Christie Integrated Media Block

Integration Guide

020-100962-03

CHRISTIE®

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This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

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The product is designed and manufactured with high-quality materials and components that can be recycled and reused. This symbol  **means that 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, there are separate collection systems for used electrical and electronic products. Please help us to conserve the environment we live in!**

Canadian manufacturing facility is ISO 9001 and 14001 certified.

GENERAL WARRANTY STATEMENTS

For complete information about Christie's limited warranty, please contact your Christie dealer. In addition to the other limitations that may be specified in Christie's limited warranty, the warranty does not cover:

a. **Problems or damage occurring during shipment, in either direction.**
b. **Projector lamps (See Christie's separate lamp program policy).**
c. **Problems or damage caused by use of a projector lamp beyond the recommended lamp life, or use of a lamp supplied by a supplier other than Christie.**
d. **Problems or damage caused by combination of a Product with non-Christie equipment, such as distribution systems, cameras, video tape recorders, etc., or use of a Product with any non-Christie interface device.**
e. **Problems or damage caused by the use of any lamp, replacement part or component purchased or obtained from an unauthorized distributor of Christie lamps, replacement parts or components including, without limitation, any distributor offering Christie lamps, replacement parts or components through the internet (confirmation of authorized distributors may be obtained from Christie).**
f. **Problems or damage caused by misuse, improper power source, accident, fire, flood, lightening, earthquake or other natural disaster.**
g. **Problems or damage caused by improper installation/alignment, or by equipment modification, if by other than Christie service personnel or a Christie authorized repair service provider.**
h. **Problems or damage caused by use of a Product on a motion platform or other movable device where such Product has not been designed, modified or approved by Christie for such use.**
i. **Problems or damage caused by use of a projector in the presence of an oil-based fog machine.**
j. **For LCD projectors, the warranty period specified applies only where the LCD projector is in "normal use." "Normal use" means the LCD projector is not used more than 8 hours a day, 5 days a week. For any LCD projector where "normal use" is exceeded, warranty coverage under this warranty terminates after 6000 hours of operation.**
k. **Problems or damage caused by use of a product outdoors unless (i) such product is protected from precipitation or other adverse weather or environmental conditions and the ambient temperature is within the recommended ambient temperature set forth in the specifications for such product and (ii) if the product is an LCD flat panel, such LCD flat panel is not exposed to direct sunlight**
l. **Image retention on LCD flat panels.**
m. **Failure due to normal wear and tear.**

PREVENTATIVE MAINTENANCE

Preventative maintenance is an important part of the continued and proper operation of your product. Please see the Maintenance section for specific maintenance items as they relate to your product. Failure to perform maintenance as required, and in accordance with the maintenance schedule specified by Christie, will void the warranty.

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Introduction

This document provides comprehensive instructions for installing and configuring the Christie Integrated Media Block (IMB) with network-attached storage (NAS) and direct attached storage (DAS) devices.

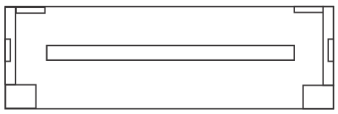
This document is intended for integrators who are installing multiple Christie IMBs in Christie Solaria Series 2 projectors. This manual can also be used to configure the internal Christie IMB (CMB) in Solaria One and Solaria One^{+} projectors. This document assumes a familiarity with digital cinema servers, IMBs, and basic networking concepts. Recommendations made in this document are based on the Christie IMB v1.0.0(132) firmware.

Only accredited Christie technicians who are knowledgeable about the hazards associated with high-voltage, ultraviolet exposure, and the high temperatures generated by the projector lamp are authorized to assemble, install, and service the projector.

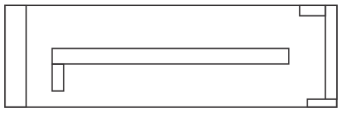
Prerequisites

To install a Christie IMB into your theater environment these items are required:

- A Christie Solaria Series 2 projector with Solaria firmware 3.0.0(1) or later installed. If you do not have Solaria firmware 3.0.0(1) or later installed, you must upgrade the Solaria firmware before installing the Christie IMB.
- A NAS or DAS device with the hard drives installed and properly configured. These are the minimum requirements for the NAS or DAS device:
  - 1TB of storage space or greater.
  - RAID 5 capable.
  - Gigabit Ethernet connectivity for NAS devices.
  - Network File System (NFS) for NAS devices.
- A 25-pin AES audio cable to connect your cinema audio processor to the Christie IMB audio output. For a PIN map of the AES3 port, see the Christie Integrated Media Block User Manual.
- An eSATA-to-SATA cable. Although this cable is optional, it can reduce the time for ingesting content. Typically, ingest drives provided by distributors have a SATA connection. The Christie IMB ingest port uses an eSATA connection.



eSATA Connector



SATA Connector

Some hard drives are not automatically recognized when they are connected to the Christie IMB Ingest port. If this occurs, leave the hard drive connected to power and the Ingest port and then power cycle the Christie IMB.

Selecting a NAS or DAS Device

As this table indicates, DAS devices offer higher transfer rates:

Feature	NAS	DAS
Interface	Gigabit Ethernet	eSATA (eSATA2)
Theoretical Maximum Transfer Rate	1 Gbit/sec	3 Gbit/sec
Setup Ease	Medium	Difficult
Integration Ease	Medium	Simple
Availability	Plentiful	Few

eSATA ports on a mass storage device do not indicate DAS functionality; they are often used to expand storage capacity.

Supported NAS and DAS Devices

These are the NAS and DAS devices that have been tested with the Christie IMB:

Type	Manufacturer	Manufacturer Part Number
NAS	QNAP	TS-559 Pro+
NAS	Cisco	NSS 324
NAS	Iomega	StorCenter px4-300r
NAS	Netgear	READYNAS Duo 2000
DAS	Areca	ARC-5040

Testing NAS and DAS Performance

To verify the performance of your NAS or DAS device, complete these tests:

- Ingest content. See *Ingest Content* on page 48.
- Verify content plays without interruption. See the *Play Content* procedure in the Christie Integrated Media Block User Manual.
- Remove a hard drive from the NAS or DAS device and verify that playback is not interrupted.
- Run the *Test NAS Performance* procedure in the Christie Integrated Media Block User Manual. The minimum data transfer rate for the NAS device should be 500 Mbps. However, data transfer rates of 700 to 800 Mbps are preferred. A KDM key is not required to test NAS performance.
- Measure NAS performance with a third-party application such as the *Intel NAS Performance Toolkit* (http://software.intel.com/en-us/articles/intel-nas-performance-toolkit/).

IP and Subnet Considerations

You must configure your network settings correctly for the Christie IMB to operate. Incorrect subnet settings can cause communication issues between the Christie IMB, the NAS device, and external automation devices. To reduce the risk of communication issues:

- Assign the projector intelligence board (PIB) and the Christie IMB NAS1 and NAS2 ports to nonconflicting subnets. For example:

Netmask	255.255.255.0
PIB	192.168.1.100
NAS1	192.168.2.1
NAS2	192.168.3.1

- Configure the NAS1 and NAS2 ports on the Christie IMB faceplate to use DHCP when they are not in use. When you set DHCP on a NAS 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 NAS1 and NAS2 ports. If you need to use DHCP:
  - Verify the NAS device can be configured as a DHCP server. See the documentation provided by the manufacturer of your NAS device.
  - Verify that the DHCP service is enabled on the NAS device. See the documentation provided by the manufacturer of your NAS device.
  - Verify the address range provided by the NAS device does not conflict with the other NAS port or the PIB port. See the documentation provided by the manufacturer of your NAS device.

