SMART Board MX series
interactive displays

INSTALLATION AND MAINTENANCE

SBID-MX265 | SBID-MX275 | SBID-MX286
SBID-MX365 | SBID-MX375 | SBID-MX386

SMART ®

Learn more

This guide and other resources for SMART Board MX series interactive displays are available in the Support section of the SMART website (smarttech.com/support). Scan this QR code to view these resources on your mobile device.

Important information

There are critical software updates for the display that you need to install to ensure the display is fully functional and provides the best experience. Connect the display and iQ appliance to a wired or wireless network with Internet access to automatically download and apply these updates as well as future updates.

⚠ WARNING

- Failure to follow the installation instructions included with the display could result in injury and product damage which may not be covered by the warranty.

- Do not open or disassemble the display. 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 the display. Rather, mount the product at the appropriate height.

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

- If the display 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 that cross the floor to the display 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 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 display's polarized plug.

- Use the power cable provided with the display. If a power cable is not supplied, 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.

- Use only VESA®-approved mounts if using a mount other than the one supplied with the display..

- Disconnect all of the display's power cables 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

- Before inserting or removing the iQ appliance from the display, turn off the display using the switch at the back of the display. See Open Pluggable Slot computer (OPS) disclaimer for more information.

⚠ CAUTION

- Turn off the display before cleaning its screen. Otherwise, you may scramble the desktop icons or inadvertently activate applications when you wipe the screen.

- Avoid setting up and using the display in an area with excessive levels of dust, humidity, and smoke.

- Make sure an electrical socket is near the display and remains easily accessible during use.

- The display should be used only with European TN and TT power distribution systems.

  It is not suitable for older, IT-type power distribution systems found in some European countries. This system (IT-type) is widely used isolated from earth, in some installations in France, with impedance to earth, at 230/400V, and in Norway, with voltage limiter, neutral not distributed, at 230V line-to-line.

  Contact qualified personnel if you're uncertain of the type of power system available where you're installing the display.

- The accessory slot's maximum available power is 60 W. The slot is not a limited power source. To reduce the risk of fire, make sure that accessories connecting to the slot satisfy the fire enclosure requirements of IEC 60950-1.

- You must connect the USB cable that came with the display 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 IEC 60950-1 and/or IEC 62368-1. The source computer must be CE marked and carry safety certification marks for Canada and USA. This is for operating safety and to avoid damage to the display.

IMPORTANT

- The following are the normal operating requirements for the display, including AM module and speakers:

Model	Power requirements
SBID-MX265	100V to 240V AC, 50 Hz to 60 Hz, 106 W max
SBID-MX275	100V to 240V AC, 50 Hz to 60 Hz, 244 W max
SBID-MX286	100V to 240V AC, 50 Hz to 60 Hz, 256 W max
SBID-MX365	100V to 240V AC, 50 Hz to 60 Hz, 115 W max
SBID-MX375	100V to 240V AC, 50 Hz to 60 Hz, 253 W max
SBID-MX386	100V to 240V AC, 50 Hz to 60 Hz, 656 W max

- For additional requirements and other information, refer to the display's specifications (see *More information* on page 17).

Federal Communication Commission interference statement

FCC
Suppliers Declaration of Conformity
47 CFR § 2.1077 Compliance Information
Unique Identifier: IDX65-1, IDX65-2, IDX75-1, IDX75-2, IDX86-1, IDX86-2
Responsible Party – U.S. Contact Information
SMART Technologies Inc.
2401 4th Ave., 3rd Floor
Seattle, WA 98121
compliance@smarttech.com

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.

NOTE

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 instruction manual, 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.

CAUTION

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

Restriction

Operations in the 5.15-5.25GHz band are restricted to indoor usage only.

IEEE 802.11b or 802.11g operation of this product in the USA is firmware limited to channels 1 through 13.

CAUTION

i. 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;

ii. the maximum antenna gain permitted for devices in the bands 5250-5350 MHz and 5470-5725 MHz shall comply with the e.i.r.p. limit; and

iii. the maximum antenna gain permitted for devices in the band 5725-5825 MHz shall comply with the e.i.r.p. limits specified for point-to-point and non point-to-point operation as appropriate.

iv. Users should also be advised that high-power radars are allocated as primary users (i.e., priority users) of the bands 5250-5350 MHz and 5650-5850 MHz and that these radars could cause interference and/or damage to LE-LAN devices.

Radiation exposure statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 20 cm between the antenna of this device and all nearby persons. This transmitter must not be co-located or operated in conjunction with any other antenna or transmitter.

Innovation, Science and Economic Development Canada statement

This device complies with RSS-247 of the Innovation, Science and Economic Development Canada 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.

Radiation exposure statement

This equipment complies with ISED radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 20 cm between the antenna of this device and all nearby persons. This transmitter must not be co-located or operated in conjunction with any other antenna or transmitter.

Cet appareil est conforme à la norme ISED CNR-247 pour les appareils radio agréés. Son fonctionnement est soumis aux deux conditions suivantes:

1. le dispositif ne doit pas produire de brouillage préjudiciable, et
2. ce dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.

⚠️ **ADVERTISSEMENT**

i. les dispositifs fonctionnant dans la bande 5 150-5 250 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;

ii. le gain maximal d'antenne permis pour les dispositifs utilisant les bandes 5 250-5 350 MHz et 5 470-5 725 MHz doit se conformer à la limite de p.i.r.e.;

iii. le gain maximal d'antenne permis (pour les dispositifs utilisant la bande 5 725-5 825 MHz) doit se conformer à la limite de p.i.r.e. spécifiée pour l'exploitation point à point et non point à point, selon le cas.

iv. De plus, les utilisateurs devraient aussi être avisés que les utilisateurs de radars de haute puissance sont désignés utilisateurs principaux (c.-à-d., qu'ils ont la priorité) pour les bandes 5 250-5 350 MHz et 5 650-5 850 MHz et que ces radars pourraient causer du brouillage et/ou des dommages aux dispositifs LAN-EL.

Déclaration d'exposition aux radiations

Cet équipement est conforme aux limites d'exposition aux rayonnements ISED établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre la source de rayonnement et votre corps. Cet émetteur ne doit pas être co- implantés ou exploités conjointement avec une autre antenne ou émetteur.

EU declaration of conformity

Hereby SMART Technologies ULC declares that the radio equipment type Interactive displays model SBID-MX265, SBID-MX275, SBID-MX286, SBID-MX365, SBID-MX375, SBID-MX386 and the OPS AM40, AM50 are in compliance with Directive 2014/53/EU.

⚠️ **WARNING**

Operation of this equipment in a residential environment this equipment may could cause radio interference.

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

The frequency band and the maximum transmitted power in EU are listed below:

Transmitting Band (MHz)	Maximum Transmit Power EIRP (dBm)
2402-2483.5	19
5150-5350	23
5470-5725	23

Restrictions in

AT/BE/BG/CZ/DK/EE/FR/DE/IS/IE/IT/EL/ES/CY/LV/LI/LT/LU/HU/MT NL/NO/PL/PT/RO/SI/SK/TR/FI/SE/CH/UK/HR—5150MHz-5350MHZ is for indoor use only

⚠️ **CAUTION: EXPOSURE TO RADIO FREQUENCY RADIATION**

This equipment complies with EU radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20 cm between the radiator and your body.

Compliance to Malaysia specification

The SMART Technologies ULC Interactive Display SBID-MX265, SBID-MX275, and SBID-MX285 meet the Malaysian requirements as defined by the Certifying Agency, SIRIM QAS International.

