Technical Reference
020-103441-01

Enterprise 4K
Troubleshooting

CHRISTIE®

NOTICES

GENERAL

Every effort has been made to ensure accuracy, however in some cases changes in the products or availability could occur which may not be reflected in this document. Christie reserves the right to make changes to specifications at any time without notice. Performance specifications are typical, but may vary depending on conditions beyond Christie's control such as maintenance of the product in proper working conditions. Performance specifications are based on information available at the time of printing. Christie makes no warranty of any kind with regard to this material, including, but not limited to, implied warranties of fitness for a particular purpose. Christie will not be liable for errors contained herein or for incidental or consequential damages in connection with the performance or use of this material. Our centers of excellence for manufacturing in Kitchener, Ontario, Canada and in Shenzhen, China are ISO 9001:2015 Quality Management System-certified.

Christie is committed to making our documents free from language bias; however, we are not responsible for the language used on any linked or third-party documentation.

For the most current technical documentation and office contact information, visit *https://www.christiedigital.com/*.

Warranty

Products are warranted under Christie's standard limited warranty, the details of which are available at *https://www.christiedigital.com/help-center/warranties/* or by contacting your Christie dealer or Christie.

PREVENTATIVE MAINTENANCE

Preventative maintenance is an important part of the continued and proper operation of your product. Failure to perform maintenance as required, and in accordance with the maintenance schedule specified by Christie, voids the warranty. For preventative maintenance schedules, refer to *www.christiedigital.com*.

REGULATORY

The product 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 product is operated in a commercial environment. The product 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 the product in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at the user's own expense. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment

CAN ICES-3 (A) / NMB-3 (A)

이 기기는 업무용(A급)으로 전자파적합등록을 한 기기이오니 판매자 또는 사용자는 이점을 주의하시기 바라며, 가정 외의 지역에서 사용하는 것을 목적으로 합니다.

ENVIRONMENTAL

The product is designed and manufactured with high-quality materials and components some of which can be recycled and reused. This symbol means electrical and electronic equipment, at their end-of-life, should be disposed of separately from regular waste. Please dispose of the product appropriately and according to local regulations. In the European Union, separate collection systems are for used electrical and electronic products.

If printing this document, consider printing only the pages you need and select the double-sided option.

Please help us to conserve the environment we live in!

Notation

Learn the hazard and information symbols used in the product documentation.

⚠ (Danger)	Danger messages indicate a hazardous situation which, if not avoided, results in death or serious injury.
⚠ (Warning)	Warning messages indicate a hazardous situation which, if not avoided, could result in death or serious injury.
⚠ (Caution)	Caution messages indicate a hazardous situation which, if not avoided, could result in minor or moderate injury.
❗ (Notice)	Notice messages indicate a hazardous situation which, if not avoided, may result in equipment or property damage.
📝 (Information)	Information messages provide additional information, emphasize or provide a useful tip.

Content

Enterprise troubleshooting

This guide provides information and procedures for resolving common projector and laser issues. If an issue cannot be resolved or you cannot find the issue in this guide, contact Christie Technical Support.

Caution! If not avoided, the following could result in minor or moderate injury.

- Only Christie qualified technicians are permitted to open product enclosures.
- Only Christie qualified technicians who are knowledgeable about the hazards associated with laser use, high-voltage, and high temperatures generated by the product are authorized to assemble, install, and service the Christie Laser Projection System.
- SHOCK HAZARD! Do not touch the power supply when the power is on.
- Hazardous voltages are present at power system inputs. The DC output, though not dangerous in voltage, has a high short-circuit current capacity that may cause severe burns and electrical arcing.

The illustrations in this document are for representation only and may not depict your model exactly.

Models

The following models are supported for the Enterprise projectors.

- Christie M RGB Series
- Griffyn® Series

Related information

Use this guide in conjunction with the Enterprise Installation and Setup, Service, User, Serial API Commands, and Status System guides available on the Christie website (***https://www.christiedigital.com/products/projectors/all-projectors/***). In addition, product interconnect and line drawings are available on the website.

- *Christie M RGB Series Installation and Setup Guide (P/N: 020-103483-XX)*
- *Christie M RGB Series Service Guide (P/N: 020-103484-XX)*
- *Griffyn Series Installation and Setup Guide (P/N: 020-103314-XX)*
- *Griffyn Series Service Guide (P/N: 020-102960-XX)*
- *TruLife+ User Guide (P/N: 020-103315-XX)*
- *TruLife+ Serial Commands Guide (P/N: 020-103316-XX)*
- *TruLife+ Status System Guide (P/N: 020-102975-XX)*

- *Christie M 4K15 RGB Series Interconnect drawing (P/N: 020-103776-XX)*
- *Christie M 4K15 RGB Series Line drawing (P/N: 020-103855-XX)*
- *Christie M 4K25 RGB Series Interconnect drawing (P/N: 020-103308-XX)*
- *Christie M 4K25 RGB Series Line drawing (P/N: 020-103552-XX)*
- *Griffyn Series Interconnect drawing (P/N: 020-103640-XX)*
- *Griffyn Series Line drawing (P/N: 020-103647-XX)*

Technical support

Technical support for Christie Enterprise products is available at:

- 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 or *tech-Australia@christiedigital.com*
  - China: +86 10 6561 0240 or *tech-supportChina@christiedigital.com*
  - India: +91 (80) 6708 9999 or *tech-India@christiedigital.com*
  - Japan: 81-3-3599-7481
  - Singapore: +65 6877-8737 or *tech-Singapore@christiedigital.com*
  - South Korea: +82 2 702 1601 or *tech-Korea@christiedigital.com*

Details to provide to Technical Support

Have the following information ready when contacting Technical Support.

- Projector model
- Serial number of the projector
- Detailed description of the problem
- Who did you purchase the equipment from
- Contact information, including phone number
- Troubleshooting performed and results
- Date and time the issue occurred, including the time zone
- Setup configuration
- Interrogator log files
- Picture of the issue

Running the Enterprise interrogator

The interrogator captures diagnostic information Christie personnel uses to help diagnose and correct any issues.