Network Attached Storage Network File Settings

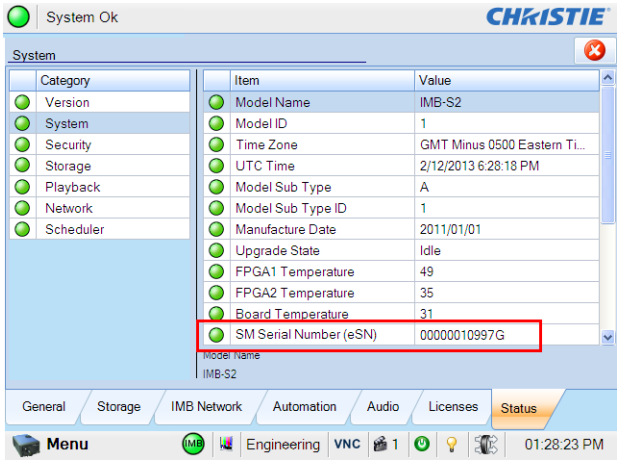
If the NFS settings of the NAS device are incorrect, the device cannot share files with the Christie IMB. To reduce the risk of NAS file sharing issues:

- Configure the NAS to use a static IP address. The static IP address must be compatible with the IMB NAS Ethernet port netmask to which the NAS is connected. Using DHCP is not recommended.
- Enable the NFS service on the NAS device. On most NAS devices, this option is disabled by default.
- Enable NFS on the share that the Christie IMB accesses. NFS must be enabled on every shared NAS share.
- Set the NFS access rights for the Christie IMB share to **read/write** or **full rights** for everyone.

Identifying the Christie IMB Electronic Serial Number

To play encrypted content, a Key Delivery Message (KDM) key is required. The Christie IMB electronic serial number (eSN) allows a distributor to identify the IMB certificate and generate the KDM. The Christie eSN is also required to generate license keys that enable specific IMB features.

To retrieve the 12-digit hexadecimal eSN on the projector touch panel controller (TPC), tap **Menu** > **Christie IMB** > **System > Status**. Tap **System** in the **Category** list. The serial number appears in the **SM Serial Number (eSN)** field:



On older model Christie IMBs the 12-digit electronic serial number (eSN) is on the back of the Christie IMB faceplate:

On newer model Christie IMBs the 12-digit electronic serial number (eSN) is on the front of the Christie IMB faceplate and on the Solaria One and Solaria One^{+} communications panel faceplate.

The electronic serial number (eSN) is also provided on the shipping carton.

Licensing

A license file is required to enable these features:

- 4K (108-444103-01)
- High Frame Rate (HFR) (108445104-01)

- RealD 3D EQ
- Dolby 3D Color Correction

Only a single license file can be active at a time. If you have multiple licensed features, the license keys are combined in a single license file. If you require multiple licenses, it is recommended that you request them all at once.

Each license file is unique to a specific Christie IMB, and it is associated with the electronic serial number (eSN) of the Christie IMB installed in the projector. After you receive the license file, you must add it to the Christie IMB to enable functionality. See *Upload a License Key* on page 6.

4K and High Frame Rate Licensing

To enable 4K or high frame rate (HFR) support, you must purchase a license. To request a license, contact Christie customer service. When you receive the license, you must install it. See *Upload a License Key* on page 6.

RealD 3D EQ Licensing

If you have RealD equipment installed, there is no charge for a RealD 3D EQ license. The RealD 3D EQ license is also referred to as ghostbusting.

To request a RealD 3D EQ license, send an email to *customer-support@reald.com*. In the body of the email, ask for the 3D EQ functionality to be enabled and include this information:

- the name of the theater
- the screen number
- the electronic serial number (eSN) of the Christie IMB
- the serial number of the RealD cinema system you have installed
- whether the projector on which the license will be installed is currently licensed or will be licensed for high frame rate (HFR) or 4K

RealD will authorize Christie to generate a license key for the RealD 3D EQ feature for the specified Christie IMB. Christie will send you the license by e-mail.

Dolby 3D Color Correction Licensing

If you have a Dolby 3D system installed, there is no charge for a Dolby 3D Color Correction license.

To request a Dolby 3D Color Correction license, send an email to *imblicenses@christiedigital.com*. In the body of your email include this information:

- the Christie IMB electronic serial number (eSN),
- the name of the theater
- the screen number where the Christie IMB is installed
- whether the projector on which the license will be installed is currently licensed or will be licensed for high frame rate (HFR) or 4K

Upload a License Key

1. Tap **Menu** > **Christie IMB** > **System** > **Licenses**.
2. Tap **Add**.
3. Insert a USB flash drive with the Christie IMB license key into the USB port on the side of the touch panel controller (TPC).

   NOTICE When uploading license keys, do not insert the USB flash drive in any of the Christie IMB ports.

4. Select a license file and then tap **Accept**.

Contact Support

If you are unable to resolve an issue, contact Christie support at *tech-support@christiedigital.com*. In order that a support representative can better assist you, have the serial number and firmware version of your Christie IMB ready. For contact information for your region, see the back cover of this document.

Automation

You use automation to control playback, the projector, and external devices. The Christie IMB includes built-in support for some external automation devices. If the device is not supported, you can use the serial-over-Ethernet protocol to send automation commands.

Add Macros

For more information about adding macros, see Manage Automation in the Christie IMB User Manual. The manual also provides information about Input Cues and Global Triggers, which may be required for more complicated installations

To add a macro on the projector touch panel controller (TPC):

1. Tap **Menu** > **Christie IMB** > **System**.
2. Tap **Automation** > **Macros**.
3. Tap **Add**.
4. Enter a name for the macro and then tap **Enter**.
5. Tap **Save**.

Available Macro Actions

These are the macro actions that are available to control automated events:

Automation Device	Activity Type	Action	Description
Playback	Playback	Pause	Pauses playback
		Resume	Resumes playback
		Stop	Stops playback
		Toggle Pause Resume	Pauses playback if content is playing OR resumes playback if content is paused.
	Disable Subtitles		Disables subtitles for the current content and onward.

Automation Device	Activity Type	Action	Description
Projector	Projector	Douser open	Opens the douser.
		Douser close	Closes the douser.
		Lamp on	Strikes the lamp.
		Lamp off	Turns the lamp off.
		Standby mode	Puts the projector in standby mode.
		Channel change	Selects a specific projector channel.
IMB Automation	GPO Pulse (not available on Solaria One or Solaria One+)		Pulses the specified GPO pin.
	GPO Set (not available on Solaria One or Solaria One+)		Sets the specified GPO pin to high or low.
	Delay		Inserts a delay into playback.
	Serial String Output		Sends a serial string to an IP address.

Connect a Christie ACT

The Christie IMB has built-in support for the Christie ACT. You can use the Christie ACT to control these automation events:

- Buzzer
- Button
- GPO Pulse
- Pulse Relay
- GPO Set All
- Run Script
- Flash LED
- Set All LEDs
- Open/Close Relay

1. Connect the Christie ACT to the Christie IMB.
2. On the touch panel controller (TPC), tap **Menu** > **Christie IMB** > **System**.
3. Tap **Automation > Devices**.
4. Tap **Add**.

5. Select **Christie ACT**.
6. Tap **Accept**.
7. Enter a name for the device and then tap **Enter**.
8. Complete the **IP Address**, **Username**, **Password**, and **Serial Command Port** fields.
9. Tap **Save**.

Control INTEG JNIOR Automation

To control an INTEG JNIOR automation device, it is recommended that you create macros on the JNIOR device, and then call them using serial commands.

To create and run macros on the JNIOR, use the JNIOR Support Tool to enable and configure the Cinema.JNIOR application. It is recommended that you install Cinema.JNIOR version 2.22.1115.1501 or later. For additional information, see INTEG Process Group (*www.integpg.com*).

