SMART Board 2000 series
Display

USER'S GUIDE

FOR SBD-2075 AND SBD-2075P

SMART®

Product registration

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

Register online at smarttech.com/registration.

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

Serial number: _____

Date of purchase: _____

smarttech.com/kb/171178

Important information

> ⚠️ **WARNING**
>
> - Failure to follow the installation instructions shipped with your SMART product could result in personal injury and product damage which may not be covered by the warranty.
>
> - Do not open or disassemble the SMART product. You risk electrical shock from the high voltage inside the casing. Opening the casing also voids the warranty.
>
> - Do not stand (or allow children to stand) on a chair to touch the surface of your SMART product. Rather, mount the product at the appropriate height.
>
> - Do not climb (or allow children to climb) on a wall- or stand-supported SMART product. Climbing on the SMART product could result in personal injury or product damage.
>
> - Individuals under the age of 18 require adult supervision when using this SMART Product.
>
> - To reduce the risk of fire or electric shock, do not expose the SMART product to rain or moisture.
>
> - If your SMART product requires replacement parts, make sure the service technician uses replacement parts specified by SMART Technologies or parts with the same characteristics as the original.
>
> - Ensure that any cables extending across the floor to your SMART product are properly bundled and marked to avoid a trip hazard.
>
> - Do not insert objects inside the cabinet ventilation holes, because they could touch dangerous voltage points and cause electric shock, fire or product damage which may not be covered by the warranty.
>
> - Do not place any heavy objects on the power cable. Damage to the cable could cause shock, fire or product damage which may not be covered by the warranty.
>
> - Use only extension cords and outlets that can fully accommodate the plug.
>
> - Use the power cable provided with this product. If a power cable is not supplied with this product, contact your supplier. Use only power cables that match the AC voltage of the power outlet and that comply with your country's safety standards.
>
> - If the glass is broken, do not touch the liquid crystal. To prevent injury, handle glass fragments with care when disposing of them.
>
> - Do not move or mount the display by connecting rope or wire to its handles. The display is heavy, and failure of the rope, wire or handle could lead to injury.

- To prevent injury, do not attempt to mount or carry the interactive flat panel by yourself. Instead, use a lifting device with the included attachable eyebolts. The eyebolts are not post-installation hardware.

- Use only VESA®-approved mounting hardware.

- Disconnect all power cables for your display from the wall outlet and seek assistance from qualified service personnel if any of the following occur:

  - The power cable or plug is damaged

  - Liquid is spilled into the display

  - Objects fall into the display

  - The display is dropped

  - Structural damage, such as cracking, occurs

  - The display behaves unexpectedly when you follow operating instructions

EU Declaration of conformity: Display SBD-2075 and SBD-2075P

Hereby, SMART Technologies Inc. declares that the radio equipment type LCD monitor SBD-2075 and SBD-2075P is in compliance with Directive 2014/53/EU.

The full text of the EU declaration of conformity is available at: www.smarttech.com/compliance.

This equipment is compliant with Class A of CISPR 32. In a residential environment, this equipment may cause radio interference.

In all EU member states, operation of 5150-5350 MHz is restricted to indoor use only.

Wireless technology	Frequency	Power
Bluetooth	2402-2480 MHz	10 db
Wi-Fi 2.4 GHz	2412-2472 MHz	17 db
Wi-Fi 5 GHz	5150-5252 MHz	16.5 db
	5250-5350 MHz	16.5 db
	5470-5725 MHz	16.5 db
	5725-5850 MHz	16.5 db

Canada statement

This device complies with Industry Canada's license-exempt RSSs. Operation is subject to the following two conditions:

1. This device may not cause interference; and
2. This device must accept any interference, including interference that may cause undesired operation of the device.

The device meets the exemption from the routine evaluation limits in section 2.5 of RSS 102 and compliance with RSS-102 RF exposure, users can obtain Canadian information on RF exposure and compliance.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

The device for operation in the band 5150-5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

1. l'appareil ne doit pas produire de brouillage;
2. l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Le dispositif rencontre l'exemption des limites courantes d'évaluation dans la section 2.5 de RSS 102 et la conformité à l'exposition de RSS-102 rf, utilisateurs peut obtenir l'information canadienne sur l'exposition et la conformité de rf.

Cet émetteur ne doit pas être Co-placé ou ne fonctionnant en même temps qu'aucune autre antenne ou émetteur. Cet équipement devrait être installé et actionné avec une distance minimum de 20 centimètres entre le radiateur et votre corps.

les dispositifs fonctionnant dans la bande 5150-5250 MHz sont réservés uniquement pour une utilisation à l'intérieur afin de réduire les risques de brouillage préjudiciable aux systèmes de satellites mobiles utilisant les mêmes canaux;

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.

FCC Radiation Exposure Statement

This device complies with FCC radiation exposure limits set forth for an uncontrolled environment and it also complies with Part 15 of the FCC RF Rules. This equipment must be installed and operated in accordance with provided instructions and the antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter. End-users and installers must be provided with antenna installation instructions and consider removing the no-collocation statement.

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

1. this device may not cause harmful interference, and
2. this device must accept any interference received, including interference that may cause undesired operation.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Contents

Welcome

This chapter introduces the SMART Board® 2000 series display.

About the display

The SMART Board 2075 display is a 75" non-touch LED display with built-in screen sharing that supports Mac iOS, Android and Microsoft platforms. The 4K ultra-high-definition display serves as an active collaboration hub between student and teacher devices to allow greater levels of student engagement. The cost-effective SMART Board 2075 display offers educators and business professionals flexibility in their implementation of classroom technology for whole class and small group collaboration.

Features

The SMART Board 2000 series display includes the following features:

Feature	Description
4K ultra high definition	The SMART Board 2000 series display has a 4K ultra high-definition LED display with 3840 × 2160 resolution at 60 Hz refresh rate.

Feature	Description
Screen Share	Use the Screen Share app to share content wirelessly on the display with remote participants. Screen Share supports iOS, Android and Microsoft devices.
SMART Learning Suite	The SMART Board 2000 series display includes a one-year subscription to SMART Learning Suite, which includes SMART Notebook® software, SMART Lab™ activities, SMART Response® 2 assessments, and access to SMART amp® software.
SMART Meeting Pro® software Personal license	The SMART Board 2000 Pro series display includes 10 subscriptions to SMART Meeting Pro software Personal license.

Components

The display consists of the following components:
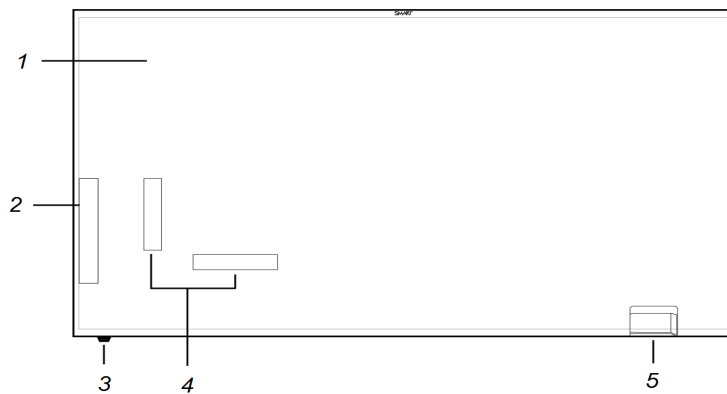
No.	Name	More information
Pictured		
1	Screen	page 2
2	Control panel	page 3
3	Remote control IR sensor	page 3
4	Connector panel (rear surface)	page 3
5	Power panel (rear surface)	
Not pictured		
6	Remote control	page 5
7	Speakers	page 6

Screen

The display comes in the following screen sizes:

Model	Diagonal	Width	Height	Aspect ratio
SBD-2075 and SBD-2075P	74 5/8" (189.7 cm)	65 1/16" (165.3 cm)	36 5/8" (93.1 cm)	16:9

Control panel

The control panel located on the side of the display enables you to turn on the display, change inputs and use the on-screen display menu. It includes buttons for Power, Input Select, on-screen display (OSD) menu and menu navigation.
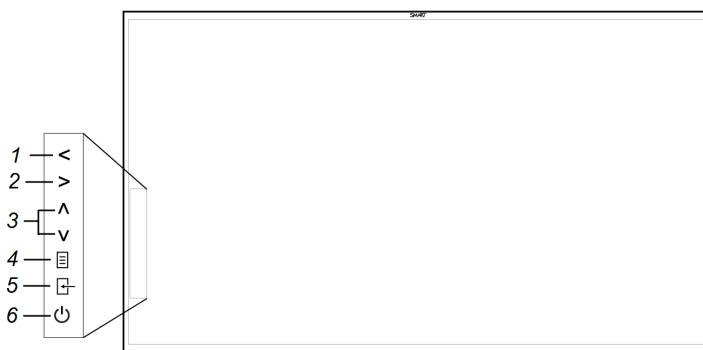
No.	Name	Procedure
1	Volume decrease, change selection.	Press to decrease volume and change a menu selection.
2	Volume increase, change selection	Press to increase volume and change a menu selection.
3	Navigate menu	Press up and down to navigate Input and OSD menus.
4	OSD menu	Press to open or close the OSD menu.
5	Input select	Press to open or close the Input select menu.
6	Power	Press to turn the display on or off.