1. If saving the interrogator file to a USB flash drive on the projector, insert a USB flash drive in the USB port on the projector.

The USB flash drive must be formatted using the FAT 32 (restricted to key sizes of 32 GB or less) and exFAT file systems.

2. Select **MENU** > **Admin** > **Interrogator**.

3. Select **Run**.

   • If on the projector, the interrogator file is stored at the root directory on the USB flash drive.

   • If running Enterprise interrogator from the web interface, a message appears indicating the interrogator file was successfully created.

4. From the web interface to download the interrogator file to the computer, select **Download File**.

   The interrogator file is downloaded to the default location on the computer.

5. If on the projector, at the completion prompt, select **OK**.

Graphing logs in Excel

The log files can provide useful information about the ambient temperature, drive currents, and color sensor board readings, which will help provide insight into projector issues.

1. *Download the Interrogator file* (on page 5) from projector.

2. For the zip file, **Extract All**.

3. Go to log folder and look for the Sensor data files (organized by date).
   Christie keeps 30 days of logs.

4. Select one of the Sensor data files.

5. Open Excel.

6. Select **Open**.

7. Navigate to the log folder and select **All files**.

8. Open the sensor data txt file you want.

9. Select **Open** and follow these steps to create a table.
   a) When asked, select **Delimited**.
   b) Select **Next**.
   c) Select **Tab and Comma**.
   d) Select **Next**.
   e) Select **Finish**.

   A table is created and the first column is the table stamp and rows one and two provide the header information for the fields.

10. Review the columns of the table.

    Christie recommends reviewing the following columns: AirIn[°C] (ambient temperature) LOS 1 Health Status Red, LOS 1 Health Status Green, and LOS 1 Health Status Blue. Every laser string is represented by a bit (0). If an failure has occurred, the bit turns to a 1; you want to see all zeros.

    The following shows an example of the sensor data in Excel.

| 1	2023-07-27 00:00:00.353 INF AirIn[°C]		LOS 1 Health Status Red	LOS 1 Health Status Green	LOS 1 Health Status Blue	Ambient Temperature
1463	2023-07-27 12:16:56.628 INF	22.19	0x00000000	0x00000000	0x00000000	22
1464	2023-07-27 12:17:26.629 INF	22.12	0x00000000	0x00000000	0x00000000	22
1465	2023-07-27 12:17:56.650 INF	22.12	0x00000000	0x00000000	0x00000000	22
1466	2023-07-27 12:18:26.651 INF	22	0x00000000	0x00000000	0x00000000	22
1467	2023-07-27 12:18:56.656 INF	21.88	0x00000000	0x00000000	0x00000000	22
1468	2023-07-27 12:19:26.651 INF	22	0x00000000	0x00000000	0x00000000	22
1469	2023-07-27 12:19:56.649 INF	21.94	0x00000000	0x00000000	0x00000000	22
1470	2023-07-27 12:20:26.659 INF	21.88	0x00000000	0x00000000	0x00000000	22
1471	2023-07-27 12:20:56.656 INF	21.88	0x00000000	0x00000000	0x00000000	22
1472	2023-07-27 12:21:26.645 INF	21.94	0x00000000	0x00000000	0x00000000	22
1473	2023-07-27 12:21:56.644 INF	22	0x00000000	0x00000000	0x00000000	22
1474	2023-07-27 12:22:26.650 INF	21.88	0x00000000	0x00000000	0x00000000	22
1475	2023-07-27 12:22:56.647 INF	21.94	0x00000000	0x00000000	0x00000000	22
1476	2023-07-27 12:23:26.644 INF	22.12	0x00000000	0x00000000	0x00000000	22
1477	2023-07-27 12:23:56.656 INF	22.25	0x00000000	0x00000000	0x00000000	22
1478	2023-07-27 12:24:26.656 INF	22.38	0x00000000	0x00000000	0x00000000	22
1479	2023-07-27 12:24:56.650 INF	22.62	0x00000000	0x00000000	0x00000000	23
1480	2023-07-27 12:25:26.649 INF	22.75	0x00000000	0x00000000	0x00000000	23
1481	2023-07-27 12:25:56.658 INF	22.94	0x00000000	0x00000000	0x00000000	23
1482	2023-07-27 12:26:26.655 INF	23.06	0x00000000	0x00000000	0x00000000	23
1483	2023-07-27 12:26:56.648 INF	23.19	0x00000000	0x00000000	0x00000000	23
1484	2023-07-27 12:27:26.655 INF	23.38	0x00000000	0x00000000	0x00000000	23
1485	2023-07-27 12:27:56.644 INF	23.44	0x00000000	0x00000000	0x00000000	23

11. Check the the laser strings show zeros.

12. Hide the columns not needed so the columns you want to see are close to one another.

    See step 10 for the most useful columns.

13. Create a graph and select the columns you want to graph.

    For example, you can graph the ambient temperature (AirIn[°C]) column against a LOS Voltage column and it should be consistent. If the ambient temperature remains the same but voltage raises, it can indicate a poor connection exists between the LOS and the cold plate.

14. Select **Insert** > **Line**.

15. Edit to switch the X and Y axes.

    Make the X axis the ambient temperature and the Y axis the LOS voltage.

16. Add or remove information as needed.

Decoding errors reported in the user interface

The status of the red, green, blue, and Griffyn 4K32-RGB TEC devices is reported in a hex string. To decode the hex value, you must convert it to binary. The ones in the binary version indicate the failed strings.

To see the binary representation of a hex value, complete the following steps.

1. Open the Microsoft® calculator.

2. Select **Open Navigation** in the upper-left corner and select **Programmer**.

3. To set the calculator to accept hex values, select **HEX**.

4. Enter the hex value reported in the user interface.

    For example, enter 1A.

