

Installation and Setup Guide
020-103872-01

Christie IMB-S4

CHRISTIE®

NOTICES

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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 messages indicate a hazardous situation which, if not avoided, results in death or serious injury.



Warning messages indicate a hazardous situation which, if not avoided, could result in death or serious injury.



Caution messages indicate a hazardous situation which, if not avoided, could result in minor or moderate injury.



Notice messages indicate a hazardous situation which, if not avoided, may result in equipment or property damage.



Information messages provide additional information, emphasize or provide a useful tip.

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Introduction

This manual provides installation and setup instructions for the Christie IMB.

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: <https://bit.ly/3VHe6cI> or <https://www.christiedigital.com/products/all-accessories/integrated-media-block/imb-s4/>
 - Scan the QR code using a QR code reader app on a smartphone or tablet.



2. On the product page, switch to the **Downloads** tab.

Related documentation

Additional information on this product is available in the following documents.

- *Christie IMB-S4 User Guide (P/N: 020-103873-XX)*
- *Servicing the IMB-S4 Instruction Sheet (P/N: 020-103880-XX)*

Safety precautions

Learn about the safety precautions related to the Christie IMB.

General safety precautions

Read all safety and warning guidelines before installing or operating the product.

Hazard warnings also apply to accessories once they are installed in a Christie product connected to power.



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

- SHOCK HAZARD! Disconnect the product from AC before installing, moving, servicing, cleaning, removing components, or opening any enclosure.
- EXPLOSION HAZARD! Allow sufficient time for the lamp to cool down before powering down the product, disconnecting it from AC, and opening the lamp door.
- EXPLOSION HAZARD! Replacement battery must be of the correct type.
- EXPLOSION HAZARD! Dispose of the battery according to local area regulations.



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

- Only Christie qualified technicians are permitted to open product enclosures.
- Observe all electrostatic precautions. Use a grounded wrist strap and insulated tools when handling, servicing, or cleaning electronic assemblies.

Key features

Understand the important features of the Christie Integrated Media Block (IMB).

- On board SSD storage
- Can play content at up to 4K 96fps (4K 48fps per eye 3D)
- Long-life battery that does not require charging
- Fully integrated with the projector web user interface (UI)

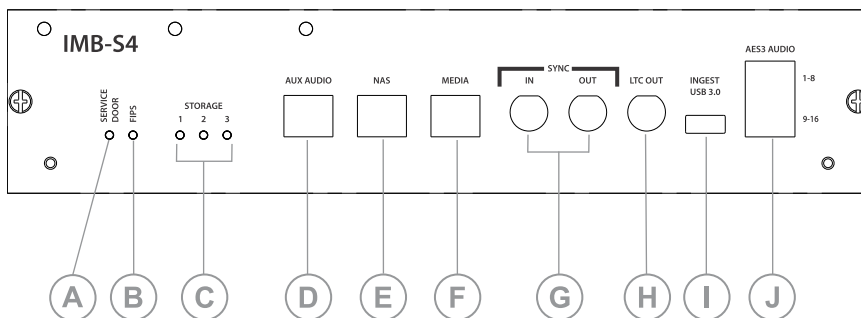
Prerequisites

To install the Christie IMB into your theater environment, the following items are required.

- A Christie CineLife Series 4 projector with CineLife+ 2.3.0 firmware or later installed. If you do not have CineLife+ 2.1.0 firmware or later installed, install the IMB in the projector before running the firmware upgrade.
- An AES connector for dual RJ45 Ethernet ports, connecting your cinema audio processor to the Christie IMB audio output. See AES3 port pin map.

Christie IMB components

Learn about the components on the Christie IMB.



Feature	Description
A	Service door status indicator—Displays green when the security door is closed. Displays red if the security door is open. Playback will not commence or continue until this LED is green.
B	FIPS (Federal Information Processing Standards Publications) status indicator—Displays green when FIPS security status is operating correctly. If the LED is red, an error has occurred. Restart the IMB. If the LED remains red, return the product to Christie Digital Systems USA Inc.
C	Integrated Storage status indicator—Indicates the operational status of the integrated storage.
D	Auxiliary Audio port for immersive audio—Can be used to connect to IAB (immersive audio bitstream) or Atmos cinema audio processor. 1GBase-T (RJ45 female)—Not currently supported.
E	Optional NAS storage interface—Not currently supported.
F	Content/Media network interface—2.5GBase-T connection to the Content/Media network (such as, TMS and LMS). Can also be used as a live streaming input port (RJ45 female).
G	Multi-projector playback Sync In and Sync Out (75 ohm BNC)—Provides a GEN LOCK output signal (primary projector) or sync input signal (secondary projector) carrying IMB-S4 playback video frequency and phase (timecode) information—Not currently supported.
H	Linear Timecode (LTC) output for driving D-box systems, for example.
I	Data Interface for local ingest (USB-3 (4.8 Gbits/s) Type A)—The USB 3.0 port can be used to load content (DCP) or keys (KDM).
J	AES3 port for up to 16 channels of uncompressed digital audio output (2 x RJ45 female).

