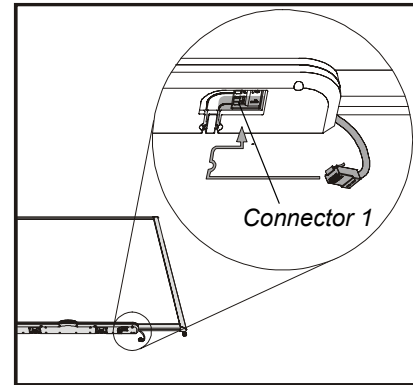


To install the pen tray

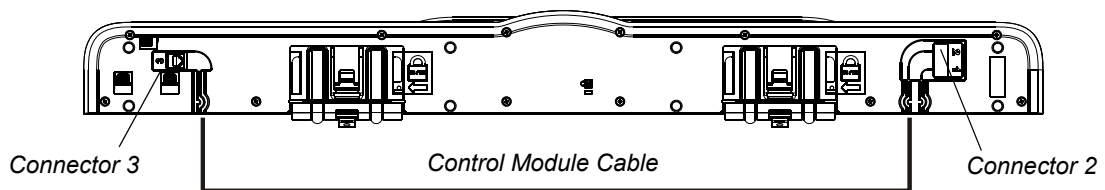
- Position the pen tray in line with the two L-shaped metal brackets, and slide it toward the wall until it is seated firmly.



- Route the modular I²C cable from the interactive whiteboard's SC9 controller module (under the lower-right end of the pen tray) and insert it into connector number **1** on the bottom of the pen tray. Press the cable into the strain relief channel on the bottom of the tray to protect the modular cable's RJ11 connector from damage if the pen tray is removed without first disconnecting the cable.



- Insert the control module cable (see step 12 on page 16) into connectors **2** and **3** on the bottom of the pen tray, and then press the cable into the strain-relief channels.

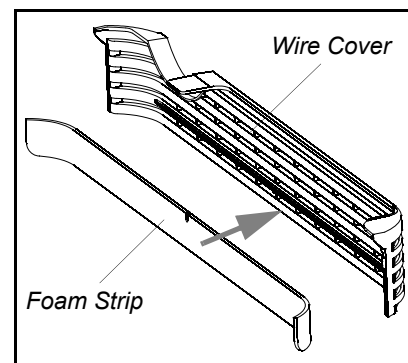


- Move all the pen tray cables out of sight behind the interactive whiteboard.

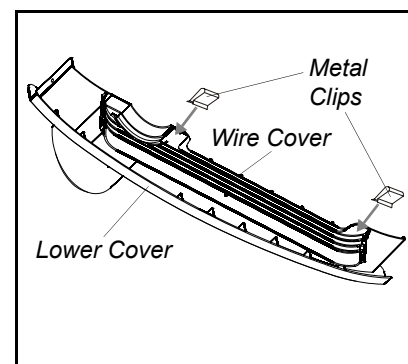
To install the wire cover

In the accessory kit included with your 600i interactive whiteboard system are two sizes of wire cover; use the narrower cover with 660i systems, and the wider cover with 680i systems.

- Remove the backing from the adhesive on the included foam strip, and then press the foam strip onto the lower edge of the wire cover.

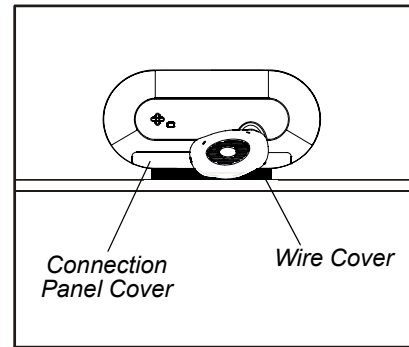


- Attach the wire cover to the lower cover using the two included metal clips as shown.



3. Install the connection panel cover with the attached wire cover onto the base of the Unifi projector, and then replace the screws at each end of the cover (see step 1 on page 12).

NOTE: Verify that the power switch is in the ON position before you install the cover.

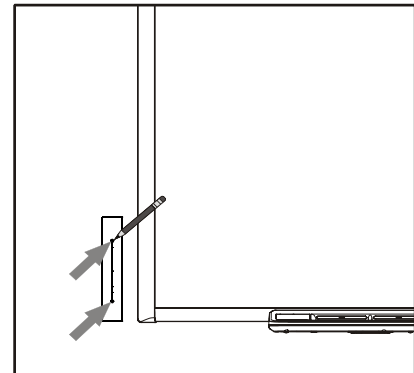


To complete the installation

1. Identify a suitable location for the extended connection panel near the bottom left corner of the interactive whiteboard. Be sure that the connectors are easily accessible.

NOTE: The drawing to the right shows only one of several possible locations for the extended connection panel.

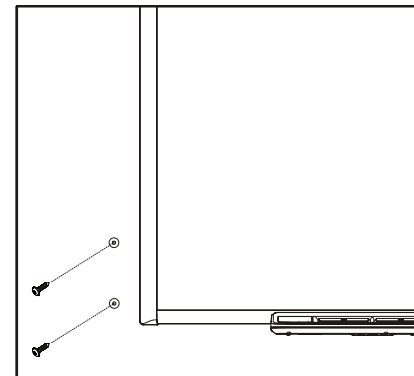
2. Using the extended connection panel part of the installation template (page 8), mark the locations of the mounting anchors.



3. If you're mounting the connection panel on a framed wall, push in one of the included wall anchors at each mark.

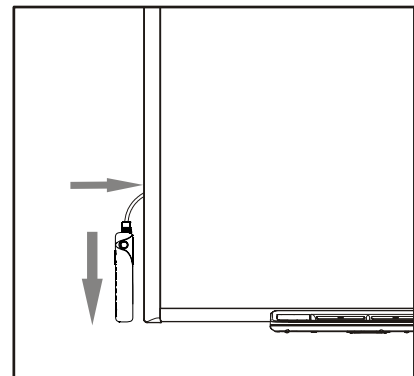
If you're mounting the connection panel on a concrete wall, drill holes at the marks, and then insert concrete anchors (not included) into the holes.

4. Screw in the anchor screws or bolts leaving the heads about 1/8" (3 mm) from the wall surface.

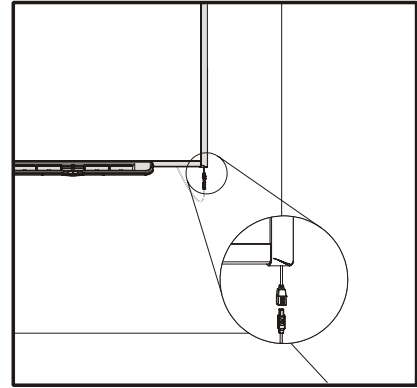


5. Position the keyholes on the back of the extended connection panel over the anchor screw heads and slide the panel to lock it into position. You may have to adjust the screw depth slightly for a secure fit.

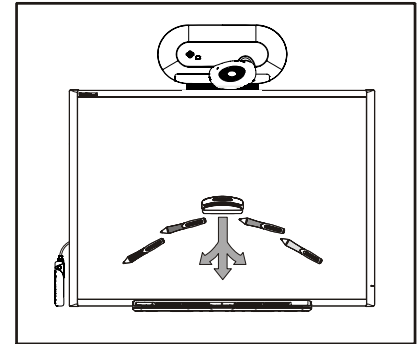
Move the cable neatly out of sight behind the interactive whiteboard.



6. Connect the USB cable from the projector base to the captive USB cable's connector at the lower-right corner of the interactive whiteboard. Hide the excess cable behind the interactive whiteboard.



7. Place the four pens and the eraser into their respective recesses in the pen tray.



Adjusting Keystone Alignment Errors

During the manufacturing process, SMART precisely aligns the Unifi 35 projector. When you install the system on a flat wall using the procedures starting on page 8, you don't need to perform keystone adjustment. If you've followed the installation procedures carefully and the projected image isn't aligned, your projector may have been damaged during shipping. Contact your SMART service representative.

When you use standard projectors, keystone errors occur when the projected image isn't perpendicular to the screen. The image appears wider at the bottom when the distance from the projector lens to the bottom of the screen is greater than the distance to the top of the screen. The image appears wider at the top when the distance from the projector lens to the top of the screen is greater than the distance to the bottom of the screen.



*Bottom of Interactive Whiteboard
is Too Far from the Projector Lens*



*Top of Interactive Whiteboard
is Too Far from the Projector Lens*

Keystone errors can occur when you mount the Unifi™ 35 short-throw, high-offset projector and the interactive whiteboard used in SMART Board 600i interactive whiteboard systems on an uneven surface, or on a wall that has obstructions such as a whiteboard or aluminum rails.

About Correcting Keystone Errors

When possible, position the interactive whiteboard so that it aligns with the projected image. This eliminates keystone errors. If your installation prevents you from moving the interactive whiteboard, you may be able to adjust the Unifi 35 projector boom alignment to correct image distortion.

NOTE: Do not adjust the projector boom alignment unless necessary.

- If you move the projector to a new location you must return its alignment to factory settings.
- If your projector requires service, you must adjust the replacement projector.

WARNING



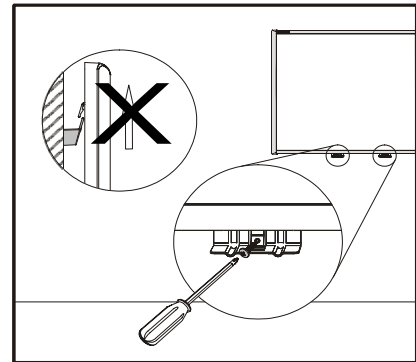
It takes two people to safely lift the interactive whiteboard on or off its wall mount bracket.

NOTE: Do not attempt the following procedures unless you are familiar with the installation procedures starting on page 8.

Aligning the Interactive Whiteboard

To prepare to align the interactive whiteboard

1. If your 600i system is fully installed, remove the pen tray from the interactive whiteboard. See page 16.
2. Remove the screws from the pen tray brackets, and put them aside.
The bottom of the interactive whiteboard is free from the wall. Don't lift the interactive whiteboard off the wall mount bracket.
3. Connect the projector's power cable to a wall outlet, and then turn on the projector using the remote control.



To adjust the projected image if it is wider at the bottom

1. While holding the interactive whiteboard against the wall, measure the space between the bottom frame and the wall.
2. Gently pull the bottom of the interactive whiteboard away from the wall until the sides of the image are parallel, and then measure how far you moved the bottom of the interactive whiteboard.

NOTE: You may have to adjust the projector boom length and focus slightly during this step.

3. Make two spacers of the correct thickness to put behind the bottom corners of the interactive whiteboard.
4. Lift the interactive whiteboard from the wall mount bracket, and then place it face down on a flat surface.
5. Tape one of the spacers to the back of the SC9 controller module, and the other to the round pad on the back of the left frame.
6. Return the interactive whiteboard to the wall mount bracket.
7. Replace the two pen tray bracket screws, and then replace the pen tray.

To adjust the projected image if it is wider at the top

1. While holding the interactive whiteboard against the wall, measure the space between the top frame and the wall.
2. Lift the interactive whiteboard off its mounting bracket, and then hold the interactive whiteboard against the wall at the same height as when it was mounted.
3. Pull the top of the interactive whiteboard away from the wall until the sides of the image are parallel, and then measure how far you moved the top of the interactive whiteboard.

NOTE: You may have to adjust the projector boom and focus slightly during this step.

4. Put the interactive whiteboard aside.
5. Make a spacer of the correct thickness to fit behind the wall mount bracket.
6. Remove the wall mount bracket screws using a Phillips® No. 2 screwdriver, and then remove the bracket.
7. Place the spacer behind the wall mount bracket, and then replace the bracket.
8. Return the interactive whiteboard to the wall mount bracket.
9. Replace the two pen tray bracket screws, and then replace the pen tray.

Aligning the Unifi 35 Projector Boom

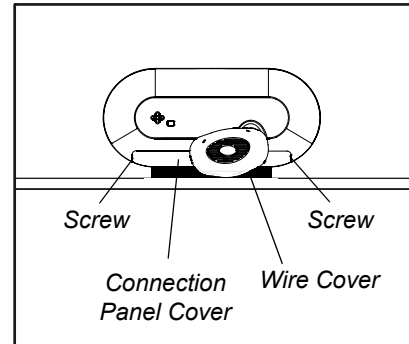
CAUTION



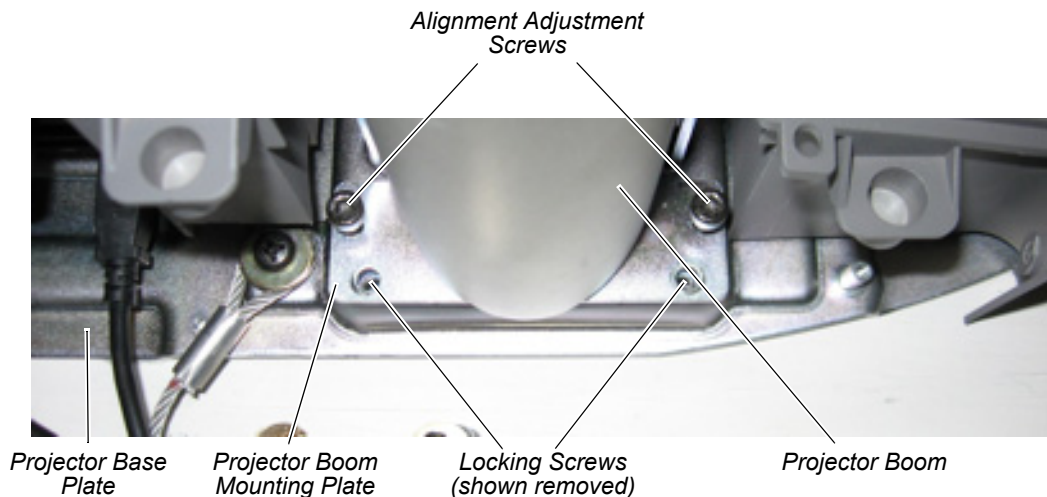
Read the following procedure carefully before adjusting the boom alignment. Improper adjustment can damage the projector severely, potentially voiding the projector's warranty.