5. Read the BIN string.

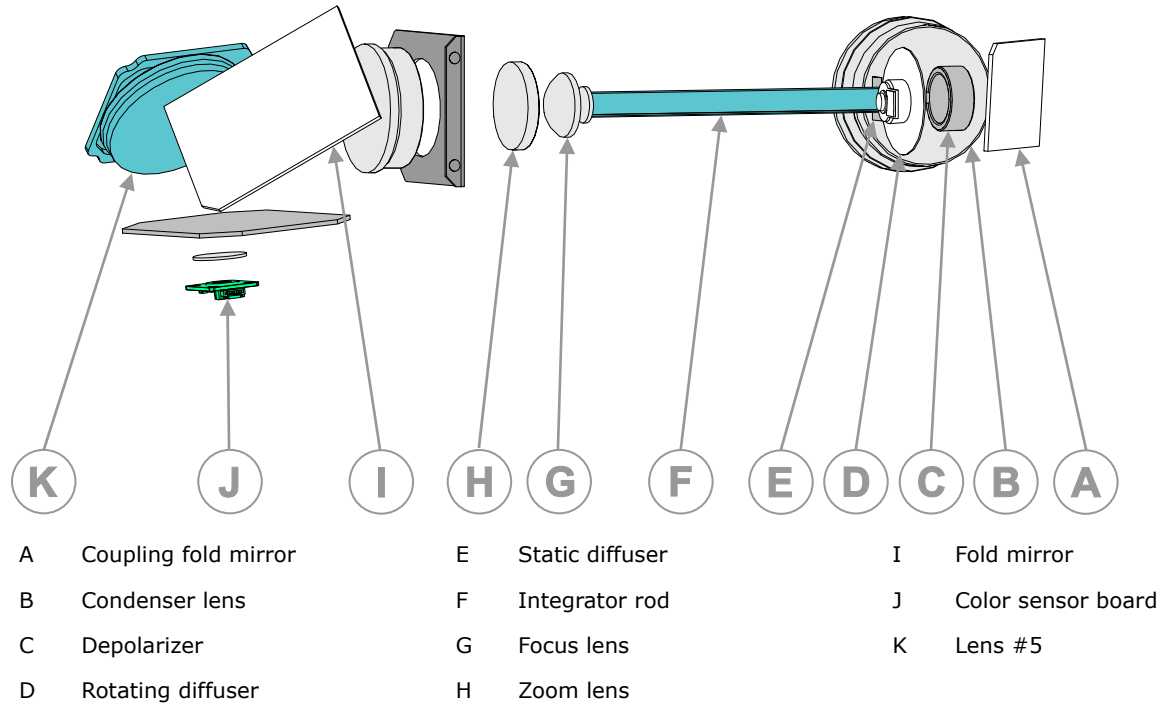   For a hex value of 1A, the binary value is 0001 1010.
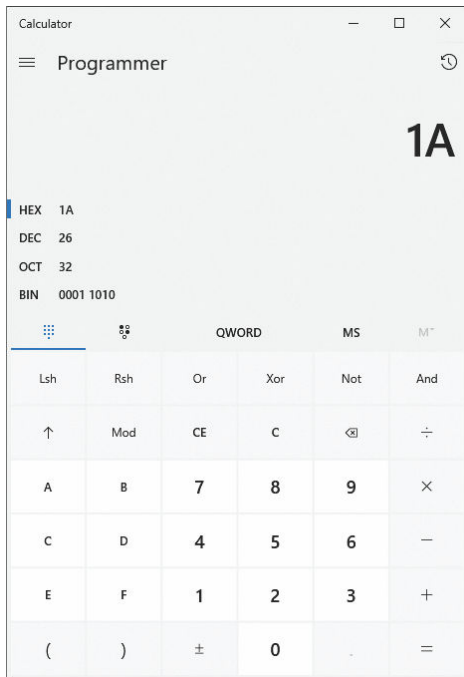
6. Decode the binary value by mapping ones to string numbers.

For example, 1A maps to strings 5, 4, and 2.

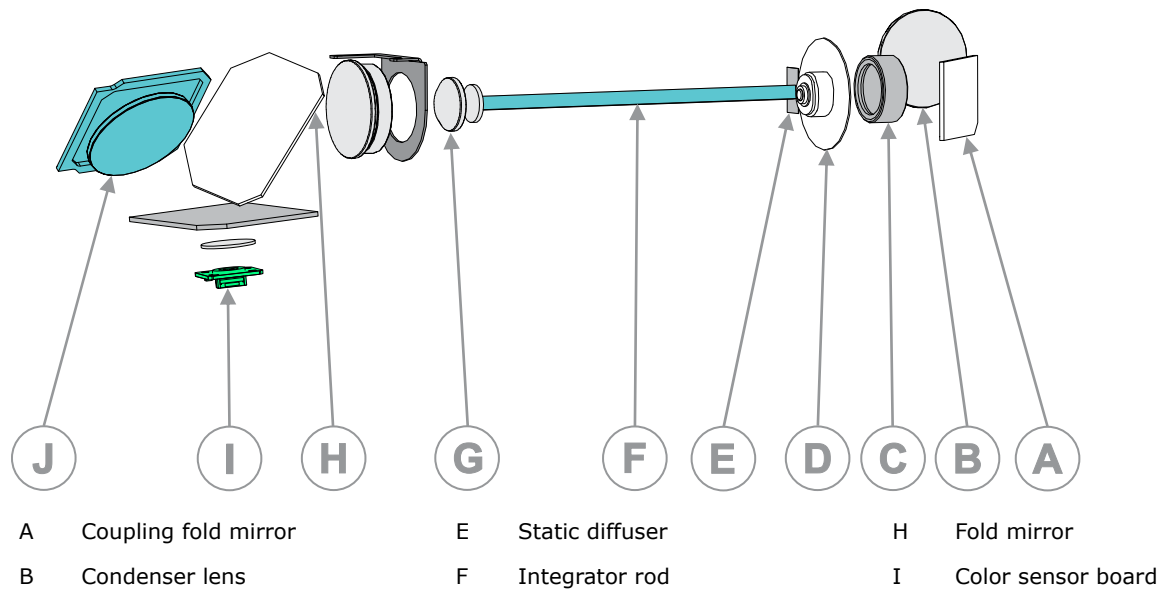| Hex value	Binary equivalent					
1A	0	1	1	0	1	0
Out of service strings	—	String 5	String 4	—	String 2	—

Optical components

The following shows the optical components in the Griffyn® Series and Christie M RGB Series projector models.