The default Ethernet port for sending automation commands to the JNIOR is port 9200.

By default, you must log in to the JNIOR automation device to control relays and physical devices. However, the Christie IMB does not support JNIOR log in. To control relays and physical devices from the JNIOR with the Christie IMB, you must disable JNIOR server log in:

a. Log in to the JNIOR application.
b. Click the **Configuration** tab.
c. Click the **Misc.** tab.
d. Clear the **JNIOR Server Login Enabled** check box in the **JNIOR Protocol** area.

Hex commands must be escaped with backslashes. For example, the Hex command:

```
010008ffff0a070101000001f4
```

is entered as:

```
\01\00\08\ff\ff\0a\07\01\01\00\00\01\f4\0D
```

in the **Serial String** field of the macro activity. The `\0D` was added to the end of the string to make sure the string is followed by a carriage return.

Control Dolby CP750 Cinema Processor Automation

To adjust the settings of a Dolby CP750 cinema processor, send a command string in a macro. For example, send this command:

```
cp750.sys.fader 60\0D
```

to adjust the volume to 6.0.

Make sure that you include a carriage return (\0D) at the end of each command. For more information about controlling other features with serial commands, see the Dolby CP750 documentation

The default Ethernet port for sending automation commands to the Dolby CP750 is port 61408.

Adding Serial Command Actions to a Macro

1. On the projector touch panel controller (TPC), tap **Menu** > **Christie IMB** > **System**.
2. Tap **Automation > Macros**.
3. Tap a macro in the left pane.
4. Tap **Add** in the **Macro Activities** list.
5. Select **IMB Automation** in the **Automation Device** list.
6. Select **Serial String Output** in the **Activity Type** list.
7. Adjust the activity settings in the right pane.
8. Tap **Accept**.
9. Tap **Save**.

Create and Add a Black Delay to a Play List

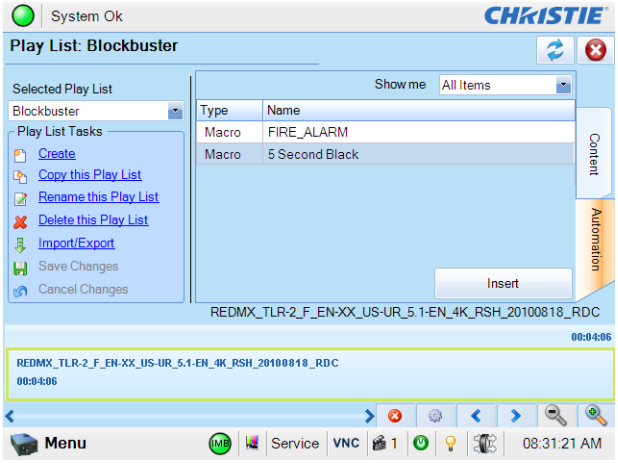
This procedure adds a five second delay macro named 5 Second Black to a play list. You can create longer or shorter delays.

1. On the projector touch panel controller, tap **Menu** > **Christie IMB** > **System**.
2. Tap **Automation** > **Macros**.
3. Tap **Add**.
4. Enter **5 Second Black** and then tap **Enter**.
5. Tap the macro in the left pane.
6. Tap **Add** in the **Macro Activities** list.
7. Select **IMB Automation** in the **Automation Device** list.
8. Select **Delay** in the **Activity Type** list.
9. Enter **5000** in the **Duration (ms)** list.
10. Tap **Accept**.
11. Tap **Save**.
12. Insert the 5 Second Black macro before content in a play list:
    a. Tap **Menu** > **Christie IMB** > **Play Lists**.
    b. Select a play list in the **Selected Play List** list.

c. Tap the **Automation** tab on the right side of the screen.

d. Tap the 5 Second Black macro in the macros list.

e. Tap content in the time line. The time line appears at the bottom of the Play List window. When you tap content, a green border appears around the content to indicate it is selected.



f. Tap **Insert**.

g. Select

h. **Before Clip Start** in the **Time Offset** list.

i. Tap

j. **Save**.

k. Tap **Save Changes** in the **Play List Tasks** list.

Create a Macro to Disable Subtitles

When you add the Disable Subtitles macro to a play list, the subtitles are disabled in all remaining content in the play list.

1. On the projector touch panel controller, tap **Menu** > **Christie IMB** > **System**.
2. Tap **Automation** > **Macros**.
3. Tap **Add**.
4. Enter **Disable Subtitles** and then tap **Enter**.
5. Tap the macro in the left pane.
6. Tap **Add** in the **Macro Activities** list.
7. Select **Playback** in the **Automation Device** list.
8. Select **Disable Subtitles** in the **Activity Type** list.
9. Tap **Accept**.
10. Tap **Save**.

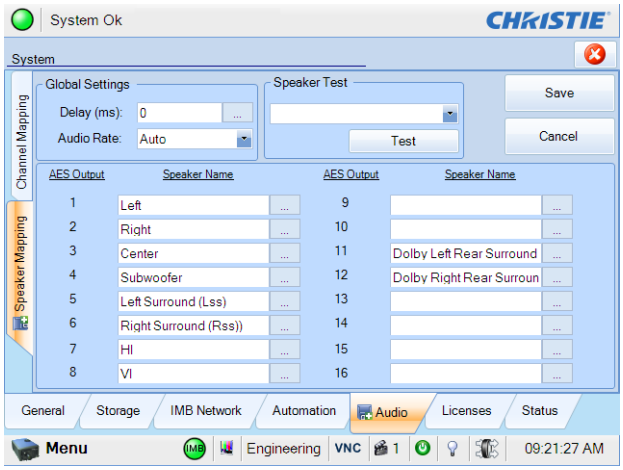
Audio Mapping

You use the Speaker and Mapping screens to map Digital Cinema Processor (DCP) audio to the Audio Engineering Society (AES) outputs that are sent to the cinema sound processor (B-chain). It is recommended that you complete speaker mapping first.

Speaker Mapping

You use the Speaker Mapping screen to apply descriptive labels for each of the physical connections made to the AES outputs. The AES port on the Christie IMB uses a standard DB25 pinout and a pin map is available in the Christie IMB User Manual.

1. Tap **Menu** > **Christie IMB** > **System**.
2. Tap the **Audio** tab.
3. Tap the **Speaker Mapping** tab.
4. Complete the fields in the **AES Output** area. This is an example of speaker mapping for a Dolby 7.1 DS configuration:



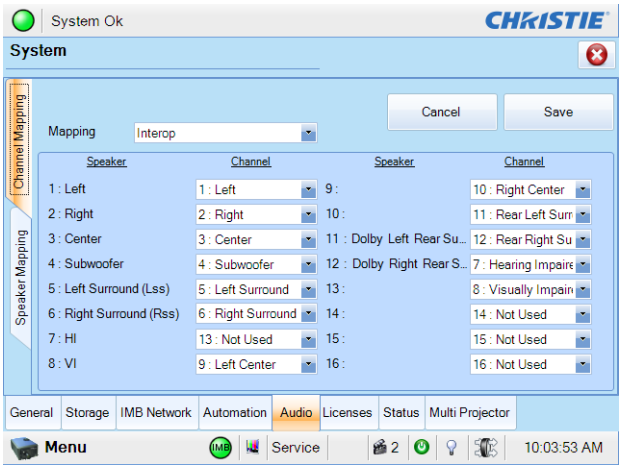
5. Tap **Save**.

Channel Mapping

You use the Channel Mapping screen to map the DCP audio channels to the AES outputs. Although you can select a number of options in the **Mapping** list, Interop is the most common. For more information about Interop channel mapping, see *http://isdcf.com/papers/ISDCF-Doc4-Interop-audio-channel-recommendations.pdf*.