MCMC
CIDF17000247

United Arab Emirates – TRA registration details

Regulatory model SBID-MX065, SBID-MX065, SBID-MX075, SBID-MX086

```
┌─────────────────────────────────┐
│             TRA                 │
│  REGISTERED No: ER63029/18      │
│  DEALER No: DA0076339/11        │
└─────────────────────────────────┘
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OPS – Regulatory model AM40

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┌──────────────────┐
│       TRA        │
│ Registration No: │
│   ER48726/16     │
│   DEALER No:     │
│   0033451/10     │
└──────────────────┘
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Contents

Welcome

This chapter introduces the SMART Board® MX series interactive displays.

About this guide

This guide explains how to install and maintain a SMART Board MX series interactive display. It includes the following information:

- How to install the display

- How to connect power and devices

- How to turn on the display for the first time

- How to configure the iQ appliance

- How to maintain the display for years of use

- How to troubleshoot issues with the display

In addition, this guide includes information on the display's settings and remote management support.

This guide is intended for those who install and maintain displays in their organizations. Other documentation and resources are available for those who use displays (see *More information* on page 17).

Identifying your specific model

SMART offers several different models of the SMART Board MX series interactive display and iQ appliance.

Identifying your SMART Board MX series interactive display model

The following models of SMART Board MX series interactive display are available:

Model	Screen size (approximate)
SBID-MX365	65" (165 cm)
SBID-MX375	75" (190 cm)
SBID-MX386	86" (218 cm)
SBID-MX265	65" (165 cm)
SBID-MX275	75" (190 cm)
SBID-MX286	86" (218 cm)

Refer to the specifications for detailed technical information for this model, including product dimensions and weights (see *More information* on page 17).

For help identifying your display, see *Appendix D: Identifying the display* on page 87.

Identifying your iQ appliance model

The iQ appliance is installed in the accessory slot to enable iQ functionality. SMART offers several different iQ appliance models. Use the Identifying your iQ appliance model wizard to identify the specific model of iQ appliance installed in your display.

Features

The SMART Board MX series interactive display is the hub of your classroom or meeting room. PC-free embedded computing provides one-touch access to collaborative tools, including a whiteboard, wireless screen sharing, and a web browser. There's no need for wires, cables or manual software and firmware updates.

The display includes the following features:

Feature	Description
iQ technology	The display's iQ appliance provides one-touch access to collaborative tools, including a whiteboard, wireless screen sharing and a web browser.
Intel® Compute Card	Models with an AM50 appliance can use an Intel Compute Card to provide a complete Windows 10 solution at your fingertips, without the need for an external PC or cables.
Touch support	You can do everything on the display that you can do at your computer—open and close applications, meet with others, create new documents or edit existing ones, visit websites, play and manipulate videos, and so on—by touching the display's surface. You can use an array of gestures within applications, including panning, scaling, rotating and zooming in and out. The display's support for up to 10 simultaneous touch, writing and erase points enables you and other users to interact with objects on the screen at the same time.[1]
Writing and drawing support	You can write over applications in digital ink using one of the supplied pens, and then erase the digital ink using your palm. Up to two users can write or draw digital ink on the screen at the same time.
Remote control	You can use a remote control with the SMART Board MX series interactive display.
Audio support	The display includes integrated speakers for presenting audio from connected input sources.

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[1]Requires SMART Product Drivers to be installed. Some applications might not support all touch points.

Components

The display consists of the following components:
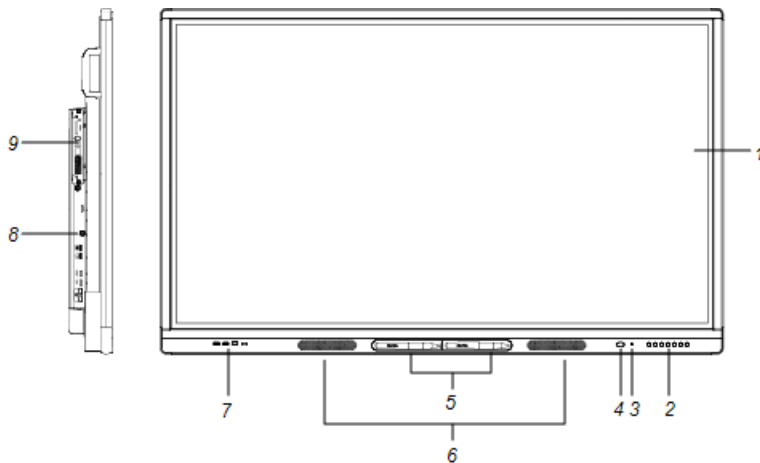
No.	Name	More information
Pictured		
1	Screen	Page 14
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4	Remote control sensor / status light	Page 16
5	Pen (×2)	Page 15
6	Speakers	Page 16
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9	iQ appliance (and Intel Compute Card)	Page 14
Not pictured		
10	AC switch	Page 44
11	Bottom connector panel	Page 38
12	Remote control	Page 16

iQ appliance (and Intel Compute Card)

The iQ appliance is inserted in the accessory slot on the back of the following models:

- SBID-MX265
- SBID-MX275
- SBID-MX286
- SBID-MX365
- SBID-MX375
- SBID-MX386

Take advantage of iQ technology and access collaborative tools.

With the SBID-MX365, SBID-MX375, and SBID-MX386 models, you can insert an Intel Compute Card in the appliance to provide a complete Windows 10 solution at your fingertips, without the need for an external PC or cables.

> ⚠️ **CAUTION**
>
> The accessory slot's maximum available power is 60 W. The slot is not a limited power source. To reduce the risk of fire, make sure that accessories connecting to the slot satisfy the fire enclosure requirements of IEC 60950-1.

> **TIP**
>
> Use the Identify your iQ appliance model on the SMART support site to identify your model of iQ appliance.

For more information about the iQ experience, see iQ experience on SMART's support site.

Screen

The following are the dimensions for the display:

Model	Diagonal	Active touch area	Active image area
SBID-MX365	64 1/2" (163.9 cm)	57 3/8" × 32 3/4" (145.7 cm × 83.3 cm)	56 1/4" × 31 5/8" (142.9 cm × 80.4 cm)
SBID-MX375	74 1/2" (189.3 cm)	66 1/2" × 38" (168.8 cm × 96.6 cm)	65" × 36 1/2" (165 cm × 92.8 cm)
SBID-MX386	85 5/8" (218.4 cm)	76 3/8" × 43 3/4" (194.1 cm × 111.2 cm)	74 5/8" × 42" (189.5 cm × 106.6 cm)
SBID-MX265	64 1/2" (163.9 cm)	57 3/8" × 32 3/4" (145.7 cm × 83.3 cm)	56 1/4" × 31 5/8" (142.9 cm × 80.4 cm)

Model	Diagonal	Active touch area	Active image area
SBID-MX275	74 1/2" (189.3 cm)	66 1/2" × 38" (168.8 cm × 96.6 cm)	65" × 36 1/2" (165 cm × 92.8 cm)
SBID-MX286	85 5/8" (218.4 cm)	76 3/8" × 43 3/4" (194.1 cm × 111.2 cm)	74 5/8" × 42" (189.5 cm × 106.6 cm)

Pens

The display comes with two pens.

The display's bottom frame includes magnetic holders for the pens. Remove a pen from its holder and use the pen to draw digital ink.

> ⚠ **CAUTION**
>
> When you return a pen to the magnetic holder, make sure it's centered in its holder to keep it from falling and being damaged.

Front connector panel

The front connector panel includes connectors for USB peripherals and a computer or other input source.

No.	Name	Procedure
1	USB 2.0 Type-A connector	Connect USB drives and other devices that you want to use with the currently selected input source.
2	USB 2.0 Type-A connector	Connect a USB drive to update the display's firmware.
3	USB 2.0 Type-B connector	Connect a USB cable to the display and computer to provide touch control of the computer connected to HDMI 3.
4	HDMI 3 input connector	Connect a computer or other input source to the display (see page 33).

Front control panel

The front control panel contains the Power, Input Select, Menu, Freeze, Mute and volume control buttons.

Remote control

The remote control is an alternative to the front control panel for controlling the display.

Remote control sensor

The status light blinks green and red when it registers a button being pressed on the remote control.

Status light

The status light blinks green and red when it registers a button being pressed on the remote control.

When the status light is red, the display is in a low power state. To wake the display, press the **Power** button ⏻ on the front control panel or **POWER** on the remote control.

Ambient light sensor

The ambient light sensor can detect the room brightness and adjust the display's brightness. Make sure **Auto** is enabled in Brightness and volume in the display's settings. See *Brightness and volume* on page 77.

Internal speakers

The display includes two 10 W rms integrated speakers. You can also connect external speakers (see *Connecting external speakers* on page 35).

Accessories

Accessories for the display include the following:

- SBA-100 projection audio system

- SMART Audio 400 classroom amplification system

- USB extenders

- SMART PCM8 series OPS PC

SBA-100 projection audio system

The SBA-100 projection audio system consists of two 14 W speakers and is intended for wall-mounted displays. You can control volume using the display's front control 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).
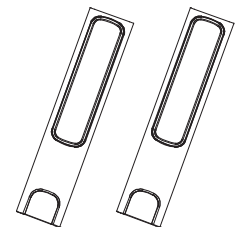
SMART Audio 400 classroom amplification system

The SMART Audio 400 classroom amplification system provides high-quality audio amplification. The system comes with a teacher microphone and optional student microphone. Multiple speaker options are available, including wall- and ceiling-mounted speakers. The amplifier receives audio signals from the microphones and translates them into crystal-clear sound through the speakers.

For more information, see the *SMART Audio 400 classroom amplification system specifications* (smarttech.com/kb/171137).

NOTE

The SMART Audio 400 classroom amplification system is available only in Canada and U.S.

USB extenders

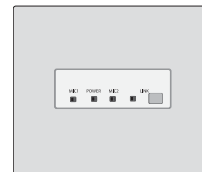As noted in *Connecting cables for room computers, guest laptops and other input sources* on page 33, the USB connection between the display and computer should be no longer than 16' (5 m). If you need to connect a computer that is more than 16' (5 m) from the display, use one of the following USB extenders:

Extender	Specifications
USB-XT	smarttech.com/kb/119318
CAT5-XT-1100	smarttech.com/kb/170202

SMART recommends only using USB extenders with the USB connectors on the side and bottom connector panels on the display.

For more information, see:

- Troubleshooting and extending the USB 2.0 and USB 3.0 connection to your SMART interactive display

- USB cables and connectors

SMART PCM8 series OPS PC

The optional SMART PCM8 series OPS PC (smarttech.com/kb/171429) provide a fully functional Windows 10 solution at your fingertips, without the need for an external PC or cabling.

More information

In addition to this guide, SMART provides the following documents for the display:

Document	Link
User's guide	smarttech.com/kb/171284
SBID-MX165, MX175, MX186, MX265, MX275, MX286, MX365, MX375, and MX386 installation instructions	smarttech.com/kb/171274
SBID-MX265 specifications	smarttech.com/kb/171240
SBID-MX275 specifications	smarttech.com/kb/171259
SBID-MX286 specifications	smarttech.com/kb/171260
SBID-MX365 specifications	smarttech.com/kb/171369
SBID-MX375 specifications	smarttech.com/kb/171367
SBID-MX386 specifications	smarttech.com/kb/171368
Comparison	smarttech.com/kb/171161

These documents are available in the Support section of the SMART website (smarttech.com/support).
Scan the QR code on the cover of this guide to view the SMART Board MX series interactive displays
pages in the Support section.

Chapter 2

Installing the display

SMART recommends that only trained installers install the display.

This chapter is for installers. Installers should read this information along with the installation instructions included with the display before they install the display.

> ⚠ **WARNING**
>
> Improper installation of the display can result in injury and product damage.

Moving the display to the installation site

After your organization receives the display, you need to move it to the place where you plan to install it.

On occasion, you might also need to move the display to another location after initially installing it.

> ⓘ **IMPORTANT**
>
> - Move the display at your own risk. SMART cannot accept liability for damages or injury that occur during the display's transportation.
>
> - When moving the display
>
>   - Follow local safety regulations and standards.
>
>   - Pack the display in its original packaging, including the pallet.
>
>   - Move the display so that its top frame faces up.
>
>   - Have at least two people move the display.

TIP

Display packaging may be labeled to indicate which side is the front. Look for "FRONT" on the packaging to help orient the box during transportation.

Using transportation aides

You can use the following aides to move the display:

- Cart

- Furniture dolly

- Mechanical lift

Accommodating doorways, hallways and elevators

In some situations, you might need to remove the display from its packaging to move it through narrow doorways or hallways or on to an elevator. In these situations, keep the foam pieces on the bottom corners of the display. These foam pieces protect the display if you need to set it down during transportation.

You might also need to rotate the display so that its top frame faces to the side. You can do this during transportation, but when you install the display, it must be in landscape orientation (with the top frame facing up).

Dealing with cracked, chipped or shattered glass

The display contains safety-tempered glass. Although this glass is heat-strengthened to help withstand impacts, the glass can crack, chip or shatter if struck with enough force. (Safety glass is designed to break into small pieces rather than sharp shards if it is broken.) Temperature changes can cause a minor crack or chip to become worse, possibly causing the glass to shatter. See the knowledge base article, Shattered glass on an interactive display, for information about conditions that can cause the display's glass to shatter even when it's not in use.

If the display's glass is cracked or chipped, have it professionally inspected and repaired at a SMART authorized repair center. If the display's glass shatters, carefully clean up the area and have the display repaired or replaced.

> ⚠ **CAUTION**
>
> For safety and to prevent further damage, do not continue to install or use the display if its glass is cracked, chipped or shattered.

Saving the original packaging

Save the original packaging and repack the display with as much of it as possible if you ever need to move the display after installation. This packaging was designed to provide the best possible protection against shock and vibration.

> ⚠ **CAUTION**
>
> Move the display only in the original packaging or replacement packaging purchased from your authorized SMART reseller. Moving the display without correct packaging can lead to product damage and voids the warranty.

> **NOTE**
>
> If the original packaging isn't available, you can purchase the same packaging directly from your authorized SMART reseller (smarttech.com/where).