Griffyn Series models optical components

A	Coupling fold mirror	E	Static diffuser	I	Fold mirror
B	Condenser lens	F	Integrator rod	J	Color sensor board
C	Depolarizer	G	Focus lens	K	Lens #5
D	Rotating diffuser	H	Zoom lens		

Christie M RGB Series models optical components

A	Coupling fold mirror	E	Static diffuser	H	Fold mirror
B	Condenser lens	F	Integrator rod	I	Color sensor board

C	Depolarizer	G	Focus lens	J	Lens #5
D	Rotating diffuser				

Failures related to optical components

The following provides information on failures related to the optical components.

Component	Symptoms	Failure mode	Corrective actions
Coupling mirror	• Poor color uniformity • Excessive red deficiency causing lower overall system brightness	Out of alignment after laser optical subsystem (LOS) or illumination optical system (IOS) replacement	Refer to the Service manual and training documentation for the alignment procedure. The new LOS assembly ships with a replacement mirror.
	Significant brightness drop (not seen in the field)	Cracked, burnt, or both	Replace and adjust the coupling mirror.
Condenser lens	Spots of contamination on the glass	Minor brightness loss	Clean the lens with a lens cleaning cloth/microfibre.
	Cracked, damaged lens	Significant brightness drops	Contact Christie Technical Support.
Depolarizer	Minor brightness loss	Hazy, spotted/dashed blemishes on the glass	Replace the depolarizer.
Rotating diffuser	Cannot turn on the laser	Speed (RPM) is outside of specs.	Replace the rotating diffuser.
	Significant brightness drops	Motor spins but the diffuser is cracked, burnt, or both.	Replace the rotating diffuser.
Static diffuser	Significant brightness degradation	Cracked, burnt, or both	Replace the static diffuser.
Integrator rod	Gradual and potentially significant brightness drop	Integrator rod moves closer to the rotating diffuser	Replace the integrator rod assembly.
Focus lens	Shadow around the edge of the screen	Light is not focused on the surface of the digital micromirror device (DMD)	Refer to the Service manual and training documentation for the adjustment procedure.
Zoom lens	Significant brightness degradation	Light is overfilling the surface of the DMD. Running the projector for extended period at high laser power while overfilling the DMD can damage it.	Refer to the Service manual and training documentation for the adjustment procedure.
	Shadows around the edge of the screen	Light is underfilling the surface of the DMD.	Refer to the Service manual and training documentation for the adjustment procedure.

Component	Symptoms	Failure mode	Corrective actions
Fold mirror	Dark section around the edge of the screen or missing parts of the image	If the light is not aligned to the DMD, sections of the DMD may not be illuminated.	Refer to the Service manual and training documentation for the adjustment procedure.
Color sensor board	LiteLOC™ is not achievable	Hardware failure	Replace the color sensor board.
	Color calibration is missing	Calibration is missing.	Perform color calibration.
DMD	Significant brightness degradation	Light is overfilling the surface of the DMD. Running the projector for extended period at high laser power while overfilling the DMD can damage it.	Refer to the Service manual and training documentation for the adjustment procedure.
Projection lens	Minor brightness loss	Spots of contamination on the glass	Cleans the lens with a lens cleaning cloth/microfibre.
	Significant brightness drops	Cracked, damaged lens	Contact Christie Technical Support.

Fold mirror, zoom lens, and focus lens adjustments interact with one another. All three adjustments are usually done over a few iterations by rotating between the three adjustments.

Projector does not have power and is not operational

The projector does not have power and is not operation. Pushing the **Power** button does not turn on the projector.
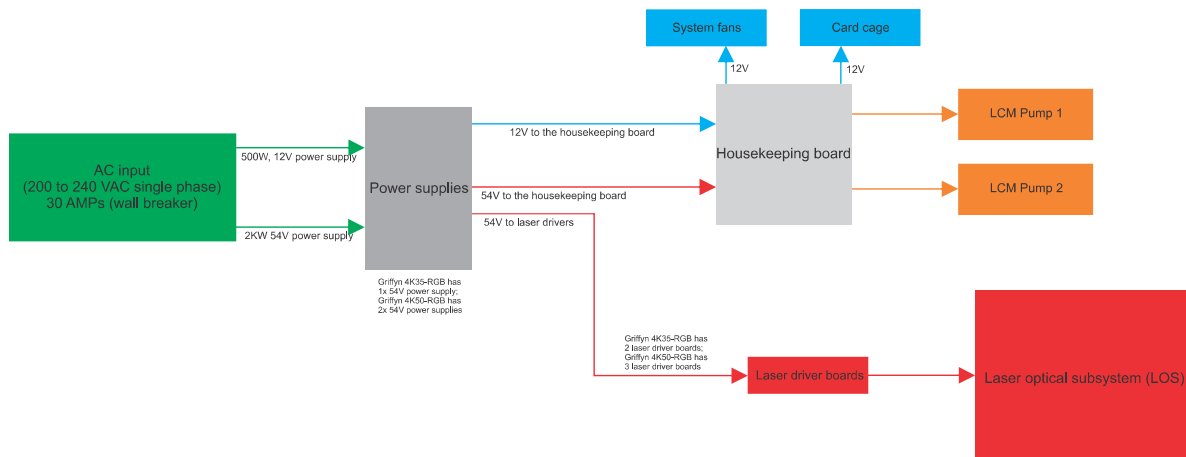
Details