1. Tap **Menu** > **Christie IMB** > **System**.
2. Tap the **Audio** tab.

3. Tap the **Channel Mapping** tab.
4. Select **Interop** in the **Mapping** list.
5. Select the channel that matches the speaker specified in the Interop channel mapping guide. For example, these are the selections for a Dolby 7.1 DS configuration:



6. Select **Not Used** for any speakers that are not used.
7. Tap **Save**.

CHRISTIE

Connect to a QNAP NAS

This section provides detailed instructions for connecting a QNAP TS-559 Pro+ to a Christie IMB. The instructions should be applicable to other QNAP NAS devices.

The IP addresses and folder names used in this document are provided as examples. Use IP addresses and share names that are unique to your theater environment.

NOTICE Complete the procedures in the order they are written.

Prerequisites

To connect a QNAP NAS to a Christie IMB, install and format the NAS hard drives and verify that they are configured for RAID 5. For more information about installation and setup, see *http://docs.qnap.com/nas/en/index.html*.

Connect the QNAP Device and Configure the Network Settings

1. Download and install the QNAP Finder utility on your computer. This utility is available for download on the QNAP web site (*http://www.qnap.com/en/index.php?lang=en&sn=848&c=&sc=&t=4*)
2. Connect one end of an Ethernet cable to a computer and the other end to the top Ethernet port on the QNAP NAS device.
3. Open the QNAP Finder utility. The utility automatically locates and displays the QNAP device.
4. Click **Configure**.
5. Enter the default administrator name **admin** and administrator password **admin**. Click **OK**.
6. Click the **Network Settings** tab.
7. In the **Configuration of Network Interfaces** list, select **Standalone**.
8. Click the **Ethernet 1** tab.
9. Select **Use the following static IP settings**.
10. Complete these fields:

Field	Description
IP Address	192.168.1.100 (QNAP Lan1 IP address)
Subnet Mask	255.255.255.0
Default Gateway	0.0.0.0 or Christie NAS1 port IP address

11. Click **OK**.

12. Add your computer to the subnet of the NAS device:
    a. On the computer, click **Start** > **Control Panel**.
    b. Click **Network and Sharing Center**.
    c. Click **Change adapter settings** in the left pane.
    d. Right-click a network connection and select **Properties**.
    e. Select **Internet Protocol (TCP/IP)** in the **This connection uses the following items** list.
    f. Click **Properties**.
    g. Select **Use the following IP address**.
    h. Enter the subnet IP address of the NAS device in the **IP address** field. In this example it is **192.168.1.15**.
    i. Enter **255.255.255.0** in the **Subnet mask** field.
    j. Click **OK**.

Create a Network Share Folder

A share folder is required to allow the Christie IMB to store ingested content.

1. Open a web browser and enter **http://192.168.1.100** in the **Address** field. Press **Enter**.
2. Click **Administration**.
3. In the **User Name** and **Password** fields, enter **admin**. Click **OK**.
4. Expand **Network Services** and then click **NFS Service** in the left pane.
5. Select **Enable NFS Service** in the right pane and then click **Apply**. For more information about enabling the NFS service, see section 6.3 NFS Service of the QNAP Turbo NAS User Manual (*http://docs.qnap.com/nas/en/index.html?nfs_service.htm*).
6. Expand **Access Right Management** in the left pane and then click **Share Folders**.
7. Click **Create a Network Share** in the right pane.
8. Click **Next**.
9. Enter **Content** in the **Folder Name** field and then click **Next**.
10. Select **Full access (Grant full access right for everyone)** and then click **Next**.
11. Select **Read/Write** in the **Guest Access Right** area.
12. Confirm the settings are correct and then click **Next**.
13. Click **Finish**.

Verify NFS is Enabled and Disable Sleep Mode

1. In the left pane, select the **Content** folder.
2. Click the **NFS** icon (the third icon from the left) in the **Action** column next to the **Content** share.

   For more information about enabling the NFS service, see section 6.3 NFS Service of the QNAP Turbo NAS User Manual (*http://docs.qnap.com/nas/en/index.html?nfs_service.htm*)
3. Select **No limit** in the **Access Right** list.
4. Clear the **Sleep Mode** check box.
5. Click **Apply**.

Configure the Christie IMB Communication Settings

You can use the projector touch panel controller (TPC) menus or the web interface to set the communication settings between the Christie IMB and the QNAP device. If you use the web interface, the IP address of your computer must be on the same subnet as the projector and the computer must be connected by an Ethernet cable to the Ethernet port of the PIB.

1. Disconnect the Ethernet cable from the computer and connect it to the **NAS1** port on the Christie IMB.
2. On the projector TPC, tap **Menu** > **Christie IMB** > **System**.
3. Tap **IMB Network**.
4. In the **NAS 1** area, select **Static IP** and then complete these fields:
   a. Enter **192.168.1.1** in the **IP Address** field.
   b. Enter **255.255.255.0** in the **Netmask** field.

   Unless it is required for your installation, leave the **Gateway** field blank.
5. Select **DHCP** in the **NAS 2** area.

NOTICE The IP address for port 2 must not be on the same subnet as port 1. In this example, it cannot start with 192.168.1.x

6. Tap **Save**.
7. Tap the **Storage** tab.
8. Tap **Add NAS**.
9. Tap **Primary**.
10. Tap **Yes**.
11. Complete these fields:
    a. Enter **QNAP NAS** in the **Label** field.

b. Enter **192.168.1.100** in the **IP Address** field.

c. Enter **admin** in the **User** field.

d. Enter **admin** in the **Password** field.

e. Select **NFS** in the **File System** list.

f. Tap **Refresh Share Names** to update the **Share** list.

g. Select **/Content** in the **Share** list.

12. Tap **Test Connectivity**.
13. Tap **OK**.
14. Tap **Save**.
15. Tap **OK**.

Connect to an Iomega NAS

This section provides detailed instructions for connecting an Iomega StorCenter px4-300r network storage array to a Christie IMB. The instructions should be applicable to other Iomega NAS devices.

The IP addresses and folder names used in this document are provided as examples. Use IP addresses and share names that are unique to your theater environment.

NOTICE Complete the procedures in the order they are written.

Configure the Iomega NAS Network Settings

1. Connect one end of an Ethernet cable to a computer and the other end to the Ethernet port on the Iomega NAS device.
2. Record the IP address displayed on the screen on the front of the Iomega NAS with the available disk space and time.

   If you have ordered a pre-configured Iomega NAS device from Christie, the IP address is already assigned. If the Iomega NAS device is not pre-configured and there is not a Dynamic Host Configuration protocol (DHCP) server on your network, the Iomega NAS device obtains a self assigned IP address in the 169.254.x.x range.

   If your computer cannot connect to the self assigned IP address, connect your computer to the Iomega NAS device with a network cable. Open the Network settings on the Iomega management screen and enter IP address, subnet mask, and gateway values that allow the storage device to operate on your network.
3. Add your computer to the NAS device network:
   a. On the computer, click **Start** > **Control Panel**.
   b. Click **Network and Sharing Center**.
   c. Click **Change adapter settings** in the left pane.
   d. Right-click a network connection and select **Properties**.
   e. Select **Internet Protocol (TCP/IP)** in the **This connection uses the following items** list.
   f. Click **Properties**.
   g. Select **Use the following IP address**.
   h. Enter a non-conflicting IP address that allows the computer to communicate with the NAS device in the **IP address** field. For example, if the IP address of the NAS device is 169.254.168.168, enter 169.254.168.169.
   i. Enter 255.255.255.0 in the **Subnet mask** field.
   j. Click **OK**.