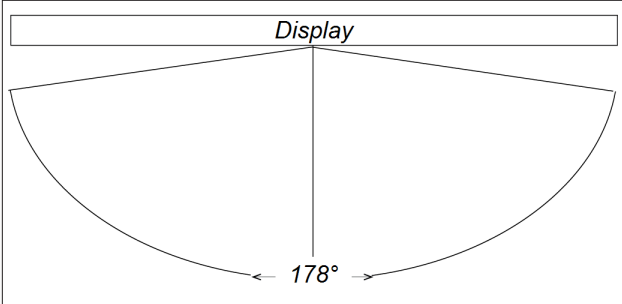
Installing the display on a wall

Typically, you install the display on a wall in a classroom or meeting space.

Choosing a location

A display is typically installed at the room's focal point, such as at the front of a classroom or meeting space.

Selecting an appropriate location for the display is crucial for ensuring the best possible experience with the product. Consider the following factors as you choose a location:

Factor	Considerations
Room setup	• The location allows users, including those in wheelchairs, access to the display. Refer to local regulations regarding accessibility. • The location allows for multiple users to access the display at the same time. • The location accommodates room traffic patterns, and there are no tripping hazards. • The display is not installed where it could be hit by a door or gate. • There are no nearby heat sources directed at the display such as a radiator or heat vent. • There are no nearby shelving units, desks, or other furniture that has doors or drawers that could hit the display. • Furniture, wall décor, and other room features, such as light switches and thermostats, do not block the display and are not blocked by it. (You might be able to move some of these room features to accommodate the display.)

Power and other connections	• The location is close to:
	  ○ A power outlet
	  ○ A network outlet (if you plan to use a wired network connection)
	  ○ A room computer (if you plan to connect a room computer)
	  ○ External audio systems and other devices that you want to connect to the display
	
	NOTES
	  ○ If the location is not near a power outlet, consult an electrician for the power setup you need.
	  ○ Determine if you'll need additional equipment, such as power bars, additional cables, or cable extenders.
	• The location is not where the mains power supply enters the building.

Factor	Considerations
Visibility	The display's screen is clearly visible to all users in the room. SMART recommends users sit within a 178° viewing area: **NOTE** The viewing area depends on the display's resolution and a variety of other factors. For more information, see the knowledge base article, Recommended viewing distances and viewing angles for SMART Board interactive flat panels.
Lighting	The location is not near bright light sources, such as windows or strong overhead lighting. Risks of light Interference include: **Reduced visibility:** Light sources can cause glare on the display's screen, reducing its visibility. **Touch system interference:** Many displays use infrared (IR) light as a key component of the touch system. Strong light that hits the display's screen directly can cause interference with the touch system and prevent the display from working properly. **TIP** To reduce light interference, install blinds or shades on windows or skylights and install switches to dim or turn off any lights shining directly on the display's screen. Keep in mind that sunlight can come through windows at different angles at different times of the year.
Acoustics	The room has good acoustics (see Configuring your SMART Board MX or MX100 for the best audio performance).

Factor	Considerations
Environment and ventilation	- The location meets the environmental requirements in the display's specifications (see *More information* on page 17). - The display isn't subjected to strong vibrations or dust. - Ventilation systems don't blow air directly on the display. - There is adequate ventilation or air conditioning around the display so that heat can flow away from it and the mounting equipment. SMART recommends at least 2" (5 cm) of space on all sides of the display for proper airflow. - If you plan to install the display in a recessed area, there is at least 4" (10 cm) of space between the display and the recessed walls to enable ventilation and cooling.

Choosing a height

Consider the general height of the user community when you choose the height for the display.
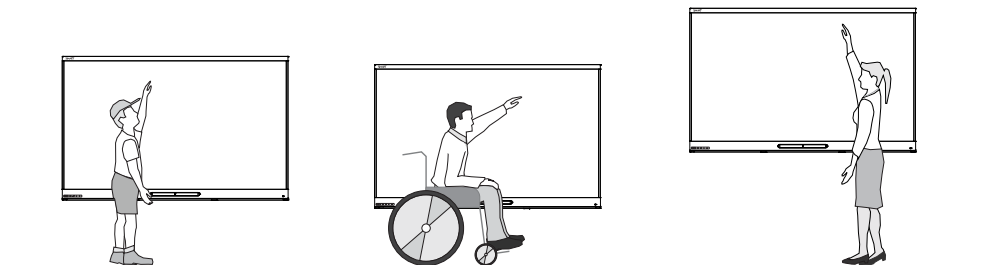
SMART recommends that you mount the display so that its top is 6' 5" (1.9 m) from the floor.

NOTE

If participants will be sitting at a steep angle (such as in a lecture hall), you may have to adjust the installation height or angle.

Assessing the wall

Be sure the wall you're installing the display on can support the weight of the display and mounting equipment. If it can't, consider using a SMART wall stand to transfer some of the weight from the wall to the floor (see smarttech.com/accessories).

NOTE

Refer to the display's specifications for its weight (see *More information* on page 17).

In some situations, you may need to request an engineering analysis to determine if the wall can support the display.

Selecting mounting hardware

The mounting hardware required for installation varies according to the type of wall onto which the display is being mounted.

Refer to *Installation best practices for SMART products* (smarttech.com/kb/171035) for the mounting hardware required for the display.

Selecting a wall mount

It is always best to mount the display on a wall. If the wall can't support the display's weight, you can use additional hardware to transfer some of the weight to the floor.

The display includes a pre-attached wall bracket which can be used to mount the display to the wall. See the *SBID-MX165, MX175, MX186, MX265, MX275 and MX286, MX365, MX375, MX386 installation instructions* (smarttech.com/kb/171274).

Contact your authorized SMART reseller (smarttech.com/where) for information on SMART's mounting options.

If you choose a third-party option rather than one of SMART's mounting options, be sure the wall mount can accommodate the display's dimensions and support the display's weight as well as the weight of any attached accessories.

Mounting the display

Mount the display following the included installation instructions. In addition, consider the following:

The electrical and mechanical components of a display are designed to work properly when the display is mounted in the orientation described in its installation instructions. Mounting the display in a different orientation can cause malfunctions and will void the display's warranty.

There are a number of potential hazards of mounting a display in a non-standard orientation or angle:

- Mounting a display horizontally (like a table top) can cause the glass to sag, damaging the display or interfering with the display's touch system.

- Non-standard orientation can affect ventilation, creating hotpots in equipment, premature failures and, in displays that use projectors, exploding projector bulbs.

- Mount the display vertically (90° relative to the floor plus or minus 2° for tolerance) and in landscape orientation. SMART doesn't support mounting the display at other angles or in portrait orientation.
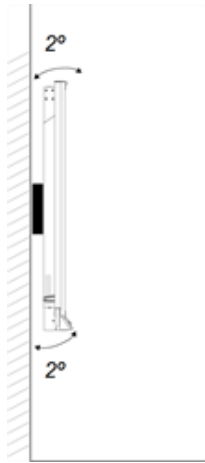
- Use the included wall mount. Optionally, use a VESA-approved mounting plate that is rated for the display's weight and size.

- If you're not using the included bolts to fasten the wall mount to the display, see the following table.

SMART Board MX365 **SMART Board MX265**	**Part number 1031028** Minimum M6 length **Part number 1033445** Minimum M8 length	14 mm + x mm where x is the combined thickness of the wall mount and washer	
	Part number 1031028 Maximum M6 length **Part number 1033445** Maximum M8 length	18 mm + x mm where x is the combined thickness of the wall mount and washer	
	Fasten force	97.36–177.01 in-lb. (11–20 N·m)	
		⚠ **CAUTION** Do not over-tighten the bolts.	
SMART Board MX375 **SMART Board MX275**	Minimum M8 length	18 mm + x mm where x is the combined thickness of the wall mount and washer	
	Maximum M8 bolt length	30 mm + x mm where x is the combined thickness of the wall bracket and washer	
	Fasten force	97.36–177.01 in-lb. (11–20 N·m)	
		⚠ **CAUTION** Do not over-tighten the bolts.	

SMART Board MX386 SMART Board MX286	Minimum M8 length	14 mm + x mm where x is the combined thickness of the wall mount and washer	
	Maximum M8 bolt length	30 mm + x mm where x is the combined thickness of the wall mount and washer	
	Fasten force	97.36–177.01 in-lb. (11–20 N·m)	
		⚠ **CAUTION** Do not over-tighten the bolts.	

Installing the display on a stand

If you want to move the display from place to place or if it's not possible to install the display on a wall, you can install it on a stand.

Using SMART mobile stands

SMART mobile stands are designed for SMART interactive displays. They are height-adjustable. Some models include integrated speakers, a locking cabinet to secure equipment, and casters that swivel and lock for easy movement.

For more information about SMART mobile stands, see smarttech.com/accessories.

Using a third-party stand

For information on selecting and using a third-party stand, see Installing your SMART Board MX on a stand.

Chapter 3

Connecting power, cables and devices

Connect the display to power after you install it but before you turn it on for the first time. You can also connect cables for room computers, guest laptops or other input sources as well as for speakers and room control systems.

By installing cables in advance, you make use of connectors that might not be accessible after the display is wall-mounted. You can then run the cables across floors or behind walls as needed.

> ⚠ **WARNING**
>
> Ensure that any cables that cross the floor to the display are properly bundled and marked to avoid a trip hazard.

Connecting the iQ appliance

For more information about installing the iQ appliance in SMART Board MX series interactive displays, see the *SBID-MX165, MX175, MX186, MX265, MX275, MX286, MX365, MX375, and MX386 installation instructions* (smarttech.com/kb/171274).

> ⚠ **CAUTION**
>
> Install the AM50 iQ appliance and Intel Compute Card before you turn on the display for the first time.

> ❶ **IMPORTANT**
>
> If you're installing an AM50 iQ appliance in a display, make sure the display's firmware is updated to 1.8.7 or later. The display may not function properly if the display's firmware is not updated. See *Updating the display's firmware* on page 53.

Connecting power
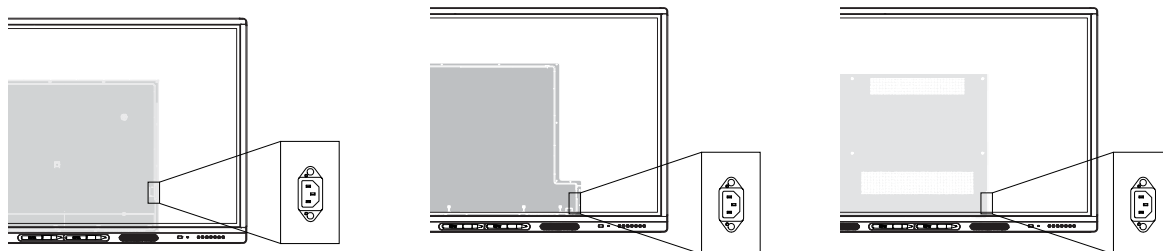
SBID-MX265
SBID-MX365

SBID-MX275
SBID-MX375

SBID-MX286
SBID-MX386

Connect the supplied power cable from the AC power inlet on the side of the display to a power outlet.

> **NOTE**
>
> Refer to the display's specifications for power requirements and power consumption information (see *More information* on page 17).

Connecting to a network

> **❗ IMPORTANT**
>
> Do not use the RJ45 jack on the AM40 iQ appliance to connect to a network.

The display requires a network connection for downloading software and firmware updates, and a number of the iQ appliance's apps require a network connection as well. You can use one of the display's RJ45 jacks (pictured) to connect to a network, or you can use a Wi-Fi connection. For more information about the display's network connection and configuration, see Connecting to a network.
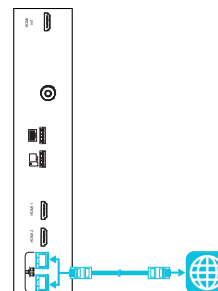
You can also connect a computer to the display's other RJ45 jack so the display and computer are connected to the same network.

> **❗ IMPORTANT**
>
> Do not use the RJ45 jack on the SMART PCM8 series OPS PC to connect to a network.

AM50 iQ appliance

There are three ways to connect the AM50 iQ appliance to a network:

- Wi-Fi

- connect an Ethernet cable from a network outlet directly to the AM50 iQ appliance's RJ45 jack
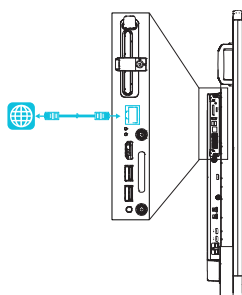
- connect an Ethernet cable from a network outlet to the display's RJ45 IN jack, and then connect another Ethernet cable from the display's RJ45 OUT jack to the AM50 iQ appliance's RJ45 jack
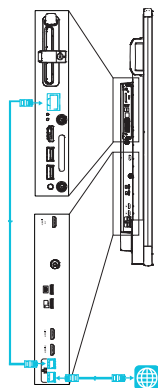
Connecting the Intel Compute Card

With the SBID-MX365, SBID-MX375, and SBID-MX386 models, you can insert an Intel Compute Card in the slot on the AM50 iQ appliance to access the card's Windows 10 operating system from the display.

> **❶ IMPORTANT**
>
> Make sure the Intel Compute Card is inserted before you turn on the display.

NOTE

By default, the HDMI output extends the Windows desktop, and this can cause display problems in certain configurations. If you experience issues, set the HDMI out to a mirrored desktop rather than the default extended desktop. Right click, select Display settings, and set the secondary display to mirror the first.

TIP

You can connect peripherals, such as a keyboard or mouse, to the Intel Compute Card using the USB receptacles on the iQ appliance.

Connecting cables for room computers, guest laptops and other input sources

You can connect cables to the display so that users can connect and use room computers, guest laptops or other devices, such as Blu-ray™ disc players.

NOTE

If your display is configured with firmware 2.0.6 (and later), you can configure the HDMI version for each HDMI connector as either HDMI 1.4 or HDMI 2.0. This allows you to connect HDMI 1.4 devices that are incompatible with HDMI 2.0 connectors and would otherwise appear as DVI devices, see *HDMI [connector number]-EDID version* on page 78.

Using recommended cables

SMART recommends the following varieties of cable:

Cable type	Maximum length	Recommendation
HDMI	23' (7 m)[1]	Use only certified HDMI cables that have been tested to support the performance standard you require.
VGA	23' (7 m)	Use VGA cables with all pins in their connectors fully populated and wired.
Stereo 3.5 mm	20' (6 m)	[N/A]
USB	16' (5 m)	Use a USB extender if the distance between the computer and the display is greater than 16' (5 m). For more information, see *USB extenders* on page 17.

Using cables that exceed these maximum lengths may produce unexpected results, such as degraded picture quality or degraded USB connectivity.

---

[1]The performance of cables longer than 23' (7 m) is highly dependent on the cable's quality.

Connecting to the side connector panel
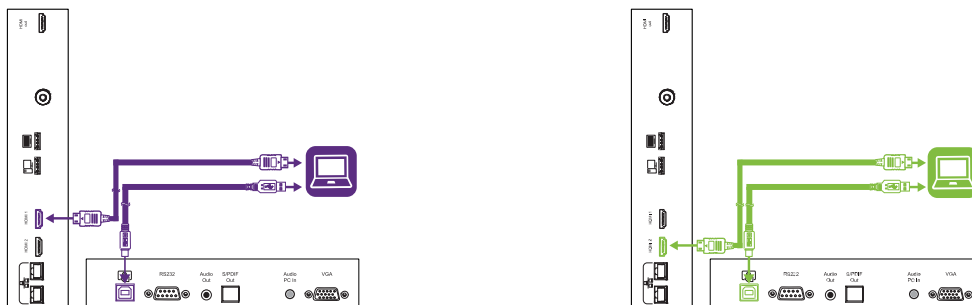
The side connector panel includes two HDMI video connectors: HDMI 1 and HDMI 2. Both connectors can accommodate an HDMI cable for video and audio, and both support HDMI 2.0.

NOTES

- The USB Type-B connector for touch control is located on the bottom connector panel. See *Connecting to the bottom connector panel* below.

- You can connect a wireless USB keyboard and mouse to the two USB Type-A connectors.

Connecting to the bottom connector panel
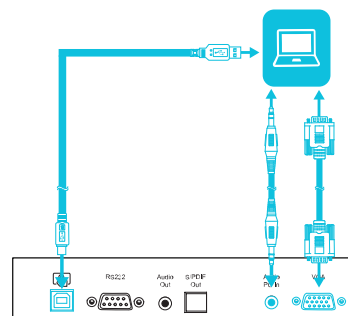
The bottom connector panel includes a video connector and USB connector:

- **VGA:** This connector can accommodate a VGA cable for video.

- **USB Type-B:** This connector can accommodate a USB cable for touch control for computers connected to HDMI 1, HDMI 2 or VGA.

NOTE

When connecting a computer to the VGA connector, use the Stereo 3.5 mm in connector for audio.

Connecting to the front connector panel

In addition to the three sets of video connectors on the side and bottom connector panel, there is one set of computer connectors on the front control panel:

- **HDMI 3:** This set of connectors can accommodate a USB cable for touch control and an HDMI cable for video and audio. This input supports HDMI 1.4 with HDCP 1.4.

- **USB Type-B:** This connector can accommodate a USB cable for touch control for computers connected to HDMI 3.
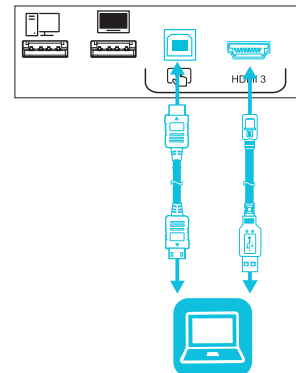
Viewing a connected computer or other device's input

Users can tap the Input button to open the input selection menu. Tap an input source to view the computer or other device's input on the display.

For information about viewing a connecteds device's input, see the *SMART Board MX series interactive display user's guide* (smarttech.com/kb/171284).

Connecting external speakers

The display includes two 10 W speakers, which are designed to provide sound at the front of a room. You can connect external active speakers if you're providing sound in a larger space. See *SMART Audio 400 classroom amplification system* on page 17 for more information.
You can connect external speakers to the display using the stereo 3.5 mm out connector (pictured).
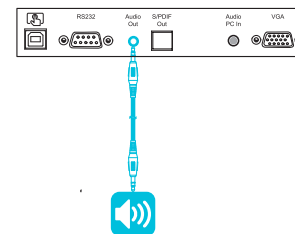
The display also provides a Sony/Philips Digital Interface (S/PDIF) optical out
connector. S/PDIF is a digital audio transmission medium. You need an audio
receiver that supports S/PDIF to decode this connection to analog for use with
external speakers.
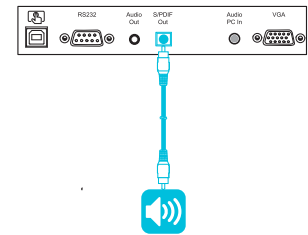
Connecting room control systems

A room control system enables users to control a room's lighting, audio system and, possibly, the display.
Some installations may require you to integrate the display with a room control system.

You can use the display's RS-232 connector to connect a third-party external control system to the display
(see *Appendix C: Remotely managing the display* on page 80).

NOTE

Displays are not compatible with centralized remote control systems, such as a universal remote control.

Connector reference

Side connector panel

The following diagram and table present the connectors on the display's connector panel:
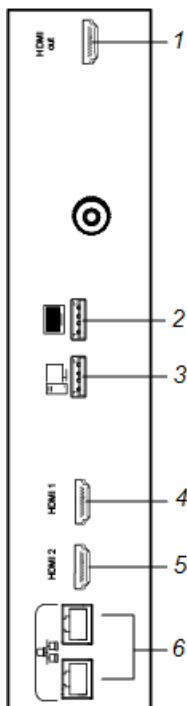
No.	Connector	Connects to	Notes
1	HDMI 1.4 out (HDCP-compliant)	External monitor	This connector is HDCP-encrypted HDMI. **NOTE** HDMI out is an optional feature. Contact your authorized SMART reseller (smarttech.com/where) for further ordering instructions.
2	USB 2.0 Type-A connector	USB drives and other devices	Connect a USB drive to update the display's firmware. **NOTE** If troubleshooting an issue with the display, connect a USB mouse to navigate the display's on-screen menu.

No.	Connector	Connects to	Notes
3	USB 2.0 Type-A connector	USB drives and other devices	Connect USB drives and other devices that you want to use with the currently selected input source.
4	HDMI 1 2.0 in	HDMI 1 input (video and audio)	See page 33.
5	HDMI 2 2.0 in	HDMI 2 input (video and audio)	See page 33.
6	RJ45 (×2)	Network	See page 31.

Bottom connector panel

The following diagram and table present the connectors on the display's bottom connector panel:
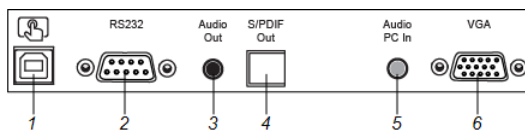
No.	Connector	Connects to	Notes
1	USB 2.0 Type-B	HDMI 1, HDMI 2 or VGA input (touch)	See page 33.
2	RS-232	Room control system	See page 80.
3	Stereo 3.5 mm out	External speakers or audio system	See page 35.
4	S/PDIF out	Optical digital audio output	See page 35.
5	Stereo 3.5 mm in	VGA input (audio)	See page 33.
6	VGA in	VGA input (video)	See page 33.

Front connector panel

The following diagram and table present the connectors on the display's convenience panel:

No.	Name	Procedure
1	USB 2.0 Type-A connector	Connect USB drives and other devices that you want to use with the currently selected input source.
2	USB 2.0 Type-A connector	Connect a USB drive to update the display's firmware.
3	USB 2.0 Type-B connector	Connect a USB cable to the display and computer to provide touch control of the computer connected to HDMI 3.
4	HDMI 3 input connector	Connect a computer or other input source to the display (see page 33).

Other connectors

There are additional connectors on the bottom of the display (see *Installing the display on a wall* on page 21 and *Appendix C: Remotely managing the display* on page 80).

AM40 iQ appliance

This diagram and table describe the connectors on the AM40 iQ appliance:
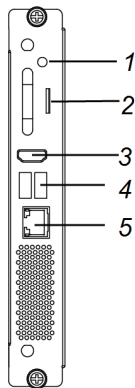
AM40

No.	Connector	Connects to	Notes
1	LED	[N/A]	LED lights green when the iQ appliance is inserted in the accessory slot and turned on.
2	Micro SD	[N/A]	This connector is a service port.
3	HDMI out	[N/A]	Do not use. See page 37.
4	USB Type-A (×2)	Supported peripherals	[N/A]
5	RJ45 (AM40 iQ appliance)	[N/A]	Do not use this connector. Use the connectors on the display instead. See page 31.
6	Eject button	[N/A]	This button ejects the Intel Compute Card. See Ejecting the Intel Compute Card.

AM50 iQ appliance

This diagram and table describe the connectors on the AM50 iQ appliance:

AM50
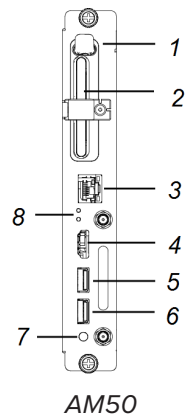
No.	Connector	Connects to	Notes
1	Eject button	[N/A]	This button ejects the Intel Compute Card. See Ejecting the Intel Compute Card.
2	Intel Compute Card	[N/A]	[N/A]
3	RJ45	Network	Use this connector to connect the AM50 iQ appliance to a network. See *AM50 iQ appliance* on page 31.
4	HDMI out	[N/A]	Do not use. See page 37.
5	USB Type-A (CC)	Supported peripherals	Supported USB devices connected to this receptacle are available in the Windows 10 operating system. See Using Input.
6	USB Type-A (iQ)	Supported peripherals	Supported USB devices connected connected to this receptacle are available to the iQ experience. See *Chapter 3: Connecting power, cables and devices* on page 29.

No.	Connector	Connects to	Notes
7	Power button and LED	[N/A]	LED lights when the appliance is inserted in the accessory slot and turned on. Press the Power button to start Windows 10 on the Intel Compute Card.
8	Lock and Eject LEDs	[N/A]	The Lock LED lights when the AM50 appliance shouldn't be removed from the display. The Eject LED lights when it is safe to remove the appliance from the display. See Ejecting the Intel Compute Card.
Not pictured			
9	Intel Compute Card label	[N/A]	The label for the Intel Compute Card. The label is titled "Assembly, PC, AM50".
10	iQ appliance (AM50) label	[N/A]	The label for the AM50 appliance. The label is titled "Model / AM50".

Chapter 4

Configuring the network

You can connect the display to a network using Wi-Fi or an Ethernet connection. Before connecting the display, your organization's network administrators need to configure the network to allow users to update the display's firmware automatically and use all the features of the iQ experience.

To configure the network

1. To configure the network for use with all the iQ experience features, see *Configuring the display's network connection* in Configuring your organization's network for a SMART display with the iQ experience.

2. Open the port required for automatic firmware updates:

Protocol	Port range
TCP	80

3. Add the following URLs to the network whitelist:

URL
http://api.lango-tech.cn
http://lango-tech.cn/
http://otaa.lango-tech.cn
http://otag.lango-tech.cn
http://downloads.smarttech.com

Chapter 5

Turning on the display for the first time

> ⚠️ **CAUTION**
>
> - Install the AM50 iQ appliance and Intel Compute Card before you turn on the display for the first time.
>
> - After turning on and setting up the display, update the display's firmware. See Updating firmware for your SMART Board MX.

Turn on the display after mounting it and connecting power and devices.

To turn on and set up the display for the first time

1. Flick the switch beside the AC power inlet to the ON (I) position.
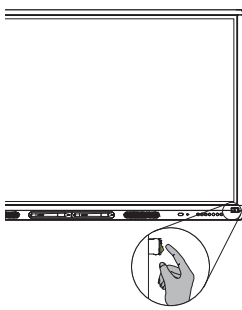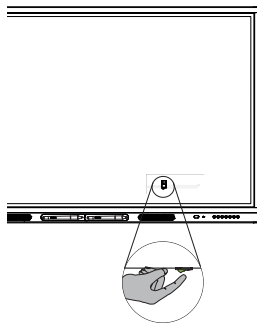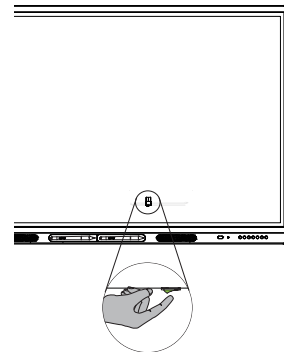
SBID-MX265 SBID-MX365	SBID-MX275 SBID-MX375	SBID-MX286 SBID-MX386

2. Select your preferred language, and then tap **Next**.

3. Select your country, and then tap **Next**.

4. Select your time zone, and then tap **Next**.

5. Set the date, and then tap **Next**.

6. Set the time, and then tap **Next**.

7. Name the display, and then tap **Next**.

8. If the display isn't using a wired network connection, select a wireless network, and then tap **Next**.

> **❗ IMPORTANT**
>
> The display needs an internet connection for downloading and installing important updates. Ask the network administrator to confirm that the network has been correctly configured for the iQ experience. For more information about network configuration, see Connecting a SMART display with the iQ experience to a network.

9. Select the list of applications that will appear in the launcher, and then tap **Next**. For more information about the apps, see the *SMART Board MX series interactive displays user's guide* (smarttech.com/kb/171284).

10. Select the apps you want to appear in the Apps Library, and then tap **Next**.

> **TIP**
>
> To change which apps appear in the Apps Library, see *Launcher* on page 70.

11. Tap **Finish**.

The *Welcome* screen appears.

Orienting the display

Use SMART Settings on computers connected to the display to orient it.

If the display is connected to a computer and the pointer appears a distance from the actual contact when you touch the screen, orient the display.

> **NOTE**
>
> You can use your finger or a pen to orient the display.

To orient the display when connected to a computer

1. Open SMART Settings.

Operating system	Procedure
Windows® 10	a. Select **Start**. b. Scroll to and select **SMART Technologies** > **SMART Settings**.
Windows 8	a. Open the *Apps* screen. b. Scroll to and select **SMART Technologies** > **SMART Settings**.
Windows 7	Select **Start** > **All Programs** > **SMART Technologies** > **SMART Tools** > **SMART Settings**.
macOS	a. Press the **SMART Board** icon on the Mac menu bar. b. Press **SMART Settings**.

2. Tap **Orient**.

3. Tap the red targets as they appear. Hold your finger or the tip of the pen at the center of each target, and then lift the pen or finger. When you lift the pen or finger, the target moves to the next orientation point.

   > **❶ IMPORTANT**
   >
   > Hold the pen at a right angle to the screen.

4. Continue until you've pressed all the targets.

   The orientation window closes.

Chapter 7

Maintaining the display

With proper maintenance, the display will provide years of use.

Checking the display installation

Inspect the display installation frequently to ensure that the display remains securely installed.

- Check the mounting location for signs of damage or weakness that can occur over time.

- Check for loose screws, gaps, distortions or other issues that could occur with the mounting hardware.

If you find an issue, contact a trained installer.

Cleaning the screen

Follow these instructions to clean the screen without damaging its anti-glare coating or other product components.

> ⚠ **CAUTION**
>
> - Do not use permanent or dry-erase markers on the screen. If dry-erase markers are used on the screen, remove the ink as soon as possible with a lint-free, non-abrasive cloth.
>
> - Do not rub the screen with dense or rough material.
>
> - Do not apply pressure to the screen.
>
> - Do not use cleaning solutions or glass cleaners on the screen, because they can deteriorate or discolor the screen.

To clean the screen

1. Turn off any connected computers.

2. Turn off the display (see *Turning the display off and back on* on page 51).

3. Wipe the screen with a lint-free, non-abrasive cloth.

   > **NOTE**
   >
   > You can also use a damp cloth with a drop of dish soap.

Cleaning the touch sensors

The display uses infrared (IR) transmitters and sensors around the display's perimeter between the screen and the frame. Dust buildup on the protective plastic can impair touch performance. Inspect these areas for dust and clean them every week.

> ⚠ **CAUTION**
>
> - Do not use compressed air to clean the sensors or borders.
>
> - Do not use water or cleaning agents to clean the touch sensors.
>
> - Do not apply too much pressure when cleaning the display because you can damage the plastic.

To clean the IR transmitters and sensors

1. With a clean lint-free, non-abrasive cloth, gently wipe the plastic between the screen and the frame around the perimeter of the display's screen.

2. If dirt still remains, use 50% isopropyl alcohol (IPS) to clean the protective plastic between the screen and the frame.

Maintaining ventilation

The display requires proper ventilation. Dust buildup in the ventilation holes compromises cooling and can lead to product failure.

- Clean accessible ventilation holes monthly with a dry cloth.

- Use a vacuum cleaner with a narrow hose end fitting to clear the back ventilation holes regularly. You might have to remove the display from the wall.

  For more information on removing the display, see *Removing and transporting the display* on the next page.

⚠ **CAUTION**

Avoid setting up or using the display in an area with excessive levels of dust, humidity, or smoke.

Preventing condensation

If the display has been moved from a cold environment to a warmer one (for example, from storage to the installation site), let the display sit for a few hours to allow it to acclimate to the new temperature. Failing to do so can cause humidity to build up in the space between the front glass and the LCD.

If condensation appears under the screen after you turn on the display, select an active video source and leave the display on for 48 hours. If the condensation doesn't dissipate, contact SMART Support if the display is still under warranty.

If there is enough moisture between the layers to cause the moisture to drip and run, remove power immediately and contact SMART Support if the display is still under warranty.

Replacing the pens

To prevent damage to the display's anti-glare coating, replace a pen if its nib becomes worn. You can purchase replacement pens from the Store for SMART Parts (see smarttech.com/Support/PartsStore).

Turning the display off and back on

In most situations, you can put the display to sleep when not using it following the instructions in the *SMART Board MX series interactive displays user's guide* (smarttech.com/kb/171284).

In some situations, such as when you need to transport the display or clean its screen, you need to turn the display off for a period of time. You can turn it back on after.

To turn the display off

1. Press and hold the **Power** button ⏻ on the front control panel for two seconds.

To turn the display back on

Press the **Power** button ⏻ on the front control panel.

Resetting the display

You can reset the display and the iQ appliance using the switch on the back of the panel.

To perform a factory reset, see *Recovery* on page 79. A factory reset returns all options to their default values.

To reset the display

1. Flick the switch to the OFF (O) position.

2. Flick the switch to the ON (|) position.