Remote control sensor

The sensor detects input from the remote control. For best performance, maintain line-of-sight between the remote control and the sensor on the display.

Connector panel

The connector panel enables you to connect the display to your computer, external speakers and other devices. The following connections are available on 2000 series displays:
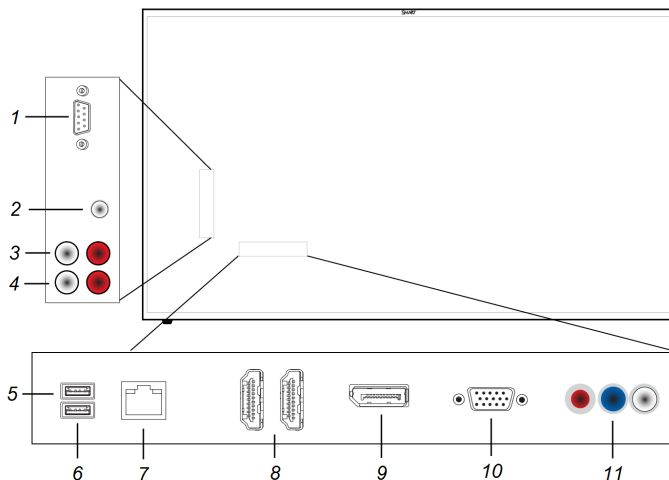
No.	Name
1	Room control RS-232 in
2	Stereo 3.5 mm audio line in
3	RCA audio in
4	RCA audio out
5	USB 2.0 user port. Input for a human interface device (HID), such as a keyboard or mouse for use during initial setup.
6	USB 2.0 service port
7	Ethernet RJ45
8	HDMI in (×2)
9	DisplayPort in
10	VGA in
11	Component video in

Power panel

Use the power panel to connect the display's power cable, connect a mini computer's power to the display and operate the power switch.
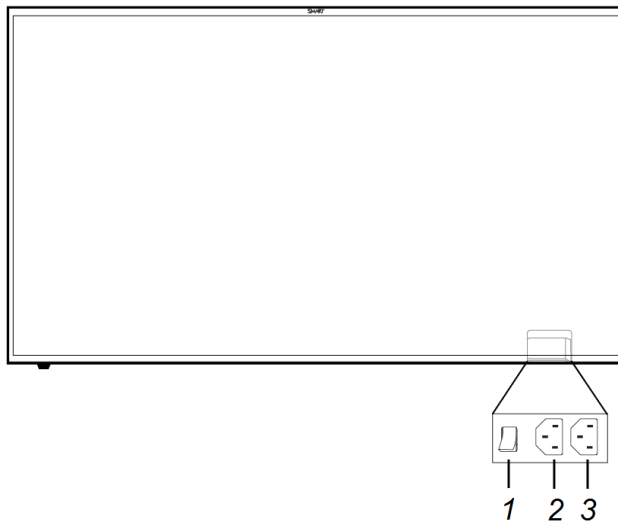
No.	Name
1	Power switch
2	Display power outlet
3	Mini computer power inlet

Remote control

Use the remote control to turn the display on or off, adjust the volume, select input, access SMART Board Settings, and adjust the OSD settings. The remote control features the following buttons:
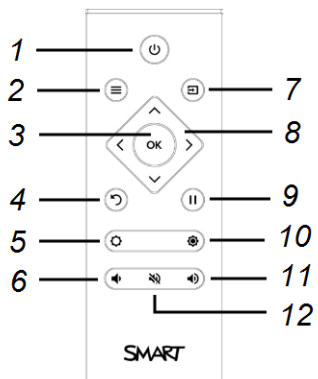
No.	Function	More information
1	Power	Turn the display on or off
2	OSD menu	Open or close the OSD menu
3	OK	Select a menu option
4	Back	Navigate back
5	Brightness decrease	Decrease display brightness
6	Volume decrease	Decrease the volume
7	Input select	Open or close the Input select menu
8	Navigation buttons	Navigate Input select, SMART Board Settings and the OSD menu
9	Freeze screen	Freeze the displayed image
10	Brightness increase	Increase display brightness
11	Volume increase	Increase the volume
12	Volume mute	Mute the volume

Speakers

The display has two 10 W integrated speakers. You can use the RCA or 3.5 mm audio output connectors to connect to an external sound system.

Accessories

You can connect the following accessories to your SMART Board 2000 display:

- SBA-100 speaker system
- SMART Audio 400 classroom amplification system

SBA-100 projection audio system

The SBA-100 projection audio system consists of two 14 W speakers intended for wall-mounted displays. You can control volume using the display's convenience panel or the digital volume controls in a connected computer's operating system.

For more information, see the SBA-100 projection audio system specifications (smarttech.com/kb/171146).

SMART Audio 400 classroom amplification system

The SMART Audio 400 classroom amplification system provides high-quality audio amplification.

The system comes with a teacher microphone and optional student microphone. A variety of speaker options are available, including wall- and ceiling-mounted speakers. The amplifier receives audio from the microphones and translates them into crystal-clear sound. For more information, see the SMART Audio 400 classroom amplification system specifications (smarttech.com/kb/171137).

More information

See the following resources for more information:

- SBD-2075 specifications: smarttech.com/kb/171147
- SBD-2075P specifications: www.smarttech.com/kb/171231
- SBD-2000 series installation guide: smarttech.com/kb/171177

These documents are available in the Support section of the SMART website: smarttech.com/support.

Chapter 2

Getting started with the display

This chapter describes how to turn the display on and off and view the input of your connected computer.

Turning the display on and off

▶ **To turn the display on**

1. Flick on the power switch on the back of the display.

2. Press the **Power** button on the remote control or the display's control panel.

▶ **To turn the display off**

Press the **Power** button on the remote control or the display's control panel.

Standby mode

The display enters standby mode when there's not active signal for 30 minutes.

▶ **To enter standby mode**

▶

▶ **To exit standby mode**

Setting up your SMART Board 2000 series display

After you've installed the display on the wall, turn it on and complete the initial set up.

💡 **TIP**

Connect a USB mouse and keyboard to the USB plug on the connection panel to make the following procedure go more quickly.

▶ **To set up the display**

1. Press the **Power** button on the remote control.

   The display turns on and the set-up wizard appears.

2. Select your preferred language from the list, select **Next** and then press **OK** on the remote control.

3. Select your country from the list, select **Next** and then press **OK** on the remote control.

4. Enter a name for the SMART Board, select **Next** and then press **OK** on the remote control.

5. Select your time zone from the list, select **Next** and then press **OK** on the remote control.

6. Set the date, select **Next** and then press **OK** on the remote control.

7. Set the time, select **Next**, and them press **OK** on the remote control.

8. If the display isn't using a wired network connection, select **Configure Wi-Fi** and then press **OK** on the remote control.

   The wireless connection wizard opens.

9. Select a wireless network from the list ,and then press **OK** on the remote control.

10. Enter the password for the wireless network, select **Connect** and then press **OK** on the
    remote control.

    The wireless connection wizard closes and you return to the *Configure Wi-Fi* step of the set-up
    wizard.

11. Select **Next** and then press **OK** on the remote control.

12. Select **Finish** and then press **OK** on the remote control.

    The welcome screen appears.

Connecting to a network

Before you connect the display to a network, your organization's network administrators need to
configure the network for the display.

Configuring the network for iQ functions

Network administrators need to configure the network so users can set the date and time and
update system software automatically and to allow apps to function properly.

▶ **To configure the network**

Add thefollowing URLs to the network whitelist.

URL	Feature
https://ws.kappboard.com ✏️ **NOTE** Block access to https://ws.kappboard.com to prevent automatic system software updates	Automatic system software update
https://*.mixpanel.com	System software
*.hockeyapp.net	System software
http://*.smarttech.com	SMART Learning Suite Online
https://*.youtube.com	Screen Share app
https://updates.airsquirrels.com	Screen Share app

▶ **To allow mobile devices and computers to use AirPlay and Google Cast to use the Screen Share app**

1. Open the required TCP/UDP ports:

Protocol	Port range	Feature
TCP	80	Outbound http
UDP	123	Network Time Protocol
TCP	3689	iTunes music sharing
TCP	5000	Audio streaming
TCP	5353	mDNS
UDP	5353	mDNS
TCP	7000	Picture sharing
TCP	7001	Video streaming
UDP	7010	Display mirroring
UDP	7011	Display mirroring
TCP	7100	Display mirroring
TCP	47000	Audio negotiation
TCP	49152–65535	Dynamic ports
UDP	49152–65535	Dynamic ports
TCP	49228	Google Cast
TCP	50259	Google Cast
UDP	54780	Google Cast
UDP	62572	Google Cast

2. Configure the network to allow Bonjour and mDNS (multicast).

3. Configure the network to allow Network Time Protocol (NTP) requests to Internet time servers.

> 🖉 **NOTE**
>
> Using a 5 GHz wireless network connection may provide a better experience with the Screen Share app.