The following images detail the power distribution workflows for the 12V and 48 V/54 V power supplies. For more details including port numbers, harnesses, and board numbers, refer to the product's Interconnect drawing.
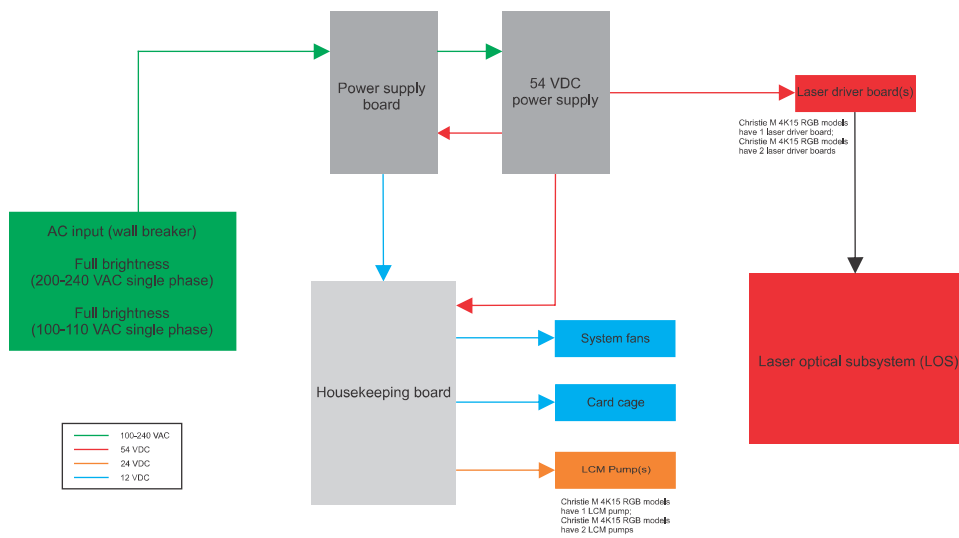
Griffyn® 4K32-RGB power distribution workflow:
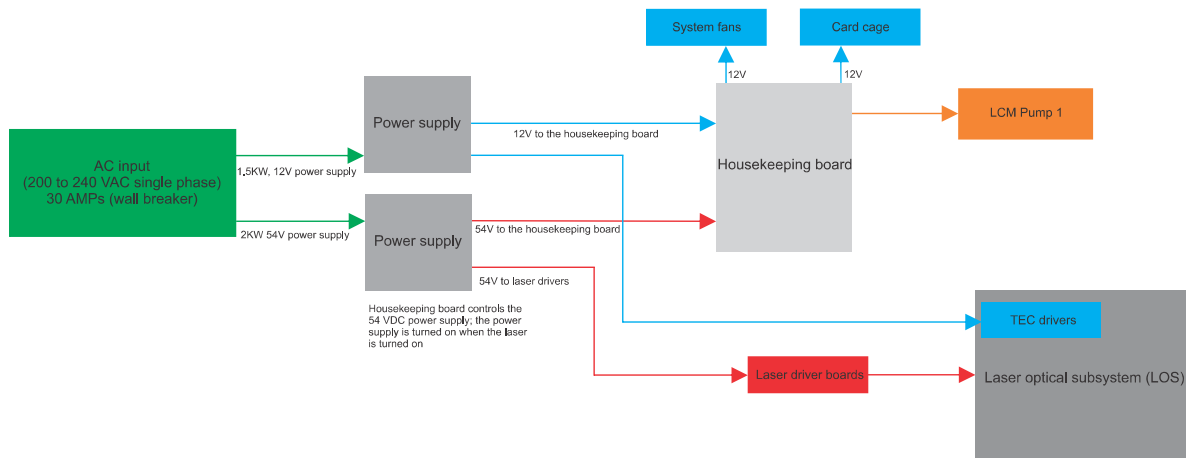
Griffyn® 4K35-RGB and Griffyn® 4K50-RGB power distribution workflow:

Christie M RGB Series power distribution workflow:

Possible causes include:

1. The breaker switch is not on.

2. Power supplies are not functioning.

3. Issue with the housekeeping board.

4. If the projector does not enter standby mode, nothing appears on the display panel, which can indicate an issue with the display panel, keypad, or the power supply.

> When enabled, the Stealth mode feature does not turn off the display panel only the status and shutter LEDs and the heartbeat feature on the display panel **Enter** key.

Resolution

1. Check the breaker switch is on or the breaker is not damaged.

   • If the breaker switch is not on, turn it on.

   • Check the line cord for damage and proper connection.

   • If the breaker switch is on and the line cord is connected, contact a certified electrician to confirm the rated projector power is available at the wall breaker.

2. Confirm the rated projector power is is reaching the power supplies and 12 VDC is being output by the 12V power supply.
   The 12 VDC power supply has one LED.

   • If the LED is green, the 12V power supply is good. Proceed to step 3.

   • If the LED is not green, an issue exists with the 12V power supply. Contact Christie Technical Support.
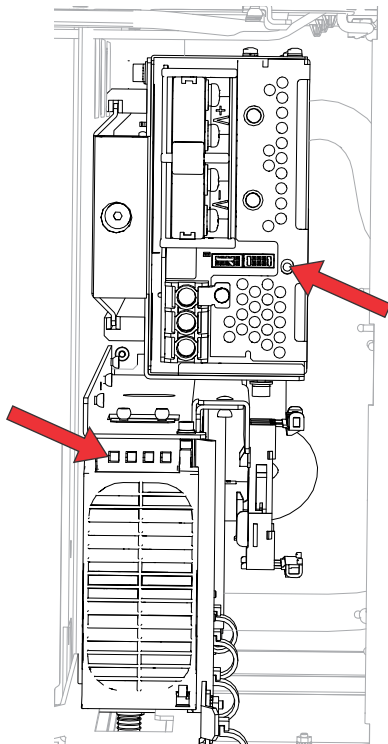
3. If confirmed the projector has power out of the 12V power supply but the system does not boot, check the LEDs on the housekeeping board.

- If no light on the housekeeping board, make sure the 12V harness (J112) from the LVPS to the housekeeping board is properly seated and connected.
- If the housekeeping board boots but the two LEDs are not blinking, make sure the power (J6) and communication (J8) harnesses between the housekeeping board and card cage are properly seated and connected. If the display panel is on, it indicates a functioning card cage.
- If the harnesses are connected and properly seated between the two boards, replace the housekeeping board.