IP and subnet considerations

To make sure the Christie IMB can operate, you must configure your network settings correctly. Incorrect subnet settings can cause communication issues between the Christie IMB and external automation devices.

To reduce the risk of communication issues:

- Assign the projector Management, Christie IMB, Media, and Aux Audio networks to non-conflicting subnets. For example:

Netmask	255.255.255.0
Command and Control (Management)	192.168.3.100
Content/Media	192.168.2.1
Aux Audio	192.168.3.1

- Configure the Content/Media port on the Christie IMB faceplate to use dynamic host configuration protocol (DHCP) when not in use. When you set DHCP on an Ethernet port and nothing is connected to the port, the Christie IMB does not mount the port and there is no risk of an IP address conflict.
- Use static IP addresses on the Command and Control (Management), Content/Media, and Aux Audio ports when they are in use.

Technical support

Technical support for Christie Cinema products is available at:

- *Support.cinema@christiedigital.com*
- +1-877-334-4267
- Christie Professional Services: +1-800-550-3061 or *NOC@christiedigital.com*

Installing and configuring

Learn how to install and configure the Christie .

Site requirements

To safely install and operate the IMB, the installation location must meet these minimum requirements.

Physical operating environment

- Ambient temperature (operating) 10 to 35°C (50 to 95°F) up to 304.8 meters (1000 feet)
- Humidity (non-condensing) 10% to 80%
- Operating altitude 0 to 4000 meters (0 to 13,125 feet) at 10 to 21.9°C (50 to 71.4°F) ambient

Physical non-operating environment

- Storage temperature range -40 to 70°C (-40 to 158°F)

