Installation and Setup Guide

020-001930-02

LED Display System

Core Gen2 Series

CHRISTIE®

Content

Product overview

The Christie® Core Gen 2 Series features UHD resolution, extremely high fill-factor, and advanced monitoring capabilities. The Core Gen 2 Series is a completely certified LED display wall solution providing 24/7 operation for critical viewing environments. With front-access serviceability, remote and redundant power supply and a slim ADA-compliant design, the Core Series delivers the highest performance possible for LED displays.
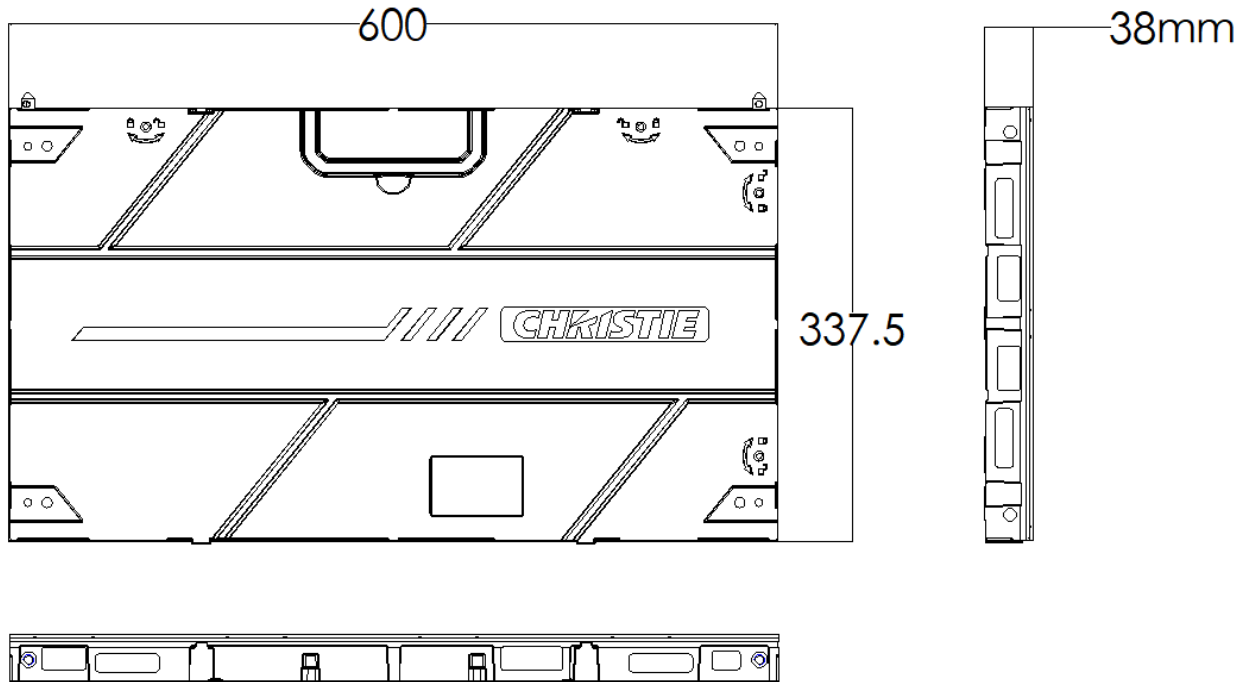
Important safeguards

To prevent personal injury and to protect the device from damage, read and follow these safety precautions.

General safety precautions

To prevent personal injury and to protect the device from damage, read and follow these safety precautions.

> ⚠ **Warning!** If not avoided, the following could result in death or serious injury.
> - Observe all electrostatic precautions. Use a grounded wrist strap and insulated tools when handling, servicing, or cleaning electronic assemblies.
> - A certified electrician must be present during installation to ensure the installation meets the local electrical code.
> - Motors and fans may start without warning.

Notice. If not avoided, the following could result in property damage.
- Always wear clean, lint-free gloves when handling the product.

Power precautions

Ensure all power precautions are understood before installing the product.

Warning! If not avoided, the following could result in death or serious injury.
- After the replacement of the power supply, hi-pot and ground/earth bond tests must be performed. Only Christie qualified technicians who are familiar with the necessary precautions can perform these tests.
- A certified electrician must be present during installation to ensure the installation meets the local electrical code.
- Always connect the ground or earth first to reduce shock hazard.
- Do not return the current through the ground or earth.
- SHOCK HAZARD! The line cord has a maximum power carrying capability. For the maximum number of tiles that may be connected per daisy chain when connecting to the power supply, refer to the product specifications.
- SHOCK HAZARD! A permanent single-phase connection must be installed between the LED tile system and the AC power supply.
- FIRE AND SHOCK HAZARD! Do not operate the system unless certified power connections, providing the recommended voltage, are used.
- HIGH TOUCH CURRENT HAZARD! To ensure reliable grounding, the power connection must be made by using an industrial plug (pluggable type B) or be provided by a permanent connection.
- A 13-20 A double-pole mains circuit breaker, certified for the applicable local regulations, is required. It must be part of the building installation and easily accessible.
- Do not use a wall breaker greater than 20 A. This could result in severe damage to the tile system in the event of a failure.

Caution! If not avoided, the following could result in minor or moderate injury.
- SHOCK HAZARD! The line cord has a maximum power carrying capability. For the maximum number of tiles that may be connected per daisy chain when connecting to the power supply, refer to the product specifications.
- SHOCK HAZARD! Only use the AC power cord provided with the product or recommended by Christie.
- TRIP OR FIRE HAZARD! Position all cables where they cannot contact hot surfaces, be pulled, be tripped over, or damaged by persons walking on or objects rolling over the cables.
- FIRE HAZARD! Do not use a power cord, harness, or cable that appears damaged.
- FIRE OR SHOCK HAZARD! Do not overload power outlets and extension cords.
- Only Christie qualified technicians are permitted to open product enclosures.

Terminology

Learn about the components of the LED display system.

Term	Definition
Tile	A cabinet that contains several LED modules.
Array	A group of connected tiles that from a larger display.

Controller	Controls the LED display system array and video input source. Sometimes referred to as the control unit.
Pixel	A group of one red, one green, and one blue dot.
Subpixel	A pixel is comprised of three subpixels, one for each color: red, green, and blue. Each subpixel in LED display technology is and LED chip.
Pixel pitch	Specified the distance from the center of one pixel to the center of the next pixel.
SMD package size	A technical supplier specification related to the pixel size and it denotes the size of the surface-mounted diode (SMD) itself.
Fill factor	Indicates the ratio between the area covered by pixels and the area not covered by pixels.

Product documentation

For installation, setup, and user information, see the product documentation available on the Christie Digital Systems USA Inc. website. Read all instructions before using or servicing this product.

1. Access the documentation from the Christie website:

    - Go to this URL: *http://bit.ly/2qXBAdX* or
      https://www.christiedigital.com/en-us/digital-signage/products/led-tiles/coreplus-series.

    - Scan the QR code using a QR code reader app on a smartphone or tablet.

2. On the product page, select the model and switch to the Downloads tab.

Related documentation

Additional information on the Core LED Display System is available in the following documents.

- Core Gen 2 (Internal Power) Safety Guide (P/N: 020-001929-XX)

- E600 User Guide (P/N: 020-102717-XX)

- E510 User Guide (P/N: 020-102222-XX)

Required tools

Make sure the following tools are available during the installation.

- Rubber hammer

- Utility knife

- Allen key

- Spirit level

- Tape measure

- Anti-static glove

- socket wrench

- Torque driver

- Torque wrench

- Philips screwdriver, with magnetic tip

- Slotted screwdriver, with magnetic tip

- LED module removal tool for Core Gen 2 (P/N: 003-007099-XX)

- Attachment Block template for Core Gen 2 (P/N: 003-007100-XX)

- Screws appropriate for the mounting surface—These screws are not provided.