   The display and iQ appliance reset.

Removing and transporting the display

If the display is wall mounted, you might need to remove it from its current location and transport it to another location on occasion.

To remove the display safely, use two or more trained installers.

⚠️ **WARNING**

- Do not attempt to move the display by yourself. The display is very heavy.

- Do not move the display by connecting a rope or wire to the handles on the back. The display can fall and cause injury and product damage.

ℹ️ **IMPORTANT**

Follow any documentation included with the third-party mounting hardware.

To remove the display

1. Turn off connected computers.

2. Turn off the display by pressing and holding the **Power** button ⏻ on the front control panel for two seconds.

3. Flick the switch on the back of the display to the OFF (O) position.

4. Remove all accessible cables, connectors and antennae.

5. Remove the iQ appliance from the accessory slot.

6. Lift the display from its mounting location and insert it into its original shipping box.

   ⚠️ **WARNING**

   Do not place the display on a sloping or unstable cart, stand or table. The display could fall, resulting in injury and severe product damage.

   ⚠️ **CAUTION**

   Do not leave the display face up, face down or upside down for an extended period. This could cause permanent damage to the screen.

   ---

7. Remove the mounting brackets.

To transport the display

See *Moving the display to the installation site* on page 19.

Updating iQ system software

When the iQ appliance is connected to the Internet, it updates its system software automatically.

When a system software update is available, the iQ appliance 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 the Home screen.

When the update is installing, touch, the front control panel and remote control will not respond.

NOTE

You can configure your organization's network to allow or prevent automatic system software updates (see Connecting to a network).

Applying an automatic iQ system software update manually

If the iQ appliance 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 iQ system software update manually

1. From the Home screen, tap **Settings** ⚙ .

2. Scroll to **Auto Update**.

3. 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.

Updating the display's firmware

The display checks for firmware updates automatically, provided the display's date and time are set correctly (see *Date & Time* on page 72) and the display is connected to the internet. The display notifies you when a firmware update is available.

When a display is connected to the Internet and an update for the display's firmware is available, the display shows a message that an update is available.

- Tap **Update** to update the display's firmware.

- Tap **Ignore** to skip that specific firmware update. The display won't apply that update even if you check for updates manually.

- Tap **Cancel** to update the display's firmware at a later time.

The display applies the firmware update automatically if no options are selected after a short time.

When the update is installing, touch, the front control panel and remote control will not respond.

To make sure the network is configured properly for firmware updates, see *Chapter 4: Configuring the network* on page 43.

Applying the display's firmware update manually

To apply a system software update

1. A dialog box appears on the screen asking if you want to update the display's firmware.

2. Tap **Update** to update the display's firmware.

   OR

   Tap **Cancel** to update the display's firmware at a later time.

To apply an automatic system software update manually

1. On the display, press the **Menu** ≡ button on the front control panel.

2. Tap **Update**.

3. Under *Update*, tap **Update**.

Updating the display's firmware manually

You can download display's firmware updates at smarttech.com/downloads and update your display using a USB drive.

1. Go to smarttech.com/downloads and download the update file for your size of display.

2. Copy the .zip file to a USB drive.

3. Insert the USB drive into the display USB.

4. Press **Menu** ≡ on the front control panel to open the display's settings.

5. Tap **Update**.

6. Tap **Check**.

   A dialog box appears.

7. Tap **USB**.

8. The upgrading software screen appears.

    If the update includes an upgrade to the touch firmware, don't touch the screen during an update.

9. Using the switch on the back of the display, turn off the display.

10. Wait 10 seconds.

11. Using the switch on the back of the display, turn on the display.

Chapter 8

Troubleshooting

The following information helps you resolve a variety of common issues with the display, including issues with:

- Remote control

- Power

- Video

- Image quality

- Audio

- Touch and digital ink

- Remote management

- iQ experience

- Intel Compute Card

- Software

- SMART PCM8 series OPS PC

Resolving remote control issues

Issue	Solutions
Some buttons on the remote control don't do anything.	Not all buttons on the remote control have an effect on the display. See using-the-remote-control.htm for a guide to the remote control's buttons.
The display doesn't respond or responds intermittently when you press remote control buttons..	- Make sure you are using the correct remote control for your display. See using-the-remote-control.htm for an image of the correct remote control. - Make sure you are aiming the remote control's IR transmitter at the remote control sensor on the bottom right corner of the display while standing in front of the display, not to the side. - Make sure that both the remote control's IR transmitter window and the display's remote control sensor are clean and unobstructed. - Replace the remote control's batteries.

Resolving general issues

Issue	Solutions
You've forgotten the lock screen password.	Contact SMART Support.
You forgot the Settings security password.	Contact SMART Support.
The display can't connect to a 5 GHz wireless network.	The wireless network may be operating on bands that the display doesn't support. Contact your network administrator.
The message "The board is not compatible with the inserted iQ appliance" appears on the screen.	See "The board is not compatible with the inserted iQ appliance" message appears on a SMART Board MX series interactive display.
The pen is broken.	Contact SMART Support.
The Freeze button is not working.	See The Freeze button is not working on SMART Board MX series interactive displays.

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. **NOTE** If the power cable is plugged into a power bar, make sure the power bar is securely fastened to the power outlet and turned on. • Make sure the switch on the back of the display 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 but nothing shows on the screen.	• Press the Power button to wake the display. **NOTE** The status light is red when the display is in a low power state. • If the status light is solid green, see *Resolving issues with image or video quality* below. • Restart the display. See *Turning the display off and back on* on page 51.
The display doesn't turn on when you use a connected computer's mouse or keyboard.	• Make sure the computer is on. • If the status light is red, press the display's Power button to wake the display.
You're experiencing other issues with power, or the previous solutions don't resolve the issue.	See *Referring to the SMART knowledge base for additional troubleshooting information* on page 66.

Resolving issues with image or video quality

Issue	Solutions
You're experiencing the following or similar issues with image quality: • There are lines or snow on the screen. • The image is flickering or flashing.	• Make sure the display's firmware is updated to 1.8.7 or later. The display may not work properly if the display's firmware is not updated. See *Updating the display's firmware* on page 53.

Issue	Solutions

You're experiencing the following or similar issues with video:
 	
• The video is distorted.
• There is visual noise.
• The image is dim.
	• Make sure any connected computers are on and not in Standby mode.
	• Set the connected computers' resolution and refresh rate to values that the display supports.
	  See *Appendix E: Supported resolutions* on page 88.
	• Restart the display and any connected computers.
	  See *Turning the display off and back on* on page 51.
	• Make sure the cable is not longer than the maximum specified in the display's specifications.
	• Make sure the cable is securely connected to the video connectors on the display and the computer.
	• If the video connection uses and extender or goes through a wall socket, try connecting the display and computer directly.
	• Replace the video cable to determine if the issue is with the cable.
	• Make sure the iQ appliance is securely installed in the accessory slot and its power light is on.
	• Make sure your computer's video driver is up to date.

There are bright spots on the screen. **NOTE** It is normal for some areas of the screen to be slightly brighter than other, but these variations should be minor.	• Open the on-screen display menu. If it appears correctly, the issue is with the video input. • Take a photograph of the screen that shows the variation in brightness 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. • Make sure the cable is not longer than the maximum specified in the display's specifications. • Make sure the cable is securely connected to the video connectors on the display and the computer. • If the video connection uses and extender or goes through a wall socket, try connecting the display and computer directly.
Colors don't appear correctly.	• Minor differences in colors across displays are common. 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. • Make sure the cable is not longer than the maximum specified in the display's specifications. • Make sure the cable is securely connected to the video connectors on the display and the computer. • If the video connection uses and extender or goes through a wall socket, try connecting the display and computer directly. • Perform a factory reset. See *Factory Reset* on page 72. • Take a photograph of the screen that shows the issue with color 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.

Issue	Solutions
The image is cut off or shifted to the left or right.	• Adjust the connected computers' video settings, particularly zoom, crop, underscan and overscan. See the computer's operating system documentation. • If the computer's desktop is entirely black, change it to gray or a different color. • If the computer's desktop is extended across multiple screens, duplicate the desktop across the screens or use the display as the only screen. • Make sure the cable is not longer than the maximum specified in the display's specifications. • Make sure the cable is securely connected to the video connectors on the display and the computer. • If the video connection uses and extender or goes through a wall socket, try connecting the display and computer directly.
The image doesn't fill the entire screen.	Adjust the connected computers' video settings, particularly underscan or overscan. See your computer's operating system documentation.
A persistent image appears on the display.	See Image persistence or burn in on LCD displays.
The display is on, but nothing shows on the screen.	• Make sure any connected computers are on and not in Standby mode. • Make sure the screen is working by pressing **Input** ➡️ on the front control panel and selecting the correct input source for your device. • Restart the display and any connected computers. See *Turning the display off and back on* on page 51. • Replace the video cable connecting the computer to the display to determine if the issue is with the cable. • If the video source is HDCP-protected, make sure it's connected to an HDMI port that supports a compatible version of HDCP. The HDMI 3 port supports only HDCP 1.4. Be sure to connect devices that use HDCP 2.2 to the HDMI 1 or HDMI 2 port.
A computer is connected to the display, but only a "No Signal" message appears on the screen.	• Connect the computer to one of the display's video input connectors. **NOTE** In the input source menu, video input connectors that have a device connected are blue. • Make sure the computer is the currently selected input. • Make sure the connected computer's video connector is configured to output a supported video signal. See No video display output from a laptop. • 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. Make sure the cable length is within the maximum length specified in the display's specifications. • The computer is using a video resolution or refresh rate that the display doesn't support. Set the computer to a supported resolution and refresh rate. See *Appendix E: Supported resolutions* on page 88. • Make sure the computer hasn't entered Sleep mode. Press a key on your computer's keyboard to wake it up.
If an AM50 iQ appliance with an Intel Compute Card is installed in the display and a "No Signal" message appears on a blue screen.	Make sure the Windows operating system on the Intel Compute Card hasn't entered Sleep mode. Tap the display's screen to wake up the operating system.

Issue	Solutions
No image appears on a device you've connected to the display's HDMI OUT connector.	See Using a secondary display.
The image from a device connected to the VGA port is cut-off or not centered.	• Make sure the computer's background is not a dark or solid-black image. • Switch to a different video input source, then switch back to the VGA input.
You're experiencing other issues with video or image quality, or the previous solutions don't resolve the issue.	See *Referring to the SMART knowledge base for additional troubleshooting information* on page 66.

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.	• Turn up the computer's volume. • 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. **NOTES** ○ The display's stereo 3.5 mm in connector works with the VGA input. ○ Connecting an audio cable to the display's stereo 3.5 mm out connector disables the internal speakers. ○ If you're using the display's S/PDIF out connector to connect a sound bar or receiver for external speakers, See *SMART Board MX series interactive displays user's guide* (smarttech.com/kb/171257). • Adjust the volume on the display and the connected computer, and make sure both are not muted. • Make sure the display is set as the default audio device for the connected computer. See the connected computer's operating system documentation. • If you're using the display's 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. • If you're connecting a computer to the VGA connector, make sure an analog audio cable is also connected from your computer's audio output to the display's analog audio input.

Issue	Solutions