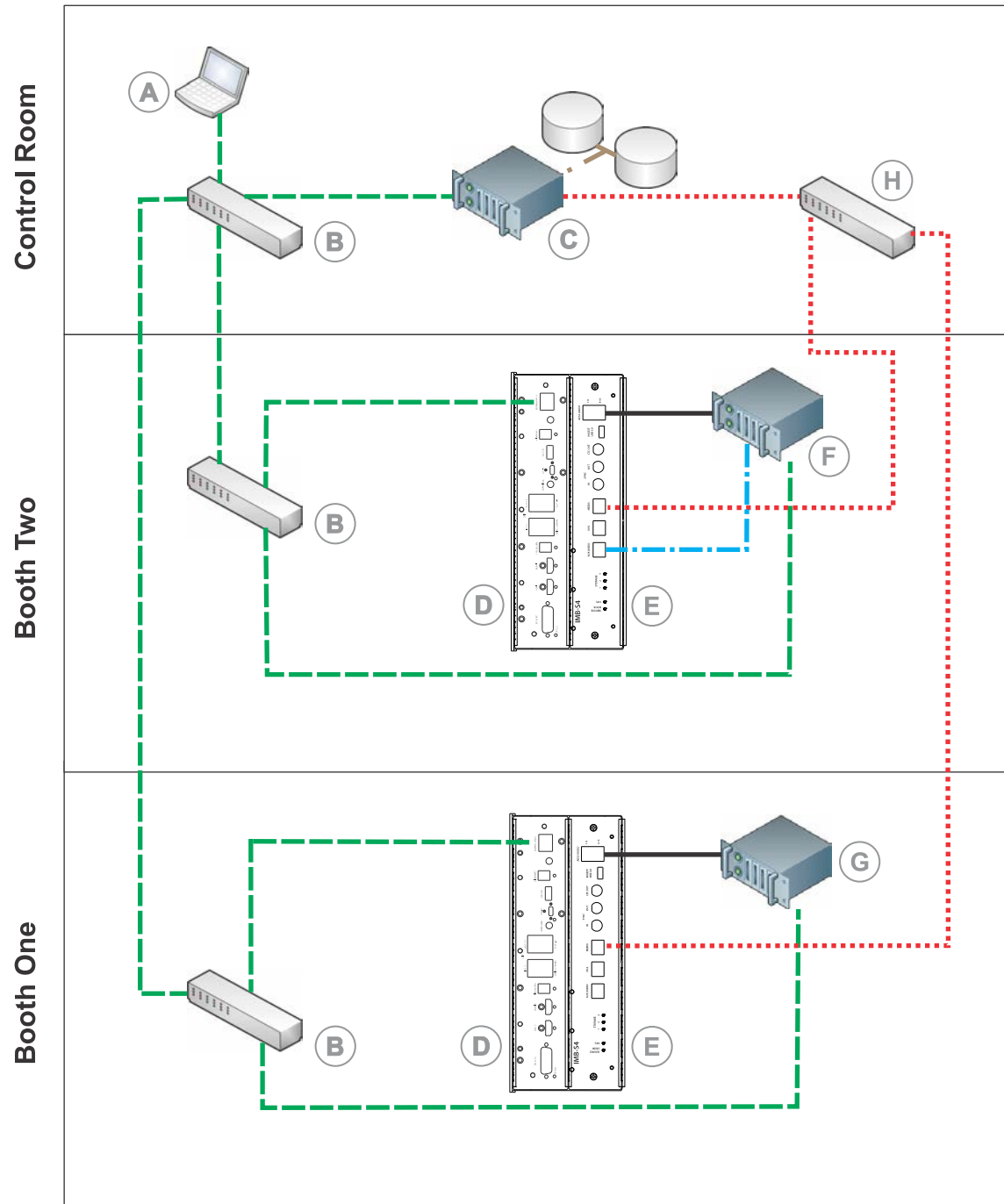
Connecting to a content network

With a content network, you can ingest content from a theater management system (TMS), a satellite receiver, or another IMB. The network file system (NFS) service must be enabled on the file share accessed by the Christie IMB.





To allow the projector to communicate with the ingest device, see the *Christie IMB-S4 User Guide* (P/N: 020-103873-XX). Specify the IP address of the theater management system or satellite receiver in the IP Address field and select the NFS share in the Share Folder list.

Content network topology

Learn the components of a content network.



Item	Description
A	Control computer

Item	Description
B	GigE switch for command and control network
C	Theater Management System (TMS) or Library Management System (LMS)
D	Common audio video electronics board (CAVE)
E	Christie Integrated Media Block (IMB)
F	Dolby Atmos Cinema processor CP850
G	Dolby Digital Cinema Sound Processor CP750
H	GigE switch for content network
	Command and Control (Management) network (GigE media network for moving content over the network)
	Content/Media network (GigE)
	Home run connection to CP850
	AES connection

LED status indicators

The following table provides the IMB-S4 status indicator LED and its meaning.

LED action	Description
Service door LED	
Green	Indicates the service door is closed.
Red	Indicates the service door is open.
FIPS LED	
Green	Indicates the FIPS is armed and is in approved operational mode.
Orange	Indicates a periodic self-test is in progress.
Red	Indicates the FIPS is in an error state.
Storage 1, 2, 3 LEDs	
Green	Indicates drive activity.
Red	Indicates a failure of the associated SSD.
Orange	Indicates the RAID is being rebuilt.
Auxiliary Audio (Ethernet) LEDs	
Yellow	Indicates a link.
Green	Indicates activity.
Content/Media (Ethernet) LEDs	
Yellow	Indicates a link.

LED action	Description
Green	Indicates activity.

Installing the Christie IMB

The Christie IMB is installed in the card cage located on the side of the projector.

Marriage permissions are required to activate marriage.



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

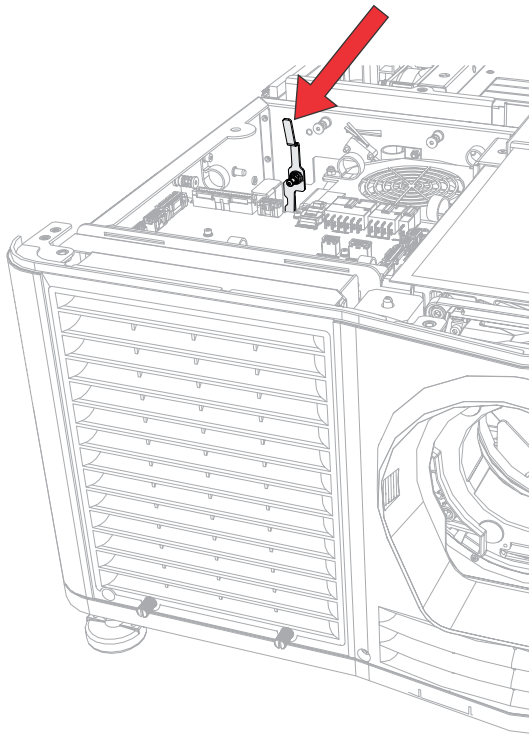
- Observe all electrostatic precautions. Use a grounded wrist strap and insulated tools when handling, servicing, or cleaning electronic assemblies.