Typical LED solution

D LED Display

C Receiving Card

A Controller Peripheral

B Video Controller
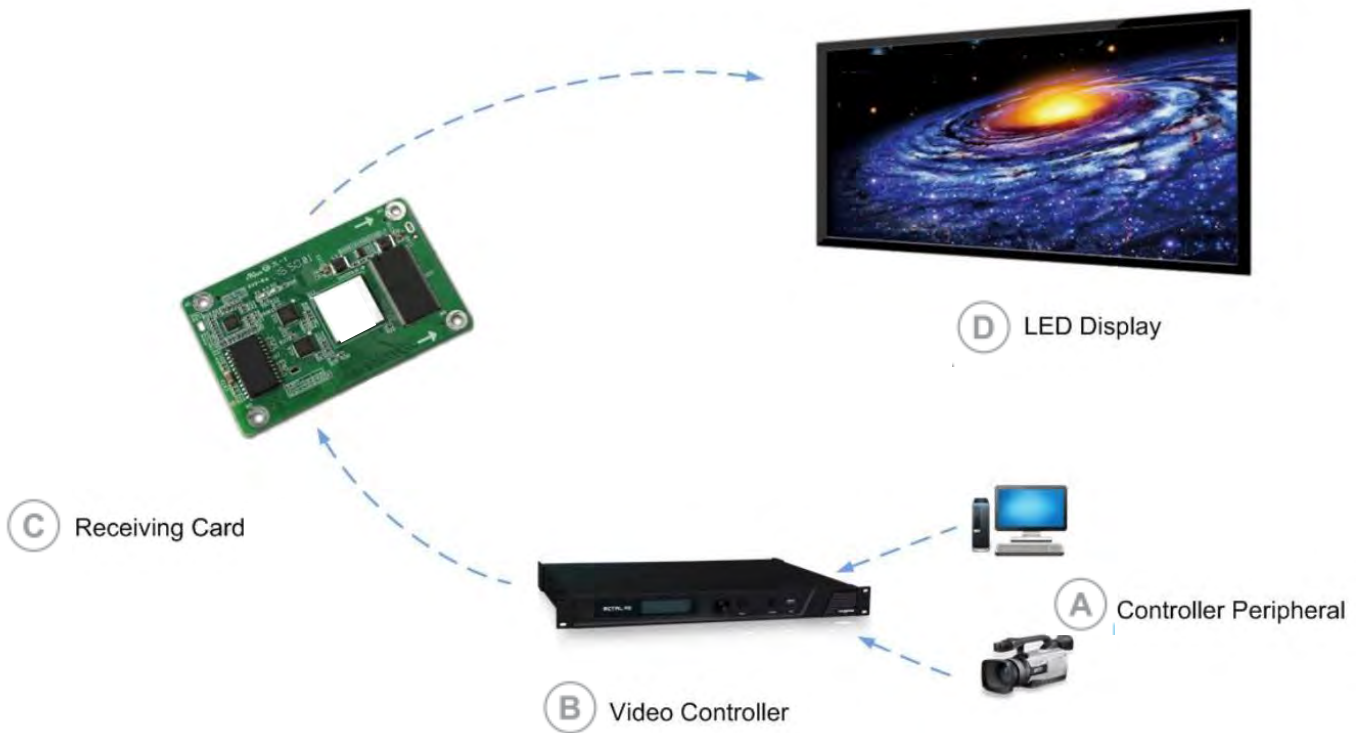
A	Media sources
B	E600/E510 LED display controller
C	Receiving card A8s/A10s plus
D	LED display

Cable and controller layout and design

Before an array is constructed, you must plan the design layout of the tiles to make sure the controller placement and the cabling layout support the overall design objectives.

The LED display system offers considerable flexibility in terms of the number of media sources that can be displayed and the overall resolution. Color and brightness matching, as well as other functions, may be performed across an entire array.

The video source connections between the cabinets are represented by the blue line. The power connections between the cabinets are represented by the red line.
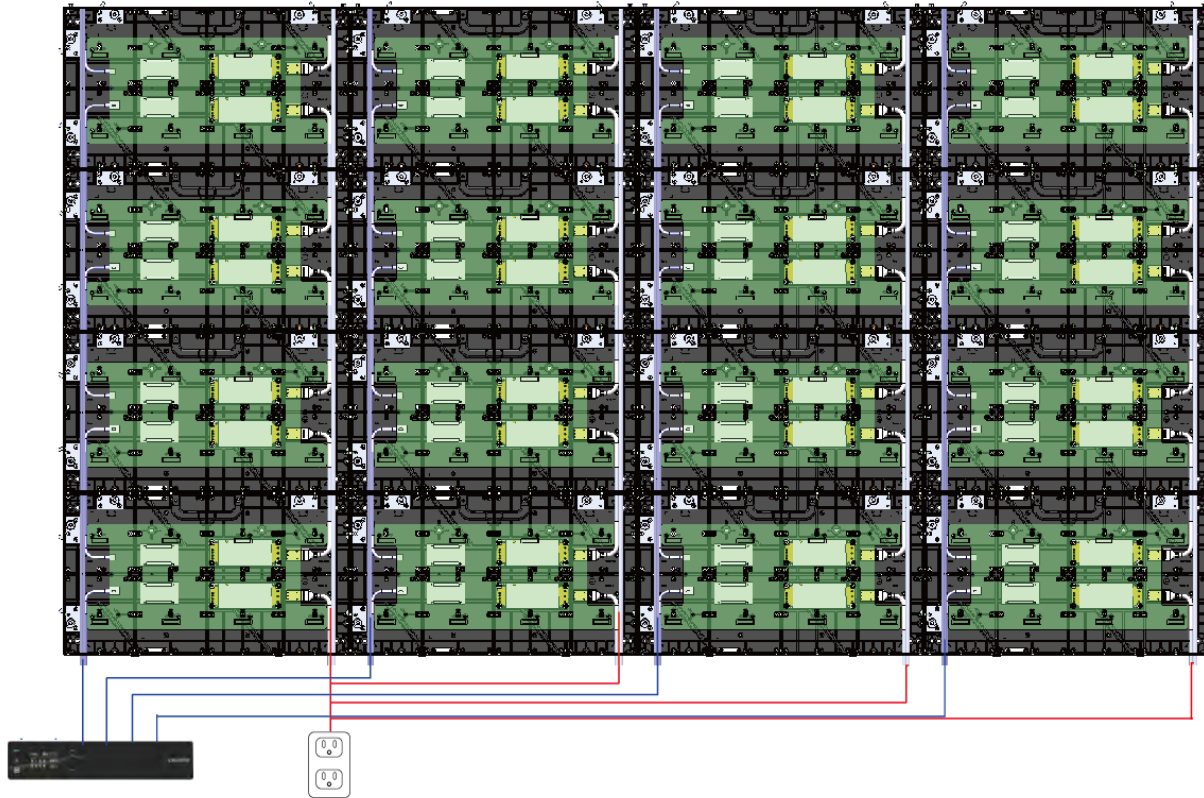
Controller limitations

Each controller can support a maximum number of tiles, which varies depending on the pixel pitch of the tiles in the array. The configuration to achieve an HD display differs by the pixel pitch of the tile, as outlined in the table below.

E510 controller

Tile	Pixel pitch	1080p array size	4K array size	8K array size	Maximum number of tiles per controller
LED009	0.9 mm	3x3	6x6	12x12	9
LED012	1.25 mm	4x4	8x8	16x16	16

LED015	1.5625 mm	5x5	10x10	20x20	25
LED018	1.875 mm	6x6	12x12	24x24	36
LED025	2.5 mm	8x8	16x16	32x32	64

E600 controller

Tile	Pixel pitch	1080p array size	4K array size	8K array size	Maximum number of tiles per controller
LED009	0.9 mm	3x3	6x6	12x12	36
LED012	1.25 mm	4x4	8x8	16x16	64
LED015	1.5625 mm	5x5	10x10	20x20	100
LED018	1.875 mm	6x6	12x12	24x24	144
LED025	2.5 mm	8x8	16x16	32x32	256

E510 controller interface and ports

Learn about the interface and physical ports on the E510 controller.

Front
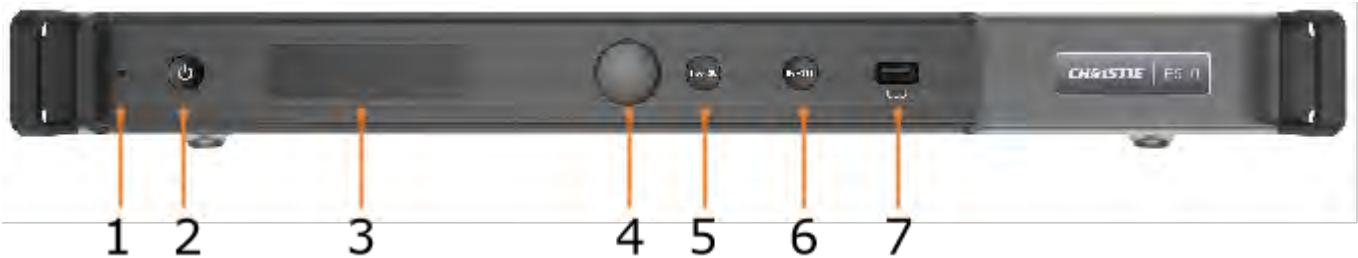
1	Operating indicator • Green—The device is running normally. • Red—The device is in standby mode.
2	Power switch
3	OLED operation screen
4	Function knob
5	BACK button—Select to return to the previous menu.
6	INPUT button—Select to choose a video source.
7	USB port: Used to update firmware

Rear

Inputs/outputs		Description
Inputs	DVI IN	Single-link DVI connector Custom resolutions supported: • Maximum width: 3840 pixels • Maximum height: 2560 pixels Supported standard resolutions: • 1024×768@(24/30/48/50/60/72/75/85/100/120) Hz • 1280×1024@(24/30/48/50/60/72/75/85) Hz • 1366×768@(24/30/48/50/60/72/75/85/100) Hz • 1440×900@(24/30/48/50/60/72/75/85) Hz • 1600×1200@(24/30/48/50/60) Hz • 1920×1080@(24/30/48/50/60) Hz • 1920×1200@(24/30/48/50/60) Hz • 2560×960@(24/30/48/50) Hz • 2560×1600@(24/30) Hz
	HDMI IN	HDMI 1.4a compliant HDCP 1.4 compliant Custom resolutions supported: • Maximum width: 3840 pixels • Maximum height: 2560 pixels Supported standard resolutions: • 1024×768@(24/30/48/50/60/72/75/85/100/120) Hz • 1280×1024@(24/30/48/50/60/72/75/85) Hz • 1366×768@(24/30/48/50/60/72/75/85/100) Hz • 1440×900@(24/30/48/50/60/72/75/85) Hz • 1600×1200@(24/30/48/50/60) Hz • 1920×1080@(24/30/48/50/60)Hz • 1920×1200@(24/30/48/50/60) Hz • 2560×960@(24/30/48/50) Hz • 2560×1600@(24/30) Hz
	3G-SDI IN	SMPTE ST 425-1 Level A & B, SMPTE ST 274, ST 296, ST 295 compliant Maximum supported input resolution: 1920×1080 @ 60 Hz Note: 3G-SDI input sources do not support input resolution and color depth settings.
Outputs	RJ45 × 6	6 Gigabit Ethernet ports Maximum loading capacity of a single Ethernet port: • For 8-bit input sources: 650,000 pixels • For 10-bit/12-bit input sources: 320,000 pixels Support redundancy between Ethernet ports.