To adjust the Unifi 35 projector boom alignment

1. Remove the screws from the connection panel cover using a Phillips No. 1 screwdriver, and then remove the connection panel cover and the wire cover from the base of the projector.



2. Completely remove the two locking screws from the projector boom mounting plate and set them aside.



IMPORTANT



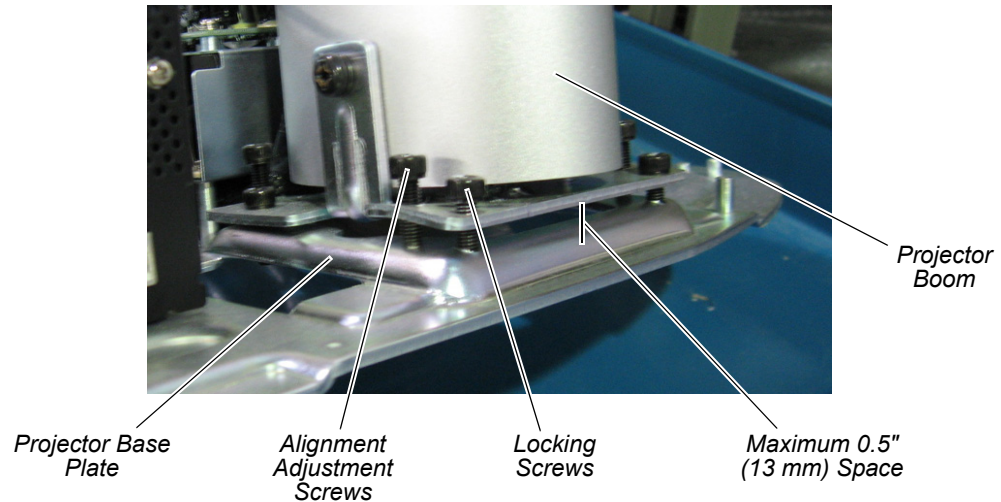
You can damage the projector boom mounting plate or the projector base plate if you do not remove the locking screws before adjusting the boom alignment.

3. Adjust both adjustment screws at the same time, and don't turn the screws more than a quarter turn (90°) at a time.
 - If the image is wider at the bottom, turn the adjustment screws counter-clockwise to lower the boom.
 - If the image is wider at the top, turn the adjustment screws clockwise to raise the boom.

NOTE: You may have to adjust the projector boom length and focus slightly during this step.

4. After adjusting the screws, check the projected image for keystone error.
5. Repeat steps 3 and 4 until the keystone error is eliminated.


NOTE: When you raise the boom, do not allow more than 0.5" (13 mm) space between the bottom of the mounting plate and the projector base plate. If you can't eliminate the keystone error, contact your SMART technical support representative.



6. Replace the locking screws, and then tighten them to prevent the adjustments from changing.
7. Replace the connection panel cover and wire cover onto the base of the projector.

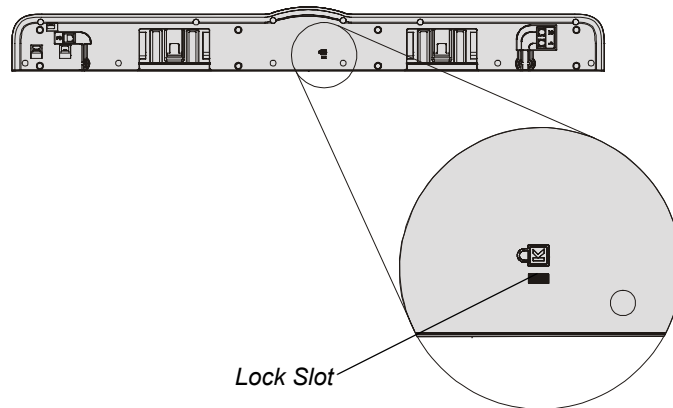
Securing the Pen Tray and Interactive Whiteboard

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.

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. In effect, when you secure the pen tray, you're also securing the interactive whiteboard, if the security cable is tight.

To lock the pen tray to the interactive whiteboard

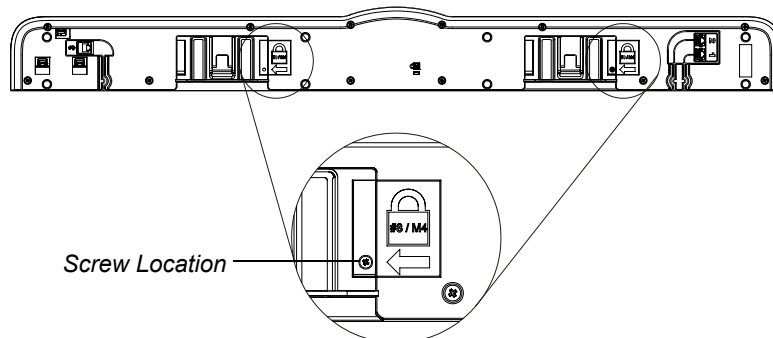
Underneath the pen tray, you'll find a lock slot that accommodates a security cable, such as a Kensington® lock.



Loop the security cable behind the pen tray brackets before you screw them to the wall (as shown in step 1 on page 16) 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 lock 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 do not have this feature.



Upgrading a 600 Series Interactive Whiteboard to a 600i System

Read this section carefully before upgrading your 600 series interactive whiteboard to a 600i system. Use this checklist to determine whether you can upgrade your 600 series interactive whiteboard to a 600i interactive whiteboard system.

Upgrade Checklist

Item	Question	Yes	No
1	Is your interactive whiteboard a model 660 or 680? You can't use the Unifi projector with model 640 or 690 interactive whiteboards.		
2	Measured from the floor to the top of the interactive whiteboard's frame, is the top currently 81" (206 cm) or higher above the floor? If the floor to top frame measurement is less than 81" (206 cm), then you may be unable to mount Unifi projector at a safe height, or meet local regulations.		
3	Measured from the top of the frame and the ceiling, is there 16 3/4" (42.5 cm) or more space between the top frame of model 660 interactive whiteboard, or 17 1/4" (42 cm) or more space for the model 680 interactive whiteboard? If the clearance is too small, the Unifi projector won't receive adequate cooling airflow.		
4	If your interactive whiteboard is mounted on a framed wall, can you slide it sideways, up to 10" (25 cm), if required? Because the Unifi projector mounting plate must be attached to a stud that can safely support the projector's weight, you may not be able to center the projector over the interactive whiteboard's current position. You must be able to move the interactive whiteboard sideways to align it with the projector's image.		
5	If your interactive whiteboard is mounted on a concrete wall, can you slide it sideways, up to 3" (7.5 cm), if required? You must be able to adjust the interactive whiteboard sideways to align it with the projector's image.		
6	Are you using a USB cable to connect the computer to the interactive whiteboard? You must use a USB cable to connect a computer to the 600i system. You can't use the serial or wireless Bluetooth® connection options.		

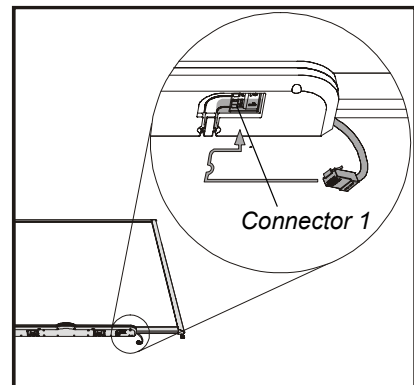
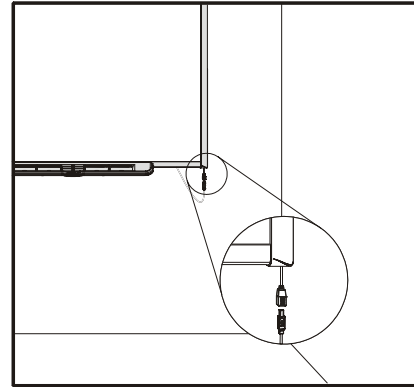
If you checked **No** for any of the previous questions, you may not be able to upgrade your existing interactive whiteboard to a 600i system in its current location.

Preparing for the Upgrade

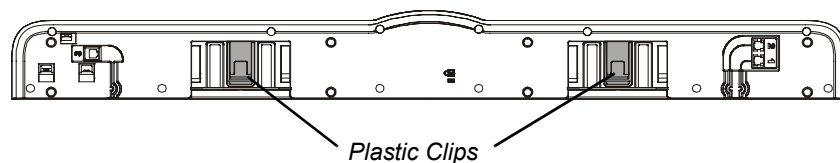
Before you can install the Unifi 35 projector above your 600 series interactive whiteboard, you must remove the interactive whiteboard from the wall.

To remove the existing interactive whiteboard

1. Remove the pens and the eraser from the pen tray.
2. Disconnect the USB cable from the captive USB cable's connector at the lower right corner of the interactive whiteboard.
3. Pull the modular I²C cable out of the strain-relief channel on the bottom of the pen tray, and then disconnect it from connector 1.
4. If you secured the pen tray to its brackets using two screws (page 24), remove these screws.
5. If you secured the pen tray using a Kensington lock or similar device, unlock and remove the lock.
6. Reach underneath the pen tray, and then pull down on the two large plastic clips on the bottom of the pen tray. The ends of these clips project downwards slightly, so they're easy to find.

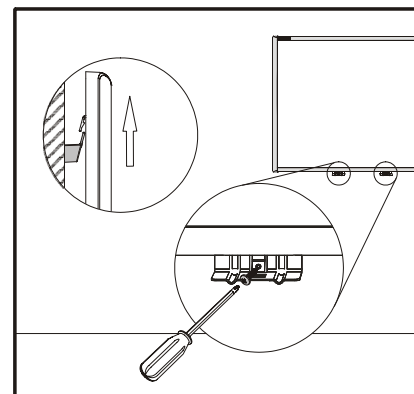


The Pen Tray Viewed from Below



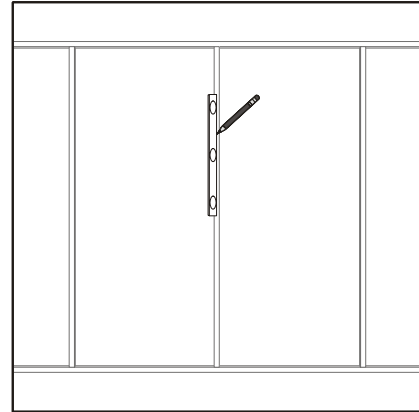
7. Continue to apply downward pressure to the clips and gently slide the pen tray toward you until it's free of the two L-shaped metal brackets, and then set the pen tray aside.
8. Remove the screws from both pen tray brackets, and, with the assistance of another person, lift the interactive whiteboard from the wall bracket and set it aside.

NOTE: When you reinstall the interactive whiteboard, you will probably have to mount it to the left or right of its current position. You will require replacement anchors and screws.

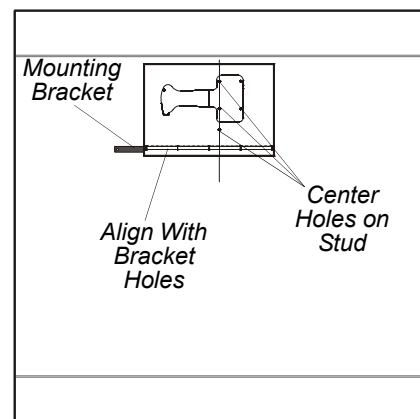


To position the projector above the interactive whiteboard — framed wall

1. Using a stud finder, locate the stud closest to the center of the 600 series interactive whiteboard wall bracket.
2. Using a pencil and a carpenter's level, draw a vertical line on the wall, marking the stud's centerline.



3. Position the installation template on the wall with the three holes indicated in the diagram centered on the stud.
4. Slide the template up or down the wall until the row of marks for your size of interactive whiteboard aligns with the row of screws in the mounting bracket. Use a carpenter's level to ensure that the template is level. Tape the template to the wall.



NOTES

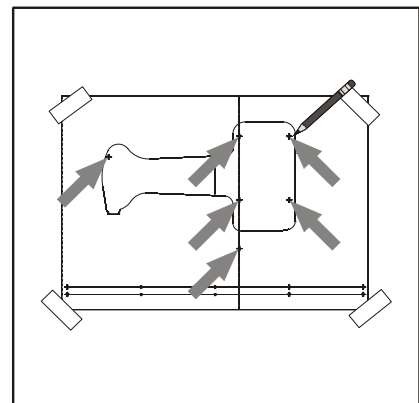
- The markings on the template probably won't line up with the mounting bracket screws.
- Be sure to position the projector bracket at least 5" (12.7 cm) from the ceiling in order to provide adequate airflow around the projector.

WARNING

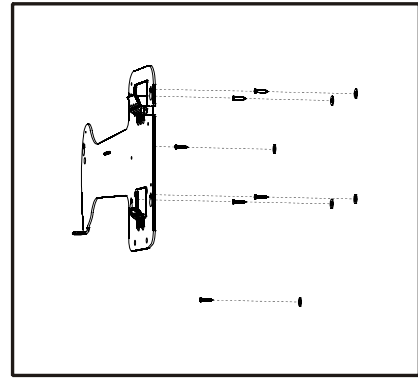


When mounting the projector on a framed wall, you must attach the mounting bracket to a stud that can support the projector's weight. If you use drywall anchors only, the anchors or the drywall may not be able to support the projector, resulting in product damage and possible personal injury.

5. Mark the six holes for the projector mounting plate anchors and the security cable anchor, and then remove the template from the wall.
6. For a **wooden** stud wall, drill a 1/8" (3 mm) pilot hole at the three center marks, and then screw in one of the included pan-head wood screws with a washer into each of the top two holes, leaving the heads about 1/4" (6 mm) from the wall surface. Don't screw in the security cable screw at this time.
For a **metal** stud wall, drill 7/16" (11 mm) holes through the drywall and the stud at each of the two center marks and the security cable mark.
7. Drill 5/16" (8 mm) holes at the remaining three marks.