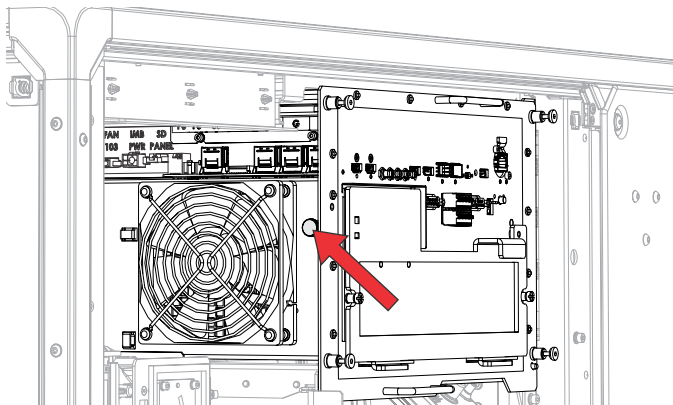
To prevent damage by static electricity, keep the Christie IMB in its anti-static package until you install it.

1. Turn off the light source and cool the projector for at least 15 minutes.
2. Turn off the projector and disconnect it from AC power.
3. To access the marriage lock pin.
 - For CP44xx-RGB models, open the service door.
 - For all other models, remove the top cover.
4. Release the marriage ring.
 - For Cinema 2K-RBe models, pull the marriage plate lever.
 - For all other models, release the marriage lock pin.

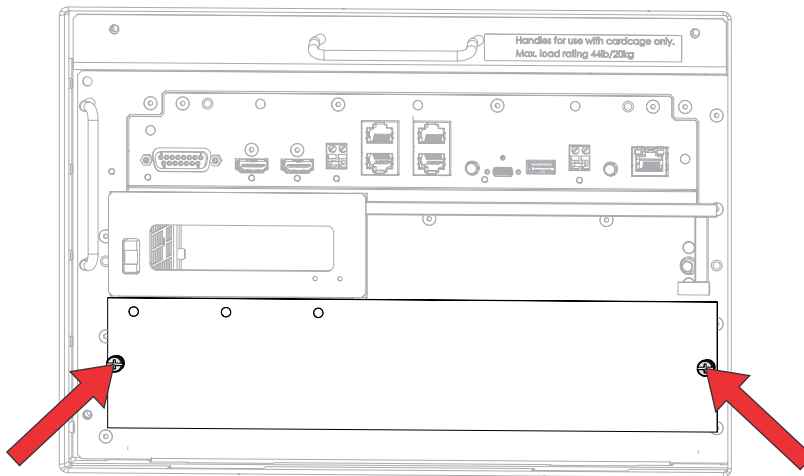
Marriage plate lever:



Marriage lock pin:



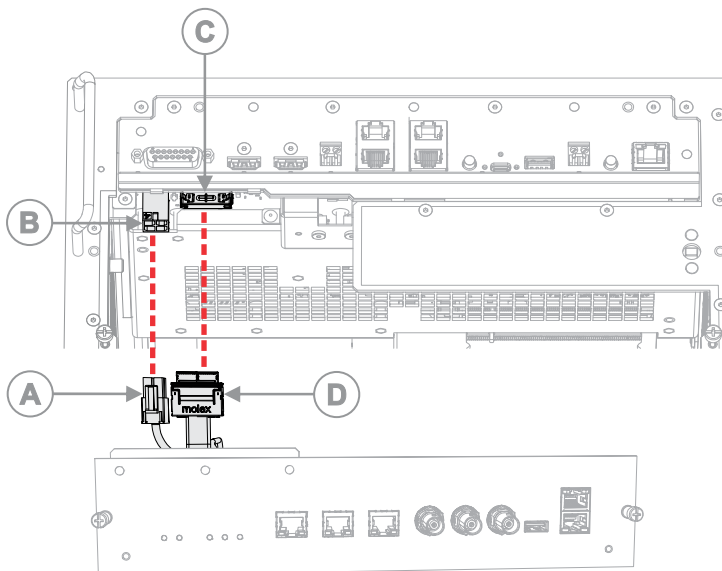
5. Remove the marriage ring.
6. Loosen the two screws securing the blank plate and remove it.