	OPT1	10G optical ports
	OPT2	Single-mode twin-core fiber: Support LC optical connectors; wavelength: 1310 nm; transmission distance: 10 km; OS1/OS2 recommended.
		Dual-mode twin-core fiber: Support LC optical connectors; wavelength: 850 nm; transmission distance: 300 m; OM3/OM4 recommended.
		The maximum loading capacity of a single optical port equals that of all the six Ethernet ports.
		Two OPT inputs/outputs
		• The OPT1 works as the primary input or output port and the 6 Gigabit Ethernet ports
		• The OPT2 works as the backup input or output port of OPT1.
		In the sending card mode, both OPT ports and 6 Gigabit Ethernet ports can work as output ports to output the same image.
		In the fiber converter mode, when the OPT ports work as the input ports, the 6 Gigabit Ethernet ports work as output ports. When the 6 Gigabit Ethernet ports work as input ports, the OPT ports work as output ports.
	DVI LOOP	DVI loop output
	HDMI LOOP	HDMI loop output
		Support HDCP 1.3 loop output encryption.
	3G-SDI LOOP	SDI loop output
MONITOR	HDMI	Connect to a monitor to monitor the inputs. The output resolution of this connector is 1920×1080@60 Hz (fixed output with a width of 1920 pixels and height of 1080 pixels).
		If the input resolution exceeds the monitor resolution, the input is automatically scaled in proportion and then displayed on the monitor starting from its top left.
Control	GENLOCK IN	GENLOCK input connector
		Genlock type: Blackburst
		Input Genlock sync signal to ensure synchronization and same refresh rate between the output signals of cascaded E510 units and the external Genlock input signal.
	GENLOCK LOOP	Genlock loop output connector. Up to eight E510 units can be cascaded.
	ETHERNET	Fast Ethernet port, which connects to PC and supports TCP/IP
	USB IN	Input port for cascading devices, or connecting to PC
	USB OUT	Output port for cascading devices. Up to eight E510 units can be cascaded.
Power supply		100–240 VAC
Power switch		ON/OFF

E600 controller interface and ports

Learn about the interface and physical ports on the E600 controller.

The E600 controller behaves as two independent controllers, displaying 3840x2160 pixels at 30 Hz with each virtual controller. The images of both DVI1 and DVI2 input sources can be displayed on the tiles simultaneously but the inputs must be configured independently.

DVI1 corresponds to Ethernet ports 1 to 8 and DVI2 corresponds to Ethernet ports 9 to 16.

Front
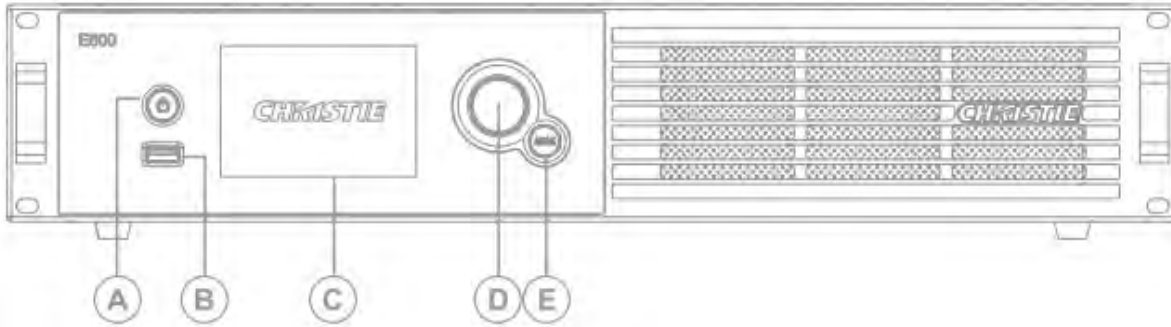
A	Power button
B	USB interface for communication with a UDISK
C	LCD screen
D	Menu dial for interacting with the menu
E	Menu dial for interacting with the menu
F	Back button for exiting from the current operation or option in the menu

Rear

Inputs/outputs			Description
A	Outputs	BNC (quantity 16)	16-channel Gigabit Ethernet interface, with each channel supporting up to 1 GB bandwidth Total loading capacity: 8.8 million pixels Low latency is not supported
B	Control	Ethernet	USB, RJ45 (with SNMP support), and USB cascading

C		USB Out	
D		USB In	
E	Genlock	BNC (quantity 2)	Support Genlock IN and LOOP
F	Inputs	DisplayPort	Standard DisplayPort 1.2 input Maximum user-definable resolution is 7680x1080 @ 60 Hz or 1080x6000 @ 60 Hz.
G		HDMI	Standard HDMI 2.0 input Supports 8-bit, 10-bit, and 12-bit; refer to the table below.
H		DVI (quantity 2)	Dual-link DVI, user-definable resolution Horizontal resolution maximum: 3840 pixels Vertical resolution maximum 3840 pixels
I	OPT Output		Fiber optic ports for connecting to the FE600 fiber optic extender
J	Power		Power supply port: AC 100-240 VAC @ 50/60 Hz
K			Power switch

HDMI 8-bit, 10-bit, and 12-bit support

Color depth	Input source		
	3840x2160 @60Hz (HDCP)	3840x1080 @60Hz (HDCP)	1920x1080 @60Hz (HDCP)
8-bit			
RGB/444	Yes	Yes	Yes
Y'C'BC'R/444	Yes	Yes	Yes
Y'C'BC'R/422	Yes	Yes	Yes
Y'C'BC'R/420	Yes	Yes	Yes
10-bit			
RGB/444	Yes	Yes	Yes
Y'C'BC'R/444	Yes	Yes	Yes
Y'C'BC'R/422	Yes	Yes	Yes
Y'C'BC'R/420	Yes	Yes	Yes
12-bit			
RGB/444	Yes	Yes	Yes
Y'C'BC'R/444	Yes	Yes	Yes
Y'C'BC'R/422	Yes	Yes	Yes

	Y'C'ʙC'ʀ/420	Yes	Yes	Yes

FE600 controller extender interface and ports

Learn about the interface and physical ports on the E600 controller.

Front
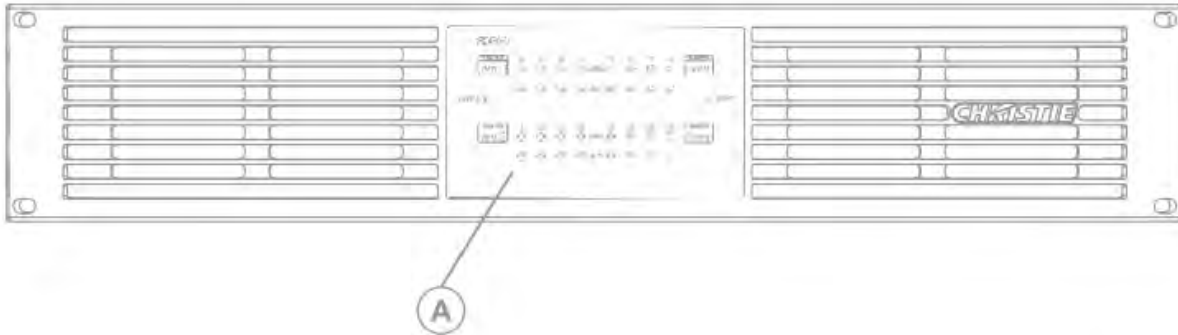
A	Status display

Rear

Inputs/outputs			Description
A	Outputs	BNC (quantity 16)	16-channel Gigabit Ethernet interface, with each channel supporting up to 1 GB bandwidth • Total loading capacity: 8.8 million pixels • Low latency is not supported
B	Control	Ethernet	USB, RJ45 (with SNMP support), and USB cascading

C		USB In	
D	OPT Output (quantity 4)		Fiber optic ports for connecting to the E600 controller • OPT1 is used for transferring the data of port 1-8 • OPT2 is used for transferring the data of port 9-16 • OPT3 is the backup channel of OPT1 • OPT4 is the backup channel of OPT2 Either Gigabit Ethernet port or optical fiber port can be used at the same time but cannot be used to connect devices simultaneously.
E	Power		Power supply port: AC 100-240 VAC @50/60 Hz
F			Power switch
G			Power supply port: AC 100-240 VAC @50/60 Hz

Technical support

- North and South America: +1-800-221-8025 or *Support.Americas@christiedigital.com*

- Europe, Middle East, and Africa: +44 (0) 1189 778111 or *Support.EMEA@christiedigital.com*

- Asia Pacific (*support.apac@christiedigital.com*):

    - Australia: +61 (0)7 3624 4888

    - China: +86 10 6561 0240

    - India: +91 (80) 6708 9999

    - Japan: 81-3-3599-7481

    - Singapore: +65 6877-8737

    - South Korea: +82 2 702 1601

- Christie Professional Services: +1-800-550-3061 or *NOC@christiedigital.com*

Installation and setup

The configuration of an array depends on the installation. Use the following instructions as a guideline only. Before you install an LED array, you must fully understand all site requirements and characteristics.

📝 The Core Gen 2 Series must mount to ¾″ marine grade plywood backing (fire rated).