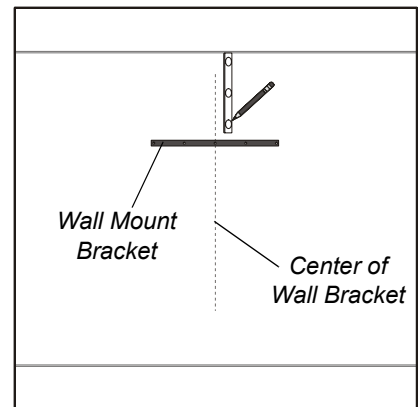


8. Insert the anchors (included) into all of the drilled holes, and then screw them in until they are flush with the drywall surface. See page 10 for an illustration of the anchor. Do not use a hammer to insert the anchors.
9. Screw the anchor bolts with washers into the bracket anchors, leaving the heads about 1/4" (6 mm) from the wall surface. Don't screw in the bolt for the security cable at this time.
10. Hang the projector bracket on the five screws and anchor bolts, use a carpenter's level to ensure that the bracket is level, and then tighten the screws and bolts securely.
11. Go to *To mount the projector on the bracket* on page 12 to complete the upgrade.

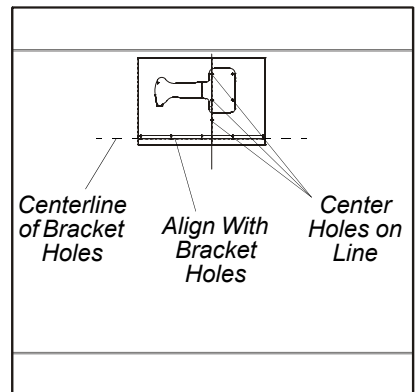


To position the projector above the interactive whiteboard — concrete wall

1. Using a pencil and a carpenter's level, draw a vertical line on the wall about 2" (5 cm) to the right of the center of the interactive whiteboard's wall bracket.



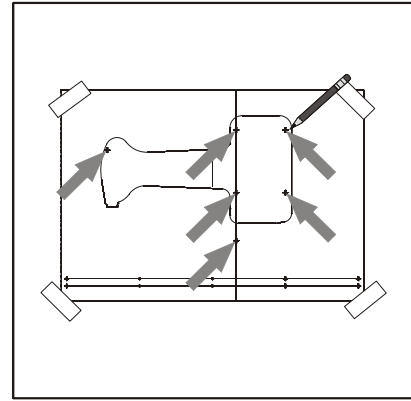
2. Position the installation template on the wall with the three holes indicated in the diagram centered on the vertical line.
3. Slide the template up or down the wall until the row of marks for your interactive whiteboard model aligns with the row of screws in the mounting bracket. Use a carpenter's level to ensure that the template is level. Tape the template to the wall.



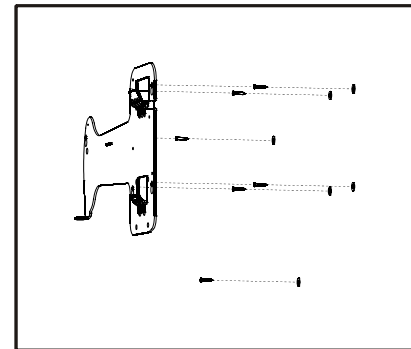
NOTES

- The markings on the template may not align with the mounting bracket screws.
- Be sure to position the projector bracket at least 5" (12.7 cm) from the ceiling, in order to provide adequate airflow around the projector.

4. Mark the six holes for the projector mounting plate anchors and the security cable anchor, and then remove the template from the wall.
5. At each of the marks (including the security cable mark) drill 5/16" (8 mm) holes into the concrete wall.



6. Insert the included concrete anchors into all of the drilled holes, pushing them in until the sleeve is flush with the wall surface. Tighten the nuts to secure the anchor in the wall, and then remove the nuts. See page 11 for an illustration of the anchor.
7. Place a washer on each bolt, and then replace the nuts, leaving them about 1/4" (6 mm) from the wall surface. Don't screw in the bolt for the security cable at this time.
8. Hang the projector bracket on the five screws and anchor bolts, use a carpenter's level to ensure that the bracket is level, and then tighten the nuts securely.
9. Go to *To mount the projector on the bracket* on page 12 to complete the upgrade.



Updating 600i System Firmware

The 600i interactive whiteboard system has firmware in both the Unifi projector and the 600 series interactive whiteboard's SC9 controller module.

Updating the Unifi Projector Firmware

To determine your Unifi 35 projector's firmware version using the Unifi on-screen display, press **Settings > System Information**. The version is located to the right of SMART FW VER.

To take advantage of the latest firmware enhancements for your Unifi 35 projector, check for updates at www.smarttech.com/600ifirmware. You can download a wizard that leads you through the steps to install the update.

NOTE: You can use software developed by SMART Technologies on SMART products only. The use of software developed by SMART Technologies is subject to the terms and conditions of the Software End User License Agreement.

Updating the Interactive Whiteboard's SC9 Firmware

Early versions of SC9 controller firmware don't work with the Unifi projector. You must update the SC9 firmware to version 4.1.2.0 or later before it will work with 600i systems.

To see your interactive whiteboard's SC9 firmware version using the Unifi on-screen display, press **Settings > System Information**, and read the value to the right of SC9 FW VER.

When you install SMART Board software, the installation program copies SC9 firmware files onto your hard drive. If you don't have SMART Board software installed, install the SC9 firmware files using the CD included with 600i systems.

If the files on your computer are earlier than version 4.1.2.0, or if you want to see if an update is available, visit www.smarttech.com/support/software/index.asp.

To update the SC9 firmware

1. Disconnect the USB cable from the interactive whiteboard's SC9 controller to the Unifi projector.
2. Connect the SC9 controller directly to your computer with a standard USB cable.
3. On Windows based computers, browse to the SMART Board Software folder, and then double-click the **SB-W.X.Y.Z Flash.exe file** (W.X.Y.Z represents the version number of the firmware).

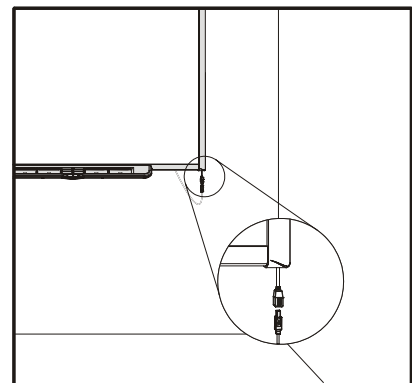
On Mac computers, click **Go > Applications > SMART Board Software**, and then double-click **SC9-W_X_Y_ZFlash** (W_X_Y_Z represents the version number of the firmware).

The *SMART Firmware Upgrade* wizard appears.

4. Click **Next** to start a search for connected interactive whiteboards.
5. When the wizard locates your connected interactive whiteboard, click **Next** to continue.

The wizard displays the current firmware version and the latest update version available on the computer.

If the update version is earlier than or the same as the current version, or if the wizard is unable to locate your interactive whiteboard because it isn't correctly connected to the computer, click **Finish** or **Cancel** to exit the wizard.



6. Select the **Yes** option, and then click **Next** to begin the SC9 firmware update.
The Ready light flashes amber during the update.
7. When the update is complete, click **Next**, and then click **Finish**.
The interactive whiteboard restarts automatically, and the Ready light is solid green.
8. Reconnect the USB cable between the interactive whiteboard's SC9 controller and the Unifi projector.

NOTE: If the firmware update is unsuccessful, repeat the procedure. If the update is unsuccessful after a second attempt, contact your support representative.

Connecting the 600i System to a Computer

In this Chapter

Refer to these topics for information about connecting the 600i system to a computer and adjusting the orientation of the 600i system.

- *Operating Safety and Precautions* (this page)
- *Connecting with a USB Cable* (page 34)
 - To connect to the extended connection panel (ECP)*
 - To install the USB driver (Windows only)*
 - To install SMART Board software*
- *Connecting With a Serial (RS-232) Cable* (page 36)
 - *Connecting a Resident Serial Computer* (page 36)
 - To configure the serial, video and audio inputs for the resident computer*
 - To disable Room Control mode using the Unifi software on-screen menus*
 - To connect the resident computer*
- *Connecting a Guest Laptop* (page 39)
 - *Using Multiple SMART Products* (page 39)
- *Orienting the SMART Board 600i Series Interactive Whiteboard* (page 40)
 - *Default Manufacturing Orientation* (page 40)
 - *Orienting with the Unifi Projector Interface* (page 40)
 - *Orienting with a Computer* (page 40)
 - To orient the interactive whiteboard*
 - To set the orientation precision*
- *Configuring the Room Control Feature* (page 42)
 - To enable room control using Unifi software's on-screen menu*
 - To configure your serial interface settings*
 - To verify that the serial interface is in Room Control mode*
- *Command Summary* (page 43)
 - *SET Commands* (page 43)
 - *Power Control Commands* (page 43)
 - *Configuration Commands* (page 43)
 - *Query Commands* (page 44)
- *Finding More Information* (page 44)

Operating Safety and Precautions

IMPORTANT



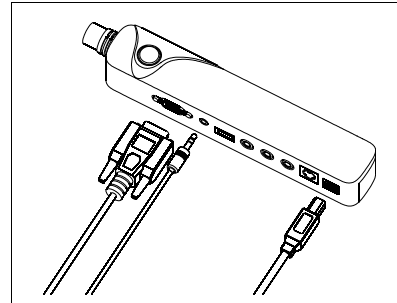
To ensure safe operation and to avoid damage to the SMART Board 600i series interactive whiteboard system, connect the USB connector of the Unifi 35 projector *only* to a computer that has a USB compliant interface and that bears the USB logo. In addition, the USB source computer must be compliant with CSA/UL/EN 60950 and bear the CE mark and CSA and/or UL mark(s) for CSA/UL 60950.

Connecting with a USB Cable

You can connect all 600i interactive whiteboards systems to a computer using the USB interface on the extended connection panel. SMART provides a 6' (1.8 m) USB cable, or you can purchase cables locally. The systems have a *high-power* USB 2.0 full-speed peripheral interface that runs at speeds of up to 12 Mbps. The units work with USB 2.0- and USB 1.1-compliant USB interfaces.

To connect to the extended connection panel (ECP)

1. Connect the included 6' (1.8 m) USB cable to the USB Type B receptacle on the ECP.
2. Plug the other end of the USB cable into a USB receptacle on your computer.



IMPORTANT



Do not use a USB cable longer than 6' 5" (2 m) to connect your computer to the extended connection panel. If you use a longer cable, its length, when combined with that of the extended connection panel cable, exceeds USB specifications, resulting in communication failure.

3. Connect the included 6' (1.8 m) VGA-HD cable to the ECP's DB15 VGA connector.
4. Plug the other end of the VGA-HD cable into a DB-15 VGA receptacle on your computer.
5. If you use the audio output from your computer, connect the included 6' (1.8 m) 3.5 mm stereo phone cable to the ECP's 3.5 mm phone jack.
6. Plug the other end of the audio cable into a 3.5 mm phone jack on your computer.

If you are using a Mac computer (with the OS X operating system), or if you already have the appropriate USB driver installed on your computer, you can install SMART Board software.

To install the USB driver (Windows only)

The computer sees the 600i system as a USB Human Interface Device (HID). If an appropriate driver isn't installed on the computer, a *Found New Hardware* wizard helps you locate a driver.

1. Click the **Next** button to direct the wizard to search for an appropriate driver.
2. Click **Next** again to make the Windows operating system search the driver database on the computer's hard drive for an appropriate driver.

NOTE: If the Windows operating system can't find a driver, insert the Windows 2000/XP CD in your CD drive and install a USB HID driver. USB HID is a subclass of USB devices, and the drivers are not always included in a default installation. Computers must have these drivers before a USB connection to the 600i system will work correctly.

3. Click the **Finish** button after the driver search and installation is complete.

NOTE: If you have a Mac computer or a Windows computer with a USB driver installed, you can now connect the 600i in HID (Mouse) mode. USB drivers are not currently available for Linux computers, so you must install SMART Board software before you can connect to the 600i.

To install SMART Board software

1. Put the SMART Board software CD, version 9.5 or later, in your CD drive and follow the on-screen instructions.

NOTE: If SMART Board software is already installed on your computer, you can use this opportunity to upgrade the software to ensure compatibility. SMART Board software upgrades are available at www.smarttech.com/support/software/index.asp. You can't use SMART Board software versions earlier than 9.5 with the 600i system.

2. If the SMART Board tools do not open automatically, select **Start > Programs > SMART Board Software > SMART Board Tools**, or double-click the **SMART Board Tools** icon on your desktop.

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. Refer to the SMART Board software online Help for a list of Ink Aware applications.

USB Extender Cables and Hubs

The 16' (5 m) USB cable included with the interactive whiteboard is within the limit defined by the USB 2.0 standard for maximum length. If the included USB cable isn't long enough, you can use active USB extender cables, USB extenders or hubs.

When used with a 600i series interactive whiteboard system, the SMART active USB extension cable shown here (Part No. USB-XT) extends standard USB cables by 16' (5 m). You can connect up to three active USB extenders to increase the total cable length to about 64' (20 m). Note that passive USB extension cables are not supported. Don't use cables longer than 6' (1.8 m) to connect these extenders to the extended connection panel (ECP).



Alternately, USB extenders that use Cat 5 cables can extend the range to approximately 325' (100 m), at a much higher cost. The more economical SMART Cat 5 to USB extender (Part No. CAT5-XT) shown here can extend the USB connection up to 120' (36.6 m) using an RJ45 Cat 5 cable.



NOTE: Two 6' (1.8 m) USB cables are included with the Cat 5 extenders, and you must use them to connect the computer and the interactive whiteboard. Don't use cables longer than 6' (1.8 m), and don't connect these extenders through the extended connection panel used with 600i systems. Connect them directly to the Unifi projector base.