Connecting the display to a network

The display can connect to a network using either Wi-Fi or an Ethernet connection. Network administrators can also add a browser proxy or install a certificate.

▶ **To connect to a Wi-Fi network**

1. Press the **Input** ⬚ button on the remote control.

   The launcher appears.

2. Select **Settings** ⚙ and press **OK**.

3. Select **Wi-Fi** and press **OK**.

   > 🖊 **NOTE**
   >
   > Ensure Wi-Fi is turned **On**.

4. Select a wireless network.

   If the Wi-Fi network is not password protected, the display connects to the network.

5. If the network requires a password, enter the Wi-Fi password, select **Connect** and then press **OK**.

   OR

   If the network requires a user name and password, enter the user name and Wi-Fi password, select **Connect** and then press **OK**.

▶ **To connect to a network**

Connect an Ethernet cable to the display's RJ45 receptacle.

> 🖊 **NOTE**
>
> The network must provide network settings via DHCP. If you require a static IP address, use DHCP reservation on the router.

▶ **To configure a proxy**

1. On the remote, press **Input** ⬚ button to open the launcher.

   The launcher appears.

2. Select **Settings** ⚙ and press **OK**.

3. Select **Wi-Fi** and press **OK**.

4. Select the network to which you're adding a proxy and press **OK**.

   A dialog box appears.

5. Select **Modify network** and press **OK**.

6. Select **Show advanced options**.

7. In the *Proxy* box, select **Manual**.

8. Enter the information in the *Proxy hostname*, *Proxy port* and *Bypass proxy* boxes.

9. Select **Save** and press **OK.**.

▶ **To install a certificate**

> ✏ **NOTE**
>
> Certificates must be PFX format.

1. Copy the PFX format certificate to a USB drive.

2. On the remote, press **Input** ⊡ button to open the launcher.

   The launcher appears.

3. Select **Settings** ⚙ and press **OK**.

4. Select **Wi-Fi > ... > Advanced > Install Certificates** and press **OK.**.

   The *USB Drive* window appears.

5. Select **USB Drive** and pres **OK**.

6. Select the certificate to install.

7. If required, enter a password to extract the certificate.

8. Optionally, enter a name for the certificate in the *Certificate name* box and reason for certificate use in the *Credential use* box. Select **OK** and press **OK** on the remote.

9. A window appears requesting that a lock screen PIN, pattern or password be set before using the certificate. Select **OK** and press **OK** on the remote.

10. Select a pattern, PIN or password method. Select **OK** and press **OK** on the remote.

    > 👉 **IMPORTANT**
    >
    > Make note of the pattern, PIN or password. The pattern, PIN or password may be required to install future certificates.
    >
    > If the pattern, PIN or password is forgotten, a factory reset is required before installing more certificates.

    The iQ system software confirms the certificate was installed.

Evaluating the impact of Screen Share on your network data usage

When you connect your device or computer to the display using Screen Share, the screen sharing protocol compresses the image from your device or computer. The protocol may transmit only areas of the screen that change. This can make it difficult to estimate the impact of Screen Share on a network where many users would like to screen share simultaneously.

For example, in a school where 30 teachers are using Screen Share simultaneously, 10% of teachers might be streaming video while 90% might be sharing static content with occasional updates. In such an instance, you could expect to see an additional 5 Mbps in network traffic. Use the following table to help estimate the impact of wireless Screen Share on your network.

Content being shared	Data rate transmission
Static content with minor screen movement	20 kb/sec
Static content with periodic scrolling or refreshes	Spikes briefly to 500–600 kb/sec, returns to 20 kb/sec
Gaming or streaming video with major screen changes	700 kb/sec–1.2 Mbps

Using SMART Learning Suite

Your SMART Board 2000 series display includes a subscription to SMART Learning Suite. SMART Learning Suite includes the following software:

Software	Description
SMART Notebook collaborative learning software	Create .notebook files that include graphics, text, tables, lines, shapes and animations on your computer. Present the file on the display and keep your class's attention as they view the content.
SMART Product Drivers	Enables connected computers to detect input from the display.

Install SMART Learning Suite on the computer connected to your display. Present SMART Learning Suite content on the display by using the Input app to select your computer's HDMI, Display Port or VGA inputs

▶ **To view a connected computer's input**

Use the Input app (see *Using Input* on *Using Input* on page 17).

Updating system software

When the SMART Board 2000 series display is connected to the Internet, it updates the system software automatically.

When a system software update is available, the display downloads the update in the background then waits for four hours of inactivity. When that happens, the display shows a two-minute countdown before beginning the update. The countdown can be interrupted at any time. The update begins when the countdown finishes. The display shows a blank screen for four minutes. When the update is complete, the display shows content that was on it before the update.

> ✏️ **NOTE**
>
> You can configure your organization's network to allow or prevent automatic system software updates (see connecting-to-a-network.htm).

Applying an automatic system software update manually

If the display has downloaded the system software update but hasn't yet applied the update, you can start the update process manually from Settings.

▶ **To apply an automatic system software update manually**

1. On the remote, press **Input** 🔁 button to open the launcher.

   The launcher appears.

2. Select **Settings** ⚙️ and press **OK**.

3. Scroll to **Auto Update**.

4. Under *Check for Updates Now*, tap **Apply Update Now**.

Updating system software manually

You can download system software updates at smarttech.com/downloads and update your display using a USB drive.

Chapter 3

Using apps on the display

The display includes the following apps:

- Input

- Screen Share

Using Input

Connect a computer to the display to present content on the display.

Showing content on the display

▶ **To show content on the display**

1. On the remote, press **Input** ▣ to open the launcher.

   The launcher appears.

2. Use the arrow button to select the input source and press **OK**.

   The display looks for a connection, and the content appears on the display's screen.

Stop showing content on the display

▶ **To stop showing content on the display**

Open the launcher and select another video source.

Using Screen Share

You can share content wirelessly to the display from your computer or mobile device.

> **NOTE**
>
> If you want to change the display's name, see the *SMART Board 2000 series displays user's guide* (smarttech.com/kb/171178) for instructions.

Sharing content from the Chrome™ browser to the display

You can use the Chrome browser and Google Cast™ (a browser extension for Chrome) to share the desktop or a specific browser tab from your computer.

> **NOTES**
>
> - Use Chrome version 52 or later.
>
> - Make sure your computer is connected to the same network as the display. See *Verifying that the display and mobile device or computer are connected to the same network* on page 25 for more information.

▶ **To download the Chrome browser**

1. On your computer, go to google.com/chrome.

2. Click **Download** > **For personal computers** > **Download Chrome**.

3. Follow the on-screen instructions.

▶ **To share content from the browser tab to the display**

1. On the display's remote, press **Input** to open the launcher.

   The launcher appears.

2. Select **Screen Share** and press **OK**.

   > **NOTE**
   >
   > Remember the display's name.

3. On your computer, open the Chrome browser.

4. Open the tab you want to share to the display.

5. In the top right corner of your browser, click the **Cast** icon ⬚.

6. Select the display's name.

> ✏️ **NOTE**
>
> When you're sharing content, the Cast icon ⬚ turns blue.

▶ **To share content from your desktop to the display**

1. On the display's remote, press **Input** ⬚ to open the launcher.

   The launcher appears.

2. Select **Screen Share** ⬚ and press **OK**.

3. On your computer, open the Chrome browser.

4. In the top right corner of your browser, click the **Cast** icon ⬚.

5. Click the drop-down menu beside *Cast to*.

6. Click **Cast desktop**.

7. Select the display's name.

8. In the *Share your screen* dialog box, click **Entire screen**.

> ✏️ **NOTE**
>
> When you're sharing content, the Cast icon ⬚ turns blue.

Sharing content from your Windows® computer to the display

If your computer is running Windows 10 or Windows 8.1 operating system, you can use Miracast to share content.

You can use the Chrome browser to share content from your Windows computer. See *Sharing content from the Chrome browser to the display* on the previous page

You can purchase AirParrot®, an application that allows you to share your display, a single application or a media file. See airsquirrels.com/airparrot/features/win.

✏️ **NOTE**

Make sure your computer is connected to the same network as the display. See *Verifying that the display and mobile device or computer are connected to the same network* on page 25 for more information.