A whine or buzzing sound is coming from the back of the display.	• All displays emit some electrical noise. Such sounds may be more noticeable with some displays than with others. However, if you hear noise from the front of the display, contact SMART Support. • Make sure all devices are connected to the same power outlet or power bar. • If the computer is connected to the display with analog audio cables (for example, 3.5 mm audio cable with the VGA video input), make sure you are using high-quality cables with electromagnetic interference (EMI) protection. Make sure audio cables don't run alongside power cables. • Use a digital HDMI connection for video and audio. Audio hum is far less common with digital connections than it is with analog.
You're experiencing other issues with audio, or the previous solutions don't resolve the issue.	See *Referring to the SMART knowledge base for additional troubleshooting information* on page 66.

Resolving issues with touch and digital ink

Issue	Solutions
You're experiencing the following or similar issues with touch and digital ink: • When users touch or write on the screen, the pointer or digital ink appears in the wrong place. • Touch is not working or is not accurate. • Touch control and digital ink are intermittent. • The display only responds to touch on part of the screen. • Digital ink disappears as you write.	• If you're using two pens, make sure they're at least 2" (5 cm) apart. • Make sure you are not holding the pen near its tip, and that the pen is at a right angle (90°) to the screen. • Restart the display. See *Turning the display off and back on* on page 51. • If touch interactivity is slow, close some open applications on the computer. • Make sure the pen nib is not worn. Replacement pens are available from the Store for SMART Parts (see smarttech.com/Support/PartsStore). • Make sure you are using a SMART Board MX series interactive display pen. • Use a known working pen from another SMART Board MX series interactive display to check if the issue is being caused by the pen. • Clean the optical touch sensors. See *Cleaning the touch sensors* on page 49. • Make sure SMART Product Drivers and SMART Ink are installed and running on any connected computers, and orient your display. See *Chapter 6: Orienting the display* on page 46. • if touch is not accurate, make sure the computer's image occupies the entire screen area, with no black borders. If there are black borders, adjust the overscan or underscan settings on your computer's video settings, so that the image fills the screen. • Open SMART Product Drivers and orient the display. This will set up a non-native touch system orientation for your computer. • Update the firmware. • Confirm with the installers that the computer is connected to the display with only a single cable. • If touch interactivity is slow, close some open applications on the computer. • if touch is not accurate, make sure the computer's image occupies the entire screen area, with no black borders. If there are black borders, adjust the overscan or underscan settings on your computer's video settings, so that the image fills the screen. • Open SMART Product Drivers and orient the display. This will set up a non-native touch system orientation for your computer.

Issue	Solutions
	• Make sure the USB cable is securely fastened to both your computer and the display. • Make sure the USB cable is not longer than the maximum specified in the display's specifications. • Use a USB 2.0 cable and make sure it's connected to the correct USB connector that's associated with the video input source. See *Connecting cables for room computers, guest laptops and other input sources* on page 33. • Make sure the latest version of SMART Product Drivers is installed on your computer. SMART Board MX series interactive displays require SMART Product Drivers 12.10 or later. See smarttech.com/downloads. • Remove any USB cable extenders. For best results, use a USB cable that's no longer than 16' (5 m). • Remove any external infrared light sources such as sunlight, incandescent or arc lights, desk lamps and infrared audio devices or move the display to another location in the room. • Remove the display from the wall, calibrate it and confirm if this resolves the issue. If it does, check the wall and wall mount for issues.
The display responds to touch but not to writing with a pen.	• Make sure you are using a SMART Board MX series interactive display pen. • Make sure the pen nib is not worn. A worn pen nib might be interpreted as a finger touch. Replacement pens are available from the Store for SMART Parts (see smarttech.com/Support/PartsStore). • Reinstall or update SMART Product Drivers.
The display doesn't respond to touch at all.	• A red X appearing on the SMART Product Drivers icon in your Windows task bar or Mac menu bar indicates that no display is connected. If a red X appears, open SMART Settings and use the connection wizard for assistance. • Make sure any connected computers have detected the display's USB connection and installed drivers. On Windows computers, open Device Manager and make sure there is no red X or yellow explanation mark (!) over the display's icon. On Mac computers, open System Information and ensure there are no error messages in the display's row.
You can't write or draw in Microsoft® Office.	• Make sure you're using Microsoft Office 2013 or later. • Reinstall or update SMART Product Drivers and SMART Ink. • Refer to the *SMART Ink user's guide* (smarttech.com/kb/171190) for more information about inking in Microsoft applications.
You're experiencing other issues with touch and digital ink, or the previous solutions don't resolve the issue.	See *Referring to the SMART knowledge base for additional troubleshooting information* on page 66.

Resolving issues with remote management

Issue	Solutions
You're experiencing general issues with remote management.	- Make sure all the cable connections are secure. - Be aware that some commands work only when the display is on. See *Configuring the serial interface settings* on page 81. - Restart the display and the remote management system. See *Turning the display off and back on* on page 51. - Configure the serial interface settings. See *Configuring the serial interface settings* on page 81.
Using the command `set powerstate=on` doesn't turn on the display	- Add spaces around the operator symbol (=). - Ensure **Power on RS232** is enabled in the display's on-screen settings menu (☰). If the display's firmware is version 1.9.2 or earlier, disable **Power saving mode** in the display's on-screen settings menu. See *Power saving mode* on page 78.
- The display doesn't respond to a control command - Commands are not followed by a command prompt that indicates the display is ready to receive the next command.	- The display is in a Power Saving mode in which the RS-232 control system is not yet operating. Ensure the display is in a power state in which the RS-232 control system is ready to receive commands. Ensure **Power on RS232** is enabled in the display's on-screen settings menu (☰). If the display's firmware is version 1.9.2 or earlier, disable **Power saving mode** in the display's on-screen settings menu. - The display's firmware has not been updated to version 1.8.4 or later. Check the firmware version in the display's on-screen settings menu. See *MX system version* on page 79. To update the display's firmware to version 1.8.4 or later, see *Updating the display's firmware* on page 53. - Commands might have been incorrectly terminated with a carriage return (0x0d) and a line feed (0x0a). Terminate commands with only a carriage return (0x0d).
You're experiencing other issues with remote management, or the previous solutions don't resolve the issue.	See *Referring to the SMART knowledge base for additional troubleshooting information* on page 66.

Resolving issues with the iQ experience

For information on resolving issues with the iQ experience, including the Whiteboard, SMART Notebook Player, Browser, Input and Screen Share apps, see Troubleshooting iQ system software.

Resolving issues with the Intel Compute Card

Issue	Solutions
An AM50 iQ appliance with Intel Compute Card is installed in the display but you can't select Intel Compute Card from the Input Selection Menu.	• Make sure the display's firmware is updated to 1.8.7 or later. The display may not work properly if the display's firmware is not updated. See *Updating the display's firmware* on page 53. • Make sure the Intel Compute Card is properly installed in AM50 iQ appliance's Compute Card port. Eject and reinsert the Intel Compute Card. See Ejecting and inserting the Intel Compute Card. • The AM50 iQ appliance may have been installed after the display was turned on for the first time. Restore the display's factory settings. See *SMART Board MX series interactive displays installation and maintenance guide* (smarttech.com/kb/171257). **NOTE** Restoring factory settings resets all options to their default values.
An AM50 iQ appliance with Intel Compute Card is installed in the display but you can't connect to a network.	Connecting the AM50 iQ appliance to a network: ○ wirelessly, ○ connect an Ethernet cable to the AM50 iQ appliance's RJ45 jack from a network switch on the wall, or ○ connect an Ethernet cable to the AM50 iQ appliance and to the display that is connected to a network with a wired or wireless connection.

For information on resolving issues with the Intel Compute Card, including the drivers, see Troubleshooting the iQ appliance (AM50) and Intel Compute Card.

Resolving issues with software

For information on resolving issues with SMART software, see the following pages in the Support section of the SMART website:

- Troubleshooting SMART Notebook 18

- Troubleshooting SMART Learning Suite Online

- Troubleshooting SMART Ink 5

- Troubleshooting SMART Product Drivers 12

Referring to the SMART knowledge base for additional troubleshooting information

Refer to the SMART knowledge base for additional troubleshooting information:

> community.smarttech.com/s/topic/0TO0P000000Xt5yWAC/mx-series

Contacting your reseller for additional support

If an issue you're experiencing with the display persists or isn't covered in this guide or the knowledge base, contact your authorized SMART reseller (smarttech.com/where).

Your reseller might ask you for the serial number for the display or the iQ appliance.

Finding the display's serial number

You can find the display's serial number in the following ways:

- Look on the bottom frame

- Look on the back of the display

- In the display's settings, under *About*.

  NOTE

  You can access the display's settings using the **Menu** ☰ button on the front control panel.

Finding the iQ appliance serial number

You can find the iQ appliance's serial number in the following ways:

- In the iQ settings (see *Appendix A: Adjusting iQ settings* on page 68)

- Look on the iQ appliance

  NOTE

  You need to remove the iQ appliance from the display to locate the serial number.

Finding the Intel Compute Card serial number

You can find the Intel Compute Card's serial number in the following ways:

- Look on the label on the back of the Intel Compute Card. For information about ejecting the Intel Compute Card from the iQ appliance, see Ejecting and inserting the Intel Compute Card.

  NOTE

  The serial number appears after *S/N*.

- From the Intel Compute Card's command prompt, execute the `wmic bios get serialnumber` command.

Adjusting iQ settings

You can access settings using the ⚙ icon on the Home screen.

NOTES

- Settings can apply to a user or to the entire system. User-level settings change depending on the user who is signed in. System-level settings apply to all users. See the settings for more information.

- Some settings aren't available while you're signed in to your SMART account. Sign out of your SMART account on the display to see all settings.

Network settings

Option	Values	Function	Notes	User or system setting
▸ **Wi-Fi**				
• Wi-Fi	On Off	Enables or disables Wi-Fi on the display.	Turn on Wi-Fi to discover networks.	System
• [Wi-Fi network name]	[N/A]	Shows information about the connected wireless network.	[N/A]	System
• Wi-Fi MAC address	[N/A]	Shows MAC address for the network the display is connected to.	[N/A]	System
• Wi-Fi IP address	[N/A]	Shows IP address for the network the display is connected to.	[N/A]	System

Option	Values	Function	Notes	User or system setting
▶ **SMART iQ Ethernet**				
• Advanced options	[N/A]	Options available when an Ethernet cable is connected	[N/A]	System
• Static IP (Use DHCP)	On Off	Enables or disables DHCP to assign the display an IP address.	[N/A]	User
• Proxy (Use proxy)	On Off	Enables or disables a proxy server for connecting to the network.	[N/A]	User
• Proxy (Auto-configure)	On Off	Enables or disables automatic configuration of the proxy server for connecting to the network.	[N/A]	User
• MAC address	[N/A]	Shows information about the network the display is connected to.	[N/A]	System
• Static IP	[N/A]	Shows information about the network the display is connected to.	[N/A]	System
• Proxy	[N/A]	Shows information about the network the display is connected to.	[N/A]	System
• Bluetooth	[N/A]	Shows information about the display's Bluetooth.	Turn on Bluetooth to view available Bluetooth devices.	System
▶ **SMART Cloud**				
• SMART Cloud Status	[Status]	Shows the status of SMART Cloud.	[N/A]	System
• Service Region	[N/A]	Shows the service region.	[N/A]	System

Personalization

Option	Values	Function	Notes	User or system setting
• Wallpaper	[Wallpapers]	Select the wallpaper that appears in the background.	• 1920 × 1080 images work best • The display supports .png and .jpg file formats • See Changing the display's wallpaper.	User

Application settings

Option	Values	Function	Notes	User or system setting
▶ **Launcher**				
• SMART Notebook Player	On Off	Enables or disables SMART Notebook Player in the Apps Library.	[N/A]	User
• Browser	On Off	Enables or disables Browser in the Apps Library.	[N/A]	User
• Screen Share	On Off	Enables or disables Screen Share in the Apps Library.	[N/A]	User
▶ **SMART Whiteboard**				
• Whiteboard Storage	[N/A]	[N/A]	[N/A]	User
• Library	On Off	Enables or disables saving kapp Whiteboard sessions.	[N/A]	User
• Save Whiteboards in Library	For 1 week For 1 Month Indefinitely	Sets how long kapp Whiteboard sessions are saved.	[N/A]	User
• Mobile App				
• Saving Whiteboards	On Off	Enables or disables the Capture function in the SMART kapp app.	If this option is off, the QR code is not visible. The SMART kapp app cannot connect to the display and your mobile device cannot save snapshots of the display in the app.	User
• Sharing Whiteboards	On Off	Enables or disables the Invite function on the SMART kapp app.	If this option is off, you cannot invite people to your session.	User
• Annotation				
• Enable annotation layers	On Off	Enables or disables annotations on the Browser and Screen Share apps.	[N/A]	User
▶ **Screen Share**				