You can also use USB hubs with interactive whiteboards. If you also pass streaming audio through the USB hub, ensure that the computer's USB drivers are up-to-date, or the interactive whiteboard's performance might become choppy, intermittent or otherwise unacceptable.

NOTES

- Some computers use internal active hubs to provide more USB receptacles. A computer's operating system may interpret these internal hubs as external devices, which limits the number of USB extenders that you can use.
- Cables and connectors must meet the specifications of the extenders and hubs. Impedance mismatches and poor connections can cause signal degradation and performance problems with the interactive whiteboard.
- USB extenders and hubs must be USB 1.1 or USB 2.0 compliant.

Connecting With a Serial (RS-232) Cable

You can connect a computer to the Unifi 35 projector's serial (RS-232) interface. If you connect the resident computer to the Unifi 35 projector's RS-232 interface, you can also connect a guest computer to the USB interface, and you can switch between the computers using the Unifi on-screen menus.

NOTE: Your Unifi 35 projector must be running firmware version 1.2.13 or later to enable its RS-232 interface. See (page 30).

Connecting a Resident Serial Computer

To serially connect a computer to the SMART Board 600i interactive whiteboard system you must:

- configure the Unifi 35 projector's serial, video and audio inputs for the resident computer connections using the Unifi software on-screen menus.
- disable Room Control mode using the Unifi software on-screen menus.
- connect your computer's serial, video and audio outputs to the Unifi 35 projector.

To configure the serial, video and audio inputs for the resident computer

NOTE: You must use either the DVI-A or the DVI-D video input with the Unifi 35 projector's serial connection.

1. Turn on the SMART Board 600i interactive whiteboard system.
The Unifi software splash screen appears.
2. Select any input, or select **ScratchPad**.
The Unifi software menu appears in the lower-left of the touch screen.
3. Press **Settings**.
4. Press **Configure inputs**.
The *Configure Inputs* dialog box appears, displaying the current configuration of the projector's inputs.
5. Select the check box on the left of the DVI-A or the DVI-D input to enable the input.
6. Select the **Serial** option on the same row. You can select the **Serial** option for one input only.
The Properties column displays the input names as they appear in the Unifi software on-screen menus. Typically, the USB computer input is labeled **Computer 1** and the serial computer input is labeled **Computer 2**.
7. Press **Computer 2** in the Properties column.
The *Audio Properties* dialog box appears.
8. Select the audio input that you want to use with the serial computer connection.
NOTE: If you select an audio input that is used with another input, you can use a "Y" adapter cable to connect both inputs.
9. Press **Close** in all dialog boxes to save your changes.

To disable Room Control mode using the Unifi software on-screen menus

You must disable the Unifi 35 projector's Room Control mode to use its RS-232 interface to communicate with your computer.

1. Turn on the SMART Board 600i interactive whiteboard system.
The Unifi software splash screen appears.
2. Select any input source from the Unifi on-screen menu.
3. Press **Settings**.
4. Press **Advanced Settings**.
5. Press the wrench icon.
The *Setup window* appears.
6. Press **Room Control Mode**.
7. Use the on-screen navigation buttons to select **Disable**, and then press **Enter**.
8. Press **Close** in all dialog boxes to save your changes.

To connect the resident computer

You must install SMART Board software on the resident computer to communicate serially with the Unifi 35 projector. SMART Board software is available at www.smarttech.com/support/software/index.asp.

NOTE: You only have to perform this procedure the first time you connect your resident computer. Unifi software and SMART Board software save the settings so that you can simply start SMART Board software the next time you work with the system, and then select the computer input from the Unifi software menu.

1. Connect the female connector of a straight-through DB9M-to-DB9F RS-232 cable to your computer's serial connector.
If your computer doesn't have a serial (RS-232) interface, you can use a USB-to-serial adapter to connect the computer's USB port to the Unifi 35 projector's serial connector. See *Serial Interface Settings* on the next page.
2. Connect the male connector of the cable to the Unifi 35 projector's DB9 connector.
NOTE: Unifi 35 projectors manufactured before February 2007 have a male DB9 connector. Therefore, you need a straight-through DB9F-to-DB9F RS-232 cable to connect these projectors to a computer.
3. Connect video and audio cables from the computer to the Unifi 35 projector base connection panel connectors.
 - If your computer has a VGA (DB15-HD) analog video output, use the 10' (3 m) DVI-A to VGA adapter cable included in the Unifi 35 projector's accessory kit.
 - If your computer has a DVI-D output, use as short a cable as possible (not included) to reduce interference.**NOTE:** We recommend that you make all resident computer connections to the projector base connection panel. This leaves the ECP connectors available for a guest computer connection.
4. Turn on the SMART Board 600i interactive whiteboard system, but don't select an input yet.
The Unifi software splash screen appears.
5. Turn on your computer, if it's not already on.

6. Click the **SMART Board** icon in the Windows notification area or Mac Dock, and then select **Control Panel**.

The SMART Board Control Panel appears.

7. Click the **SMART Board Connection Wizard** button.
8. When the *SMART Interactive Product Connection Wizard* finds the SMART Board 600i system, click Finish.
9. Select the **Computer 2** serial input from the Unifi on-screen menu.

The computer's video output appears on the interactive whiteboard screen. If necessary, perform an orientation procedure to align the pointer with your pen tray pen or finger movements. For more information, see SMART Board software on-line Help.

Serial Interface Settings

You can't configure the Unifi 35 projector's serial interface settings. When configured for serial computer connection, the serial interface has the following settings:

Data rate	19,200 bps
Data bits	8
Parity	None
Stop bits	1
Flow control	None

If you're connecting a computer that doesn't have a serial (RS-232) interface, you can use a USB-to-serial adapter that operates at these settings, such as the SMART USB-to-serial adaptor (Part No. 93-00481) included in USB-FRU.

Connecting a Guest Laptop

You can connect a guest laptop to the 600i system even if the laptop doesn't have SMART Board software installed. Simply disconnect the USB, video and audio cables from a currently connected computer and connect them to the laptop. If the laptop has suitable USB drivers installed, you'll immediately have touch control of the interactive whiteboard.

NOTE: With this setup, the interactive whiteboard's Ready light flashes green, indicating that the projector and interactive whiteboard are communicating normally. See page 48 for more information about Ready light states.

Using Multiple SMART Products

If you're stretching your computer's desktop across more than one interactive screen while using an older operating system, you must tell SMART Board software how the interactive products are arranged. Open the **SMART Board Control Panel**, press **SMART Board Settings** and select **Arrange Video Output** from the list. Some setups may require you to change the computer's display settings. For more information, read the documentation for your computer's video card.

You must orient each interactive product separately so that the pointer is properly aligned when you touch the product. Open the **SMART Board Control Panel** and select **Align/Orient the SMART Board**. Refer to the Help Center for the specific procedure to orient each display.

After you set up your multiple displays, each display has touch control. However, some applications can't accept cursor commands or mouse input from more than one source at a time. To enable the multiple touch setting, read the Help Center's *How To > Changing the SMART Board Software Settings > Mouse Settings* topic for instructions.

For more information on setting up multiple SMART products, read the Technical Bulletin *Connecting Multiple Interactive Whiteboards to One Computer* that's available at www.smarttech.com/support.

Orienting the SMART Board 600i Series Interactive Whiteboard

At the factory, the interactive whiteboard's controller module receives a default manufacturing orientation data set. The interactive whiteboard uses this data if you haven't oriented the interactive whiteboard with Unifi projector software or with SMART Board software. The term *User Orientation* describes a manual orientation performed with SMART Board software or the Unifi projector interface.

Default Manufacturing Orientation

When the interactive whiteboard uses the default manufacturing orientation data, the touch point on the screen corresponds fairly well to the projected computer desktop image, provided the projected image fills the entire interactive screen. The default orientation is a simple 2-point orientation, and the projected touch point might be offset from the actual contact point. You can resolve this problem by performing a more accurate orientation.

NOTE: You can restore the default orientation by holding the Reset button on the controller module for more than three seconds.

Orienting with the Unifi Projector Interface

When you use the 600i interactive whiteboard system without a computer, you can perform a 9-point orientation using the Unifi projector's on-screen interface. The Unifi projector's software saves the orientation data in the flash memory of the interactive whiteboard's controller module. If you switch to another video source or attach a computer that uses SMART Board software, the orientation data for the 600i system remains unchanged.

Orienting with a Computer

4- and 9-Point User Orientation

When you use SMART Board software to perform a quick 4-point or standard 9-point orientation, the software saves the orientation data in the flash memory of the interactive whiteboard's controller module (i.e., the orientation data stays with the 600i system). If you attach a different computer, the orientation data remains unchanged.

12- and 20-Point User Orientation

You can also perform higher resolution 12- or 20-point user orientations. Unlike the 4- and 9-point orientations, the software saves the 12- and 20-point orientation data on the computer, and the data stays with the computer and not the 600i system. Resetting the controller module doesn't clear the computer's 12- or 20-point orientation data.

If you attach a different computer (that hasn't performed a 12- or 20-point orientation), the interactive whiteboard uses the most precise level of orientation data that's stored in the controller's memory.

NOTES

- When used without a computer, the 600i interactive whiteboard system uses the 2-, 4- or 9-point orientation data that is stored in the controller module's memory.
- If a user performs a 2-, 4- or 9-point orientation procedure on a computer, any 9-point orientation data that was saved using the Unifi projector's interface is lost.

To orient the interactive whiteboard

To orient the unit, follow on-screen instructions for touching specific points on the interactive whiteboard's screen.

- You can use the Unifi projector's interface to perform a 9-point orientation.
- If you are using a computer with SMART Board software, you can perform a 4-, 9-, 12- or 20-point orientation, depending on your Alignment/Orientation Precision setting. The next procedure shows how to change the precision setting.



The picture to the right shows SMART Board software's 9-point orientation screen. The Unifi software orientation screen is similar.

To access the orientation screen, press and hold the two large pen tray buttons at the same time. If your 600i is connected to a computer with SMART Board software, the SMART Board software orientation screen opens. Otherwise, the Unifi interface's orientation screen opens. If you are using a computer, you can also press the **Help** button on the pen tray and select **Align/Orient the SMART Board**.

NOTE: Use a fine-point tool, such as a pen tray pen, instead of your finger for greater precision when touching the targets.

To set the orientation precision

NOTE: You can perform this procedure *only* if a computer with SMART Board software is connected to the 600i system.

1. Press the **SMART Board** icon.
2. Press **Control Panel**.
3. Press the **SMART Board Settings** button.
4. If more than one SMART product is connected to the computer, select the appropriate interactive whiteboard.
5. Select **Orientation/Alignment Settings** from the list.
6. Select the desired orientation setting, and press **OK**.

NOTES

- The changes to the orientation precision takes effect the next time you orient the system.
- Changing the orientation precision has no effect when you perform an orientation procedure using the Unifi projector's interface.

Configuring the Room Control Feature


You can connect a computer or room control system to the Unifi 35 projector's serial (RS-232) interface to externally manage the SMART Board 600i interactive whiteboard system. Using a connected computer or room control system, you can select video inputs, control audio volume and turn off the system. You can also request information such as projector lamp usage, current settings and network addresses.

This article describes how to configure your Unifi 35 projector for external control using a computer or room control system, and includes the commands you can use to change and view the projector settings.

NOTE: Your Unifi 35 projector must be running firmware version 1.2.13 or later to enable its RS-232 interface and to enable external control. See (page 30).

To enable and use the Unifi 35 projector's room control feature, you must:

- enable the Unifi projector's room control mode.
- configure the connected computer or room control system's serial interface.
- program your room control system to use the Unifi projector's room control commands.

 **IMPORTANT** When the Unifi 35 projector is in Room Control mode, you can only use its RS-232 interface for command inputs and responses. You must connect your computer to the extended connection panel's USB interface to work interactively with the SMART Board 660i series interactive whiteboard system.

To enable room control using Unifi software's on-screen menu

1. Turn on the SMART Board 600i interactive whiteboard system.
2. Select any input source in Unifi software's on-screen menu.
3. Press **Settings**.
4. Press **Advanced Settings**.
The *Advanced Settings* dialog box appears.
5. Press the wrench icon.
The *Setup window* appears.
6. Select **Room Control Mode** option.
7. Use the on-screen navigation buttons to select **Enable**, and then press **Enter**.
8. Press **Close**.

To configure your serial interface settings

The Unifi 35 projector's serial interface settings aren't configurable. Therefore, you must configure your computer's serial communication program, such as Microsoft HyperTerminal, or your room control system's serial communication settings to the following values.

Data rate	9600 bps
Data bits	8
Parity	None
Stop bits	1
Flow control	None

To verify that the serial interface is in Room Control mode

1. Turn on your computer and start your serial communications program.
2. Connect the computer to the Unifi projector's serial connector using a straight-through DB9M-to-DB9F cable.

NOTE: Unifi 35 projectors manufactured before February 2007 have a male DB9 connector. You need a straight-through DB9F-to-DB9F RS-232 cable to connect the projector to the computer.

3. Configure the serial communication parameters as listed previously.
4. Press **Enter**.
If your configuration is correct and the Unifi projector is in room control mode, the > character appears.
5. To see a list of available commands, type **?**, and then press **Enter**.