Using Miracast to share content from Windows 8.1 operating system

▶ **To share content from the Windows 8.1 operating system**

1. On the display's remote, press **Input** ⊡ to open the launcher.

   The launcher appears.

2. Select **Screen Share** 🛜 and press **OK**.

   ✏️ **NOTE**

   Remember the display's name.

   ---

3. On your computer, swipe in from the right edge of the screen, and then tap **Devices**.

   OR

   With a mouse, point to the lower-right corner of the screen, move the pointer up and click **Devices**.

4. Click **Project > Add a wireless display** and select the display.

▶ **To choose how content is shared from the Windows 8.1 operating system**

1. On the display's remote, press **Input** ⊡ to open the launcher.

   The launcher appears.

2. Select **Screen Share** 🛜 and press **OK**.

   ✏️ **NOTE**

   Remember the display's name.

   ---

3. On your computer, swipe in from the right edge of the screen, and then tap **Devices**.

   OR

   With a mouse, point to the lower-right corner of the screen, move the pointer up and click **Devices**.

4. Click **Project** and then select an option:

   ○ **PC screen only:**. No content is shared to the display.

   ○ **Duplicate:**. The same content appears on both screens.

   ○ **Extend:** The computer's desktop is extended across the computer and display's screen. You can move items between the two screens.

   ○ **Second screen only:**. Content is shared to the display. The computer's screen is blank.

Using Miracast to share content from the Windows 10 operating system

▶ **To share content from a computer using Windows 10 system software**

1. On the display's remote, press **Input** ⊡ to open the launcher.

   The launcher appears.

2. Select **Screen Share** ⬓ and press **OK**.

   > ✏ **NOTE**
   >
   > Remember the display's name.

3. On the computer, click the action center   in the lower right of the screen, select **Connect**, and select the display.

Supported Chrome browsers

Chrome browser version 52 or later

Sharing content from your Apple product to the display

For a list of supported Apple products, see *Supported Apple devices and operating systems* on page 23.

> ✏ **NOTE**
>
> Make sure your Mac computer or iOS device is connected to the same network as the display. See *Verifying that the display and mobile device or computer are connected to the same network* on page 25 for more information.

▶ **To mirror your Mac computer's desktop to the display**

1. On the display's remote, press **Input** to open the launcher.

   The launcher appears.

2. Select **Screen Share** and press **OK**.

   ✏ **NOTE**

   Remember the display's name.

   ---

3. On your Mac computer, click the **AirPlay** icon in the menu bar.

4. Select the display's name.

   The AirPlay icon turns blue when your Mac computer is sharing content with AirPlay.

▶ **To extend your Mac computer desktop to the display**

1. On the display's remote, press **Input** to open the launcher.

   The launcher appears.

2. Select **Screen Share** and press **OK**.

   ✏ **NOTE**

   Remember the display's name.

   ---

3. On your Mac computer, click the **AirPlay** icon in the menu bar.

4. Select the display's name.

   The AirPlay icon turns blue when your Mac computer is sharing content with AirPlay.

5. Click the **AirPlay** icon , and then click **Extend Desktop**.

▶ **To mirror your iOS device's screen to the display**

1. On the display's remote, press **Input** to open the launcher.

   The launcher appears.

2. Select **Screen Share** and press **OK**.

   ✏ **NOTE**

   Remember the display's name.

   ---

3. On your iOS mobile device, open the Control Center.

4. Tap **AirPlay**.

5. Select the display's name.

6. Select **Mirroring**.

7. Select an app.

   The content appears on the display.

Supported Apple devices and operating systems
The following Apple operating systems support Screen Share.

- iOS 9 or later

- OS X 10.11 (El Capitan) or later

The following Apple devices support Screen Share.

- iPhone 4S or later

- iPad 2 or later

- iPod touch (5th generation) or later

Sharing content from your Android™ mobile device
For a list of supported Android products, see *Supported Android devices and operating systems* on the next page.

For more information, see Cast your Android screen from the Google Home app.

✎ NOTE

Make sure your Android mobile device is connected to the same network as the display. See *Verifying that the display and mobile device or computer are connected to the same network* on page 25 for more information.

▶ **To share your Android device's screen on the display using the Google Home app**

1. Download the Google Home app from Google Play™.

2. On the display's remote, press **Input** ⊡ to open the launcher.

   The launcher appears.

3. Select **Screen Share** ⿻ and press **OK**.

> ✏️ **NOTE**
>
> Remember the display's name.

4. On your Android device, open the Google Home app.

5. In the top left corner, tap the navigation drawer ☰.

6. Tap **Cast Screen**.

7. Select the display's name.

> ✏️ **NOTE**
>
> If you don't see the display you want, tap **MORE SETTINGS** to show more displays.

▶ **To share your Android device's screen on the display from the notification shade**

1. On your Android device, swipe down to open the notification shade.

2. Tap **Cast**.

3. Select the display's name.

   If you don't see the display you want, tap **MORE SETTINGS** to show more displays.

> ✏️ **NOTE**
>
> Not all apps are Google Home-enabled.

Supported Android devices and operating systems

- All devices running Android 4.4.2 or later support the Cast Screen feature.

  See Optimized devices for Android Screen casting.

  > ✏️ **NOTE**
  >
  > Not all mobile devices have been optimized for screen casting.

- Make sure Power Saving mode is off on your Android device. Power Saving mode can limit the mobile device's processing power, which could affect the performance of the Cast Screen feature.

Stop sharing content

> 💡 **TIP**
>
> You can disconnect your mobile device or computer to stop sharing content to the display.

▶ **To stop sharing content to the display**

1. On the display's remote, press **Back**.

2. When the message "Want to disconnect?" appears, select **Yes** and press **OK**.

▶ **To stop sharing content to the display when using Miracast**

> 💡 **TIP**
>
> This an optional way to stop sharing content when using Miracast.

1. Tap or click Project, and then tap or click Disconnect.

   The overlay appears.

2. On your computer, swipe in from the right edge of the screen, and then tap **Devices**.

   OR

   With a mouse, point to the lower-right corner of the screen, move the pointer up and click **Devices**.

3. Click **Project**, and then click **Disconnect**.

Verifying that the display and mobile device or computer are connected to the same network

▶ **To verify that the display and mobile device or computer are connected to the same network**

1. On the display's remote, press **Input** ⊡ to open the launcher.

   The launcher appears.

2. Select **Screen Share** 🔗 and press **OK**.

3. Note the name of the network the display is connected to.

4. On your mobile device or computer, verify that the mobile device or computer is connected to the same network. Consult the mobile device or computer's user guide for more information.

Troubleshooting

This chapter describes how to troubleshoot issues you might have with the display.

Locating the serial number

If you contact SMART support, you might be asked to provide the display's serial number. The serial number is located on the display's lower right side, on the back.

F112IW21E0020
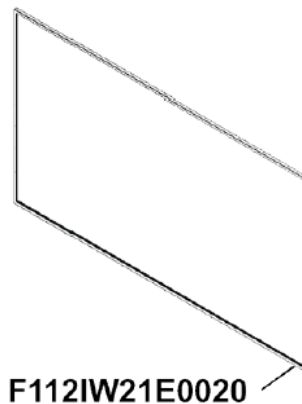
Troubleshooting the display

Resolving issues with power

Issue	Solutions
The display doesn't turn on and its power light isn't lit.	- Make sure the power cable is securely fastened to the power outlet and the display. - Make sure the switch beside the AC power inlet is in the ON (I) position. - Make sure the power outlet is working by testing it with a different device. - Make sure the power cable is working by testing it with a different device.
The display turns on, its power light is lit, but nothing shows on the screen.	- See *Resolving issues with video* below. - Restart the display. See *Turning the display on and off* on page 9.
You're experiencing other issues with power, or the previous solutions don't resolve the issue.	See referring-to-the-knowledge-base.htm.

Resolving issues with video

Issue	Solutions
You're experiencing general issues with video.	- Make sure any connected computers are on and not in Standby mode. - Set connected computers' resolution and refresh rate to values that the display supports. - Restart the display and any connected computers. See *Turning the display on and off* on page 9.
The display is on, but nothing shows on the screen.	- Make sure any connected computers are on and not in Standby mode. - Restart the display and any connected computers. See *Turning the display on and off* on page 9.
A computer is connected to the display, but only a "Looking for a connection" message appears on the screen.	Make sure the computer is connected to the currently selected input.
You're experiencing other issues with video, or the previous solutions don't resolve the issue.	See referring-to-the-knowledge-base.htm.