8 x LED modules (B)   Chassis (A)
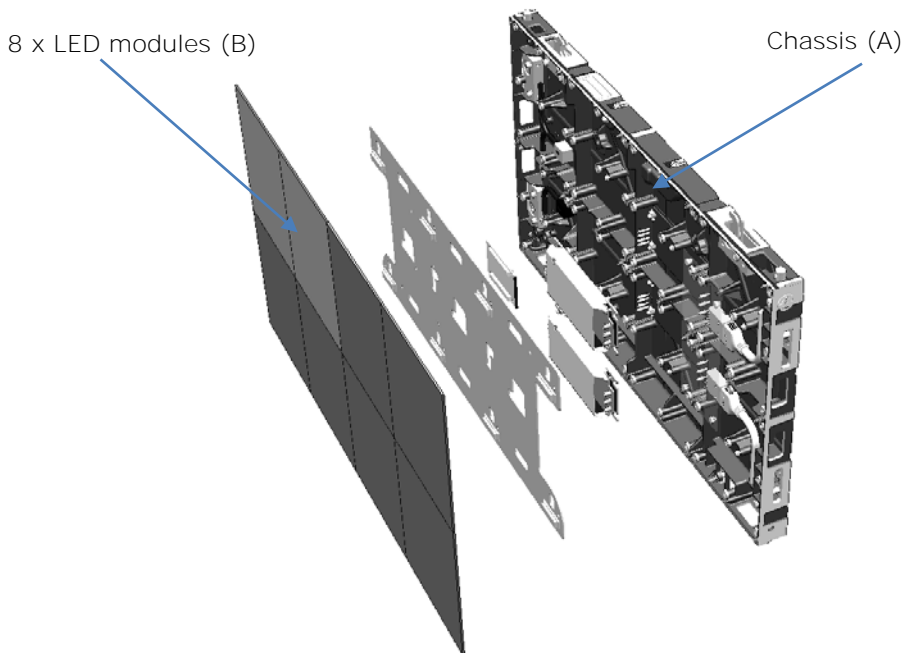
Installing an LED array from the front

Perform the following steps when you install an LED array while facing the LED modules.

1. Install the mounting poles (on page 18).
2. Mount the tiles (A) (on page 23).
3. Connect the data cables (on page 24).
4. Connect the power cables between tiles (on page 24).
5. Install the LED modules (B) (on page 25).
6. Power on the array (on page 26).
7. Install the E510 controller software (on page 28) or install the E600 controller software (on page 31).
8. Configure the E510 controller (on page 28) or configure the E600 controller (on page 31).

The controller can be configured at any time. Before connecting the controller to the wall, Christie recommends updating the firmware and configuring the controller.

Installing the mounting poles

Determine where the mounting poles should be installed on the plywood backing and attach them.

⚠️ Warning! If not avoided, the following could result in death or serious injury.

- External support for a display wall must be designed and implemented by a Christie qualified installer and must comply with local area regulations and safety standards.
- All display walls must have permanent external supports. The amount of external support required depends on the size of the display wall.
- A minimum of two people or appropriately rated lift equipment is required to safely lift, install, or move the product.

The mounting poles are available in three different sizes: three cabinets high, four cabinets high, and five cabinets high. Five possible configurations are shown below.