Command Summary

The Unifi 35 projector responds to the following commands:

SET Commands

Command	Description
set input vga	Selects the VGA projector input
set input dvi-d	Selects the DVI-D projector input
set input dvi-a	Selects the DVI-A projector input
set input component	Selects the component projector input
set input composite	Selects the composite projector input
set input s-video	Selects the S-video projector input
set input scratchpad	Selects ScratchPad mode
set brightness=(+ or -) or (range 0 to 100)	Increases or decreases the brightness in increments using +(value) or -(value), or sets the brightness to an absolute value from 0 (off) to 100 (full brightness)
set contrast=(+ or -) or (range 0 to 100)	Increases or decreases the contrast in increments using +(value) or -(value), or sets the contrast to an absolute value from 0 (minimum contrast) to 100 (maximum contrast)
set volume=(+ or -) or (range 0 to 30)	Increases or decreases the volume in increments using +(value) or -(value), or sets the volume to an absolute value from 0 (off) to 30 (full volume)

Power Control Commands

Command	Description
off	Turns off the Unifi 35 projector after a 30 second delay, unless a user cancels the command from the on-screen interface
off now	Turns off the Unifi 35 projector immediately

Configuration Commands

Command	Description
factory reset	Sets all configuration settings to default values

Query Commands

The Unifi 35 projector provides these responses to the following query commands:

Command	Description	Response
get brightness	Requests the projector's current brightness setting	brightness=
get contrast	Requests the projector's current contrast setting	contrast=
get volume	Requests the projector's current volume setting	volume=
get fwver	Requests the projector's firmware version	FW version=
get macaddr	Requests the projector's MAC (Ethernet) address	MAC address=
get ipaddr	Requests the projector's IP (network) address	IP address=
get lamphrs	Requests the number of hours that the projector lamp has been in use	lamp hours=
get syshrs	Requests the number of hours that the projector has been in use	system hours=
get powerstate	Requests the current projector state i.e., on, off or cooldown	powerstate=
get input	Requests the projector's current input	input=

NOTES

- You must press **Enter** after each command.
- Commands aren't case-sensitive.

Finding More Information

SMART Board software's Help Center contains links to a wide range of information about procedures, concepts, troubleshooting hints, and more. To access the Help Center press the pen tray's **Help** button. The Help button also provides access to the orientation screen and contact information for SMART Technologies.

You should also visit www.smarttech.com for more resources. There you'll find information on each product, including setup instructions and specifications. The website's Training Center has learning resources, free hands-on lessons and information about getting more training. You'll find up-to-date, product-specific information in the Support area, including frequently asked questions (FAQs), technical bulletins and resource centers.

Using a 600i Series Interactive Whiteboard System

In this Chapter

Refer to these topics for information about the 600i system's indicators and controls and modes.

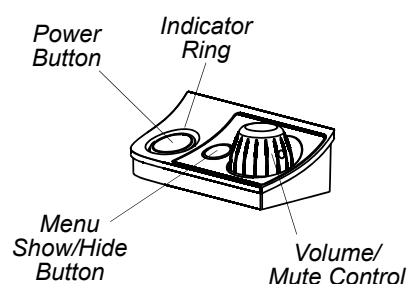
- *The 600i System's Indicators and Controls* (page 46)
 - *The Control Module* (page 46)
 - The Control Module Power Button*
 - The Control Module Status Indicator*
 - The Menu Show/Hide Button*
 - The Volume Control*
 - *The Unifi Projector External Indicators and Controls* (page 47)
 - The Unifi Projector Power Button*
 - The Unifi Projector Status Indicator*
 - The Unifi Projector Keypad*
 - *The Extended Connection Panel Power Button* (page 47)
 - *Internal Indicators and Controls* (page 48)
 - *Interactive Whiteboard Indicators and Controls* (page 48)
 - The Ready Light*
- *Working with Your 600i Series Interactive Whiteboard System* (page 50)
 - *The Startup Menu* (page 50)
- *Using a Stand-Alone 600i Series Interactive Whiteboard System* (page 50)
 - *Using Unifi ScratchPad* (page 50)
 - To Draw with Digital Ink*
 - To Erase Notes*
 - To Reduce the Toolbar*
 - To Add ScratchPad Pages*
 - To Delete ScratchPad Pages*
 - To Reduce the Toolbar*
 - *Saving ScratchPad Pages* (page 51)
 - *Exiting the Unifi Software* (page 51)
- *Using a 600i Series Interactive Whiteboard System with a Video Source* (page 52)
 - *Capturing Video Images as ScratchPad Pages* (page 52)
 - To Clear a Page*
 - To Freeze the Image*
 - To Capture an Image*
- *Using a 600i Series Interactive Whiteboard System with a Computer* (page 53)
 - *Using SMART Board Software* (page 53)
 - Projected Mode*
 - Non-Projected Mode*

The 600i System's Indicators and Controls

The Control Module

The pen tray control module on the 600i is the main user interface for the system. The module has the following indicators and controls:

- the Power button and indicator ring
- the Menu Show/Hide button
- the Volume control and mute button



The Control Module Power Button

Press the control module button to turn the 600i system on or off. When you press this button, the status indicator ring around the button flashes green to indicate that the lamp is starting. After several seconds the projected image becomes visible and the indicator ring turns solid green to indicate the normal On state.

To turn off the 600i system, press the Power button again. An on-screen dialog box opens, showing that you have thirty seconds to cancel, save your ScratchPad to a USB storage device or turn off the system immediately. (For more information about saving the ScratchPad, see page 51) When you close the dialog or the timer expires, the projector lamp goes off, the cooling fans continue and the indicator ring blinks red for two minutes. During these two minutes, you can't restart the projector. After the two minutes, the second stage of cooling begins: the indicator ring then turns white and the fans run for 3 minutes. During this second cooling stage, you can restart the projector. At the end of the cycle, the indicator remains white and the fans stop, indicating that the system is in full standby.

The Control Module Status Indicator

This table summarizes the status indicator's possible states and their meaning.

When the indicator ring is...	it indicates that...
flashing green	the projector lamp is starting up
solid green	the projector is in the normal On state
flashing red	the projector is in a two-minute cool down period, and lamp restart is locked out
solid white (fans running)	the projector is in a three-minute cool down period, and the lamp can be restarted
solid white	the projector is in Standby mode

The Menu Show/Hide Button

While the 600i system displays the computer or external video, you can use the Menu Show/Hide button to show or hide the Unifi software interface. While in ScratchPad mode, you can use the button to reduce the Unifi interface to a floating toolbar (page 51).

The Volume Control

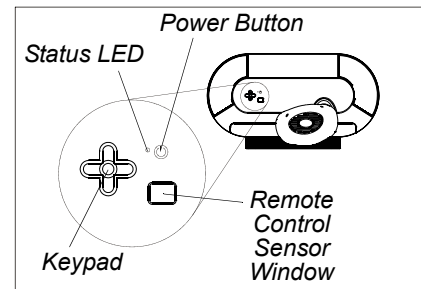
Use the Volume control to adjust the output of the Unifi projector's built-in audio amplifier. When you turn the control, an on-screen display shows the volume setting. To mute the audio, push down on the control.

The Unifi Projector External Indicators and Controls

The Unifi 35 projector has the following indicators and controls on its base:

- a Power button
- a status LED
- a keypad to control the on-screen display

The remote control's infrared sensor is located behind the transparent red window below the Power button.



The Unifi Projector Power Button

You can use the external Power button on the projector base as another way of turning the 600i system on or off. Normally, you would use the control module or remote control's Power button to turn the unit on and off.

NOTE: If you press this Power button to turn off the system, the projector lamp turns off immediately, and your ScratchPad pages are cleared without warning.

The Unifi Projector Status Indicator

The status indicator LED beside the Power button provides more detailed information about the projector's state. This table shows possible indications and their meaning.

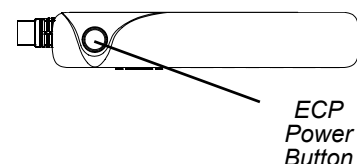
When the status LED is...	it indicates that...
flashing green	the projector lamp is starting up
solid green	the projector is in the normal On state
flashing red	the projector is in a two-minute cool down period, and lamp restart is locked out
flashing amber	the projector is in a three-minute cool down period, and the lamp can be restarted
solid amber	the projector is in Standby mode
solid red	the projector is in an error state
fast flashing amber	the projector's firmware is being updated

The Unifi Projector Keypad

You can use the keypad on the projector base as another way to adjust the projector's display and audio settings. Normally, you would use the projector's on-screen interface or the remote control to adjust these settings.

The Extended Connection Panel Power Button

You can use the Power button on the extended connection panel (ECP) as yet another way to turn the 600i system on or off. Normally, you would use the control module or remote control's Power button to turn the system on and off.



NOTE: If you press this Power button to turn the system off, the projector lamp turns off immediately, and your ScratchPad pages are cleared without warning.

Internal Indicators and Controls

The following indicators and controls are beneath the projector base cover:

- four status indicator LEDs
Software developers can use these indicators as they develop applications for the 600i.
- the Master Power switch
Use this switch to completely remove power from the 600i system for servicing, or when it won't be used for extended periods.

CAUTION



Wait for the Unifi projector to cool completely before turning it off with the master power switch. Failure to do so can cause premature lamp failure.

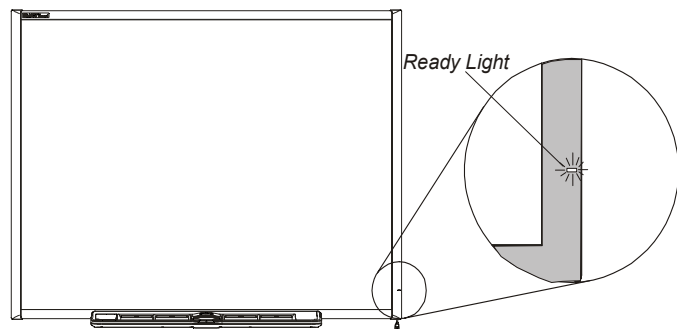
Interactive Whiteboard Indicators and Controls

600 series interactive whiteboards have the following indicators and controls:

- the Ready light
- the pen tray buttons, sensors and LEDs (page 59)
- the controller module's Reset button (page 66)

The Ready Light

The Ready light LED is in the lower-right part of the interactive whiteboard's frame. The frame has a light-pipe that carries the light from the controller module's LED to the surface of the frame. The Ready light indicates the operational states of the controller module.



NOTE: The following table shows the *normal* states of the Ready light. If the indicator's behavior doesn't match a state listed here, contact your service representative.

If the Ready light is...	it indicates that...
solid red	the interactive whiteboard is receiving power from the projector through the USB cable, but it's not communicating with the Unifi software.
solid green	the interactive whiteboard is receiving power and successfully communicating with Unifi software or it's communicating through the Unifi projector to a computer that is running the SMART Board software service.

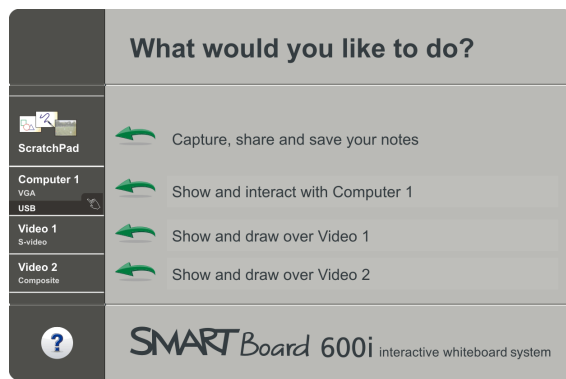
If the Ready light is...	it indicates that...
flashing green	<p>the interactive whiteboard is receiving power and is successfully communicating with the USB HID driver of a connected device.</p> <p>This state can also indicate that the user selected a computer input from the Unifi software's on-screen display and the computer isn't running SMART Board software.</p> <p>NOTE: In HID mode, however, the SMART Board tools (such as the pens and the eraser) won't work. You can move the mouse pointer and perform mouse functions with simple touch anywhere on the interactive screen. The Right-Click button on the pen tray may work (on some versions of Windows operating system), but neither the Keyboard nor the Help button will work.</p>
flashing or solid amber	<p>the controller module is in a Service mode, such as during a firmware update (page 30), or it has detected a software error. Reset the interactive whiteboard. If condition persists, contact your service representative.</p>

Working with Your 600i Series Interactive Whiteboard System

This section shows how to use your 600i as a stand-alone interactive whiteboard system, with a video device such as a VCR or TV tuner or when attached to a computer.

The Startup Menu

When you turn on the 600i, the Unifi software opens a Startup menu similar to this example. The number of computer and video options may change based on the system's configuration.



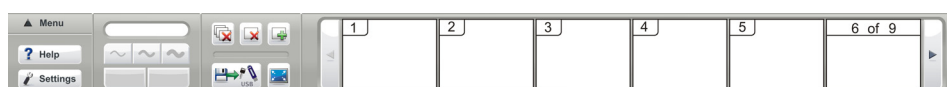
Using a Stand-Alone 600i Series Interactive Whiteboard System

You can use the ScratchPad feature of Unifi software when the system isn't connected to a computer or other video source. When you touch the interactive whiteboard's surface, the interactive whiteboard detects the contact's horizontal and vertical (or x,y) coordinates. The Unifi software interprets these coordinates and moves the pointer to the corresponding point on the projected image.

- When all the pens and the eraser are in their pen tray recesses, Unifi software interprets touches as mouse clicks and movements.
- When you remove a pen or the eraser from the pen tray, sensors detect which tool you are using. The Unifi software changes the pointer into a colored pen or eraser, allowing you to draw or remove digital ink from the projected image.

Using Unifi ScratchPad

When you select the ScratchPad option from the Startup menu, this toolbar opens across the bottom of the touch screen:



You can use ScratchPad and the pen tray tools to draw and erase notes on the interactive whiteboard's screen and capture them as ScratchPad pages. You can then save the pages to a USB storage device.

To Draw with Digital Ink

When you pick up a pen tray pen, the toolbar's pen option palette activates. You can use this palette to select the shade and thickness of the lines you draw on the interactive whiteboard.



To Erase Notes

When you pick up the pen tray eraser and place it on the screen, a projected circle identifies the eraser's location. Simply move the eraser over your notes to remove them from the ScratchPad page.

To Add ScratchPad Pages



Press the **Add Page** button on the Unifi toolbar. The new page appears in the page sorter to the right of the currently selected page.

To Delete ScratchPad Pages



In the page sorter, select the page you'd like to delete, and then press the **Delete Page** button. If there is only one page, pressing the button clears the page.




To delete all the pages, press the **All Pages** button.

To Reduce the Toolbar



Press this button to reduce the ScratchPad toolbar to a floating toolbar. The floating toolbar has buttons to scroll forward and back through your ScratchPad pages and a button to add new pages.