• Require Permission	On Off	Enables or disables automatic connection from a device sharing its screen.	[N/A]	System

Option	Values	Function	Notes	User or system setting
• AirPlay	On Off	Enables or disables the AirPlay protocol.	AirPlay is enabled by default.	System
• Google Cast	On Off	Enables or disables the Google Cast protocol.	Google Cast is enabled by default.	System
• Miracast	On Off	Enables or disables the Miracast protocol.	Miracast is enabled by default. ❗ **IMPORTANT** Devices that use AirPlay and Google Cast can't connect to the display while a Miracast device is connected.	System
• Performance Logging	On Off	SMART Support may ask users to enable Performance Logging to help diagnose issues.	Performance Logging is disabled by default.	System
• Miracast Connection Handling	On Off	When enabled, the display disconnects from the network when a device shares its screen using Miracast.	SMART recommends enabling this setting for areas with high network saturation or busy networks. ❗ **IMPORTANT** Only one device can connect to the display when Miracast is enabled.	System
• Reset Screen Share	[N/A]	Closes and restarts the 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.	System

System settings

Option	Values	Function	Notes	User or system setting
▶ **Date & Time**				
• Automatic Date & Time	On Off	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.	System
• Date	[N/A]	Sets the display's date.	Disable **Automatic date & time** to set the date manually.	System
• Time	[N/A]	Sets the display's time.	Disable **Automatic date & time** to set the time manually.	System
• 24 Hour Time	On Off	Shows the display's time using the 24-hour clock.	[N/A]	User
• Time Zone	[N/A]	Sets the display's time zone.	[N/A]	System
• Language	[Languages]	Sets the language for the settings menu.	To select a different language for the on-screen display menu, see [XREF].	User
• Country	[Countries]	Sets the display's country.	[N/A]	System
▶ **Diagnostics**				
• Factory Reset	[N/A]	Resets all options to their default values.	Only administrators should reset the display.	[N/A]
• Save Log File	[N/A]	Copy diagnostic logs to a USB drive.	[N/A]	[N/A]
• Improve the Experience	On Off	Sends usage statistics and error reports to SMART.	[N/A]	User
• Support ID	[Support ID]	Shows the support ID associated with the display.	[N/A]	[N/A]

Option	Values	Function	Notes	User or system setting
▸ **Security**				
• Lock Down Settings	[N/A]	Lock down the display's settings using a certificate on a USB drive.	See Locking down the Settings app for more information.	System
• Install certificates	[N/A]	Install certificates to connect to a network.	[N/A]	System
• Clean up				
• Clean Up Policy	Disabled Manually reset with the **Clean Up** button in the launcher 1 hour 2 hours 3 hours 1 day	Sets how often the display cleans up.	[N/A]	User
• Clean Up the whiteboard	[N/A]	Saves the Whiteboard session to the Library and erases the Whiteboard.	[N/A]	User
• Clean Up the browser	[N/A]	Closes the browser tabs and clears the history, cache, and cookies.	[N/A]	User
• Clean Up other applications	[N/A]	Closes open applications.	[N/A]	User
▸ **Software Update**				
• Updates Channel	Stable Channel Beta Channel	Sets which iQ system software updates the display receives.	When switching from the Beta channel to the Stable channel, a factory reset occurs. See page 72 for more information about factory reset. For more information about the Beta Channel, see Switching to the Beta channel.	System

Option	Values	Function	Notes	User or system setting
• 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 or a USB drive with the system software update file is connected to the display.	If an update is available, the text changes to Apply update now.	[N/A]
▶ **Remote Management**				
• Launch Remote Management Settings	[N/A]	Configure the display's connection settings with the Radix Viso server.	This option is only enabled when Remote Management is enabled.	System
• Remote Management Enabled	On Off	Enables or disables Remote Management on the display.	[N/A]	User
• Radix Viso version	[N/A]	Shows the Radix Viso version.	[N/A]	System
▶ **About**				
• Board Name	[N/A]	Select a name for your display.	[N/A]	System
• Help	[N/A]	Shows the SMART support site.	[N/A]	[N/A]
• Send Feedback	[N/A]	Send feature request to SMART.	[N/A]	[N/A]
• Board Details	[N/A]	[N/A]	[N/A]	[N/A]
• Build Number	[N/A]	Shows the iQ system software's version number.	[N/A]	[N/A]
• Serial Number	[N/A]	Shows the iQ appliance serial number	[N/A]	[N/A]
• Firmware Details	[N/A]	[N/A]	[N/A]	[N/A]
• Touch controller version	[N/A]	Shows the display's touch controller version.	[N/A]	[N/A]
• Scaler version	[N/A]	Shows the display's scaler version.	[N/A]	[N/A]
• Legal Information	[N/A]	[N/A]	[N/A]	[N/A]
• End User License Agreement	[N/A]	Shows the SMART end user license agreement.	[N/A]	[N/A]
• Open Source Licenses	[N/A]	Shows the open source licenses.	[N/A]	[N/A]
• SMART Intellectual Property	[N/A]	Shows the SMART intellectual property information.	[N/A]	[N/A]

Appendix B

Adjusting display settings

You can access the display's settings using the **Menu** ☰ button on the front control panel.

Exiting the display's settings

To exit the display's settings

Tap **Exit**

OR

press the **Menu** ☰ button on the front control panel

Network

Option	Values	Function	Notes
▸ **Ethernet**			
• Ethernet	Enable Disable	Enables or disables connecting to a network with the wired RJ45 jacks	Enabling Ethernet disables Wi-Fi.
• Get IP address automatically	Enable Disable	The display automatically acquires an IP address from a DHCP server on your network	Enabling Wi-Fi hotspot allows you to connect your mobile device to the display using Wi-Fi for screen sharing.

Option	Values	Function	Notes
• Static IP address	Enable Disable	Enter a static IP address	Use the on-screen keyboard or connect a USB keyboard to the Display USB Type-A connector on the front connector panel to enter information.
• Wi-Fi	Enable Disable	Enables or disables connecting to a network wirelessly	Turn on Wi-Fi to discover networks. Enabling Wi-Fi disables Ethernet.
▸ **Wi-Fi hotspot**			
• Wi-Fi hotspot	Enable Disable	Enables or disables the Wi-Fi hotspot	The lock screen appears after the display wakes up from sleep.
• Set up Wi-Fi hotspot	[N/A]	Sets the network name, security, password and access point frequency	Use the on-screen keyboard or connect a USB keyboard to the Display USB Type-A connector on the front connector panel to enter information.
• Network status	[N/A]	Shows information about the display's current network connection	[N/A]

Screen lock

Option	Values	Function	Notes
▸ **Lock screen mode**			
• Lock screen mode	Enable Disable	Turns lock screen on or off	[N/A]
• Image	[N/A]	Select a custom image for the lock screen	• Supports .png, .jpg, .bmp files • Save the wallpaper file to a USB drive and insert it into the USB port. See *Front connector panel* on page 15.
• Disable	[N/A]	Turns off the custom image for the lock screen	[N/A]
• Lock screen password	Enable Disable	Set a PIN to unlock the lock screen	[N/A]
• Settings security	Enable Disable	Set a PIN to access certain settings	When Settings security is enabled, only Advanced and About settings are available. To access the other settings, tap the setting and enter the PIN.

Advanced

Option	Values	Function	Notes
▸ **Display**			
• Walllpaper	[N/A]	Sets the background image on the display	• Only .png, .jpg, .bmp files are supported • Save the wallpaper file to a USB drive and insert it into the USB port. See *Front connector panel* on page 15.
• Launcher	[Apps]	Select which apps appear in the launcher.	[N/A]
• Home screen	[Apps]	Select three apps to appear on the home screen	Tap the app you want to remove from the home screen. Then select the app you want to appear on the home screen instead.
• HDMI out	480p 1080p 4K	Select the output resolution	Ensure the device that is receiving the display's HDMI out signal matches the selected output resolution.
• Sleep	15 minutes 30 minutes 45 minutes 60 minutes Always on	When a time interval is selected, the display's screen will turn off even if the connected computer or device is still on.	If the iQ experience is selected, the display's screen will not turn off when a time interval is selected.
▸ **Brightness and volume**			
• Auto	[N/A]	Automatically sets the display's brightness based on the room's brightness.	The ambient light sensor can detect the room brightness and adjust the display's screen brightness
• Manual	[N/A]	Sets the display's brightness level	Disable **Auto** to set the brightness manually
• Volume	[N/A]	Sets the display's volume level	[N/A]
▸ **OTA**			
• OTA server	[OTA servers]	Sets which server the display connects to for updates **NOTE** The display must be connected to the Internet to check for system software updates.	Default is **Auto**.
• Automatically check for updates	Enable Disable	Enables or disables checking and downloading updates for the display's firmware	Enabled by default. If this is disabled, manually check for updates in *Update* on the next page.

Option	Values	Function	Notes
• Power saving mode	Enable Disable	Enables or disables power saving mode	Enabled by default. When enabled, power saving mode activates after 90 minutes of inactivity. Enabling Power saving mode makes RS-232 control of the display unavailable until the display is turned on using the power button on the front control panel .
• Default input	OPS HDMI1 HDMI2 HDMI3 VGA	Select a default input when the display is turned on.	OPS is enabled by default.
• Use default touch settings	Enabled Disabled	Sets the number of touch points.	Default is Enabled. Select Enabled to use 10 touch points. Select Disabled to use 20 touch points.
• Power on RS232	Enabled Disabled	When enabled, RS-232 can be used to turn on the display from low power state (soft off).	Default is Disabled.
• HDMI [connector number]-EDID version	Default EDID 1.4 EDID 2.0	Sets the HDMI-EDID version of the display's active HDMI connector to Default, EDID 1.4 or EDID 2.0. **NOTE** Default is selected by default.	When Default is selected, the display automatically detects a connected device's HDMI-EDID version and switches the display's HDMI connector between EDID 1.4 and 2.0. This feature might not work consistently for older or non-compliant EDID 1.4 devices.

Update

Option	Values	Function	Notes
• Firmware version	[N/A]	Shows technical information about the display's scalar firmware.	To see the firmware version use the About option (see *About* on the next page.
• Update	[N/A]	Checks for updates to the system software	If an update is available, the text changes to Apply update now. **NOTE** The display must be connected to the Internet to check for system software updates. Check the display's network settings. To check the network settings, see *Network* on page 75.

Recovery

Option	Values	Function	Notes
• Restore user settings	[N/A]	Resets any options the user may have changed	[N/A]
• Restore factory settings	[N/A]	Resets all options to their default values	Only administrators should reset the display.

About

Option	Values	Function	Notes
• Name	[N/A]	Select a name for your display	This name is different from the display name set in the iQ system software.
• RAM	[N/A]	Shows how much RAM is installed in the display	[N/A]
• Local storage	[N/A]	Shows how much storage memory is available and how much is currently in use	[N/A]
• Resolution	[N/A]	Shows the display's current screen resolution	[N/A]
• Android	[N/A]	Shows the current version of the Android operating system on the display	[N/A]
• MX system version	[N/A]	Shows the current version of the display's scalar firmware	[N/A]
• Touch kit	[N/A]	Shows the current version of the touch system firmware	[N/A]
• HDMI-out	[N/A]	Shows the current version of the HDMI-out system firmware	[N/A]
• MAC address	[N/A]	Shows the network's MAC address	[N/A]
• Serial number	[N/A]	Shows the display's serial number	[N/A]
• License	[N/A]	Shows third-party component licenses	[N/A]
• User agreement	[N/A]	Shows the SMART EULA	[N/A]

Appendix C

Remotely managing the display

You can connect a control system or terminal emulation program on your computer to the display's room control input and remotely select video inputs, change power and sleep states, and get information about the display's current settings, such as current input source, contrast and power state.

Connect an RS-232 cable from the control system or the computer's serial port to the RS-232 connector on the bottom of the display.
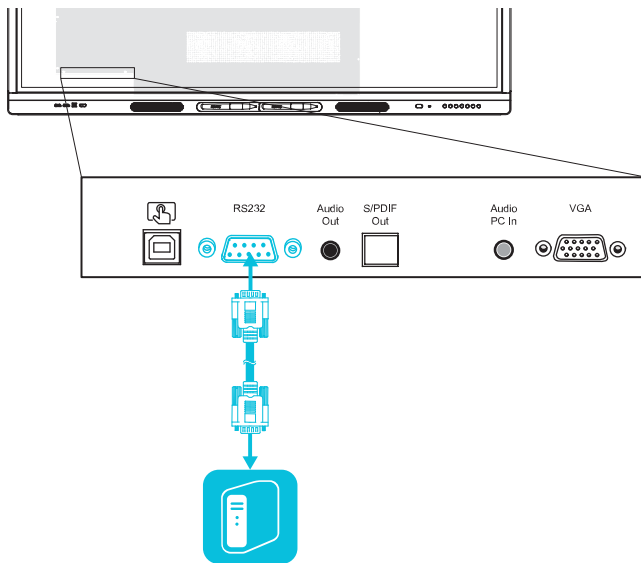
> **❗ IMPORTANT**
>
> Use only a standard RS-232 cable. Do not use a null modem cable. Null modem cables typically have ends of the same type.

Configuring the serial interface settings

Configure the control system or computer's serial interface before sending commands to the display.

To configure the serial interface settings

1. Turn on the display.

2. Turn on the control system or computer, and access the serial data communications settings.

3. If using a terminal emulation program on a computer, activate local echo.

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

Baud rate	19200
Data length	8
Parity bit	None
Stop bit	1

When a command prompt (>) is received by your control system or terminal emulation program, the display can accept commands. If the command prompt isn't received, send a carriage return character (0x0d) to the display (press **ENTER** on your keyboard if you're using a terminal emulation program on your computer).

NOTE

If no message or an error message is received in the control system or terminal emulation program, the serial interface isn't configured correctly. Repeat steps 3 and 4.

Communication structure

Communication consist of a command argument, property affected, operator symbol, a value to apply, and a terminating carriage return character (0x0d).

❗ IMPORTANT

When manually entering commands into a terminal emulation program, commands must be terminated with only a carriage return character (0x0d). If you terminate a command with both a carriage return character (0x0d) and a line feed (0x0a), the command may not be processed and the command prompt that indicates readiness to receive the next command may not be received.

NOTES

- The display won't respond to RS-232 commands when it is in a low power state (soft off). Disable Power saving mode to prevent the display from entering a low power state. See *Power saving mode* on page 78.

- When you first turn on the display, the RS-232 connector operates in a special diagnostics mode instead of control mode, and the display won't respond to control commands. In addition, the connected control system or terminal emulation program might receive unexpected data characters.

  Program a connected control system to ignore the unexpected data characters and only send commands after it receives the command prompt (>).

  If you haven't disabled Power saving mode, you'll see the unexpected characters every time you turn on the display.

CORRECT