4. On the computer, open a web browser and enter the IP address you recorded in step 2 in the Address bar. Press **Enter**.
5. Enable security:
    a. Click **Common** in the left pane of the Iomega management screen.
    b. Click **Users** in the right pane.
    c. Click **Enable security**.
    d. Enter **admin** in the **Username** field.
    e. Enter **admin** in the **Password** field.
    f. Enter **admin** in the **Confirm password** field.
    g. Click **Apply**.
6. In the left pane click **Network**.
7. Click **Network** in the right pane.
8. Click **Modify network settings**.
9. Clear the **Automatically configure DNS, WINS, and all IP addresses (DHCP)** check box.
10. In the first **DNS Servers** field, enter **127.0.0.1**.
11. In the second **DNS Servers** field, remove the information.
12. In the **Bonding Mode** list, select **Adaptive Load Balance**.
13. Click **Apply**.
14. Click **Yes**.

Add the Iomega NAS to the Christie IMB Network

1. Click **Network** in the left pane of the Iomega management screen.
2. Click **Network** in the right pane.
3. Expand the second network interface.
4. Expand **Information**.
5. Enter an IP address that allows the NAS device to communicate with the Christie IMB NAS1 port in the **IP Address** field. For example, 192.168.1.100. To configure the settings of the NAS1 port, see *Configure the Christie IMB Communication Settings, on page 28*.
6. Enter **255.255.255.0** in the in the **Subnet Mask** field.
7. If required, enter the gateway address for the NAS device in the in the **Gateway** field
8. In the **Jumbo Frame** list, click **None**.
9. Click **Apply**.
10. Repeat step 3 of *Configure the Iomega NAS Network Settings, on page 19* when the new communication settings are applied.

    You need to repeat step 3 to reconfigure the communication settings of the computer to use the new IP address. Specify a non-conflicting address. For example, if the IP address in step 5 is 192.168.1.100, you could enter 192.168.1.102.

11. On the computer, open a web browser and enter the IP address you recorded in step 5 in the Address bar. Press **Enter**.

    The Iomega management screen appears.

Add the Iomega NAS to a Monitoring Network

This is an optional procedure to connect the Iomega NAS device to a system that monitors network components for poor performance or failure. When a component fails, a network administrator is notified and the problem is corrected.

1. Click **Network** in the left pane of the Iomega management screen.
2. Click **Network** in the right pane.
3. Expand the first network interface.
4. Expand **Information**.
5. Enter the IP address of your monitoring network in the **IP Address** field.
6. Enter the subnet IP address of the NAS device in the in the **Subnet Mask** field.
7. Select **None** in the **Jumbo Frame** list.
8. Click **Apply**.
9. On the computer, open a web browser and enter the IP address you recorded in step 5 in the Address bar. Press **Enter**.

   The Iomega management screen appears.

Configure the Iomega NAS for RAID5

When you first configure the RAID settings, it can take several hours to complete.

1. Click **Storage** in the left pane of the Iomega management screen.
2. Click **Drive Management** in the right pane.
3. Click **Add a Storage Pool**.
4. Enter **SP1** in the **Name** field.
5. Select **Parity (RAID5)** in the **Protection** list.
6. Select **Enable periodic consistency check**.
7. Clear the **Create commonly used Shares** check box.
8. Select all of the drives in the device image.

9. Click **Create**.

Create a Network Share Folder

A share folder is required to allow the Christie IMB to store ingested content.

1. Click **Storage** in the left pane of the Iomega management screen.
2. Click **Shares** in the right pane.
3. Click **Add a Share**.
4. Enter **Content** in the **Name** field.
5. Click **Create**.
6. Expand **Access Permissions**.
7. Select **Read/Write** for the **Everyone** entry.
8. Click **Apply**.

Enable NFS on the Iomega NAS

1. In the left pane on the Iomega management screen, scroll down and then click **All Features**.
2. Click **Protocols** in the right pane.
3. Move the **Off/On** slider for NFS to **On**.
4. Click the **Settings** () icon to the right of NFS.
5. Select **Allow all client users full access**.
6. Click **Apply**.

Configure the Christie IMB Communication Settings

You can use the projector touch panel controller (TPC) menus or the web interface to set the communication settings between the Christie IMB and the Iomega device. If you use the web interface, the IP address of your computer must be on the same subnet as the projector and the computer must be connected by an Ethernet cable to the Ethernet port of the PIB.

1. Disconnect the Ethernet cable from the computer and connect it to the **NAS1** port on the Christie IMB.
2. On the projector TPC, tap **Menu** > **Christie IMB** > **System**.
3. Tap **IMB Network**.
4. In the **NAS 1** area, select **Static IP** and then complete these fields:
    a. Enter an IP address that is on the same subnet as the Iomega device in the **IP Address** field. For example, if the IP address of the Iomega device is 192.168.1.100, you would enter 192.168.1.101.
    b. Enter **255.255.255.0** in the **Netmask** field.

    Unless it is required for your installation, leave the **Gateway** field blank.

5. Select **DHCP** in the **NAS 2** area.

NOTICE The IP address for port 2 must not be on the same subnet as port 1.

6. Tap **Save**.
7. Tap the **Storage** tab.
8. Tap **Add NAS**.
9. Tap **Primary**.
10. Tap **Yes**.
11. Complete these fields:
    a. Enter **Iomega NAS** in the **Label** field.
    b. Enter the IP address of the Iomega device in the **IP Address** field.
    c. Enter **admin** in the **User** field.
    d. Enter **admin** in the **Password** field.
    e. Select **NFS** in the **File System** list.
    f. Tap **Refresh Share Names** to update the **Share** list.
    g. Select **/Content** in the **Share** list.
12. Tap **Test Connectivity**.
13. Tap **OK**.
14. Tap **Save**.
15. Tap **OK**.

CHRISTIE

Connect to a NETGEAR NAS

This section provides detailed instructions for connecting a NETGEAR ReadyNAS 2100 to a Christie IMB. The instructions should be applicable to other NETGEAR NAS devices.

The IP addresses and folder names used in this document are provided as examples. Use IP addresses and share names that are unique to your theater environment.

NOTICE Complete the procedures in the order they are written.

Prerequisites

To connect a NETGEAR NAS to a Christie IMB, install and format the NAS hard drives and verify that they are configured for RAID 5. See the ReadyNAS 2100 User Manual (http://www.readynas.com/download/documentation/UM/ReadyNAS2100_UMv1.1_22Jun09.pdf).

Connect the NETGEAR Device and Configure the Network Settings

1. Connect one end of an Ethernet cable to a computer and the other end to the top Ethernet port on the NETGEAR NAS device.
2. On the computer, download and install the NETGEAR RAIDar application (http://kb.netgear.com/app/answers/detail/a_id/20684/~/readynas-downloads).

   The NETGEAR RAIDar application automatically identifies your NETGEAR NAS device and provides information about the device, including the IP address. The default IP address should be 192.168.168.168.
3. Add your computer to the NAS device network:
   a. On the computer, click **Start** > **Control Panel**.
   b. Click **Network and Sharing Center**.
   c. Click **Change adapter settings** in the left pane.
   d. Right-click a network connection and select **Properties**.
   e. Select **Internet Protocol Version 4 (TCP/IPv4)** in the **This connection uses the following items** list.
   f. Click **Properties**.
   g. Select **Use the following IP address**.
   h. Enter a non-conflicting IP address that allows the computer to communicate with the NAS device in the **IP address** field. For example, if the IP address of the NAS device is 192.168.168.168, enter 192.168.168.169.
   i. Enter 255.255.255.0 in the **Subnet mask** field.
   j. Click **OK**.

4. Open an internet browser and enter the IP address of the NETGEAR device in the address field. Press **Enter**.
5. Enter the user name and password.