Resolving issues with image quality

Issue	Solutions
You're experiencing the following or similar issues with image quality: • There are lines or snow on the screen. • The image if flickering or flashing.	• Set the connected computer's resolution and refresh rates to values that the display supports. • Open the on-screen display menu. If it appears correctly, the issue is with the video input. • Adjust the display's image settings. • Restart the display. See *Turning the display on and off* on page 9.
There are bright spots on the screen.	• Open the on-screen display menu. If it appears correctly, the issue is with the video input. • Take a photograph of the screen and send it to SMART support. If SMART support determines that the issue is with the screen and the display is under warranty, you may be eligible for a replacement.
The image isn't clear. There are lines, double images or other distortions.	Adjust the display's image settings.
Colors don't appear correctly.	• Be aware that if two or more displays are mounted side-by-side, there could be minor differences in colors across the displays. This issue is not unique to SMART products. • If you're using a VGA video input, use a different cable or connect a different source to see if the issue is with the cable or input source.
The image is cut off or shifted to the left or right.	• Adjust any connected computers' video settings, particularly zoom, crop and underscan. See the computer's operating system documentation. • If the computer's desktop is entirely black, change it to dark gray or a different color. • If the computer's background is extended across multiple screens, duplicate the desktop across the screens or set the display as the only screen.
The image doesn't fill the entire screen.	Adjust any connected computers' video settings, particularly overscan. See the computer's operating system documentation.
A persistent image appears on the display.	See Image persistence or burn in on LCD displays.
You're experiencing other issues with image quality, or the previous solutions don't resolve the issue.	See referring-to-the-knowledge-base.htm.

Resolving issues with audio

Issue	Solutions
You're experiencing the following or similar issues with audio: • No sound is coming from the speakers. • Sound is coming from the speakers, but the volume is low. • The sound is distorted or muffled.	• If you're using external speakers, make sure the speakers are turned on. • Make sure the cables connecting the display to the computer are securely fastened. ✎ **NOTE** Connecting an audio cable to the display's stereo 3.5 mm out connector disables the internal speakers. • Adjust the volume on the display and the connected computer and make sure neither are muted. • Adjust the display's audio settings. See *Audio menu* on page 48. • Make sure the display is set as the default audio device for the connected computer's audio output. See the connected computer's operating system documentation. • If you're using the integrated speakers, set the volume for the computer and any running applications to 80%, and then adjust the display's volume. OR If you're using external speakers, set the volume for the computer, any running applications and the display to 80%, and then adjust the speakers' volume.
There is a whine or buzzing sound coming from the back of the display.	Be aware that these sounds are normal. Most displays emit electrical noise. Such sounds may be more noticeable with some displays than with others.
You're experiencing other issues with audio, or the previous solutions don't resolve the issue.	See referring-to-the-knowledge-base.htm.

Troubleshooting the display's software

This section explains how to troubleshoot the display's software.

Resolving issues with Input

Issue	Solutions
There is an issue with the image.	- See *Resolving issues with video* on page 28 for more information. - Make sure the video cable is securely fastened to both your computer and the display. - Replace the video cable with a better quality video cable. - If you're using two connected video cables, use one longer cable or move the computer so it's within a single cable length of the display. - If you're using a display adapter with your video cable, try a different display adapter. - The computer's video resolution settings and refresh rates aren't supported by the display. The display supports the following resolutions and refresh rates: 1920 × 1080 at 60 Hz 1600 × 900 at 60 Hz 1280 × 720 at 60 Hz
There is an issue with audio.	- See *Resolving issues with audio* on the previous page. - Turn off the mute setting on your computer. - Turn up the volume on your computer. - Turn up the volume on the display.

Resolving issues with Screen Share

> 💡 **TIP**
>
> In some instances, restarting the Screen Share app and its discovery services resolves issues with the app.
>
> On the remote, press the up button and select **Screen Share**.

Resolving issues with Android mobile devices

Issue	Solutions
The display's name doesn't appear in the list of available devices.	- Make sure your mobile device is on the same network as the display. - Not all Android devices can initiate Screen Share from the notification drawer. Download the Google Home app from Google Play™ to use Screen Share. - If your display is using a wired network connection, try connecting it to a wireless network. **NOTE** Wired and wireless networks don't often share the same network subnet. Connecting the display to a wireless network might help the connection between the display and a mobile device or computer that's connected wirelessly. - Make sure the display and mobile device are set to the correct date and time. See am30.htm and your mobile device's documentation. - On your mobile device, turn Airplane mode on and then off again. - Restart your Android mobile device. **NOTE** Restarting your Android device can clear network address information that your device had cached. Restarting the device can also reinitialize audio and video encoders that might have stopped working properly. - On the remote, press the up button and select **Screen Share**. - Restart the display. - If you've restarted your display and still don't see the display's name in the list of devices, wait several minutes and then try to connect to the display again. - Ensure you have the latest operating software on your Android device. Make sure no system updates are pending for your Android device. See the device's user guide for more information.

The display's name appears in the list of available devices but you're unable to connect to it.	Open the Screen Share app. a. On the display's remote, press **Input** to open the launcher.
	     The launcher appears.
	   b. Select **Screen Share** and press **OK**.

The video is choppy or the audio isn't in sync with the video.	- If your network is slow or congested, Screen Share is affected. Contact your administrator. - Your mobile device could be connected to a different access point than your display, which can increase latency. Turn Airplane mode on and then off on your mobile device to try to connect to a closer access point. - Sharing videos or playing video games with frequent screen updates requires more network bandwidth. Try reducing the video quality to improve performance. See connecting-to-a-network.htm. - Your mobile device may not be optimized for sharing its screen and is limited to lower quality performance. Try connecting with a different mobile device. - Ensure you have the latest operating software on your Android device. Make sure no system updates are pending for your Android device. See the device's user guide for more information.

Issue	Solutions
The video has no audio.	• Make sure the volume on your Android device is turned up and the display is not muted. • Turn up the volume on the display. • Make sure you have the latest operating software on your Android mobile device. • Restart your mobile device.
The issues persist even after you've restarted your Android mobile device and ensured it is on the same network as the display.	Contact your system administrator.

Resolving issues with Apple devices

Issue	Solutions
The display's name doesn't appear in the list of available devices.	• Make sure your mobile device or computer is on the same network as the display. • If your display is using a wired network connection, try connecting it to a wireless network. ✏ **NOTE** Wired and wireless networks don't often share the same network subnet. Connecting the display to a wireless network might help the connection between the display and a mobile device or computer that's connected wirelessly. • Make sure the display and mobile device are set to the correct date and time. See am30.htm and your mobile device's documentation. • On your mobile device, turn Airplane mode on and then off on your mobile device. • Restart your mobile device. ✏ **NOTE** Restarting your mobile device can clear network address information that your mobile device had cached. Restarting the mobile device can also reinitialize audio and video encoders that might have stopped working properly. • On the remote, press the up button and select **Screen Share**. • On your computer, turn Wi-Fi off and then back on, or disconnect and then reconnect the Ethernet cable. • Restart your computer. ✏ **NOTE** Restarting your computer can clear network address information that your computer had cached. Restarting the computer can also reinitialize audio and video encoders that might have stopped working properly. • Restart your display. • If you've restarted your display and still don't see the display's name in the list of devices, wait several minutes and then try to connect to the display again. • Make sure your computer or device has the latest operating system software.

Issue	Solutions
The display's name appears in the list of available devices but you're unable to connect to it.	Open the Screen Share app. a. On the display's remote, press **Input** [icon] to open the launcher. The launcher appears. b. Select **Screen Share** [icon] and press **OK**.
The video is choppy or the audio isn't in sync with the video.	• If your network is slow or congested, Screen Share is affected. Contact your administrator. • The display and the mobile device or computer could be connected to different wireless access points, which can increase latency. On the mobile device, turn Airplane mode on and back off to try to connect to a closer access point. On the computer, disconnect and then reconnect the Ethernet cable or turn Wi-Fi off and then back on to try to connect to a closer access point. • Reduce your computer's display resolution to 1920 × 1080 or lower. • Sharing videos or playing video games with frequent screen updates requires more network bandwidth. Try reducing the video quality to improve performance. See connecting-to-a-network.htm. • Make sure your computer or device has the latest operating system software.
The video has no audio.	• Make sure the volume on your iOS device is turned up and the display is not muted. • Make sure the Ring/Silent switch isn't set to silent on your mobile device. • Turn up the volume on the display.
The issues persist even after you've restarted your Mac computer or iOS mobile device and ensured they are on the same network as the display.	Contact your system administrator.