To restore the full toolbar, simply press the  in the corner of the floating toolbar.

Saving ScratchPad Pages



Save your ScratchPad pages at any time by pressing this button. You can save the ScratchPad pages to a USB storage device as PDF, JPEG or SMART Notebook files. When you press this button, the *Save to USB Storage Device* dialog opens, providing three options:



Press the **Save all pages as a PDF document** button to save all ScratchPad pages as a single .pdf file, with each page saved as a separate document page.



Press the **Save each page as a JPEG image** button to save each ScratchPad page as a separate .jpg file.



Press the **Save all pages as a SMART Notebook file** button to save all ScratchPad pages as a single .xbk file, with each page saved as a separate Notebook page.

NOTE: Saving ScratchPad pages to a USB storage device does not delete the pages.

Exiting the Unifi Software

To exit from ScratchPad or a video input and return to the Startup menu, press **Menu** and select **Exit**. If the page sorter contains ScratchPad pages, a dialog box appears asking you to save the pages, exit without saving or cancel.

NOTE: Exiting the Unifi software interface deletes all of the ScratchPad pages.

Using a 600i Series Interactive Whiteboard System with a Video Source

You can connect the video and audio outputs of a VCR or DVD player, a document camera or a TV tuner directly to the Unifi projector's extended connection panel. When you select the video input, the projector displays the video content on the screen, and the 40-watt stereo amplifier and speakers play the audio.

Capturing Video Images as ScratchPad Pages

When you select one of the video inputs from the Startup menu, this toolbar opens at the bottom-left of the touch screen:



You can use the pen tray pens to draw in digital ink over the projected images and then capture the images with your notes as ScratchPad pages.

To Clear a Page

Press the **Clear** button to remove all the notes from the ScratchPad page.

To Freeze the Image

Press the **Freeze** button to see a still image of a video. Note that the Freeze button does not pause the video source's play back. Press the **Resume** button to restore normal video.

To Capture an Image

Press the **Capture** button to create a new ScratchPad page that contains a snapshot of the displayed video image, together with your notes. You do not have to freeze the video before capturing.

Using a 600i Series Interactive Whiteboard System with a Computer

When you select a computer input for the 600i system, you can display the video and play the audio (if available) from an attached computer. You can also use the interactive whiteboard to control the computer. The computer's configuration determines how you use the 600i system.

If you connect a computer that doesn't have SMART Board software installed, you can still use Unifi software and the pen tray tools to draw and erase notes over the projected images. You can then capture the images with your notes as ScratchPad pages. (See page 50 for information about using ScratchPad.) You can also use your finger as a mouse to control applications on your computer.

Using SMART Board Software

If SMART Board software is installed on the connected computer, you can use the full capabilities of the software, including SMART Board tools and Notebook software.

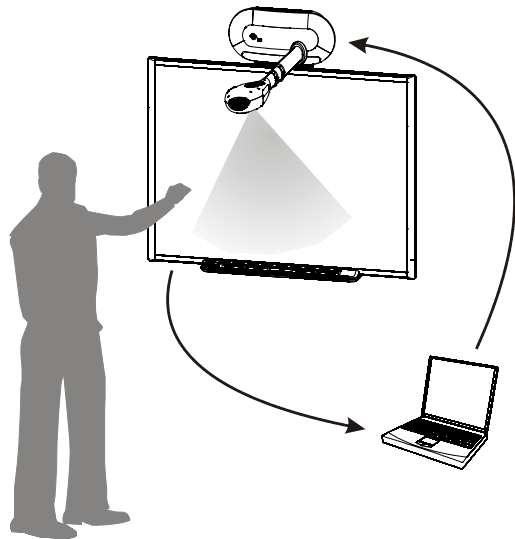
When you touch the interactive whiteboard's writing surface, the interactive whiteboard detects the contact's vertical and horizontal (or x,y) coordinates. The computer interprets the coordinates and moves the pointer to the corresponding point on the computer's screen.

- When all the pens and the eraser are in their pen tray recesses, SMART Board software interprets touches as mouse clicks and movements.
- When you remove a pen or the eraser from the pen tray, sensors detect which tool you are using. SMART Board software then interacts with the computer's mouse driver to change the pointer into a colored pen or eraser, allowing you to create or remove colored digital ink on the computer's display.

Projected Mode

When you use the SMART Board 600i interactive whiteboard system with a computer or laptop with SMART Board software running in Projected mode, the components work together as follows:

- The computer runs an application, and then sends the image to the Unifi projector, which casts the image onto the interactive whiteboard.
- The interactive whiteboard acts as the computer's monitor and its input devices (mouse and keyboard), allowing you to control the application simply by touching the screen.
- You can use a pen tray pen to write over any open application, and then save the notes in a SMART Notebook file or directly into any Ink Aware application.



Non-Projected Mode

SMART Board software's Non-Projected mode (also known as Whiteboard mode), doesn't offer control of the interactive whiteboard. Instead, you can use Notebook software to capture, save or print anything you write on the interactive whiteboard.

Refer to the SMART Board software online Help for more information. All the notes and images you save using SMART Board software are stored on the computer's disk drives.

Configuring the 600i System Input Options

In this Chapter

Refer to these topics to configure the video, audio and computer connection options available on the 600i system.

- Unifi 35 Projector Configuration (this page)
 - To access the on-screen configuration dialog box (this page)
Factory Configuration
- Customizing the Input Configuration (page 56)

Unifi 35 Projector Configuration

The Unifi projector supports a variety of video input types, including VGA, S-video, DVI-A and DVI-D, component and composite. The projector also has two 3.5 mm stereo phone jacks and a set of RCA jacks for audio input. For computer connections, the projector has a USB B connector.

You can configure many different combinations of these input options using the Unifi software's on-screen menus.

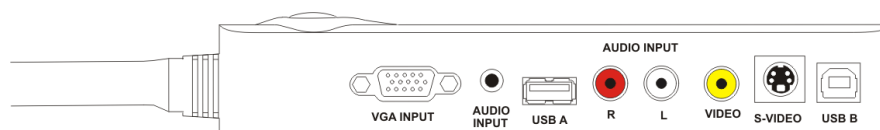
To access the on-screen configuration dialog box

1. If the Unifi software interface isn't visible at the bottom of the display, press the **Menu Show/Hide** button on the Control Module or the **Menu** button on the remote control.
2. Press the on-screen **Menu** button to show the available options.
3. Select any input, or **ScratchPad**.
4. Press the **Settings** button.
5. Press the **Configure inputs** button.

The *Configure Inputs* dialog opens, displaying the current configuration of the projector's inputs.

Factory Configuration

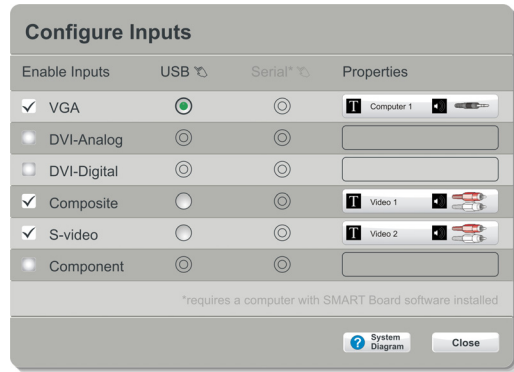
The 600i system is configured to address the most commonly used audio, video and computer connection types. To make these connections more accessible, SMART provides an extended connection panel, or ECP, that you can mount on a wall near the computer or video device that you want to attach. This diagram shows the connections available on the ECP.



When you first receive your 600i system, the 600i inputs are configured as shown in this image from the Unifi software's configuration dialog box.

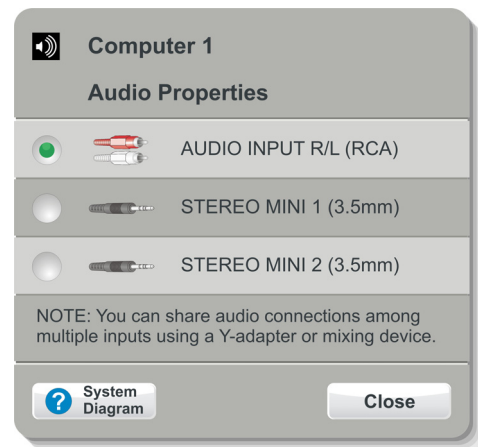
The three enabled inputs, as indicated by the check marks in the left column, are VGA, Composite and S-video. These inputs, labeled Computer 1, Video 1 and Video 2 respectively, in the Properties column, are available on the ECP.

- The Computer 1 input uses the VGA INPUT DB15-HD receptacle, the 3.5 mm AUDIO INPUT phone jack and the USB B receptacle.
- The Video 1 Composite input uses the RCA jacks labeled AUDIO INPUT L, R and VIDEO.
- The Video 2 S-video input uses the S-VIDEO connector and also uses the RCA jacks labeled AUDIO INPUT L and R.



Customizing the Input Configuration

1. To enable an input, select the check box at the left of the row for that input.
When enabled, the dialog box's Properties column shows the input name as it appears in the Unifi interface.
2. To define an input as a Computer input, select the **USB** or the **Serial** option. You can select the USB or the Serial option for one input only.
3. Press the input's button in the **Properties** column.
The Audio Properties dialog appears.
4. Select the audio input you want to use with the video source.
5. Press **Close** to save the changes.



NOTES

- The AUDIO INPUT R/L (RCA) and the STEREO MINI 1 (3.5 mm) inputs are typically connected to the extended connection panel.
- You can connect all video and audio inputs through the projector base connection panel if you disconnect the extended connection panel cable.
- You can connect to the Serial, DVI-A, DVI-D and Component inputs on the projector base connection panel only.
- The STEREO MINI 2 (3.5 mm) input is on the projector base connection panel.
- The DVI-A and DVI-D inputs use the same DVI-I connector on the projector base. To connect them at the same time, use a Y-adapter cable (not included).
- You must use the DVI inputs with the serial (RS-232) computer connection.
- When you select the same audio properties for multiple inputs, you can use a Y-adapter cable (not included) to connect the inputs at the same time.

Maintaining 600i Interactive Whiteboard Systems

In this Chapter

In this chapter you'll find the following information and procedures to keep your 600i system operating reliably.

- *Tips for Trouble-Free Performance* (this page)
 - *Preventing Damage to the Interactive Whiteboard* (page 58)
 - *Keeping the Writing Surface Clean* (page 58)
 - *Removing Permanent Marker Ink Stains* (page 58)
- *The Pen Tray* (page 59)
 - *Pen Tray Buttons* (page 59)
 - *Pen Tray LEDs and Sensors* (page 59)
 - *Servicing the Pen Tray*
 - *To remove the pen tray*
- *Maintaining the Unifi Projector* (page 61)
 - *Keeping the Unifi Projector Clean* (page 61)
 - *Adjusting the Projected Image* (page 61)
- *Replacing the Projector Lamp* (page 62)
 - *To replace the projector lamp* (page 62)
 - *To reset the lamp usage timer* (page 63)

Tips for Trouble-Free Performance

- When using the 600i with a computer, ensure that it's connected to an interface that's recognized by the operating system and that's not being used by another application.
- If you want to use your finger to touch the interactive screen, make sure all the pens and the eraser are placed securely in the pen tray. If you lose a pen, place another object in its pen tray slot. Otherwise, the interactive whiteboard senses the tool missing from the pen tray and the software assumes that the missing tool is the one you're currently using on the interactive surface.

WARNING Safety Tips for Teachers




- Tell students not to look directly at the light beam from the projector. Instead, encourage them to keep their back to the projector when working at the interactive whiteboard. Before they turn to face the class, they should step sideways, out of the projector's beam.
- Make sure you don't look directly into the light beam from the projector. Keep your back to the class when you write over a projected image. Step to the side of the interactive whiteboard before you turn and face the class.
- Tell your students not to touch the head of the projector, as it can become extremely hot during normal operation.

Preventing Damage to the Interactive Whiteboard

Although the SMART Board 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.

Keeping the Writing Surface Clean

	<p>IMPORTANT</p> <ul style="list-style-type: none">• Before you clean your interactive whiteboard, shut down the Unifi projector. Otherwise, you may inadvertently activate applications or scramble an attached computer's desktop icons when you clean the screen.• To view dirt or streaks more easily, put the Unifi projector on Standby mode (lamp off).
---	--


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

- Do not use low-odor dry-erase markers such as EXPO2®, because they can be very difficult to remove. Use standard dry-erase (high-odor) markers that include a warning to use them 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 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, such as EXPO Cleaner, if ink remains after erasing.
- Don't allow excess 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.

Removing Permanent Marker Ink Stains

To remove marks made with a permanent marker, you can use a cleaner such as the Sanford EXPO Dry Erase Board Doctor. Just write directly over the permanent ink stain with the Board Doctor pen, 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 soft cloth while the ink is still wet. If any trace of the ink remains, spray a cloth with a glass or whiteboard cleaner and wipe the area clean.

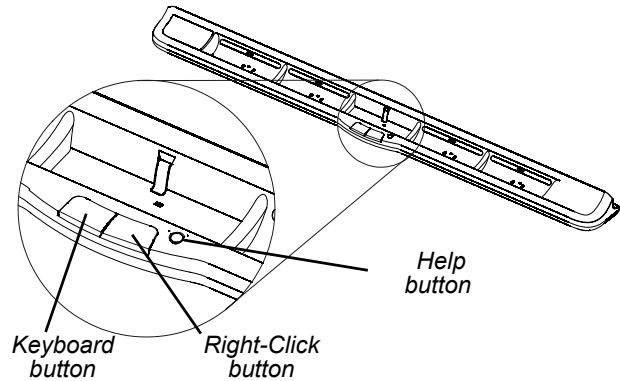
	<p>TIP</p> <p>When removing permanent marker ink, don't use low-odor or non-scented dry-erase markers. They don't contain the appropriate solvents.</p>
---	--

The Pen Tray

In addition to providing a convenient place to store the pens and the eraser, the pen tray has several controls, sensors and indicators.