   The default user name is **admin** and the default password is **netgear1**. It is recommend that you change the default password to **admin**. See *Change the Administrator Password, on page 27.*
6. Click **OK**.
7. Expand **Network** in the left pane.
8. Click **Interfaces**.
9. Click the **Ethernet 1** tab in the right pane.
10. Complete these fields to change the default IP address of the NETGEAR device:

Field	Description
Speed/Duplex mode	Select **Auto-negotiation**
MTU	Select **1500**
Ipv4 assignment	Select **Use values below**
Ipv4 address	Enter an IP address that allows the NAS device to communicate with the Christie IMB NAS1 port. For example, 192.168.1.100. To configure the settings of the NAS1 port, see *Configure the Christie IMB Communication Settings, on page 28*.
Subnet Mask	Enter **255.255.255.0**
Default Gateway	Enter the address of the router or other device that connects the NETGEAR NAS to the network
Ipv6	Select **Off**

11. Click **Apply**.
12. Click **OK**.
13. Repeat step 3 when the new communication settings are applied.

    You changed the default IP address of the NETGEAR device in step 10. You need to repeat step 3 to reconfigure the communication settings of the computer to use the new IP address. Specify a non-conflicting address. For example, if the IP address in step 10 is 192.168.1.100, you could enter 192.168.1.102.

Configure the Security Settings

1. Open an internet browser and enter the IP address of the NETGEAR device in the address field. Use the IP address you defined in step 10 of *Connect the NETGEAR Device and Configure the Network Settings, on page 25*. Press **Enter**.

2. Enter the user name and password.

   The default user name is **admin** and the default password is **netgear1**. It is recommend that you change the default password to **admin**. See *Change the Administrator Password, on page 27.*

3. Expand **Security** in the left pane of the ReadyNAS 2100 management console.
4. Click **Security Mode**.
5. Select **User** in the right pane.
6. Enter **VOLUME** in the **Workgroup** field.
7. Click **Apply**.
8. Click **OK**.
9. Click **OK**.

Change the Administrator Password

1. Expand **Security** in the left pane of the ReadyNAS 2100 management console.
2. Click **Admin Password**.
3. In the right pane, complete these fields:

Field	Description
New admin password	Enter **admin**
Retype admin password	Enter **admin**
Password recovery question	Enter a question that will help identify you as user with administrator privileges
Password recovery answer	Enter the answer to the recovery question
Password recovery email address	Enter the email address where the recovered password will be sent

4. Click **Apply**.
5. Click **OK**.
6. Click **OK**.

Set the Services for Share Access

Use this procedure to define the type of clients you want to access the ReadyNAS device.

1. Expand **Services** in the left pane of the ReadyNAS 2100 management console.
2. Click **Standard File Protocols**.
3. Select **NFS**, **FTP**, and **HTTP** in the right pane.
4. Click **Apply**.

Create a Network Share Folder

A share folder is required to allow the Christie IMB to store ingested content.

1. Expand **Shares** in the left pane of the ReadyNAS 2100 management console.
2. Click the **Add Shares** tab in the right pane.
3. Enter **Content** in the **Name** field.
4. Enter a descriptive name for the share in the **Description** field.
5. Select **Public Access**.
6. Click **Apply**.
7. Click **OK**.
8. Click the **Share List** tab.
9. Enable access to the share:
    a. Click the NFS icon.
    b. In the **Default Access** list, select **Read/Write**.
    c. Click **Apply**.
    d. Click the **FTP/S** tab.
    e. In the **Default Access** list, select **Read/Write**.
    f. Click **Apply**.
    g. Click the **HTTP/S** tab.
    h. In the **Default Access** list, select **Read/Write**.
    i. Click **Apply.**

Configure the Christie IMB Communication Settings

You can use the projector touch panel controller (TPC) menus or the web interface to set the communication settings between the Christie IMB and the NETGEAR device. If you use the web interface, the IP address of your computer must be on the same subnet as the projector and the computer must be connected by an Ethernet cable to the Ethernet port of the PIB.

1. Disconnect the Ethernet cable from the computer and connect it to the **NAS1** port on the Christie IMB.
2. On the projector TPC, tap **Menu** > **Christie IMB** > **System**.
3. Tap **IMB Network**.

4. In the **NAS 1** area, select **Static IP** and then complete these fields:
    a. Enter an IP address that is on the same subnet as the NETGEAR device in the **IP Address** field. For example, if the IP address of the NETGEAR device is 192.168.1.100, you would enter 192.168.1.101.
    b. Enter **255.255.255.0** in the **Netmask** field.

    Unless it is required for your installation, leave the **Gateway** field blank.
5. Select **DHCP** in the **NAS 2** area.

NOTICE The IP address for port 2 must not be on the same subnet as port 1.

6. Tap **Save**.
7. Tap the **Storage** tab.
8. Tap **Add NAS**.
9. Tap **Primary**.
10. Tap **Yes**.
11. Complete these fields:
    a. Enter **NETGEAR NAS** in the **Label** field.
    b. Enter the IP address of the NETGEAR device in the **IP Address** field.
    c. Enter **admin** in the **User** field.
    d. Enter **admin** in the **Password** field.
    e. Select **NFS** in the **File System** list.
    f. Tap **Refresh Share Names** to update the **Share** list.
    g. Select **/Content** in the **Share** list.
12. Tap **Test Connectivity**.
13. Tap **OK** twice.
14. Tap **Save**.
15. Tap **OK**.

Connect to a Content Network

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

Due to the bandwidth limitations of the PIB Ethernet port, connect your content network to an unused NAS port on the Christie IMB.

To allow the projector to communicate with the ingest device, see *Add a NAS* in the Christie IMB User Manual. Specify the IP address of the theatre management system or satellite receiver in the **IP Address** field and select the NFS share in the **Share** list.

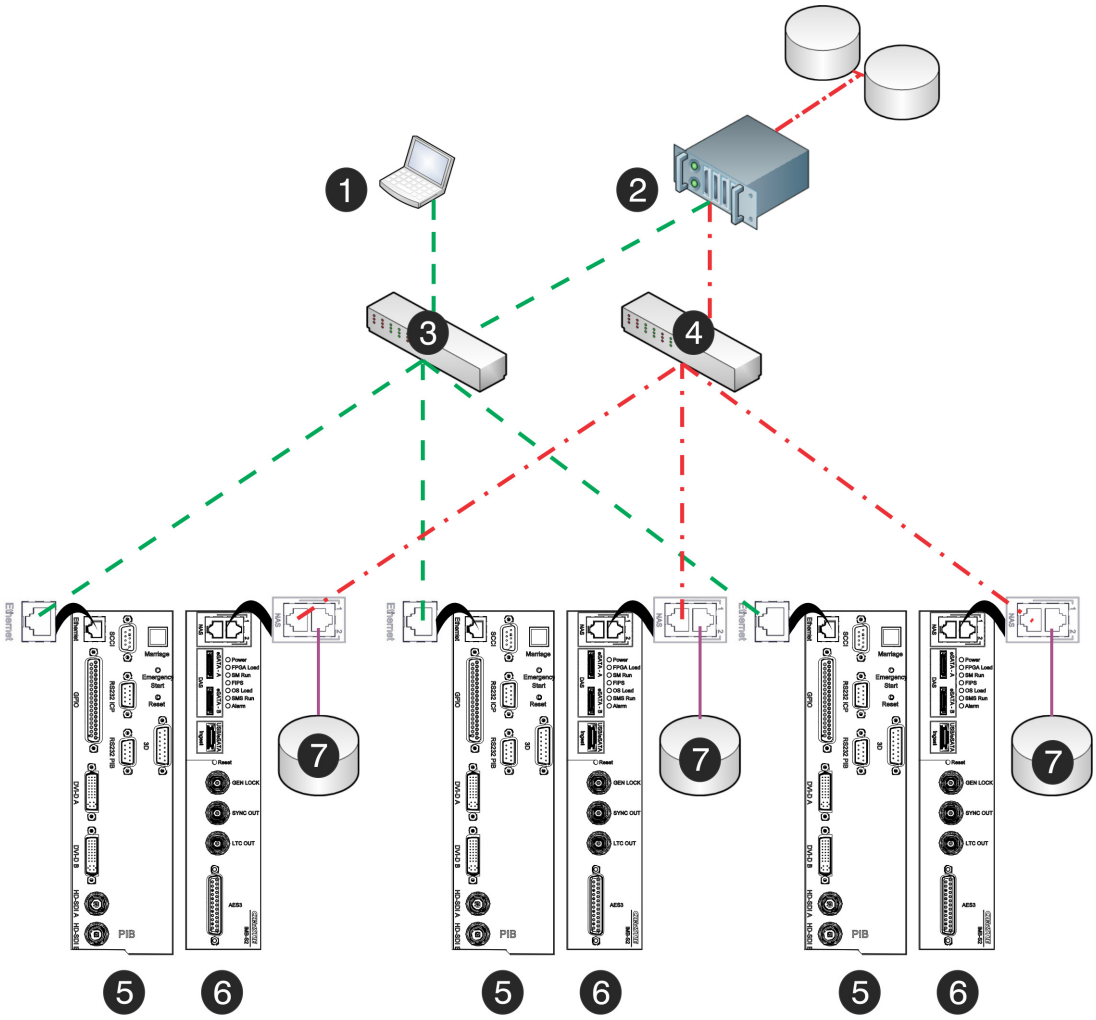
Ingest Remote Content from a Network IMB