```
>set input=HDMI1
```

INCORRECT

```
>set HDMI1
```

To use the room control system to get information about the display or to adjust display settings, send commands after receiving a command prompt (>), and then wait for the display's response before sending another command.

CORRECT

```
>get volume
volume=55
>
```

If you send a command that the room control system doesn't recognize, you receive an invalid command response.

The example contains an extra space in the volume command.

INCORRECT

```
>set vol ume=65
invalid cmd=set vol ume=65
>
```

NOTES

- Use ASCII formatted commands.

- Commands aren't case-sensitive.

- When manually entering commands into a terminal emulation program, review each entry carefully before you press ENTER to send a carriage return (0x0d) to terminate the command.

- Don't send another command until you receive the response and the next command prompt.

To identify the current value of a setting

Use a get command.

This example shows how to get the display's current volume setting:

```
>get volume
volume=55
>
```

To assign a value to a setting

Use a set command.

This example sets the volume to 65:

```
>set volume=65
volume=65
>
```

To increase or decrease the value of a setting

Use the set command to increase or decrease the value by a designated number.

This example increases the volume by 5:

```
>set volume+5
volume=70
>
```

This example decreases the volume by 15:

```
>set volume-15
volume=55
>
```

Power states

The display has the following power states:

Power state	Description
ON	The display is in normal operating mode.
READY	The screen is off, but the display is ready to turn on when: • A user presses the **Power** button ⏻ on the front control panel. • A user presses the **Power** button on the remote control. • You send the set powerstate=on command. **TIP** If the set powerstate command returns an "invalid command" message, add spaces around the operator symbol (=).
SOFT OFF (low power state)	The screen is in a low power state (soft off) and won't respond to RS-232 commands. Disable Power saving mode to prevent the display from entering a low power state. See *Power saving mode* on page 78. The display turns on when: • A user presses the **Power** button ⏻ on the front control panel. • A user presses the **Power** button on the remote control.
UPDATEON	The display is updating firmware. Do not turn off the display.
UPDATEREADY	The display is updating firmware while the screen is off. Do not turn off the display.

With the exception of `get powerstate` and `set powerstate`, commands are available only when the display is in ON power state.

Commands

Get command	Set command	Response
`get powerstate`	`set powerstate[Value]` Where [`Value`] is one of the following: • `= on` • `= ready` **NOTES** • If the command returns an "invalid command" message, add spaces around the operator symbol (=). • When the screen is in a low power state, it doesn't respond to any RS-232 commands. Disable Power saving mode to prevent the display from entering a low power state. See *Power saving mode* on page 78. • If the display is in UPDATEON or UPDATEREADY state, it might not change power states after it receives the command.	`powerstate=[Value]` Where [`Value`] is one of the following: • `on` • `ready` • `updateon` • `updateready`
`get input`	`set input[Value]` Where [`Value`] is one of the following: • `=OPS` • `=OPSCC` • `=HDMI1` • `=HDMI2` • `=HDMI3` • `=VGA`	`input=[Value]` Where [`Value`] is one of the following: • `=OPS` • `=OPSCC` • `=HDMI1` • `=HDMI2` • `=HDMI3` • `=VGA` • `=ANDROID` **NOTES** • `=OPSCC` is only available if you install an AM50 iQ appliance and compute card. • `=ANDROID` is the display's settings.

Get command	Set command	Response
`get brightness`	`set brightness[Value]` Where [`Value`] is one of the following: • `+[Value]` • `-[Value]` • `=[5-100]`	`brightness=[Value]` Where [`Value`] is a number between 5 and 100 **NOTE** Enabling Auto Brightness overrides any brightness values set manually.
`get volume`	`set volume[Value]` Where [`Value`] is one of the following: • `+[Value]` • `-[Value]` • `=[0-100]`	`volume=[Value]` Where [`Value`] is a number between 0 and 100
`get mute`	`set mute[Value]` Where [`Value`] is one of the following: • `=on` • `=off`	`mute=[Value]` Where [`Value`] is one of the following: • `on` • `off`
`get fwversion`	`fwversion=[Value]` Where [`Value`] is the firmware version.	
`get serialnum`	`serialnum=[Value]` Where [`Value`] is the display's serial number. **NOTE** If multiple displays are connected, the response includes the serial numbers for all displays, separated by commas.	
`get partnum`	`partnum=[Value]` Where [`Value`] is the part number, including the revision.	
`get videofreeze` **NOTE** This command is only available in SMART Board MX firmware 1.8.7 or later.	`set videofreeze=[Value]` Where [`Value`] is one of the following: • `=on` • `=off` **NOTE** This command is only available in SMART Board MX firmware 1.8.7 or later.	`videofreeze=[Value]` Where [`Value`] is one of the following: • `on` • `off` **NOTE** This command is only available in SMART Board MX firmware 1.8.7 or later.

Identifying the display

To identify your display

1. Press **Input** ⮕ on the front control panel.

   A list of input sources appears.

2. If the input source includes *OPS*, the display is a SMART Board MX200 series interactive display. The display has an iQ appliance installed.

   If the input source includes *Compute Card*, the display is a SMART Board MX300 series interactive display. The display has an iQ appliance and Intel Compute Card installed.

   If the input source list includes *SMART MX e³*, the display is a SMART Board MX100 series interactive display. The display includes the e³ experience.

Supported resolutions

HDMI 1 in, HDMI 2 in and HDMI 3 in

Resolution	Input source aspect ratio	Mode	Refresh rate
3840 × 2160	16:9	UHD / 2160p	59.94 Hz / 60 Hz 50 Hz 29.97 Hz / 30 Hz 25 Hz 23.98 Hz / 24 Hz
1920 × 1080	16:9	FHD / 1080p	59.94 Hz / 60 Hz 50 Hz 29.97 Hz / 30 Hz 25 Hz 23.98 Hz / 24 Hz
1360 × 768	16:9	[N/A]	60.015 Hz
1280 × 720	16:9	HD / 720p	59.94 Hz / 60 Hz 50 Hz 29.97 Hz / 30 Hz 25 Hz 23.98 Hz / 24 Hz
720 × 480	16:9	480p (DVD Player)	60 Hz

VGA

Resolution	Input source aspect ratio	Mode	Refresh rate
1920 × 1080	16:9	[N/A]	60.000 Hz
1600 × 1200	4:3	[N/A]	60.000 Hz
1360 × 768	16:9	[N/A]	60.015 Hz
1280 × 1024	5:4	SXGA 60	60.020 Hz

Resolution	Input source aspect ratio	Mode	Refresh rate
1024 × 768	4:3	XGA 60	60.004 Hz
		XGA 70	70.069 Hz
		XGA 75	75.029 Hz
800 × 600	4:3	SVGA 60	60.317 Hz
		SVGA 72	72.188 Hz
		SVGA 75	75.000 Hz
640 × 480	4:3	VGA 60	59.940 Hz

Hardware environmental compliance

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

Waste Electrical and Electronic Equipment and Battery regulations (WEEE and Battery Directives)

Electrical and electronic equipment and batteries contain substances that can be harmful to the environment and to human health. The crossed-out wheeled bin symbol indicates that products should be disposed of in the appropriate recycling stream and not as regular waste. See smarttech.com/compliance for more information.

Batteries

The remote control contains alkaline batteries. The iQ appliance module contains a CR2032 coin cell. Recycle or dispose of batteries properly.

Perchlorate material

The Appliance Module battery contains perchlorate material. Special handling may apply. See dtsc.ca.gov/hazardouswaste/perchlorate.

More information

See smarttech.com/compliance for more information.