For 3x3 array
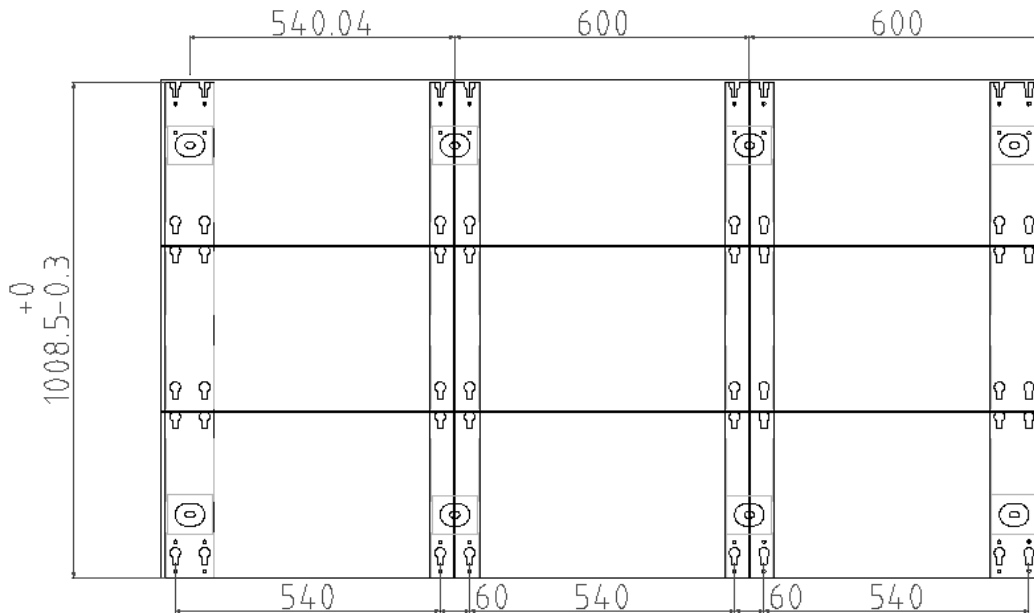
For 4x4 array
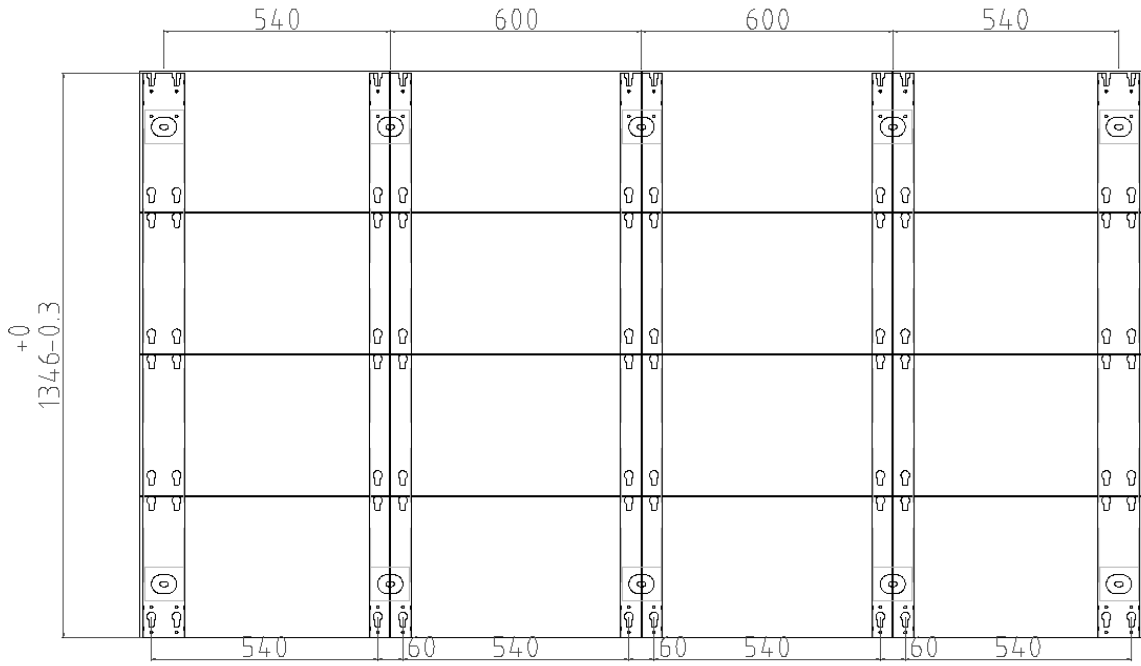
For 5x5 array
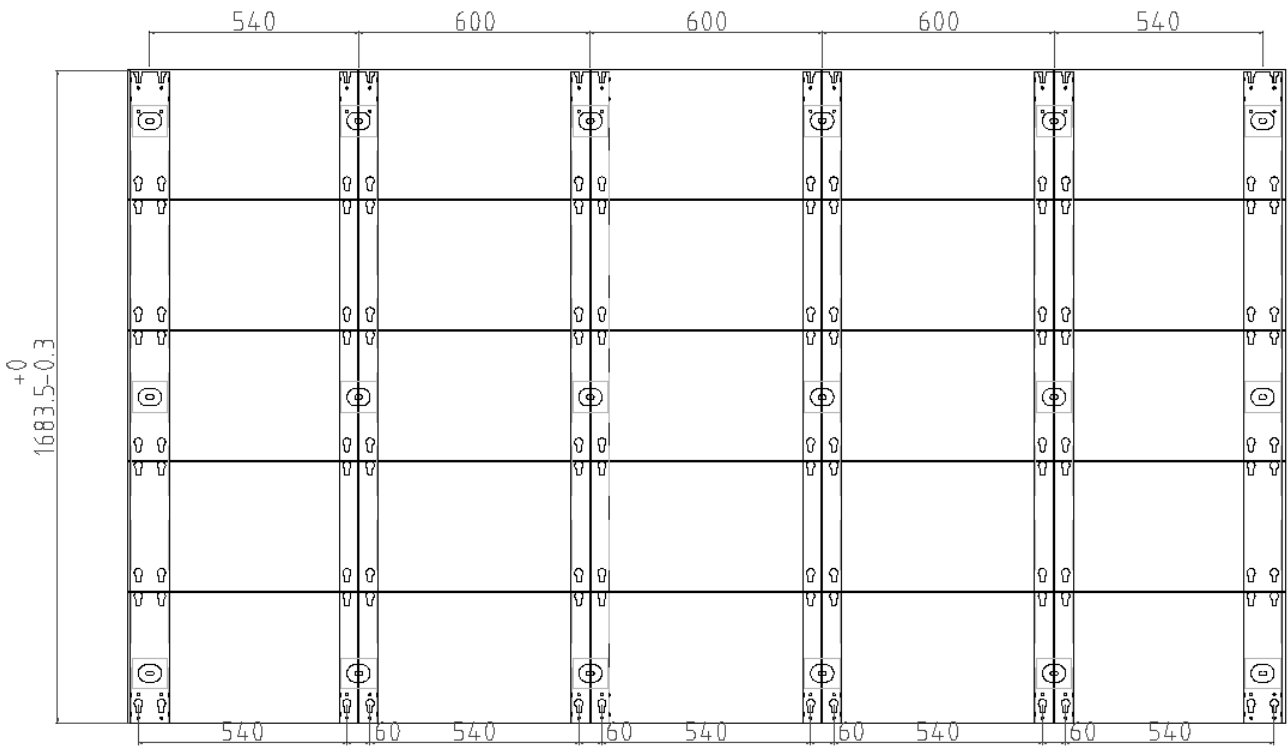
For 6x6 array
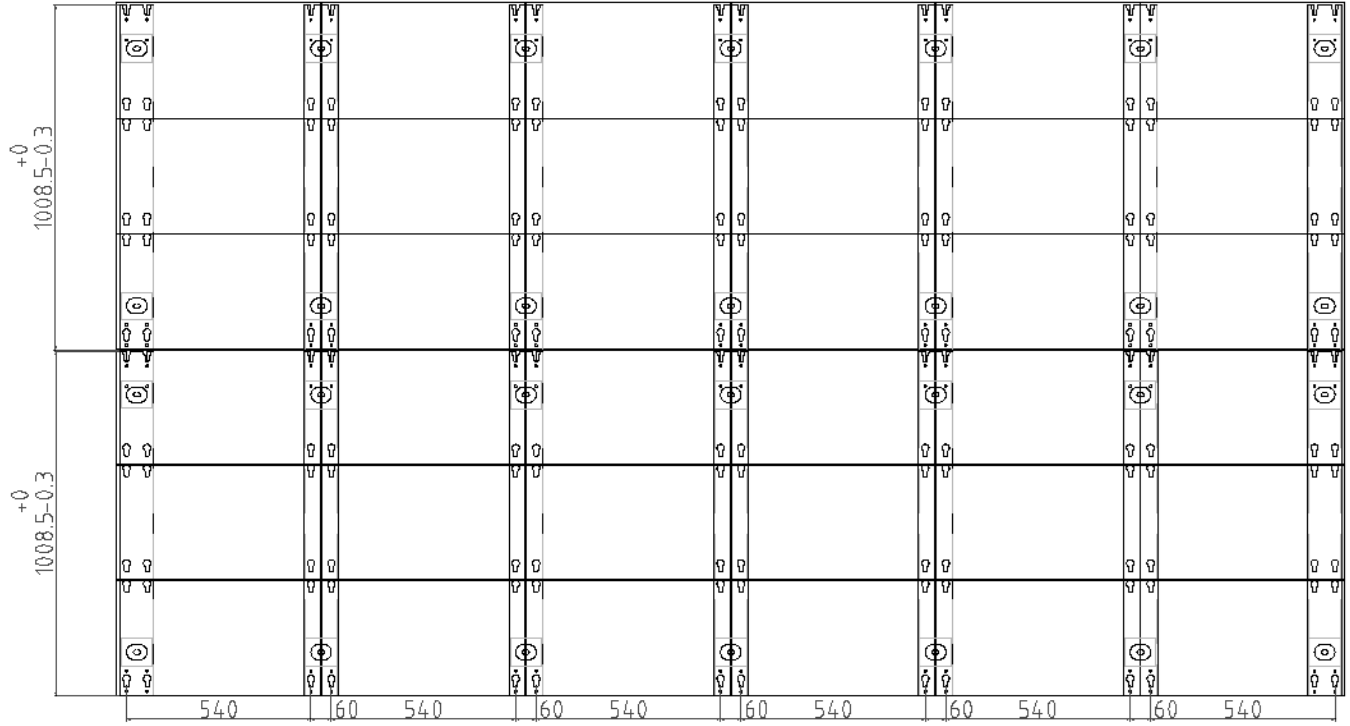
For 8x8 array
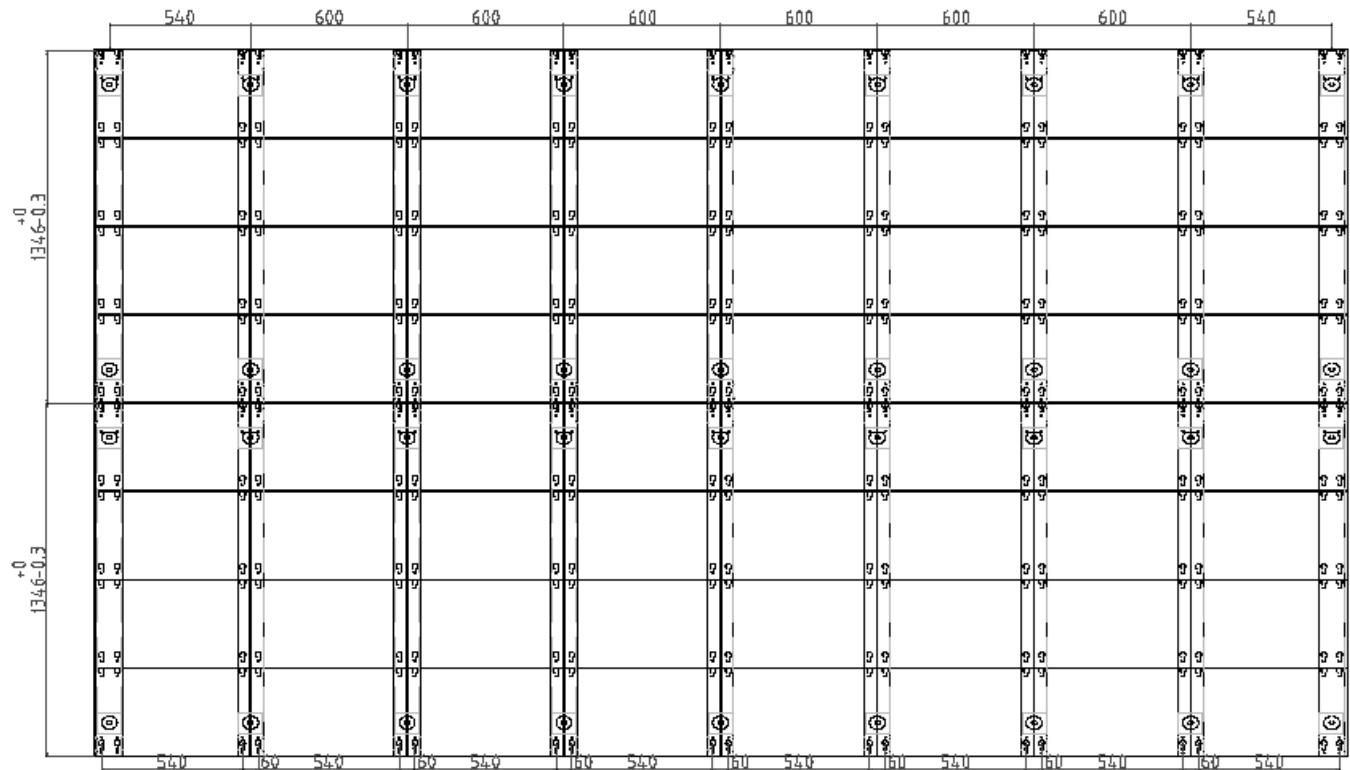
1. Determine where the mounting poles should be installed.

   a. Find and mark the border of the display area with a tape measure.
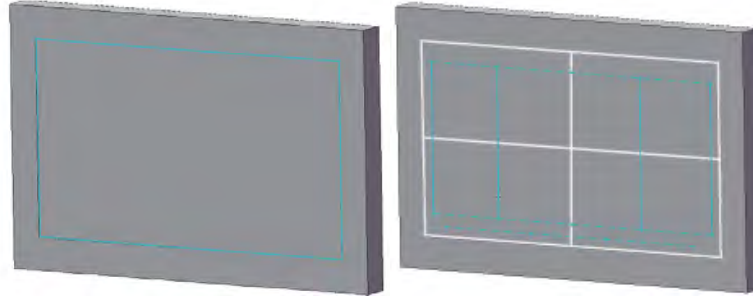
2. Install the mounting poles.

   a. Place a mounting pole onto the bottom left of the display area.

   b. Affix a mounting pole to the support surface using screws.