Pen Tray Buttons

In the center of the pen tray, there are three buttons. Simultaneously press and hold the two larger buttons to start the orientation process. When the 600i is connected to a computer operating in Projected mode, the two large rectangular buttons default to Keyboard (the left button) and Right-Click (the right button) functions. In Non-Projected mode, the buttons are assigned Print Page and New Page functions respectively. In either mode, you can use SMART Board software to customize the buttons to provide



several other functions, such as printing, changing pages, launching applications and capturing the screen. The third button (the small round one) launches the online Help, where you'll also find an alignment icon for orienting the interactive whiteboard.

NOTE: The Help button doesn't work when using the 600i without a computer, and the right and left pen tray buttons only open the orientation display (page 40).

Pen Tray LEDs and Sensors

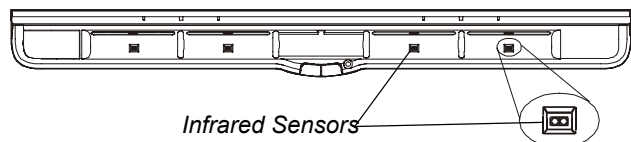
When you turn on or reset the 600i or the interactive whiteboard, the indicator lights on the pen tray cycle twice. When the system is working correctly, the lights come on individually to indicate the last tool removed from the pen tray. The pen tray detects the removal of the pens and the eraser using reflective infrared sensors similar to the ones that detect the presence of paper in photocopiers.

NOTE: Because the pen tray uses infrared sensors, the pen tray tools must reflect infrared light. Old-style black SMART Pen Tray pens (as used with the 500 Series interactive whiteboards) may not reflect infrared light reliably.

Servicing the Pen Tray

Cleaning the Pen Tray's Sensors

If the infrared sensors in the bottom of the pen tray's recesses are obstructed, the sensors can't reliably detect when the pen or the eraser is removed or replaced. The recess 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.

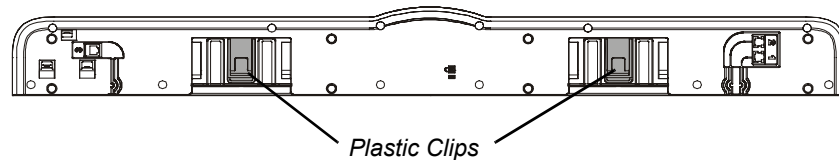
NOTE: There are no user serviceable parts inside the pen tray. Only qualified personnel should disassemble the pen tray. If dust or a small object prevents you from pressing a button, or causes a button to stick, remove the object carefully.

To remove the pen tray

NOTE: Electrostatic discharge protection is not required for this operation.

1. Turn off the interactive whiteboard by disconnecting the USB cable connected to the Unifi projector or turn off the 600i interactive whiteboard system and wait until the indicator ring on the control module is solid white and the fans have stopped running.
2. Remove the pens and the eraser from the pen tray.
3. Reach underneath the pen tray, and disconnect the modular I²C cables from connectors 1, 2 and 3. See page 16 for connector locations.
4. If you have secured the pen tray to its brackets using two screws (page 24), remove these screws.
5. If you have secured the pen tray using a Kensington lock or similar device, unlock and remove the lock.
6. Reach underneath the pen tray and pull down on the two large plastic clips on the bottom of the pen tray. The ends of these clips project downwards slightly, so they're easy to find.

The Pen Tray as Seen from Below



7. While continuing to apply downward pressure to the clips, gently slide the pen tray toward you until it's free of the two L-shaped metal brackets.

NOTE: To reinstall the pen tray, simply reverse these steps.

Maintaining the Unifi Projector

Keeping the Unifi Projector Clean

WARNING



Before you clean the Unifi projector, turn it off and wait for it to cool completely before unplugging it. Failure to do so can cause the lamp to fail prematurely or burst.

- Use a dry or damp cleaning cloth, for general cleaning of the exterior of the Unifi projector.
- Do not use spray cleaners or solvents on any part of the Unifi projector base or head.
- Do not allow liquids of any kind to flow into either the Unifi projector base or head.

Adjusting the Projected Image

You can fix many image problems by adjusting the projector's focus or boom length. Optimally, you should have a margin of approximately 3/8" (1.0 cm) on all sides of the screen. See page 14 for image adjustment procedures.

NOTE: Do not adjust the factory preset boom alignment screws or the projector alignment screws inside the projector head. If you can't achieve a satisfactory alignment, contact your support representative (page 73).

When using an external video input source, you should ensure that the source's resolution settings match those of the Unifi projector. The native resolution of the Unifi projector is XGA (1024 × 768). If the resolutions don't match, the image output may not completely fill the interactive screen, may shimmer or be distorted. You can change a computer's resolution in the Windows Control Panel or in the Mac System Preferences. For more information about setting the computer resolution, see the operating system's Help.

Replacing the Projector Lamp

After 2,000 hours of operation (3,000 hours in Eco mode), the Unifi projector turns off and goes into Standby mode. If this happens, replace the lamp assembly.

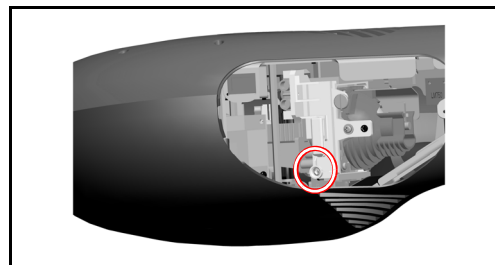
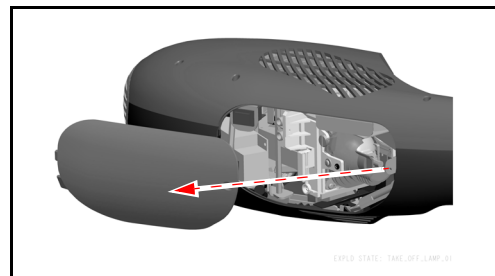
WARNING



- If you continue to use the projector after 2,000 hours (3,000 hours in Eco mode) the lamp may shatter or burst, scattering glass throughout the projector head.
- If the lamp has shattered or burst, call a SMART authorized service representative for instructions. Do not attempt to replace the lamp.
- If the lamp has shattered or burst, do not touch the glass fragments as they may cause injury. Wash your hands thoroughly if you have contacted lamp debris. Ventilate the area where the lamp rupture occurs.
- Before replacing the lamp, turn the projector off and wait for it to cool completely before removing the lamp assembly. Failure to do so can cause severe burns.
- Wear protective eyewear while changing the lamp. Failure to do so can cause injury or loss of eyesight if the lamp ruptures.
- Do not remove any screws other than the ones specified in the following lamp replacement instructions.
- Use only the SMART replacement lamp, Part No. 01-00228.
- To prevent premature lamp failure or exposure to mercury, always handle the fragile lamp assembly with care. Don't touch the lamp with your fingers.
- Never replace the lamp assembly with a previously used lamp assembly.
- The lamp used in the Unifi projector contains mercury. Don't put it in the garbage. Recycle or dispose of it as hazardous waste, in accordance with local regulations.

To replace the projector lamp

1. Turn off the projector, disconnect it from the power outlet, and then wait at least one hour for the lamp assembly to cool.
2. Use a Phillips No. 2 screwdriver to loosen the captive screw from the lamp cover on the right side of the projector head, and then remove the cover.
3. Remove the lamp retention screw (circled in the diagram).
NOTE: Do not remove any other screws.
4. Gently pull the lamp assembly out of the projector head.

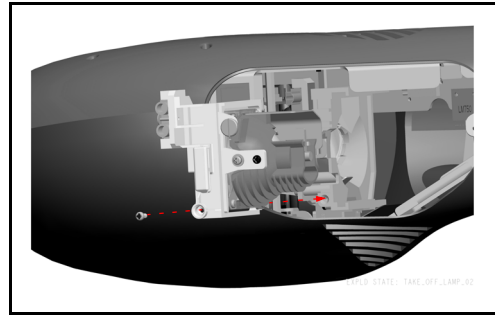


CAUTION



Do not touch any part of the replacement lamp assembly's bulb with either your fingers or tools. Fingerprints and other contamination can cause premature bulb failure.

5. Push the replacement lamp assembly into position in the projector head, and then firmly press it into place to fully seat the power connector.
6. Replace the lamp retention screw.
7. Replace the lamp cover and screw.
8. Dispose of the lamp assembly in an environmentally friendly manner, in accordance with local regulations.



NOTE: If the bulb failed within the warranty period, your support representative may ask you to record the lamp hours, and return the faulty lamp assembly to SMART Technologies. If you're asked to return the lamp assembly, please use the replacement lamp's packaging.

To reset the lamp usage timer

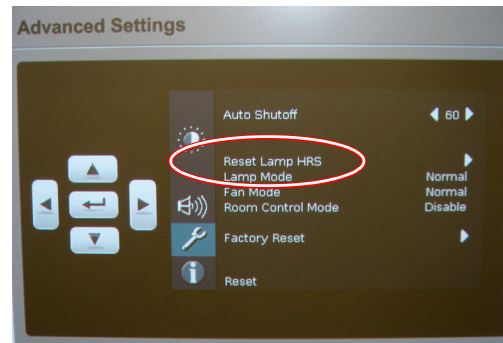
After replacing the projector lamp assembly, reset the lamp usage timer. Use the Unifi software on-screen menu or the remote control to access the projector's on-screen display.

1. Press the **Settings** button on the Unifi on-screen interface, and then select **Advanced settings**.

OR

Press remote control's **Info** button.

2. Select the **Setup** menu (wrench icon).
3. Select the **Reset Lamp HRS** option.
4. Press **Yes** to confirm.



Troubleshooting 600i Interactive Whiteboard Systems

In this Chapter

In this chapter you'll find the following information and procedures to help you troubleshoot and resolve problems with your 600i system.

- *Resetting the 600i Interactive Whiteboard System* (this page)
 - *Resetting the 600i System* (this page)
 - *Shutting down the Unifi Projector Immediately* (this page)
 - *Resetting the Interactive Whiteboard* (page 66)
- *General 600i System Troubleshooting* (page 67)
 - *The Pen Tray or Control Module Isn't Working Correctly* (page 67)
 - *The 600i System Indicators Appear Normal, But You Have Problems* (page 67)
- *Troubleshooting the Unifi Projector* (page 68)
 - *Common Problems and Solutions* (page 68)
 - *Onscreen Messages* (page 69)
- *Isolating the Interactive Whiteboard from the Unifi Projector* (page 70)
 - *To isolate the interactive whiteboard from the Unifi projector* (page 70)

Resetting the 600i Interactive Whiteboard System

If your 600i system behaves erratically (possibly because of a static discharge or power a interruption) you may be able to restore normal operation simply by resetting the system.

Resetting the 600i System

You can reset the 600i interactive whiteboard system completely by removing and replacing the power plug to the Unifi projector or by turning the Master Power switch (inside the projector base) off and on. This turns the power off and back on, resetting all components of the SMART Board 600i interactive whiteboard system.

WARNING

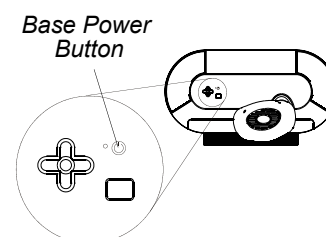
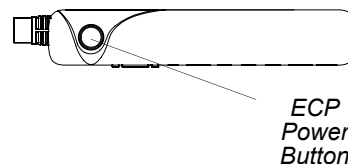


Wait for the Unifi projector to cool down completely before turning off the power. Failure to do so can cause the lamp to fail prematurely or burst.

Shutting down the Unifi Projector Immediately

You can press the Power button on the extended connection panel (ECP) to immediately put the projector into a two-minute cool down cycle and then into Standby mode. After the cool down period, you can press the ECP Power button for three seconds to turn the system back on.

You can also press the Power button on the projector base to put the system into standby. After the cool down period, press the button again to turn the system back on.



NOTES

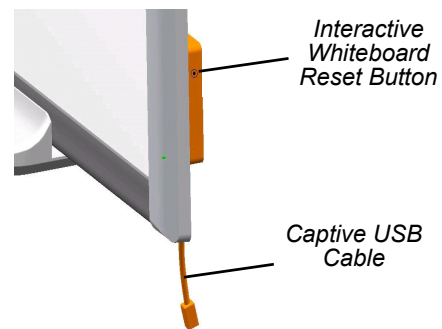
- To reset the projector completely, you must unplug the system or turn the Master Power switch (inside the projector base) off. Turning the projector off with any external power button, including the remote control, doesn't reset the projector's circuitry or power supplies.
- Turning the Unifi projector off also removes power from the interactive whiteboard.
- Save your ScratchPad before you press either Power button or remove power from the system. All captured images and notes are cleared immediately when you turn the power off.

Resetting the Interactive Whiteboard

When the 600i system is turned off and on, the interactive whiteboard power is also turned off and on, resetting it completely.

To reset the interactive whiteboard by itself, disconnect and reconnect the USB cable that links it to the Unifi projector. This turns the power off and back on, resetting all components of the interactive whiteboard.

You can also use the Reset button on the edge of the interactive whiteboard's controller module to perform a soft reset of the controller easily. You can't accidentally trigger the recessed Reset button. Use the tip of a pen tray pen or other pointed object (such as a ball-point pen) to press the button.



Press the **Reset** button if the controller module stops responding or is in the wrong mode. For example, the interactive whiteboard might be unresponsive because of an electrostatic discharge, a power interruption or some other event. After you press the **Reset** button, the controller module resets and operates normally.

NOTE: If you press and hold the **Reset** button for longer than three seconds, any saved 4- or 9-point orientation data is cleared from the controller module's memory, and the alignment defaults to factory settings. However, if you are using a computer with SMART Board software and have performed a 12- or 20-point orientation, that data is retained after a reset because it is stored on the computer (page 40).

General 600i System Troubleshooting


The Pen Tray or Control Module Isn't Working Correctly

The interactive whiteboard's SC9 firmware must be version 4.1.2.0 or later to operate correctly with the Unifi projector. Refer to the procedures for upgrading the firmware on page 30.