Use this procedure to ingest content from a Christie or Doremi IMB that is on the same network as the projector. If you are ingesting content from a Christie IMB, the default user name is **ftpuser** and the password is **ftptms**.

NOTICE A remote ingest of content must be completed using the Ethernet ports on the Christie IMB and not the projector Projector Intelligence Board (PIB) Ethernet port. The projector PIB Ethernet port does not support the remote ingest of content.

1. Tap **Menu** > **Christie IMB** > **Content**.
2. Tap **Remote Content**.
3. Enter the IP address of the Christie or Doremi IMB in the **IP Address** field.
4. Select a device in the **Device Type** list.
5. Enter the user name for the device in the **Username** field.
6. Enter the password for the device in the **Password** field.
7. Tap **List Content**.
8. Tap content in the content list.
9. Tap **Ingest**.

Network Topology



Item	Description
1	Control computer
2	Theatre Management System (TMS) or Library Management System (LMS)
3	10/100 switch for command and control network
4	GigE switch for content network
5	Projector intelligence board (PIB)
6	Christie IMB
7	Network attached storage (NAS)
	Command and control network (10/100)
	Content network (GigE)
	Home run connections (GigE)

Play MPEG-2 Content

To play MPEG-2 content, this software must be installed on the projector:

- Christie IMB-S2 Main Software v1.2 or later.
- Solaria One Main Software v4.0.1 or later on Solaria One and Solaria One+ projectors.
- Solaria Main Software v3.1.1 or later on all other Christie series 2 projectors.

You can ingest MPEG-2 formatted Digital Cinema Packages (DCPs) and regular MPEG-2 files. The supported file extensions are mpeg, mpg, and ts. To play encrypted MPEG-2 DCPS, a Key Delivery Message (KDM) key is required.

Playback of MPEG-2 content is restricted to these resolutions:

- 720p
- 1080p
- 1080i

The data format and color space of MPEG-2 and JPEG-2000 content are different. Two separate channels are required to play MPEG-2 content and JPEG-2000 content. These settings are used for MPEG-2 playback on the Christie IMB:

- Data format: 4:2:2
- Target Color: Rec 709
- Color Space: YCrCb 709

If the MPEG-2 content requires a different color space value than REC 709, you must define the new values. If you are playing interlaced content, set the scan type as **Interlaced** on the Config 2 screen of the Channel Setup screen. In addition, to play MPEG-2 content, make these selections on the Config 1 and Config 2 screens:

Screen	Field	Description
Config 1	Input	Select **IMB-Generic**.
	Data Format	Select **4:2:2 (YCbCr)**.
Config 2	Target Color	Select **Rec 709**.
	Color Space	Select **YCbCr 709**.

You can add MPEG-2 and JPEG-2000 content to the same play list. Automatic frame doubling allows MPEG-2 content to be output to the same 3D video path as the 3D JPEG-2000 content. When you switch from playing MPEG-2 to JPEG-2000 content, you must select a different channel. You do not need to manually enable or disable 3D systems when moving from one format to another in a play list.

Video content is restricted to the formats that fall within the definition of the Main Profile at High Level as defined in specification ISO/IEC 13818-2. This table lists the supported MPEG-2 video transport stream (TS) and elementary stream (9ES) formats:

Resolution	Frame Rate	Format	Bit Depth	Chroma Format
1280 x 720	25.0	Progressive	8-bits	4:2:0
1280 x 720	29.97	Progressive	8-bits	4:2:0
1280 x 720	30.0	Progressive	8-bits	4:2:0
1280 x 720	50.0	Progressive	8-bits	4:2:0
1280 x 720	59.94	Progressive	8-bits	4:2:0
1280 x 720	60.0	Progressive	8-bits	4:2:0
1920 x 1080	50.0	Interlaced	8-bits	4:2:0
1920 x 1080	59.94	Interlaced	8-bits	4:2:0
1920 x 1080	60.0	Interlaced	8-bits	4:2:0
1920 x 1080	23.98	Progressive	8-bits	4:2:0
1920 x 1080	24.0	Progressive	8-bits	4:2:0
1920 x 1080	25.0	Progressive	8-bits	4:2:0
1920 x 1080	29.97	Progressive	8-bits	4:2:0
1920 x 1080	30.0	Progressive	8-bits	4:2:0

Although the Christie IMB supports all of the listed frame rates, the projector in which the Christie IMB is installed may limit the display of some formats.

The Christie IMB converts all MPEG-2 content to YCrCb 4:2:2 10-bit before it is displayed.

Create a Channel to Play MPEG-2 Content

You need Advanced, Administrator, or Service permissions to create or modify channel settings. You can create a maximum of 64 channels.

1. Tap **Menu** > **Channel Setup**.
2. Select a channel in the **Channel Name** list.
3. Tap the **Launch Dialog** ... icon.
4. Enter a name for the channel and tap **Enter**.
5. Complete these fields on the Config 1 screen:

Field	Description
Icon	The icon associated with the channel.
Input	Select **IMB-Generic**.

Field	Description
Data Format	Select **4:2:2 (YCbCr)**.
Source File	The resolution and aspect ratio for the channel.
Screen File	The screen type, masking, cropping, and lens settings for the channel.
Use PCF	Associates the channel with a Projector Configuration File (PCF) and prevents Channel adjustments.
PCF	The PCF file associated with the channel.
Lamp File	The lamp file associated with the channel. Tap the **Launch Dialog** icon to edit the lamp file settings. Any changes made to the Lamp File settings are applied to all channels that use this lamp file.
ILS File	The Intelligent Lens System (ILS) file associated with the channel. The ILS file automatically adjusts the lens position so the content displays correctly. Tap the **Launch Dialog** icon to edit the ILS file settings. Any changes made to the ILS File settings are applied to all channels that use this ILS file.