Resolving issues with Chrome™ browser and Chromebook™

Issue	Solutions
The display's name doesn't appear in the list of available devices.	- Make sure your computer is on the same network as the display. - If your display is using a wired network connection, try connecting it to a wireless network.
	✏ **NOTE** Wired and wireless networks don't often share the same network subnet. Connecting the display to a wireless network might help the connection between the display and a mobile device or computer that's connected wirelessly.
	- Make sure the display and mobile device are set to the correct date and time. See am30.htm and your mobile device's documentation. - On your computer, turn Wi-Fi off and then back on, or disconnect and then reconnect the Ethernet cable. - Restart your computer.
	✏ **NOTE** Restarting your computer can clear network address information that your computer had cached. Restarting the computer can also reinitialize audio and video encoders that might have stopped working properly.
	- For more information about the Google Cast browser extension, see Casting a tab or entire desktop. - Restart your display. - If you've restarted your display and still don't see the display's name in the list of devices, wait several minutes and try to connect to the display again.

The display's name appears in the list of available devices but you're unable to connect to it.	Open the Screen Share app.
	  a. On the display's remote, press **Input** ⊡ to open the launcher.
	     The launcher appears.
	  b. Select **Screen Share** 📶 and press **OK**.

The video is choppy or the audio isn't in sync with the video.	- If your network is slow or congested, Screen Share is affected. Contact your administrator. - Not all devices are designed for video encoding for Screen Sharing, so video streaming might not behave as expected. - Sharing videos or playing video games with frequent screen updates requires more network bandwidth. Try reducing the video quality to improve performance. See connecting-to-a-network.htm. - Screen Share has not been optimized for performance with Chromebooks. For best results, limit usage to static content. - The display and the computer might be connected to different wireless access points, which can increase latency. On the computer, disconnect and then reconnect the Ethernet cable or turn Wi-Fi off and then back on to try to connect to a closer access point.
Parts of the image do not display correctly when sharing streaming video to the display.	

Resolving issues with Windows computers

Issue	Solutions
The display's name doesn't appear in the list of available devices.	• Make sure your computer is on the same network as the display. • If your display is using a wired network connection, try connecting it to a wireless network. ✏️ **NOTE** Wired and wireless networks don't often share the same network subnet. Connecting the display to a wireless network might help the connection between the display and a mobile device or computer that's connected wirelessly. • Make sure the display and mobile device are set to the correct date and time. See am30.htm and your mobile device's documentation. • On your computer, turn Wi-Fi off and then back on, or disconnect and then reconnect the Ethernet cable. • Restart your computer. ✏️ **NOTE** Restarting your computer can clear network address information that your computer had cached. Restarting the computer can also reinitialize audio and video encoders that might have stopped working properly. • Restart your display. • If you've restarted your display and still don't see the display's name in the list of devices, wait several minutes and try to connect to the display again. • Make sure the operating system on your computer is up to date. • Windows Wireless Display (Miracast) is currently not supported. 　○ Use Google Cast from Chrome browser. 　　See *Sharing content from your Windows computer to the display* on page 19. 　○ Use Google Cast from Chrome browser. 　○ You can purchase AirParrot, an application that allows you to share your computer's display, an application, audio or a media file. 　　See AirParrot. • If you've restarted your display and still don't see the display's name in the list of devices, wait several minutes and then try to connect to the display again. • A Mac computer, Apple mobile device or Android mobile device is sharing content with the display. Disconnect the computer or mobile device. See *To stop sharing content to the display* on page 25 or *To stop sharing content to the display when using Miracast* on page 25 for more information.
The display's name appears in the list of available devices but you're unable to connect to it.	Open the Screen Share app. a. On the display's remote, press **Input** ⊡ to open the launcher. The launcher appears. b. Select **Screen Share** 📶 and press **OK**.

Issue	Solutions
The video is choppy or the audio isn't in sync with the video.	- If your network is slow or congested, Screen Share is affected. Contact your administrator. - The Wi-Fi signal could be weak. Contact your administrator. - Your device could be connected to a different access point than your display, which can increase latency. Turn Airplane mode on and then off on your computer to try to connecting to a closer access point. - Sharing videos or playing video games with frequent screen updates requires more network bandwidth. Try reducing the video quality to improve performance. See connecting-to-a-network.htm. - Reduce your computer's resolution to 1920 × 1080 or lower. - Make sure the operating system on your computer is up to date. - If you're using AirParrot, make sure AirParrot is up to date. - If you're using Chrome make sure the browser is version 52 or later and is up to date. - If you've restarted your display and still don't see the display's name in the list of devices, wait several minutes and then try to connect to the display again. - If you're using Miracast, move the computer closer to the display or to the side of the display where the iQ appliance is installed.

When using Miracast, you can't add or connect to the display.	- If you can't add the display, wait for it to become ready and then try again. If that doesn't work, try restarting your computer and display. - If your Windows 8.1 computer won't connect to the display, try removing and then adding it again.
	  a. On your computer, swipe in from the right edge of the screen, and then tap **Settings > Change PC settings**.
	    OR
	    With a mouse, point to the lower-right corner of the screen, move the pointer up and click **Settings > Change PC settings**.
	  b. Click **PC and Devices > Devices**.
	  c. Select the display, and then click **Remove Device**.
	  d. On your computer, swipe in from the right edge of the screen, and then tap **Devices**.
	    OR
	    With a mouse, point to the lower-right corner of the screen, move the pointer up and click **Devices**.
	  e. Click **Project > Add a wireless display**
	  f. Select the display in the list of devices found, and follow the on-screen instructions. - Miracast works only when Wi-Fi is enabled on the display, even if the display uses an Ethernet connection to the network. However, the display doesn't need to be connected to a wireless network. - If you're using Miracast, move the computer closer to the display or to the side of the display where the iQ appliance is installed.

Issue	Solutions

When using Miracast, the text on your is fuzzy or images stutter.	✏️ **NOTE**
	Projecting video or games to the display might not work well.
	
	● Decrease the screen resolution on your Windows 8.1 computer.
	   a. On your computer, swipe in from the right edge of the screen, and then tap **Search**.
	     OR
	     With a mouse, point to the lower-right corner of the screen, move the pointer up and click **Search**.
	   b. Enter **Screen resolution** in the search box and select **Display settings**.
	   c. Use the Resolution slider to choose a smaller screen resolution.
	● If you're using Miracast, move the computer closer to the display or to the side of the display where the iQ appliance is installed.

When using Miracast, audio plays on the computer rather than display.	● Disconnect the display and then reconnect to it.
	● Check that the display is selected as the default audio device.
	   a. On your computer, swipe in from the right edge of the screen, and then tap **Search**.
	     OR
	     With a mouse, point to the lower-right corner of the screen, move the pointer up and click **Search**.
	   b. Enter **Sound** in the search box and click **Sound**.
	   c. Click **Playback**, and make sure the display is selected as the default device.

Advanced troubleshooting for Screen Share

Issue	Solutions

Mobile devices and computers can't find the display.	● Organizations often block a number of network ports.
	Ask the administrator to allow
	   ○ TCP ports 7000, 8008, 8009, 47000, 7100, 49228, 50259
	   ○ UDP ports 62572 and 54780
	   ○ If using Google Cast, UDP port 1900
	   ○ If using Windows computer or a Mac computer, UDP port 5353.
	See connecting-to-a-network.htm for more information.
	● The display's casting ID may not have propagated yet through the network or may be cached on the network when it's not actually available.
	Wait several minutes and attempt to connect again.
	● You're using Miracast or an unsupported wireless screen casting method.
	See *Using Screen Share* on page 18.
	You're using Miracast or an unsupported wireless screen casting method.

Issue	Solutions

Screen Share is not working for Windows computers.	• There might be an issue with the Windows firewall.
	    ○ Windows 7 operating system: See Allow a program to communicate through Windows Firewall.
	    ○ Windows 8 operating system: See Windows Firewall from start to finish.
	• Your antivirus product might be blocking access. See the antivirus product's help for more information.

Screen Share is not working for Mac computers.	• There might be an issue with the Mac firewall. See OS X: About the application firewall. • Your antivirus product might be blocking access. See the antivirus product's help for more information. • The network must be configured to run Bonjour and mDNS, and Multicast must be enabled. • Ensure your device and display are on the same VLAN or subnet.
AirPlay is not displaying on an iOS mobile device.	• Ensure the iOS device is on the same network as the display. • Try connecting the display with a wired network connection. • See Get help with AirPlay and AirPlay Mirroring on your iPhone, iPad, or iPod touch.

Screen Share is not working on Android devices.	• Ensure your Android device is on the same network as the display.
	• Casting the screen is available on mobile devices running Android 4.4.2 or later.
	• Turn off the device's Power Saving mode.
	• If you've downloaded the Google Cast app, see Cast your Android screen from the Chrome Cast app.
	• Your antivirus product might be blocking access. See the antivirus product's help for more information.
	• Your network consists of multiple access points connected to a single wireless LAN controller (WLC).
	    ○ See Chrome Cast Deployment Guide, Release 7.6.
	    ○ See Chrome Cast mDNS Service in order to Cast Screen Configuration on WLC.