4. Check the display panel and keypad are functional.

- Check to make sure the harness from the card cage (J4) to the display panel (J30) is connected and properly seated, or is not damaged. If damaged, replace the harness.
- Check to make sure the harness (J34) from the integrated keypad board (IKB) to the display screen is connected and properly seated, or is not damaged. If damaged, replace the harness.
- Check the card cage. Turn on the projector and from the web interface check for any errors on the Status page. If an error is listed, correct the error.
- If the display panel and/or keypad are not functional, replace the user interface module.

Projector is in Standby mode but cannot turn on the lasers

The lasers do no turn on while the projector is in Standby mode.

Details

Possible causes include:

- Rotating diffuser is not spinning.
- 54V power supply is down.

  The 54V power supply requires control signal from the housekeeping board. If the communication harness from the housekeeping board to the 54V power supply is removed or not seated correctly, the power supply does not output power.

  For Christie M RGB Series, when the 54V power supply is down, the projector is not operational.

- Bad laser communication for the laser driver board due to damaged or improperly connected harnesses.
- Other potential issues include the following:
  - Problems programming the CAVE or VOM FPGAs
  - Problems detecting and programming the formatter boards

To understand the power workflow, refer to the diagram in the Projector does not turn on topic.

Resolution

1. Check the status system for any status items indicating an error (red) to determine the issue to resolve.

2. Check the 54V power supply LED.

   To determine where the 54V power supply LED is located, refer to the diagram in the Projector does not turn on topic. Use the power supply status table to help determine a resolution.

LED status	Output status	Action
Solid green	DC Output OK	Indicates power to the power supplies. Proceed to step 3.
Solid orange	DC Output OK, in remote control mode	Check the communication (CN2) harness into the power supply is fully seated and connected.
Slow blinking green	Output Not Enabled	There is power but the supply is not enabled. Check the communication (CN2) harness into the power supply is fully seated and connected.
Fast blinking red	Over Voltage	Too much power is coming into the power supply. Make sure a certified electrician checks the line voltage and supply from the wall.

Solid red	Over Loaded	A potential short in the output of the power supply occurred.
		
		    Inspect the DC (secondary) harnesses are fully seated and connected.
		
		    Inspect the boards to make sure they are functioning.

Slow blinking red	Over Temperature	The power supply has over heated.
		
		    Potential air blockage. Inspect the air intake to the power supply and clear any blockages.
		
		    Check if the projector is operating in the specified projector temperature range.

Intermittent blinking red	Fan Fail	The power supply fan failed. Replace the power supply.
Short and long blinking red	AUX Standby Failure	Check the power into the power supply. Replace the 54V power supply.
No light	—	Use a multimeter to measure the voltage out of the power supply. If no power is measured, replace the 54V power supply.

3. Check the following harness connections to make sure they are not loose or damaged. If damaged, replace the affected harness.

   - Harness (J129) from the housekeeping board to the laser driver board
   - Power (J170 and J171 for Griffyn® 4K32-RGB and J141 and J142 for Griffyn® 4K35/50-RGB and Christie M RGB Series) and communication (J164 for Griffyn 4K32-RGB and J144 for Griffyn 4K35/50-RGB and Christie M RGB Series) harnesses from the laser driver board to the laser optical subsystem (LOS):

     If the communication harness from the laser driver board to the LOS is removed, loose, or partially seated and the system cannot read the LOS information, the lasers do not turn on.
   - Communications harness (J113) from the housekeeping board to the 54V power supply

- Communications harness (J110) from the housekeeping board to the 12V power supply
- Power harness (J114) from the laser driver board to the 54V Input connection on the housekeeping board
- Power harness (J112) from the 12V Input connection on the housekeeping board to the 12V power supply

4. Check if the housekeeping board has two blinking green LEDs.

   If the housekeeping board boots, the two LEDs should move from solid green to blinking. If not blinking, check the following:

   - Check the harness (J8) between the housekeeping board and card cage is properly seated and connected.
   - Make sure the proper version of software is installed on the projector.

     To view the installed version of software, select **MENU** > **Admin** > **About**. To download the latest version of software, go to *https://www.christiedigital.com/products/projectors/all-projectors*, select the model, and switch to the **Downloads** tab.
   - Check the housekeeping board. If faulty, replace the board.

5. Check the LOS serial number and run the interrogator, which captures the subtype ID.

   If the LOS is programmed with the wrong subtype ID, it does not allow some or all lasers to turn on.

6. Provide the information to Christie Technical Support.

Colors on the screen not stable or accurate

The colors on the screen are not as stable or as expected.

LiteLOC™ is crucial for ensuring color stability and accuracy. Before doing any of the following troubleshooting options, verify LiteLOC has been done on site using the actual projection surface and projection screen.

Possible causes	Resolutions	Notes
Colors on screen not stable		
This behaviour is normal if you change the brightness or are using an older version of LiteLOC.	Wait for stabilization after making brightness adjustments.	—
The color sensor board is faulty.	Replace the color sensor board.	For details, see the projector's Service guide.
Colors on screen not accurate		
The color correction modes were not selected to match the content playing on the screen.	Verify the selected Color Correction mode matches the source content color gamut.	For more details, see the *TruLife+ User Guide (P/N: 020-103315-XX)*.
Running an older version of LiteLOC could be the cause of two projectors not holding the same color point.	Redo LiteLOC or If your projector model supports upgrading to a new version of LiteLOC, upgrade to the latest software version and redo LiteLOC.	For more details, see the *TruLife+ User Guide (P/N: 020-103315-XX)*.