If the Unifi projector appears to operate normally, but the pen tray indicators and tools are not working correctly, or the control module isn't working correctly, verify that the modular I²C cable from the SC9 controller module is securely plugged into connector **1** on the bottom of the pen tray. Also verify that the control module cable is securely plugged into connectors **2** and **3**. See page 16 for detailed instructions.

The 600i System Indicators Appear Normal, But You Have Problems

If the indicators on the projector, control module and interactive whiteboard indicate that the system is operating normally, but you are still experiencing problems, use this table to help troubleshoot the issue.

Symptom/Observation	Action/Remedy
The projected image is blurry or is too large or too small.	Adjust the projector boom's length and focus. See page 14 for adjustment procedures. The video source's resolution settings may not match your projector's native resolution. If you're using a computer, check that it's settings match the Unifi projector's XGA (1024 × 768) resolution by going to the Windows Control Panel or the Mac System Preferences.
Touch is not accurate. The pointer does not appear directly below your finger. When you write on the screen, your writing appears at a slight distance from the pen.	Orient the interactive whiteboard. To start the orientation, press and hold both the Keyboard and Right-click buttons on the pen tray at the same time. If you're using a computer, you can also open the SMART Board control panel and press Orient/Align the SMART Board . 
No pointer is visible on the screen, and when you touch the screen, a colored line appears.	A pen is missing or not positioned correctly in the pen tray. Some pens, dry erase markers, or the old style (black) SMART pens aren't reflective to infrared light, so pen tray sensors can't detect them. Put light-colored tape on the pens to make them more reflective.
The pointer snaps back to one location when you lift the pen or your finger from the screen.	The analog resistive surfaces are in constant contact at the location to which the pointer returns. An object hitting or pressing on the front sheet can cause this, if it leaves a permanent depression. Gently pull the front sheet away from the back sheet using a piece of tape or a small suction cup. If the problem goes away while you pull but returns when you release the tape or suction cup, you may have to return the interactive whiteboard for repair.
The pointer moves erratically or gaps appear when you draw with the pen.	The USB power may be too low to power the interactive whiteboard reliably. Check the USB power output from the projector or USB extender.

Troubleshooting the Unifi Projector

Common Problems and Solutions

Symptom	Cause	Solution
You can't turn on the power.	The power cord is disconnected.	Plug the power cord into an AC socket.
	The Master power switch isn't turned on.	Turn on the Master power switch.
	The interlock microswitch in the projector head is open.	Remove and replace the lamp cover ensuring that the cover closes the microswitch.
No picture or sound.	The desired input source isn't selected.	Select the correct input source.
	The cables from the input source are not connected.	Connect the cables to the correct input source.
	The input source is not turned on or displaying an image. (e.g., the external monitor port on a notebook computer is not enabled)	Turn on the input source.
The lamp won't light or has turned off.	The internal temperature is too high.	Clean the cooling fan screen.
	The lamp has reached its maximum life or has prematurely failed.	Replace the lamp.
You can hear sound but can't see an image.	The VGA/video cables aren't connected.	Connect the cables to the correct input source.
	The VGA/video cables are connected to the wrong input.	
You can see an image but can't hear sound.	The audio cables are connected to the wrong input or to the audio output jack.	Connect the cables to the correct input source.
	The audio/video inputs are configured incorrectly.	Ensure proper configuration through the menu.
	The volume is set to minimum.	Turn up the volume.
	Mute is on.	Press the Volume control to turn off Mute.
The image is dark or dim.	The brightness setting is too low.	Adjust the brightness.
	The lamp needs to be replaced.	Replace the lamp.

Symptom	Cause	Solution
The projector can't detect the desired input source.	The input source is not active. A signal must be present before you can select the input source.	Connect an active input source to system.
	The cables from the input source aren't correctly connected or are faulty.	Securely connect the cables from the input sources, or replace the cables.
	The input configuration was changed by another user.	Reconfigure the inputs.
	The input device (e.g., a computer, DVD player, etc.) is not turned on.	Turn on the input source.
The remote control doesn't work.	The remote control isn't facing the remote control sensor.	Point the remote control toward the remote control sensor in the projector base.
	The remote control is too far from the sensor in the projector base.	Operate the remote control within five meters of the projector base.
	There's an obstruction between the remote control and the projector base.	Remove the obstacle.
	The remote control's batteries are exhausted or inserted incorrectly.	Insert fresh batteries or make sure the batteries are inserted correctly.

Onscreen Messages

During normal operation, the following messages may appear on-screen.

Message	Meaning
No input is detected.	The projector isn't receiving a signal from an external source. Check the cable connections and verify that the external source is on and working.
Please change the lamp.	The lamp has had 1800–1899 hours of use and needs to be changed.
There are (x) hours of lamp life remaining. The unit will shut off in 40 minutes.	The lamp has had 1900–1999 hours of use and needs to be changed.
There are (x) hours of lamp life remaining. The unit will shut off in 5 minutes.	When the lamp has had 2,000 hours of use or more, the message flashes, and the system turns off after 5 minutes.

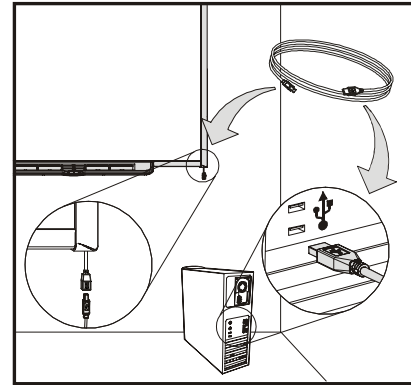
Isolating the Interactive Whiteboard from the Unifi Projector

If you suspect that there is a problem with your interactive whiteboard, isolate it from the Unifi projector so that you can test it separately.

To isolate the interactive whiteboard from the Unifi projector

1. Disconnect the USB cable from the interactive whiteboard's captive USB connector behind the lower-right corner of the interactive whiteboard.
2. Connect a USB cable from the interactive whiteboard to an unused USB receptacle on a computer that has SMART Board software installed.
3. Turn on the computer.

You can now troubleshoot the interactive whiteboard using the Ready Light, in conjunction with other observable symptoms and behaviors. Before you start troubleshooting, (page 48) locate the Ready Light, and familiarize yourself with its states during normal operation. If you suspect that your interactive whiteboard is not operating correctly, refer to the *SMART Board 600 Series Interactive Whiteboard Installation and User's Guide*, available from <http://www.smarttech.com/support>, or contact your support representative.



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.

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, as well as the People's Republic of China's Control of Pollution Caused by Electronic Information Products (China RoHS).

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.

Contacting SMART Technologies

Online 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 free training materials and information about our training services.

Contacting SMART Technical Support

SMART Technical Support welcomes your call. However, if you experience difficulty with your SMART product, you may want to contact your local reseller first. Your local reseller may be able to resolve the issue without delay.

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

Online: www.smarttech.com/contactsupport

Telephone: +1.403.228.5940 or
Toll Free 1.866.518.6791 (Canada/U.S.)
(Monday to Friday, 5 a.m. – 6 p.m. Mountain Time)

Fax: +1.403.806.1256

E-mail: support@smarttech.com

General Inquiries

Address: **SMART Technologies**
1207 – 11 Ave SW, Suite 300
Calgary, AB T3C 0M5
CANADA

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

Fax: +1.403.228.2500

E-mail: info@smarttech.com

Warranty

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

Registration

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

Index

#

600i Interactive Whiteboard Features, 1

A

Accessories

- Active USB Extension Cables, 4
- Cat 5 USB Extender, 4
- GoWire, 4
- Pen Tray Eraser, 4
- Pen Tray Pens, 4
- Pens, 4
- USB Cable, 3

Active USB Extension Cables, 4

B

Buttons

- Control Module Menu Show/Hide, 46
- Control Module Power, 46
- Control Module Volume Control, 46
- ECP Power, 47
- Help, 44
- Keyboard, 59
- New Page, 59
- Pen Tray, 59
- Print Page, 59
- Projector Power, 47
- Reset Orientation, 40
- Right-Click, 59

C

Cables

- Accessories, 3
- Security, 24
- USB Extenders, 35

Cat 5 USB Extender, 4

Cleaning

- Infrared Sensors, 59
- Removing Permanent Marker Ink Stains, 58
- The Unifi Projector, 61
- Writing Surface, 58

Connecting

- Resident Serial Computer, 36
- With a Serial (RS-232) Cable, 36
- With USB, 34

Connecting a Laptop Computer, 39

Connections

- ECP, 55
- Unifi Projector, 55

Connector

- Electrostatic Discharge, 6

Pen Tray, 17

USB Standard Compliant, 33

Control Module

- Menu Show/Hide Button, 46
- Power Button, 46
- Status Indicator, 46
- Volume Control, 46

Controller Module

- Manufacturing Orientation, 40
- Ready Light, 48
- Reset Button, 66

D

Damage Prevention, 58

Dust and Scratching, 6

E

ECP

- Available Connections, 55
- Connecting, 13
- Power Button, 47

Electrostatic Discharge, 6

Emissions, 6

Environmental Requirements, 6

Eraser, 4

ESD, 6

F

Features

- 600i Interactive Whiteboard System, 1
- SMART Board 600 series, 2
- Unifi 35 Projector System, 2
- Unifi Software Features, 3

G

GoWire, 4

H

Height, Wall-Mounting, 7

Help Button, 44

Humidity, 6

I

Indicators and Controls

- Controller Reset, 66
- Pen Tray Buttons, 59
- Projector Keypad, 47

- Projector Power Button, 47
- Projector Status LED, 47
- Ready Light, 48
- Unifi Projector, 47

Installation and Connection

- Concrete Wall Mounting, 10, 27, 28
- Conducted and Radiated Emissions, 6
- Connecting to a Computer, 33
- Dust and Scratching, 6
- ECP Connections, 13
- Electrostatic Discharge, 6
- Environmental Requirements, 6
- ESD, 6
- Framed Wall Mounting, 8
- Humidity Environments, 6
- Install the Control Module, 16
- Install the ECP, 18
- Install the Pen Tray, 16
- Install the Wire Cover, 17
- Mount the Projector, 12
- Mounting the Interactive Whiteboard, 14
- Operating Safety and Precautions, 33
- Securing the Interactive Whiteboard, 24
- Temperature Environments, 6
- Water and Fluid Resistance, 6

K

- Keyboard Button, 59
- Keystone

- Aligning the Interactive Whiteboard, 21
- Aligning the Unifi 35 Projector Boom, 22

- Keystone Alignment, 20

L

LEDs

- Control Module, 46
- Interactive Whiteboard Ready Light, 48
- Internal Status, 48
- Projector Status, 47

M

- Model 660, Basic Features, 2
- Model 680, Basic Features, 2

N

- New Page Button, 59

O

- Orientation and Alignment
 - 12- and 20-Point, 40
 - 4- and 9-Point, 40
 - Factory Default, 40

- Manufacturing, 40
- Orientation Precision, 41
- Orientation Procedure, 41

P

Pen Tray

- Accessories, 4
- Buttons, 59
- Pens, 4

Pen Tray Pens, 4

- Permanent Marker Ink Stains, Removing, 58

- Preventing Damage, 58

- Print Page Button, 59

Procedure

- Concrete Wall-Mounting, 10, 27, 28
- ECP Connections, 13
- Framed Wall-Mounting, 8
- Install the Control Module, 16
- Install the ECP, 18
- Install the Pen Tray, 16
- Install the Wire Cover, 17
- Mount the Projector, 12
- Mounting the Interactive Whiteboard, 14

Projector

- Available Connections, 55
- Keypad, 47
- Power Button, 47
- Replacing the Lamp, 62
- Reset the Lamp Usage Timer, 63

R

- Ready Light, 48

Regulatory Compliance

- RoHS Directives, 71
- WEEE Equipment Regulations, 71

- Replacing the Projector Lamp, 62

- Reset button, 66

- Reset Projector Lamp Timer, 63

- Resetting the Interactive Whiteboard, 65

- Right-Click Button, 59

Room Control

- Command Summary, 43
- Disable, 37
- Enable, 42

- Room Control Feature, 42

S

- Safety and Precautions, 33

- Safety Information, *i*

ScratchPad

- Add Pages, 51
- Capturing Video Images, 52

- Delete Pages, 51
- Saving Pages, 51
- To Capture an Image, 52
- To Clear a Page, 52
- Using the Unifi Interface, 50
- Securing the Interactive Whiteboard, 24
- Servicing
 - Cleaning the Unifi Projector, 61
 - Cleaning the Writing Surface, 58
 - Infrared Sensors, 59
 - Preventing Damage, 58
 - Removing Permanent Marker Ink Stains, 58
- SMART Board Software
 - Non-Projected Mode, 53
 - Projected Mode, 53
 - Use with 600i, 53

T

- Teachers Safety Tips, 57
- Temperature, 6
- Troubleshooting
 - General, 67
 - Isolating the Interactive Whiteboard from the Projector, 70
 - Resetting the Interactive Whiteboard, 65
 - the Unifi Projector, 68
 - Using the Ready Light, 70

U

- Unifi Projector
 - Available Connections, 55
 - External Indicators and Controls, 47
 - Features, 2
 - Four Internal LEDs, 48
 - Internal Indicators and Controls, 48
 - Keypad, 47
 - Master Power Switch, 48
 - Power Button, 47
 - Status LED, 47
- Unifi Software Features, 3
- USB Extender Cables and Hubs, 35

W

- Wall-Mounting
 - Recommended Heights, 7
 - Tools Required, 7
- Waste Electrical and Electronic Equipment Regulations, WEEE, 71
- Water and Fluid Resistance, 6
- Wire Cover, 17



SMART Technologies

1207 – 11 Avenue SW, Suite 300

Calgary, AB T3C 0M5

CANADA

www.smarttech.com/support

www.smarttech.com/contactsupport

Support +1.403.228.5940 or Toll Free 1.866.518.6791

99-00737-25 REV A0