Screen Share app closes unexpectedly or the video stops playing on the display.	• If your display is connected to a 2.4 GHz network, connect your display to a 5 GHz network. • Select a less congested Wi-Fi channel.

Using settings

You can access the display's settings using the ⚙ icon in the launcher.

> 💡 **TIP**
>
> Connect a USB mouse and keyboard to the display to use while viewing and modifying the
> display's settings.

About device

> ✏ **NOTE**
>
> To find the display's serial number, see *Chapter 4: Troubleshooting* on page 27.

Option	Values	Function	Notes
▸ **Product information**			
• Board name	[N/A]	Select a name for your display	[N/A]

Option	Values	Function	Notes
• Legal Information	[N/A]	Shows the open source licenses, the SMART end user license agreement and SMART intellectual property information	[N/A]
▸ **Board information**			
• Build number	[N/A]	Shows the iQ system software's version number	[N/A]
• Up time	[N/A]	Shows how long the display has been turned on	Turning off the display resets the up time to 0.
▸ **Board configuration**			
• Factory data reset	[N/A]	Resets all options to their default values	Only administrators should reset the display.

Diagnostics

Option	Values	Function	Notes
• Write logs to USB	[N/A]	Copy diagnostic logs to a USB drive See [XREF] for more information.	[N/A]

Language

Option	Values	Function	Notes
• Language	[Languages]	Sets the language for the settings menu	To select a different language for the on-screen display menu, see [XREF].

Country

Option	Values	Function	Notes
• Country	[Countries]	Sets the display's country	[N/A]

Wi-Fi

> ✏️ **NOTE**
>
> To add a proxy, see connecting-to-a-network.htm.

Option	Values	Function	Notes
▸ Wi-Fi	[Wireless networks]	Select a wireless network	Turn on Wi-Fi to discover networks.
• Scan	[N/A]	Scan for wireless networks	Click **More** ⋮ to access this option.
• WPS Pin Entry	[N/A]	[N/A]	Not used
• Wi-Fi Direct	[N/A]	[N/A]	Not used
• Advanced	[N/A]	Set advanced options for Wi-Fi	See *Advanced Wi-Fi options* on the next page.
• WPS push button	[N/A]	Connect to a wireless network using Wi-Fi Protected Setup	[N/A]
• Add network	[N/A]	Add a wireless network	[N/A]

Advanced Wi-Fi options

Option	Values	Function	Notes
▸ **Advanced**			
• Network notification	[N/A]	Notifies you when an open wireless network is available	[N/A]
• Keep Wi-Fi on during sleep	Always Only when plugged in Never	Determines if the Wi-Fi remains on when the display goes to sleep	[N/A]
• Scanning always available	[N/A]	Allow Google's location service and other applications to scan for networks, even when Wi-Fi is turned off	[N/A]
• Wi-Fi frequency band	Auto 5 Ghz 2.4 Ghz	Wi-Fi frequency band	[N/A]
• Install certificates	[N/A]	Install certificates to connect to a network	[N/A]
• Wi-Fi optimization	[N/A]	Minimize battery usage when Wi-Fi is enabled	[N/A]

Option	Values	Function	Notes
• MAC address	[N/A]	Shows the display's MAC address	[N/A]
• IP address	[N/A]	Shows the display's IP address	[N/A]

Ethernet

✏️ **NOTE**

Manual configuration isn't available. The IP address is automatically configured via DHCP. If you require a static IP address, use DHCP reservation on the router.

Option	Values	Function	Notes
• IP address	[N/A]	Shows the display's IP address	[N/A]
• MAC address	[N/A]	Shows the display's MAC address	[N/A]

Date & time

Option	Values	Function	Notes
• Automatic date & time	[N/A]	Sets the display's date and time automatically	Configure the network to allow Network Time Protocol (NTP) requests to Internet time servers. See connecting-to-a-network.htm.
• Set date	[N/A]	Sets the display's date	Disable **Automatic date & time** to set the date manually.
• Set time	[N/A]	Sets the display's time	Disable **Automatic date & time** to set the time manually.
• Select time zone	[N/A]	Sets the display's time zone	[N/A]
• Use 24-hour format	[N/A]	Shows the display's time using the 24-hour clock	[N/A]
• Choose date format	[N/A]	Sets the display's date format	[N/A]

Usage Data

Option	Values	Function	Notes
• Share Usage Data	[N/A]	Sends usage statistics and error reports to SMART	[N/A]

Auto Update

> ✏️ **NOTE**
>
> To disable automatic system software updates, block access to **https://ws.kappboard.com**.

Option	Values	Function	Notes
• Updates Channel	Stable Channel Beta Channel	Sets which system software updates the display receives	When switching from the Beta Channel to the Stable Channel, a factory reset occurs. See page 42 for more information about factory reset.
• Check for Updates Now	[N/A]	Checks for updates to the system software ✏️ **NOTE** The display must be connected to the Internet to check for system software updates.	If an update is available, the text changes to **Apply update now**.

Screen Share

Option	Values	Function	Notes
▶ **Screen Share**			
• Reset	[N/A]	Closes and restarts Screen Share app and its discovery services	You can restart Screen Share as a troubleshooting step if a mobile device or computer can't find or connect to the display.

Appendix B

Using the on-screen display menu

You can open and navigate the on-screen display (OSD) menu by using the remote control or the control panel on the side of the display.

Changing OSD menu settings

▶ **To change OSD menu settings**

1. Press the **Menu** button on the remote control.
   The OSD menu appears.

2. Press the up and down arrows to highlight a menu, and then press **OK** to select it.

3. Press the up and down arrows to highlight a menu option, and then press **OK** to select it.

4. Press the left and right arrows to change the setting.

5. Press **Menu** to navigate backwards until the on-screen menu closes.

See the table below for OSD settings that you can change:

Picture menu

Option	Values	Function	Notes
Brightness	0–100	Sets the overall brightness of the image and background	[N/A]
Contrast	0–100	Sets the difference in brightness between the lightest and darkest parts of the image	[N/A]
Sharpness	0–100	Sets the image sharpness	[N/A]
Color temperature	Native 6500K 9300K User	Sets the color temperature	Select **User** to customize red, green and blue settings in the *Color control* option.

Option		Values	Function	Notes
Color control	Red	0–100	Sets the amount of red in the image	You can modify this value only if you select **User** in the *Color temperature* option.
	Green	0–100	Sets the amount of green in the image	You can modify this value only if you select **User** in the *Color temperature* option.
	Blue	0–100	Sets the amount of blue in the image	You can modify this value only if you select **User** in the *Color temperature* option.
Picture mode		Standard Highbright Soft Standard	Sets the picture mode	[N/A]
Picture reset		Yes No	Resets all settings in the *Picture* menu to their default values	[N/A]

Screen menu

Option	Values	Function	Notes
H-position	0–100	Sets the horizontal position of the image	[N/A]
V-position	0–100	Sets the vertical position of the image	[N/A]
Clock	0–100	[N/A]	[N/A]
Clock phase	0–100	[N/A]	[N/A]
Blank	Off On	Turns the image off	[N/A]
Dimming	10–100	Sets the image dimming	[N/A]
Aspect ratio	Wide 4:3	Sets the aspect ratio	[N/A]
Screen reset	No Yes	Resets all settings in the *Screen* menu to their default values	[N/A]

Audio menu

Option	Values	Function	Notes
Speaker	Internal External	Sets the speaker output	[N/A]

Option	Values	Function	Notes
Audio source	HDMI 1 HDMI 2 DP Audio 1 Audio 2	Sets the audio input	[N/A]
Audio reset	Yes No	Resets all settings in the *Audio* menu to their default values	[N/A]

Configuration 1 menu

Option	Values	Function	Notes
Auto adjust			You can modify this value only if you select the **VGA** input.
Language	English	Sets the language	[N/A]
Auto source	No Yes	Turns input auto-source on or off	[N/A]
Configuration reset	No Yes	Resets all settings in the *Configuration 1* menu to their default values	[N/A]
Factory reset	No Yes	Resets all OSD menu settings to their default values	[N/A]

Configuration 2 menu

Option	Values	Function	Notes
OSD turn off	5-120 seconds	Sets the time of inactivity before the on-screen display menu turns off	[N/A]
Freeze function	Off On	Turns the picture freeze frame on or off	[N/A]
OSD H-position	1-100	Sets the horizontal position of the OSD menu	[N/A]
OSD V-position	1-100	Sets the vertical position of the OSD menu	[N/A]
OSD rotation	Landscape Portrait	Sets the rotation position of the OSD menu	[N/A]
Monitor information	[N/A]	Displays the model name, serial number, and operating time	[N/A]

Advance menu

Option	Values	Function	Notes
Gamma selection	Mode 1 Mode 2 Mode 3	Sets the color gamma value	[N/A]
Over scan	Off On	Turns over scan on or off	Over scan increases the picture size on the display
IR control	Normal Lock	Turns the remote control feature on or off	[N/A]
Keypad control	Unlock Lock	Turns the OSD keypad on or off	[N/A]
DDC/CI	On Off	Turns access to Extended Display Identification Data (EDID) on or off	[N/A]
Advanced option reset	No Yes	Resets all settings in the *Advanced* menu to their default values	[N/A]

Appendix C

Remotely managing the display

You can remotely manage the display by connecting it to a room control system via the RS-232 serial connector on the display's connection panel. You can use hexadecimal formatted commands to remotely turn the power on or off, select video inputs, and access the display's settings.