Christie recommends using these four mounting holes.
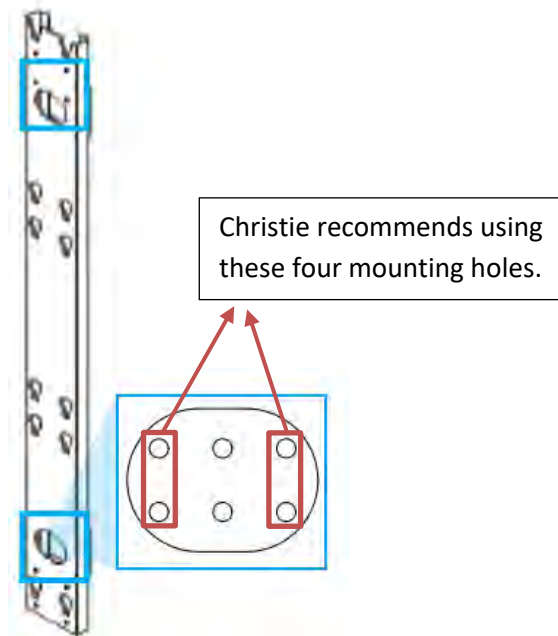
   c. Use the mounting template to determine the position of the next mounting pole as shown in the image below.
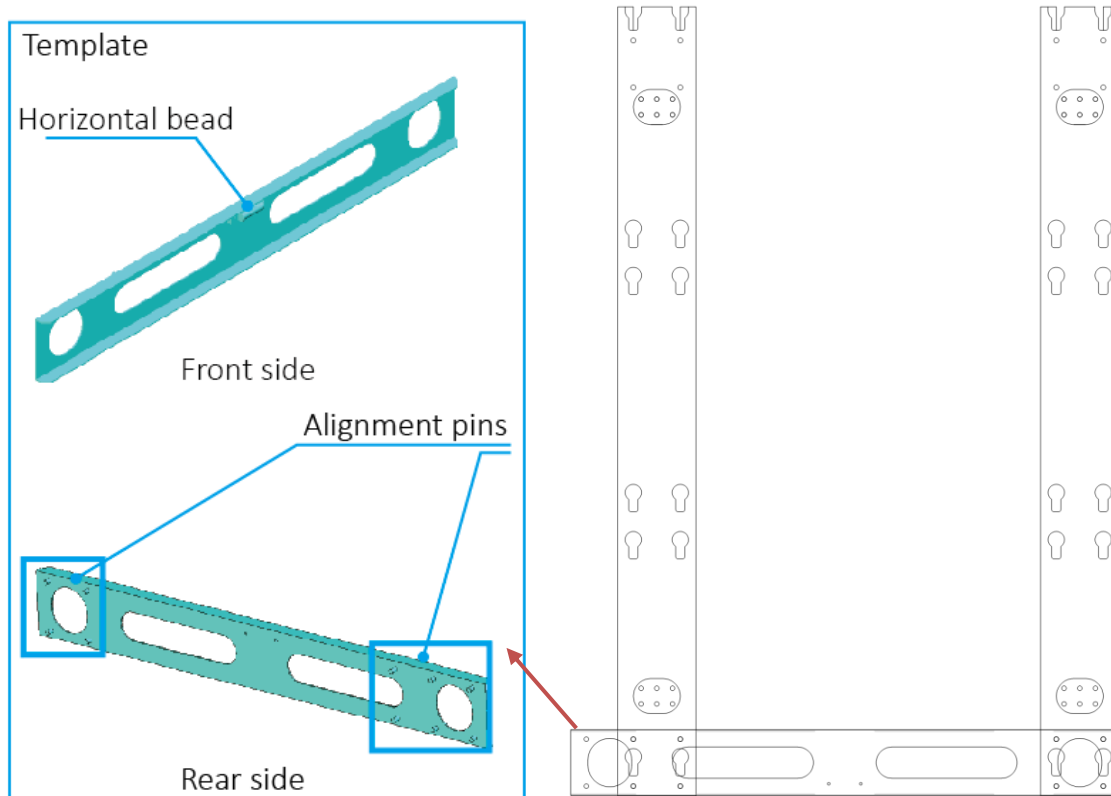
d. Orient the assembly by inserting the alignment pins into the pole already affixed.

e. Affix the second mounting pole to the support surface using the screws from step b.

3. Remove the template from the mounting poles.

4. Install the remaining mounting poles by repeating step 3.

   Install the remaining mounting poles from left to right and from bottom to top.

a. Use the mounting template to determine the correct spacing between the top and bottom poles when stacking the mounting poles on top of each other.

b. Use the template to align the poles correctly to each other.

c. Affix the top poles to the support surface using screws.

d. Remove and save the mounting template for future use.
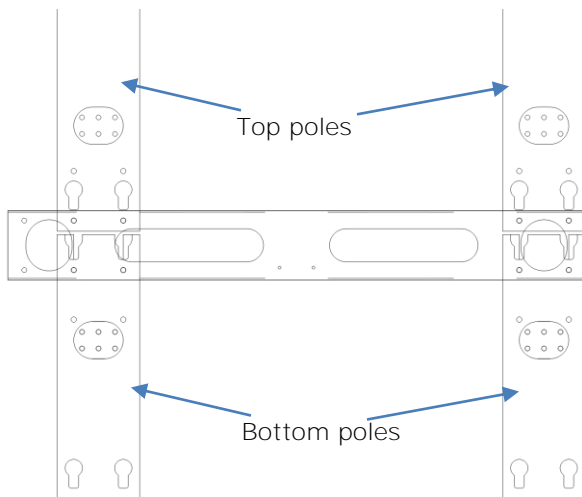
Correct spacing for the poles at the edges
of the LED array
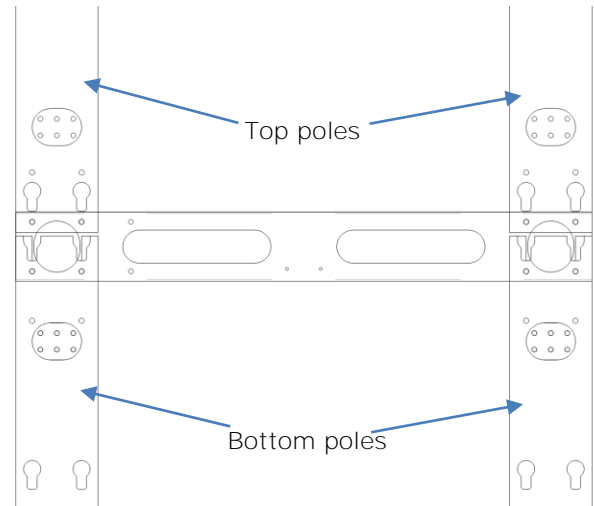
Correct spacing for the rest of the poles

Mounting the tiles

Install the tiles in the array row by row. Do not attempt to construct the array column by column.

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- All display walls must have permanent external supports. The amount of external support required depends on the size of the display wall.
- A minimum of two people or appropriately rated lift equipment is required to safely lift, install, or move the product.

1. If present, remove the metal plates covering all the external pass-through holes in the tile chassis, including the plate surrounding the power and data ports.

2. Attach the first tile in the center of the bottom row to the mounting poles in the four mounting points.

   Make sure the M6 screws have at least three full thread engaged into the tile.

3. To install the second tile in the row, repeat steps 1 and 2.

4. Use the clasp mechanism to lock the adjacent tiles tightly together and make sure only minimal gaps exist between the LED modules of each tile.

5. To determine if adjustments are needed on the tile chassis, you may need to install and remove multiple LED modules several times.

   When LED modules are installed, the resulting surface must be completely flat and smooth where the edges of the different modules meet together. If adjustment for flatness is needed, use the adjustment screw in each corner of the tile chassis.

   📝 The fixing screw must be loosened before the adjustment screw can be tightened.

6. Repeat steps 1 to 5 for all the remaining tiles in the bottom row.

7. After the bottom row is installed and the gaps are adjusted, repeat steps 1 to 6 for the remaining rows.

Connecting the data source cables

Follow these steps to connect the data source cables.

1. Connect the data cables between the tiles in the array.

2. Connect an Ethernet cable from the first tile in the array to the controller.

Connecting the power cables

Connect the power cables between the tiles in the array, column-by-column.

⚠️ **Caution!** If not avoided, the following could result in minor or moderate injury.
*   SHOCK HAZARD! The line cord has a maximum power carrying capability. For the maximum number of tiles that may be connected per daisy chain when connecting to the power supply, refer to the product specifications.

1. Connect the power cable to the next tile in the array.
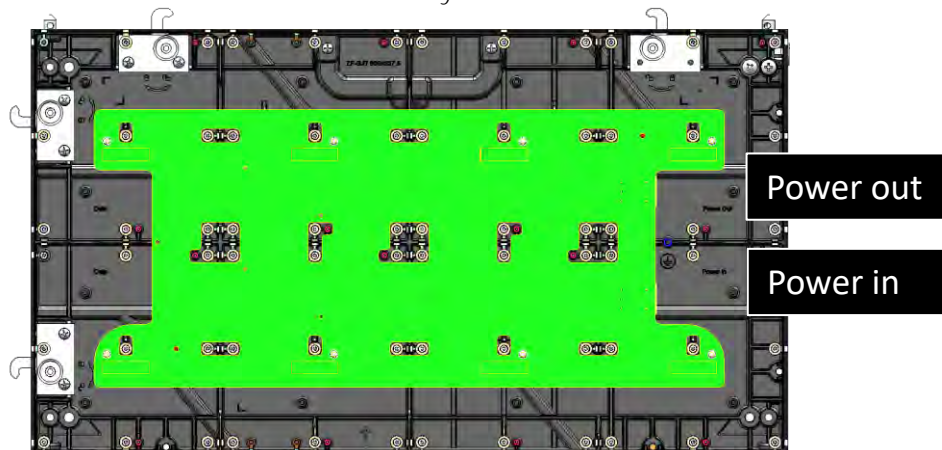
2. Connect the cabinet power cable to the wall outlet.

Installing the LED modules

Follow these steps to install the LED modules.