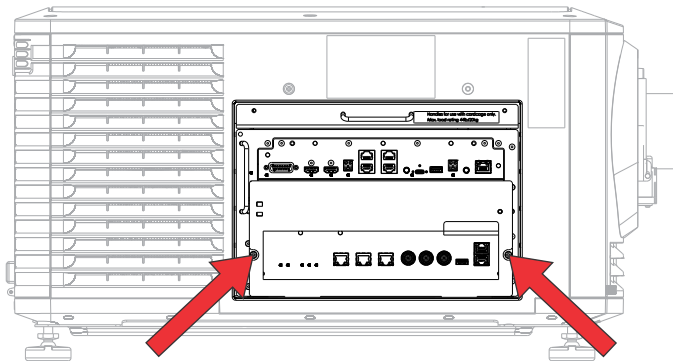
7. Unpack the Christie IMB-S4 and verify:
 - The holographic stickers covering the fasteners on the security enclosure are intact.
 - No obvious signs of tampering on the security enclosure exist.
 - The serial number stickers are in place and legible.

If the Christie IMB shows signs of tampering, contact Christie support. For contact information for your region, see the back cover of this document.

8. Align the Christie IMB with the guides in the card cage and then slide it partially into the projector.
9. Connect the power (A) and COM (D) harnesses to the power (B) and COM (C) connectors on the card cage.



10. Fully slide the IMB into the projector.
11. Tighten the two screws securing the IMB.



12. Replace the marriage ring.
13. Close the service door or replace the top cover.
14. Turn on the projector.
15. Activate marriage.

Selecting Integrated Media Block (IMB) preferences

Choose from the available options to set the type of Integrated Media Block (IMB).

1. In the left navigation menu, select **Service Setup** > **Preferences**.
2. Select **IMB**.
3. In the Type list, select the manufacturer of the IMB model.
4. When the system prompts you to reboot the projector, select **Reboot**.
5. After the projector has restarted, log in with your user account.

Activating marriage

After selecting the Integrated Media Block (IMB) type, you must install the IMB and complete marriage to display secure content and to comply with the Digital Cinema Initiatives (DCI) specification. You cannot complete marriage remotely.

For more information on marriage, refer to *Christie IMB-S4 User Guide (P/N: 020-103873-XX)*.

You cannot complete marriage remotely because you must select the **Marriage** button on the input panel during the marriage process.

1. Verify the marriage ring is installed correctly and an anti-tamper alarm does not appear on the touch panel.
2. In the left navigation menu, select **Service Setup** > **Marriage Setup**.
3. Select **Start** and complete the Marriage Setup wizard.
At the Arming stage, enter the Marriage password.
4. Select **Finish**.

Configuring audio settings

Connect the digital cinema audio processor to the Christie IMB and configure the audio settings.

1. Connect the two audio cables to the Christie IMB AES3 port and the other ends to a digital cinema audio processor.
2. Configure your speaker and channel settings.
See *Managing audio settings* in the *Christie IMB-S4 User Guide (P/N: 020-103873-XX)*.

Disposing of the product packaging

Once the product has been installed and set up, Christie recommends reusing or recycling the product packaging according to your local regulations.

Managing IMB end-of-life

As per FIPS140-3, make sure all components of the IMB are disposed of properly according to local regulations and laws.

1. Remove both battery boards from the IMB.
This causes tampering and zeroization of the IMB module.
2. Dispose of the board properly according to local e-waste regulations and laws.
3. Dispose of the batteries, which contain lithium, properly according to local regulations and laws.

Enhancements and licensing

Learn about importing licenses and activating product enhancements.

Identifying the Christie IMB electronic serial number

The Christie IMB electronic serial number (ESN) allows a distributor to identify the IMB certificate and generate the key delivery message (KDM) key to play encrypted content. The Christie ESN is also required to generate license keys that enable specific IMB features.

On Christie IMB-S4, the ESN is printed on the front of the faceplate.

1. To display the 12-digit hexadecimal ESN on the projector touch panel, select **About**.
2. Review the displayed SM ESN number.