Possible causes	Resolutions	Notes
	Contact Christie Technical Support to see if the projector model can be upgraded.	
The meter does not match the LiteLOC white point setting or the measured coordinates are outside the specified LiteLOC tolerance.	Verify the selected Color Correction mode matches the white point of the light source setting and redo the LiteLOC calibration.	For more details, see the *TruLife+ User Guide (P/N: 020-103315-XX)*.
A color mismatch can occur between two or more projectors.	1. Validate the custom colors are not setup, set colour correction mode to Max Drives (**MENU** > **Image Settings** > **Color & Gamma** > **Color Correction Mode** > **Max Drives**) and disable Pureformity Color Technology (PCT) (**MENU** > **Configuration** > **Horizontal 1D Color Uniformity** > **Color Uniformity Mode**). If you do step 1 and see the same white on the screen (the projector is doing what it is supposed to do), proceed to step 2. If you do step 1 and the projector models do not match, the steps 2 and 3 may not solve the issue due to differences in light sources. 2. Make sure the same white point is selected for all the projectors. 3. Select a custom colour gamut to use the smallest one between the projectors.	For more details, see the "Selecting the color correction mode" topic in the *TruLife+ User Guide (P/N: 020-103315-XX)*.

Projector brightness lower than expected

Why is the projector output not as bright as expected.

Check the projector for any errors displayed in the Status System and correct the issues before following the troubleshooting options below. For details, refer to the *TruLife+ Status System Guide (P/N: 020-102975-XX)*.

Possible causes	Resolutions	Notes
Projection lenses		
Depending on the projector model, ultra high contrast lenses can drop brightness by up to 35%. Ultra short throw lenses can experience some level of brightness loss by up to 30%.	Check for issues with the projection lens: 1. Try using a different lens to see if brightness increases. 2. If there are manual adjustments on the lens, make sure the aperture is fully open. 3. Look into the lens to see if any elements are crakced or have other damage to them and replace the lens if required.	This is expected performance with ultra high contrast and ultra short throw lenses.
Operating environment and condition of the projector and its accessories		
Ambient environment (such as temperature, humidity, and altitude) is above the projector's nominal performance conditions.	See the projector's specification page on the Christie website. 1. Go to *www.christiedigital.com*. 2. Search the website for the product. 3. On the product page, switch to the **Specs** tab.	—
Clogged filters reduce air flow.	Check the filters and replace as required.	For details on how to replace the filter, see the projector's Service guide.
The optical meter used to evaluate brightness or calibrate LiteLOC™ is not set up or functioning properly, or issues with the calibration process occurred.	If using an optical measuring device, make sure it is set up correctly.	For details on using the optical measuring device, see the measuring device's documentation.
A non-Christie approved optical meter.	Use one of the following optical meters approved by Christie: • CR250 • CR300 • Qalif Spectro	—
The projector is running in Limited Brightness mode.	Run the projector in Full Power mode.	Limited Brightness mode is enabled automatically when the projector is connected to 110V power. When Limited Brightness mode is enabled, the status is displayed in the header of the user interface.

Possible causes	Resolutions	Notes
An aperture or filter was added to the product.	Remove the aperature or filter from the optical and check the projector brightness.	—
The type, condition, and size of the screen or projection surface can affect the brightness of the image.	1. Try a different surface. 2. Validate the measurement by using a calibrated puck at the center of the screen and take measurements.	—
The age of the projector and its components can affect brightness.	Check the number of laser hours and see the projector's specification page on the Christie website to determine Illumination performance. 1. Go to *www.christiedigital.com*. 2. Search the website for the product. 3. On the product page, switch to the **Specs** tab.	—
Software settings		
Quiet mode is enabled in the Fan Speed Profile.	Change the Fan mode (**MENU** > **System Settings** > **Power Settings** > **Fan Speed Profile**) from Quiet to **Standard**.	For more details, see the *TruLife+ User Guide (P/N: 020-103315-XX)*.
Color correction or color matching settings	Set the Color Correction mode (**MENU** > **Image Settings** > **Color & Gamma** > **Color Correction Mode**) to **Max Drives** to turn off all color adjustments and allow the projector to run at maximum brightness.	For more details, see the *TruLife+ User Guide (P/N: 020-103315-XX)*.
Target white point differs from the light source white point setting.	Change the white point setting to the projector's rated white point—typically this is D65 (x=0.3127, y=0.329).	—
White point setting is different from the projector's nominal white point.		—
The Christie M 4K25 RGB or Christie M 4K+25 RGB projector is running in Low Brightness mode.	When enabled the Low Brightness mode feature disables a number of laser devices to allow for lower brightness operation. Disable Low Brightness mode to increase the brightness: 1. From the display panel, select **MENU** > **Admin** > **Service**. 2. Enter the service password.	For more details, see the *TruLife+ User Guide (P/N: 020-103315-XX)*.

Possible causes	Resolutions	Notes
	3. Select **Light & Output Settings**. 4. Clear the **Enable Low Brightness** option.	
Pureformity Color Technology (PCT) was done for one lens and another projection lens is used in the projector.	Disable the Pureformity Color Technology (PCT) settings (**MENU** > **Configuration** > **Horizontal 1D Color Uniformity** > **Color Uniformity Mode** > **Color Uniformity Off**).	For more details, see the *TruLife+ User Guide (P/N: 020-103315-XX)*.
Optical components		
Optical component misalignments such as LOS coupling mirror and IOS zoom	Perform optical alignments.	For details, see the "Aligning the image" section in the projector's Service guide.
LiteLOC calibration was not performed after making an IOS or LOS adjustment.	Redo the LiteLOC calibration.	For details on performing a LiteLOC calibration, see the *TruLife+ User Guide (P/N: 020-103315-XX)*.
Contaminants such as dust and dirt in the optical components	Clean the optical components.	For details, see the "Maintenance and cleaning" section in the projector's Service guide.
Degraded or faulty optical components such as cracked optics, damaged projection lens, faulty laser devices, and so on are in the projector.	Replace the suspected optical component.	See *Failures related to optical components* (on page 10) for additional information about the projector optical components and failures that can occur. For details, see the projector's Service guide.

Switching between light and dark content causes focus drift

When using the ultra short throw lens with higher brightness and switching between dark and bright content, focus drift occurs.

Details

Focus drift is more noticeable when using the ultra short throw lens with higher brightness but can be seen with any shorter throw lens with any level of brightness depending on the mix of content.