1. Check the sticker on each LED module and install the LED module according to the module number.

   The first four digits on the module number indicate in which cabinet this LED module should be installed. The last two characters of the module number indicate the correct position within the tile for the LED module as shown in the chart below.

| 0012-A1 | 0012-A2 | 0012-A3 | 0012-A4 |
| 0012-B1 | 0012-B2 | 0012-B3 | 0012-B4 |

BIN: D21JO1OS1KO1 Made in China
P/N: 1200000326   0012 - B3
S/N: DC2200092 221022   P00095
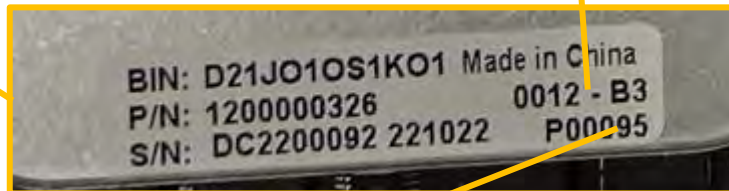
253590P00000090	2022/11/21 11:47	Data Base File	1,031 KB
253590P00000091	2022/11/21 11:47	Data Base File	1,031 KB
253590P00000092	2022/11/21 11:47	Data Base File	1,031 KB
253590P00000093	2022/11/21 11:47	Data Base File	1,031 KB
253590P00000094	2022/11/21 11:47	Data Base File	1,031 KB
253590P00000095	2022/11/21 11:47	Data Base File	1,031 KB
253590P00000096	2022/11/21 11:47	Data Base File	1,031 KB
253590P00000097	2022/11/21 11:48	Data Base File	1,031 KB
253590P00000098	2022/11/21 11:48	Data Base File	1,031 KB
253590P00000099	2022/11/21 11:48	Data Base File	1,031 KB
253590P00000100	2022/11/21 11:48	Data Base File	1,031 KB
253590P00000101	2022/11/21 11:48	Data Base File	1,031 KB
253590P00000102	2022/11/21 11:48	Data Base File	1,031 KB
253590P00000103	2022/11/21 11:48	Data Base File	1,031 KB
253590P00000104	2022/11/21 11:48	Data Base File	1,031 KB
253590P00000105	2022/11/21 11:48	Data Base File	1,031 KB
253590P00000106	2022/11/21 11:48	Data Base File	1,031 KB
253590P00000107	2022/11/21 11:48	Data Base File	1,031 KB
253590P00000108	2022/11/21 11:48	Data Base File	1,031 KB
253590P00000109	2022/11/21 11:48	Data Base File	1,031 KB
253590P00000110	2022/11/21 11:48	Data Base File	1,031 KB
253590P00000111	2022/11/21 11:48	Data Base File	1,031 KB

   The meaning of the numbers on the sticker above is shown below.

BIN: Tube type
P/N: Module material code
S/N: Order No. + Date
0012-B3: Cabinet No.-Module No.
P00095: module file serial No.
253590P00000095: .db file name (Photometry data file):
OP No.+module file serial No.

2. To install the LED module, line up the alignment pins on the tile chassis with the alignment recesses on the LED module, making sure the arrow on the back of the LED module is pointing up.

Arrow

Alignment recesses
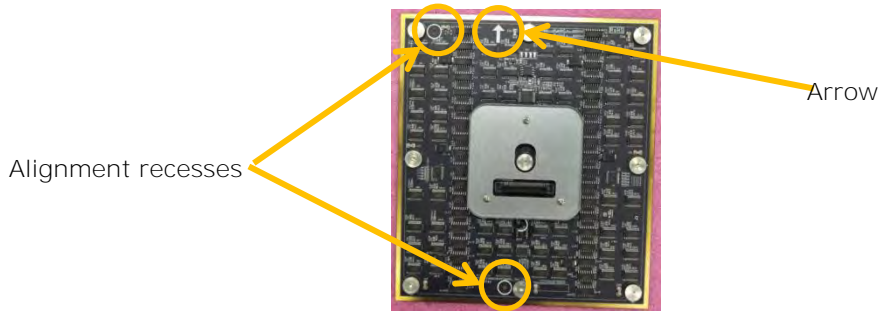
3. Set the LED module into place on the alignment recesses.

Alignment pins
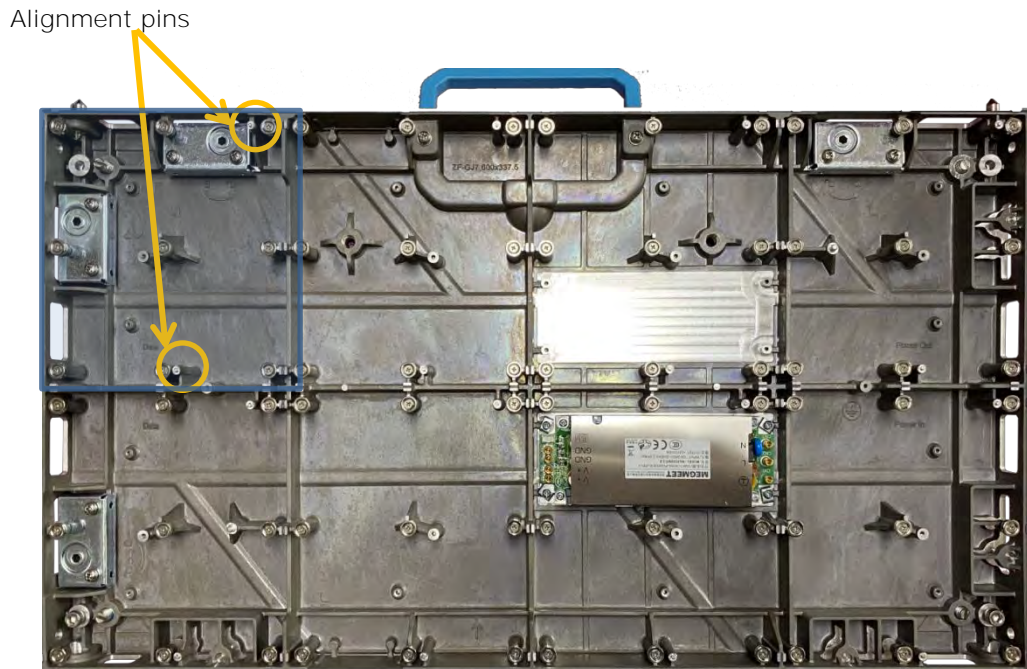
Powering on the array

Turn on each component in the array in the order below.

1. Start the computer that is the video source.

2. Plug in the power cables for the LED array to the appropriate power outlet.

3. Turn on the controller.

    a. On the rear of the controller, turn the power switch to On.

    b. On the front of the controller, press the Power button.

Connecting to video sources

An LED array requires a controller to display content on the tiles.

1. Connect the data cable from the first tile in the array to the controller.

   Connect the output Ethernet cables from the controller to the bottom tile of each column in the LED array, as needed.

2. Connect the HDMI or DVI output from the video source (computer or media player) to the appropriate input port on the controller.

   The E600 controller behaves as two independent controllers, displaying 3840x2160 pixels at 30 Hz with each virtual controller. The images of both DVI1 and DVI2 input sources can be displayed on the tiles simultaneously but the inputs must be configured independently.

   DVI1 corresponds to output Ethernet ports 1 to 8, and DVI2 corresponds to output Ethernet ports 9 to 16.

Configuring the E510 controller

After installing the tiles and connecting all cables, complete the E510 controller initial configuration. For additional configuration settings, refer to *E510 User Guide (P/N: 020-102222-XX)*.

Installing the Christie controller software

The Christie controller software controls the configuration of the array.

1. On the Christie website, navigate to the E510 product page.

2. Switch to the Downloads tab and select Software Downloads.

3. Download and unzip the Christie controller software zip file.

4. Double-click the `Christie Controller Software Setup <version>.exe` file and follow the on-screen instructions and install the Christie controller software.

Logging into the controller software

To access the configuration features of the controller software, log into the system.

1. Connect an ETH cable between the controller and the computer running the controller software.

2. Make sure the computer running the controller software is connected to the controller over a USB or Ethernet cable.

   Select the correct setting under Communications Settings from the front panel of the controller, according to the cable used for the connection.

3. Launch the controller software and log in as the administrator.

   a. Select User > Advanced User Login.

   b. Login with the password admin.

Adjusting the initial picture coordinates

Adjust the initial coordinates of the pictures on the screen.

1. On the front of the controller, press the menu dial.

   When using the menu dial, rotate the dial to move through the items in the menu. To select a menu item or to set a value, push in the menu dial.

   To return to the previous menu, press the button to the bottom right of the menu dial.

2. Select Advanced Settings > Image Offset.

3. Select Start X and push the menu dial.

4. Rotate the dial and set the horizontal offset.

5. Select Start Y and push the menu dial.

6. Rotate the dial and set the vertical offset.

Testing the communication between the controller and tiles

Verify that the array is connected to and recognized by the E510 controller.

1. Connect an Ethernet or USB cable between the controller and the computer running the E510 controller software.

   Select the correct setting under Communications Settings from the front panel of the controller, according to the cable used for the connection.

2. Launch the E510 controller software and log in as the administrator.

   a. Select User > Advanced User Login.

   b. Login with the password admin.

3. To confirm the display is connected to and recognized by the controller, in the Local System Info area, make sure Control System has a value of 1.

   If the controller is not recognizing the tiles, select System > Reconnect.

4. If the Monitor Information area reports that there is no screen, verify the output mode is set to Sending Card mode and in the E510 controller software select System > Reconnect.