Playing content

After installing and configuring the Christie IMB, complete the following tasks to play content. For more detailed instructions, see the *Christie IMB-S4 User Guide (P/N: 020-103873-XX)*.

1. Ingest the content.
Content is typically provided on a hard drive sent by your movie distributor.
2. Ingest the key delivery message (KDM) key.
A KDM key is not required for trailers and other unencrypted content. The KDM key is typically sent separately from the encrypted content on a USB flash drive.
3. Verify the content plays correctly and the KDM is correct.
4. Create a playlist.
A playlist is a list of content files including trailers, features, and automated events that play in an order you define.
5. Verify the playlist plays correctly.
6. Optionally, schedule playback or add automation to a playlist.

Regulatory

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

Safety

- IEC 62368-1:2018 - Audio/Video, Information And Communication Technology Equipment - Part 1: Safety Requirements
- BS EN 62368-1:2014 - Audio/Video, Information And Communication Technology Equipment - Part 1: Safety Requirements
- UL 62368-1:2018 - Audio/Video, Information And Communication Technology Equipment - Part 1: Safety Requirements
- CSA CAN/CSA-22.2 No. 62368-1:2018 - Audio/Video, Information And Communication Technology Equipment - Part 1: Safety Requirements

Electro-magnetic compatibility

Emissions

- FCC CFR47, Part 15, Subpart B, Class A – Unintentional Radiators
- CAN ICES-003 (A)/NMB-003 (A) – Information Technology Equipment (Including Digital Apparatus) – Limits and Methods of Measurement
- CISPR 32/EN 55032, Class A – Electromagnetic Compatibility of Multimedia Equipment – Emission Requirements
- IEC 61000-3-2/EN61000-3-2 - Limits for Harmonic Current Emissions
- IEC 61000-3-3/EN 61000-3-3: Limitations of Voltage Changes, Voltage Fluctuations, and Flicker input current ≤ 16 A per phase and not subject to conditional connection

Immunity

- CISPR 35/EN 55035 Electromagnetic compatibility of multimedia equipment - Immunity requirements

Environmental

- EU Directive (2011/65/EU) on the restriction of the uses of certain hazardous substances (RoHS) in electrical and electronic equipment and the applicable official amendment(s).
- EU Directive (2012/19/EU) on waste and electrical and electronic equipment (WEEE) and the applicable official amendment(s).

- Regulation (EC) No. 1907/2006 on the registration, evaluation, authorization and restriction of chemicals (REACH) and the applicable official amendment(s).
- China Ministry of Information Industry (along with 7 other Government Agencies) Order No.32 (01/2016) on the control of pollution caused by electronic information products, hazardous substances concentration limits (GB/T 26572 - 2011), and the applicable product marking requirement (SJ/T 11364 - 2014).

International packaging recycling mark requirements.

- EU Directive (2012/19/EU) on waste and electrical and electronic equipment (WEEE) and the applicable official amendment(s).
- EU Directive (94/62/EC) on packaging and packaging waste
- China packaging recycling mark standard (GB18455-2001)

Security policy

In accordance with the requirements of Federal Information Processing Standard (FIPS) 140-3, a security policy has been defined and published for the Christie Integrated Media Block (IMB).

This security policy identifies the ports and interfaces available on the device, the roles and services provided, and the critical security parameters protected by the Christie IMB. All users of the Christie IMB must abide by the requirements defined by the Christie IMB security policy. The Christie IMB security policy is available on the National Institute of Standards and Technology (NIST) website

Anti-tampering circuitry

The Christie Integrated Media Block (IMB) includes a security module that meets the Federal Information Processing Standard (FIPS) 140-3 security requirements as defined by the DCI Digital Cinema System Specification.

An important component of the security module is active anti-tamper monitoring. Any attempt to access the area under the security enclosure on the Christie IMB activates the anti-tamper circuitry and causes the FIPS LED to turn red. In addition, you cannot decrypt or play digital cinema content. If the anti-tamper circuitry is activated, you must return the Christie IMB to Christie Digital Systems USA Inc.

If you mishandle or drop the Christie IMB, you can activate the anti-tamper circuitry. Keep the Christie IMB in its original packaging until you install it.

Long-life batteries keep anti-tamper monitoring active when the Christie IMB is removed from the projector.

If the Christie IMB is exposed to constant temperature fluctuations, the lifetime of the battery can be shortened. The recommended temperature range for storing the Christie IMB is -20 to 25°C (-4 to 77°F).