Resolution

Christie recommends one of the following options:

- Christie recommends reducing brightness and focusing the content on what you primarily want the projector to focus on.

- Focus on a mid-range test pattern (50% grey).
- Create different profiles for dark and light content.

Projector noisier than expected

How do I make the projector quieter?

Details

The speed and noise of the fans changes with the following:

- Ambient temperature
- Brightness (laser power)

Use the fan speed profile to balance noise compared to brightness depending on projection needs.

Resolution

1. Select **MENU** > **System Settings** > **Power Settings** > **Fan Speed Profile**.
2. Select the appropriate fan speed profile:
   - **Standard**—The projector attempts to achieve a balance between low noise and brightness performance by adjusting fan speed with regards to ambient temperature and requested brightness. (Default)
   - **Quiet**—The projector achieves the lowest noise at the possible expense of brightness performance.
   - **Performance**—The projector brightness is not restricted by fan speed.
     Only applies to: Christie M RGB Series, Griffyn® 4K35-RGB, and Griffyn® 4K50-RGB

LOS Dewpoint - Approaching Limit warning

Received a LOS Dewpoint - Approaching Limit warning during calibration.

Only applies to: 4K40-RGB Series and Griffyn 4K32-RGB

Details

The projector is reacting to humidity to prevent damage in the laser optical subsystem (LOS). Due to the laser power eventually being reduced, the brightness and color may be impacted.

Resolution

1. Operate the projector in a less humid environment.
2. If a new setup, the humidity levels inside the LOS may need 24 hours to normalize with the environment.

   For example, if the projector came from a hot, humid environment (outdoors, shipment) and then brought into a cold, dry operating environment.
3. Increase the **Maximum Expected Ambient** setting in the LiteLOC™ feature.

Formatter Fault error has occurred

One of the following Formatter Fault errors appear in the Status tab of display panel for either the red, green, or blue formatter boards

- Formatter Detection Fault
- Formatter Initialization Fault
- Formatter Runtime Fault

Resolution

Follow these steps to determine the cause of the Formatter Fault error.

> The examples used in the steps below are based on a Formatter Detection Fault error on the red formatter board and use the cables labeled as red and green.

1. Remove top cover.
2. Disconnect and reconnect the cable for the affected formatter board on the high-speed imaging processing board CAVE board.

   Make sure a click sounds when you connect the cable. For example, disconnect and reconnect the red cable.
3. Re-install the top cover.
4. Turn on the projector and look at the error messages displayed in the display panel.

   - If the Formatter Fault error is still displayed, continue to the next step.
   - If the error is not reported, the formatter board is working as expected. Disregard the remaining steps.
5. Remove the top cover.
6. From the CAVE board side, swap the CAVE port cables from the formatter board having issues with one of the two other formatter board cables.

   For example, swap the red formatter cable with the green formatter cable from the CAVE side ports.
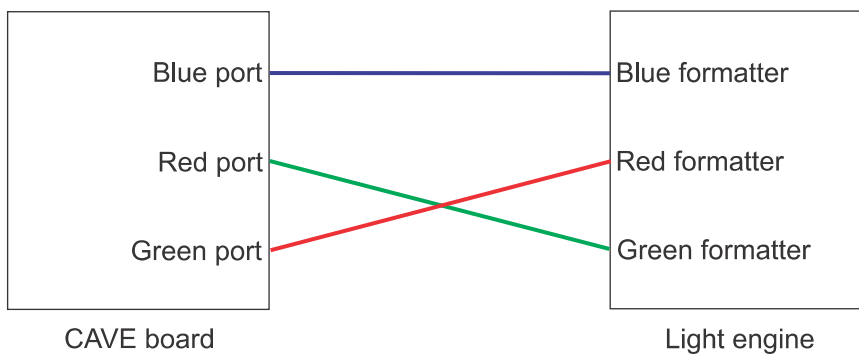
7. Re-install the top cover.
8. Turn on the projector and look at the error messages displayed in the display panel.

   - If the Formatter Fault error stays with the initial board, the issue is with the CAVE board. Change the cables to their original positions and confirm the error still persists. If it does, replace the CAVE.

- If the Formatter Fault error moved from the one formatter board to the other (for example, moved from the red formatter board to the green formatter board), the issue is with the cables or the formatter board. Proceed to the next step.

9. Remove the top cover.

10. On the light engine side, swap the same formatter cables you swapped in step 6 on the CAVE board side.

    For example, swap the red cable for the green cable. For more information on the light engine, see the Service guide for the projector model.

Blue port	———	Blue formatter
Red port	———	Red formatter
Green port	———	Green formatter

CAVE board   Light engine
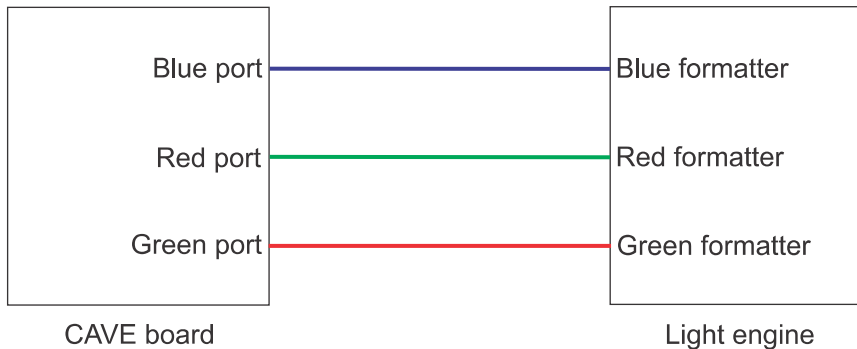
11. Re-install the top cover.

12. Turn on the projector and look at the error messages displayed in the display panel.

    - If the Formatter Fault error is displayed for the other formatter board (for example, the green board), the issue is with the initial cable (for example, the red cable). Replace the affected cable.

    - If the original Formatter Fault is still reported, the issue is with the formatter board. Replace the light engine.