5. Switch to the Screen Control tab.

6. To confirm the controller is communicating with all tiles, select a color from the Self Test list and select Send.

   If the controller is communicating with all the tiles, each tile in the display changes to the selected color.

7. Reset the Self Test to Normal and select Send.

8. Close the Screen Control dialog.

Reviewing the tile configuration

Review the tile configuration reported in the E510 controller software.

1. In the E510 controller software, select Screen Configuration.

2. Select Configure Screen and select Next.

3. Switch to the Screen Connection tab.

4. Select Read from HW.

5. Review the configuration of the tiles in the array and modify as needed.

   The cable layout for the tiles in the array is identified with an S where the first cable starts, and the green line shows the path of the daisy chain of cables. E identifies the end of the daisy chain.

Setting the input resolution

Set the resolution for the home page display of interface, which must be consistent with the output resolution of the video source.

1. Log into the E510 controller software.

2. Select Screen Configuration.

3. Select Configure Screen and select Next.

4. Switch to the Sending Card tab.

5. In the Source Configuration section, select the correct resolution of the incoming video signal from the Resolution list.

   The incoming video signal resolution must be correct for the physical dimension of the LED array. The ES10 controller has no scaling capability.

6. Select Save.

Locking and unlocking the controller front screen menu

Disable the ability to navigate the menu and modify the settings from the front of the controller.

1. To disable access to the controller menu, press and hold the menu dial and back button until the controller screen flashes.

2. To re-enable access to the controller menu, press and hold the menu dial and back button for approximately 15 seconds.

3. Test if the controller is unlocked by using the menu dial to navigate the menu.

   If the controller is still locked, press and hold the menu dial and back button for a longer period of time.

Upgrading the firmware on the E510 controller

When a new version of the software is released, the E510 controller must be upgraded.

1. Download the firmware file to a computer that will be connected to the controller for the upgrade or to a USB key.

2. Unzip the downloaded firmware file.

3. Connect a USB or Ethernet cable between the computer running the controller software and the controller.

4. Launch the E510 controller software and log in as the administrator.

   a. Select User > Advanced User Login.

   b. Login with the password admin.

5. In the blank area beside the Monitoring icon, right-click and enter 666888.

6. In the Program Path area, browse to the location of the unzipped download, and select the firmware upgrade folder.

7. Select Update.

8. In the confirmation message, select Yes.

   As the firmware upgrade is installed, the controller screen and controller software both display a progress indicator. After the upgrade is complete, the controller reboots.

Configuring the E600 controller

After installing the tiles and connecting all cables, complete the E600 controller initial configuration. For additional configuration settings, refer to *E600 User Guide (P/N: 020-102717-XX)*.

Installing and accessing the E600 controller software

The E600 controller software controls the configuration of the array.

1. On the Christie website, navigate to the E600 product page.

2. Switch to the Downloads tab and select Software Downloads.

3. Download and unzip the Christie LED Control Unit E600 Software zip file.

4. Double-click the `Christie Controller Software Setup <version>.exe` file and follow the on-screen instructions and install the E600 controller software.

Logging into the controller software

To access the configuration features of the controller software, log in to the system.

1. Make sure the computer running the controller software is connected to the controller over an Ethernet or USB cable.

   Select the correct setting under Communications Settings from the front panel of the controller, according to the cable used for the connection.

2. Connect a USB cable between the controller and the computer running the controller software.

3. Launch the controller software and log in as the administrator.

   a. Select User > Advanced User Login.

   b. Login with the password admin.

Adjusting the initial picture coordinates

Adjust the initial coordinates of the pictures on the screen.

1. On the front of the controller, press the menu dial.

   When using the menu dial, rotate the dial to move through the items in the menu. To select a menu item or to set a value, push in the menu dial.

   To return to the previous menu, press the button to the bottom right of the menu dial.

2. Select Advanced Settings > Image Offset.

3. Select Start X and push the menu dial.

4. Rotate the dial and set the horizontal offset.

5. Select Start Y and push the menu dial.

6. Rotate the dial and set the vertical offset.

Testing the communication between the controller and tiles

Verify that the array is connected to and recognized by the E600 controller.

1. Connect an Ethernet or USB cable between the controller and the computer running the E600 controller software.

   Select the correct setting under Communications Settings from the front panel of the controller, according to the cable used for the connection.

2. Launch the E600 controller software and log in as the administrator.

   a. Select User > Advanced User Login.

   b. Login with the password admin.

3. To confirm the display is connected to and recognized by the controller, in the Local System Info area, make sure Control System has a value of 1.

   If the controller does not recognize the tiles, select System > Reconnect.

4. Select Screen Control.

5. To confirm the controller is communicating with all tiles, select a color from the Self Test list and select Send.

   If the controller is communicating with all the tiles, each display changes to the selected color.

6. Reset the Self Test to Normal and select Send.

7. Select Close.

Reviewing the tile configuration

Review the tile configuration reported in the E600 controller software.

1. Connect a USB cable between the controller and the computer running the controller software.

2. Launch the controller software and log in as the administrator.

   a. Select User > Advanced User Login.

   b. Login with the password admin.

3. Select Screen Configuration.

4. Select Configure Screen and select Next.

5. Switch to the Screen Connection tab.

6. Select Read from HW.

7. Review the configuration of the tiles in the array and modify as needed.

   The cable layout for the tiles in the array is identified with an S where the first cable starts, and the green line shows the path of the daisy chain of cables. E identifies the end of the daisy chain.

Setting the input resolution

Set the resolution for the home page display of interface, which must be consistent with the output resolution of the video source.

1. Connect a USB cable between the controller and the computer running the controller software.

2. Launch the controller software and log in as the administrator.

    a. Select User > Advanced User Login.

    b. Login with the password admin.

3. Select Screen Configuration.

4. Select Configure Screen and select Next.

5. Switch to the Sending Card tab.

6. In the Source Configuration section, from the Resolution list, select the correct resolution of the incoming video signal.

    The incoming video signal resolution must be correct for the physical dimension of the LED array. The E600 controller has no scaling capability.

7. Select Set.

8. Select Save.

Locking and unlocking the controller

Disable the ability to navigate the menu and modify the settings from the front of the controller.

1. To disable access to the controller menu, press and hold the menu dial and back button until the controller screen flashes.

2. To re-enable access to the controller menu, press and hold the menu dial and back button for approximately 15 seconds.

3. Test if the controller is unlocked by using the menu dial to navigate the menu.

    If the controller is still locked, press and hold the menu dial and back button for a longer period of time.

Upgrading the firmware on the 600 controller

When a new version of the software is released, the E600 controller must be upgraded.

1. Download the firmware file to a computer to be connected to the controller for the upgrade or to a USB key.

2. Unzip the downloaded firmware file.

3. Connect an HDMI or Ethernet cable between the computer running the controller software and the controller.

4. Launch the 600 controller software and log in as the administrator.

    a. Select User > Advanced User Login.

    b. Login with the password admin.

5. In the blank area beside the Monitoring icon, right-click and enter `666888`.

6. In the Program Path area, browse to the location of the unzipped download, and select the firmware upgrade folder.

7. Select Update.

8. In the confirmation message, select Yes.

As the firmware upgrade is installed, the controller screen and controller software both display a progress indicator. After the upgrade is complete, the controller reboots.

![Christie logo]

Maintaining the LED panels

Learn the information and procedures for performing maintenance on the Core (Internal Power) LED Display System.

Cleaning the LED panels

Learn how to clean the Core II (Internal Power) LED Display System panel.

> ⓘ Notice. If not avoided, the following could result in property damage.
> - Always wear clean, lint-free gloves when handling the product.

To avoid the risk of damaging the LEDs, clean the panel only if when necessary.

1. To clean the LED panels use a dry, clean, or a paint brush to remove any particles.
2. To remove loose particles between the LEDs, use filtered compressed air.

   Make sure the air compressor does not spray oil or condensation.

Do not use the following products when cleaning the panels:

- Compressed air cans
- Liquids
- Abrasive cloths

Taking out of an LED Module

Remove the LED modules using the removal tool.

1. Place the one end of the removal tool against the LED module.

2. Slowly attach the other end of the removal tool to the LED module.

3. Pull the LED modules vertically off the tile.

Regulatory

This product conforms to the latest regulations and standards related to product safety, environmental requirements, and electromagnetic compatibility (EMC).

Safety

- cTUVus per UL 60950-1 - Information Technology Equipment – Safety – Part 1: General Requirements
- IEC 60950-1 IEC/EN 60950-1 - Information Technology Equipment – Safety – Part 1: General Requirements
- EN 60950-1
- IEC 62471-1 - Photobiological safety of lamps and lamp systems

Electro-magnetic compatibility

Emissions

- FCC CFR47, Part 15, Subpart B, Class A - Unintentional Radiators
- CAN ICES-003 (A)/NMB-003 (A) - Information Technology Equipment (In Apparatus) - Limits and Methods of Measurement
- CISPR 32/EN 55032, Class A
- IEC 61000-3-2/EN61000-3-2: Limits for Harmonic Current Emissions

Immunity

- IEC 61000-3-3/EN61000-3-3
- IEC/EN61000
- IEC 61000-4-2/EN61000-4-2
- IEC 61000-4-3/EN61000-4-3
- IEC 61000-4-4/EN61000-4-4
- IEC 61000-4-5/EN61000-4-5
- IEC 61000-4-6/EN61000-4-6
- IEC 61000-4-8/EN61000-4-8
- IEC 61000-4-11/EN61000-4-11