Connecting and configuring a room control system

Connect a computer to the display's room control input to remotely select video inputs, turn on or turn off the display and access the display's settings.

> ✏️ **NOTE**
>
> The SMART Board 2000 series display requires hexadecimal formatted commands for remote management. Use a serial communications program that supports hexadecimal characters.

▶ **To connect a computer to the display**

Connect a DB9F to DB9F (a D-sub with 9 female contacts) null modem cable from the computer's serial output to the room control input on the display's connector panel.

This table describes the cables's wiring and connectors:

Connector 1	Connector 2	Function
1	N/A	(not used)
2	3	Receive data
3	2	Transmit data
4	6	(not used)
5	5	Signal ground
6	4	(not used)

Connector 1	Connector 2	Function
7	8	(not used)
8	7	(not used)
9	N/A	(not used)

▶ **To configure the computer's serial interface**

1. Turn on the display.

2. Turn on the computer, and then start the serial communications program.

3. Activate local echo.

4. Configure the serial interface settings using the following values, and then press ENTER.

Setting	Value
Baud rate	9600
Data length	8
Parity bit	None
Stop bit	1

   A command prompt appears on the following line.

   ✎ **NOTE**

   If no message appears or an error message appears, the serial interface configuration isn't correct. Repeat steps 3 to 4.

5. Type commands to configure the display.

Using room control system programming commands and responses

You can assign settings or access the display's current settings.

▶ **To assign or access display settings**

Type a command after the command prompt in the room control system, and then press ENTER. If you're identifying a setting, wait for a response from the display.

🖉 **NOTE**

Many serial communications programs require that you insert **0x** in front of the hexadecimal value. The examples in this section already have the **0x** values included in the command.

EXAMPLE

To turn off the display, use the following command: **0x35 0x62 0x30 0x30 0x31 0x30 0x30 0x30 0x30 0x30 0x0D**.

If you type the command correctly, the display will turn off and you won't receive a response. If the room control system doesn't recognize the command, the system will respond with the same command that you entered.

EXAMPLE

To identify the display's power status, use the following command: **0x35 0x38 0x30 0x30 0x32 0x30 0x30 0x0D**.

The display will respond with a command. Compare the command to the table of command responses below. If the room control system doesn't recognize the command, the system will respond with the same command that you entered.

🖉 **NOTES**

- Use hexadecimal formatted commands.

- Commands aren't case-sensitive.

- Review each entry carefully before you press ENTER.

Commands to access and assign display settings

▶ **Power settings**

🖉 **NOTE**

The responses for different input sources are identical with the exception of the bold characters in the following tables.

Use the following command to access the display's power state **0x35 0x38 0x30 0x30 0x32 0x30 0x30 0x0D**.

Response	Display setting
0x35 0x62 0x30 0x30 0x33 0x30 0x30 0x30 0x30 **0x30** 0x0D	Standby mode
0x35 0x62 0x30 0x30 0x33 0x30 0x30 0x30 0x30 **0x31** 0x0D	Power on

Use the following commands to assign a power state to the display:

Power state	Command
Off	0x35 0x62 0x30 0x30 0x31 0x30 0x30 0x30 0x30 **0x30** 0x0D
On	0x35 0x62 0x30 0x30 0x31 0x30 0x30 0x30 0x30 **0x31** 0x0D

▶ **Input settings**

> ✏ **NOTE**
>
> The responses for different input sources are identical with the exception of the bold characters in the following tables.

Use the following command to access the display's input source: **0x35 0x38 0x30 0x30 0x32 0x30 0x31 0x0D**.

Response	Display setting
0x35 0x62 0x30 0x30 0x33 0x30 0x31 0x30 0x30 **0x30** 0x0D	HDMI1
0x35 0x62 0x30 0x30 0x33 0x30 0x31 0x30 0x30 **0x31** 0x0D	HDMI2
0x35 0x62 0x30 0x30 0x33 0x30 0x31 0x30 0x30 **0x32** 0x0D	Display port
0x35 0x62 0x30 0x30 0x33 0x30 0x31 0x30 0x30 **0x33** 0x0D	VGA
0x35 0x62 0x30 0x30 0x33 0x30 0x31 0x30 0x30 **0x34** 0x0D	Component
0x35 0x62 0x30 0x30 0x33 0x30 0x31 0x30 0x30 **0x35** 0x0D	Screen Share

Use the following commands to assign an input source to the display:

Input source	Command
HDMI1	0x35 0x62 0x30 0x30 0x31 0x30 0x31 0x30 0x30 **0x30** 0x0D
HDMI2	0x35 0x62 0x30 0x30 0x31 0x30 0x31 0x30 0x30 **0x31** 0x0D
Display port	0x35 0x62 0x30 0x30 0x31 0x30 0x31 0x30 0x30 **0x32** 0x0D

Input source	Command
VGA	0x35 0x62 0x30 0x30 0x31 0x30 0x31 0x30 0x30 **0x33** 0x0D
Component	0x35 0x62 0x30 0x30 0x31 0x30 0x31 0x30 0x30 **0x34** 0x0D
Screen Share	0x35 0x62 0x30 0x30 0x31 0x30 0x31 0x30 0x30 **0x35** 0x0D

▶ **Audio settings**

> 🖊 **NOTE**
>
> The responses for different input sources are identical with the exception of the bold characters in the following tables.

Use the following command to access the display's current mute setting: **0x35 0x38 0x30 0x30 0x32 0x35 0x35 0x0D**.

Response	Display setting
0x35 0x62 0x30 0x30 0x33 0x35 0x35 0x30 0x30 **0x30** 0x0D	Mute off
0x35 0x62 0x30 0x30 0x33 0x35 0x35 0x30 0x30 **0x31** 0x0D	Mute on

Use the following commands to assign a mute setting to the display

Audio setting	Command
Mute off	0x35 0x62 0x30 0x30 0x31 0x35 0x35 0x30 0x30 **0x30** 0x0D
Mute on	0x35 0x62 0x30 0x30 0x31 0x35 0x35 0x30 0x30 **0x31** 0x0D

Use the following commands to assign a volume setting to the display:

Volume	Command
Volume (0-100%)	0x35 0x62 0x30 0x30 0x31 0x35 0x30 0x30 0x30 0x*[volume percentage in hexadecimal]* 0x0D
Volume 0%	0x35 0x62 0x30 0x30 0x31 0x35 0x30 0x30 0x30 **0x0x00** 0x0D
Volume 25%	0x35 0x62 0x30 0x30 0x31 0x35 0x30 0x30 0x30 **0x0x19** 0x0D
Volume 47%	0x35 0x62 0x30 0x30 0x31 0x35 0x30 0x30 0x30 **0x0x2F** 0x0D
Volume 75%	0x35 0x62 0x30 0x30 0x31 0x35 0x30 0x30 0x30 **0x0x4B** 0x0D
Volume 99%	0x35 0x62 0x30 0x30 0x31 0x35 0x30 0x30 0x30 **0x0x63** 0x0D
Increase volume (+1)	0x35 0x62 0x30 0x30 0x36 0x31 **0x32** 0x30 0x30 0x30 0x0D
Decrease volume (-1)	0x35 0x62 0x30 0x30 0x36 0x31 **0x33** 0x30 0x30 0x30 0x0D

▶ **Screen settings**

✏️ **NOTE**

The responses for different input sources are identical with the exception of the bold characters in the following tables.

Use the following command to access the display's current screen freeze setting: **0x35 0x38 0x30 0x30 0x34 0x31 0x39 0x0D**.

Response	Display setting
0x35 0x62 0x30 0x30 0x35 0x31 0x39 0x30 0x30 **0x31** 0x0D	Screen freeze on
0x35 0x62 0x30 0x30 0x35 0x31 0x39 0x30 0x30 **0x30** 0x0D	Screen freeze off

Use the following command to access the display's screen blank setting: **0x35 0x38 0x30 0x30 0x35 0x30 0x30 0x0D**.

Response	Display setting
0x35 0x62 0x30 0x30 0x35 0x30 0x30 0x30 0x30 **0x30** 0x0D	Screen blank on
0x35 0x62 0x30 0x30 0x35 0x30 0x30 0x30 0x30 **0x31** 0x0D	Screen blank off