6. Tap **Config 2** in the left pane and then complete these fields:

Field	Description
Measured Color	The Measured Color Gamut Data (MCGD) file used to calculate target color processing.
Target Color	Select **Rec 709**.
Color Space	Select **YCbCr 709**.
Gamma	The gamma correction required for the proper tonal range of the source material.This option is not available when **Use PCF** is selected.
LUT_CLUT	Applies a 3D color cube for increased color accuracy. This option is not available when **Use PCF** is selected.
Scan Type	The video scan type. The default is **Progressive**.
Automatic Scan Type Detection	Automatically performs scan type detection. This feature is supported for PIBS1 inputs only.
Use PCT	Applies Christie Pureformity Color Technology (PCT) to the channel.
PCT File	Identifies the Christie Pureformity Color Technology (PCT) file associated with the channel.
HDMI EDID Type	Identifies the extended display identification data (EDID) type used by the channel when playing content from a device connected to the HDMI A/LEFT or HDMI B/RIGHT ports.
Enable 3D Dual Measured Color	Enables 3D Dual Measured Color on the channel. Select the color files for the left and right eyes.

7. Tap **3D Control** in the left pane if the channel will be used to display 3D content. Complete these fields:

Field	Description
Enable 3D	Enables 3D.
3D Test Patterns	Displays 3D test patterns.
3D Sync Input Mode	Specifies whether a specific frame of input data has left eye or right eye data. Select **Use White Line Code (true and inverted)** if you are using a single 3D input signal in which an embedded white line at the bottom of each frame identifies left and right, and an additional separate 3D stereo sync input at the GPIO port is not present. The bottom row of the left-eye sub-field should be pure white for the left-most 25% of the pixel row and pure black for the remainder of the row. The bottom row of the right-eye sub-field should be pure white for the left-most 75% of the pixel row and pure black for the remainder of the row. Select **Use Line Interleave for 3D** source data only. When specified, the ICP will de-interleave each line into the left image or right image in memory as specified. Line interleave can be used with PsF 3D data (left and right data for one field, then left and right data for second field).
L/R Display Reference	Specifies which frame of eye data to display during a specific display frame. This signal is referenced to the display frame rate which is specified by the Frame Rate N:M.
Frame Rate N:M	Sets how many frames to display per number of frames that form one complete image. Increase the display frame rate to reduce flicker from your source(s).
L/R Display Sequence	Defines the frame order (L-R or R-L) required for 3D perspective. This option only has meaning when the Frame Rate factor M is equal to 2. For this case, 2 input frames of data are required to constitute a complete frame of image data. This parameter tells the system which frames go together to make a complete image. **NOTE**: *When using **Line Interleave** as the **3D Sync Input Mode**, ensure that **Left (L1R1 L2R2)** is selected.*
3D Sync Polarity	Keeps 3D stereo sync output the same as input (true) or reversed (inverted). **True**: 3D L/R sync output from GPO will match L/R sync input. **Inverted**: 3D L/R sync output from GPO will be the opposite of sync input (left = right, right = left).
Dark Time	Creates a blank time interval between left and right frames to allow for LCD shutter glasses, Z screen, or rotating 3D wheel to synchronize the output. See Dark Time and Output Delay Notes below. Values between 0 and 65535 are accepted. Tap the **Launch Dialog** button  to enter the dark time value.

Field	Description
Output Delay	The non-image time in Microseconds (µ). Offset 3D stereo sync output in relation to dark time interval. Acceptable values are between -32768 and 32767 are accepted where a positive offset = delay and negative offset = start early. Tap **Launch Dialog** to enter the output delay value.
Phase Delay	The degree of reference between the left and right sync output. Values between -180 and 180 are accepted. Tap **Launch Dialog** to enter the phase delay value.

8. Tap **Activate** to activate the channel.

Sample Automation Procedure

This section provides sample procedures for:

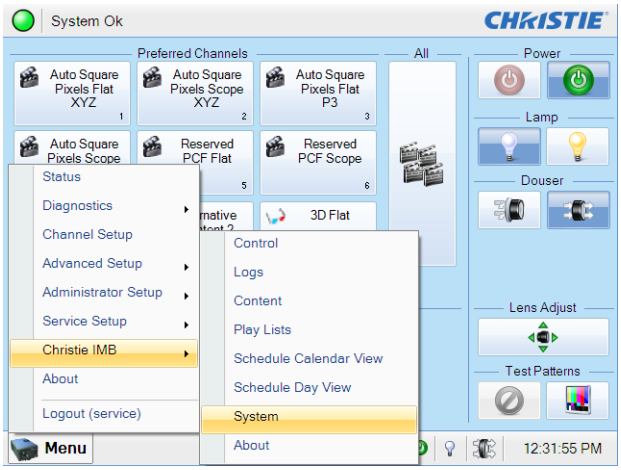
- Creating the Preshow, Trailers and Feature, Credits, and End of Show macros
- Adding activities to the macros
- Adding Christie ACT automated events to a macro
- Creating a play list
- Adding the macros to a play list

It is recommended that you use the projector touch panel controller (TPC) to complete the sample procedures. If you use the web interface, you cannot edit the macros.

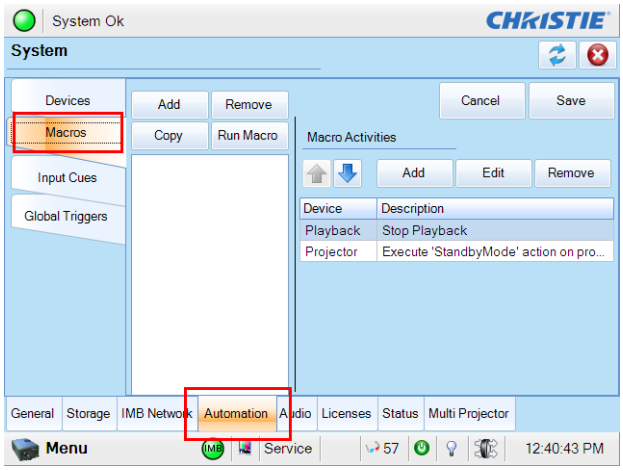
You cannot add GPO activities to Solaria One and Solaria One^{+} projectors because the communication panel does not include a GPI/O port.

Create Macros

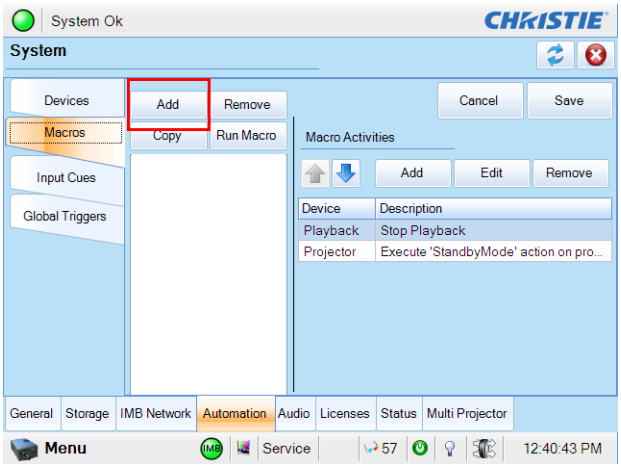
1. Tap **Menu** > **Christie IMB** > **System**.



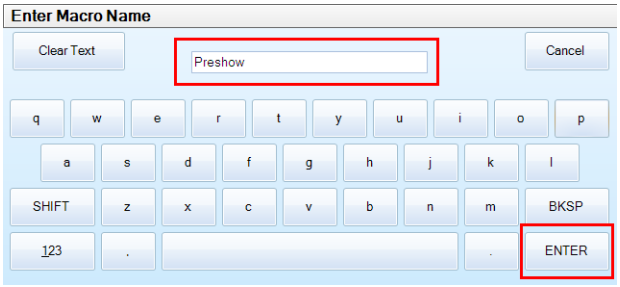
2. Tap **Automation > Macros**.



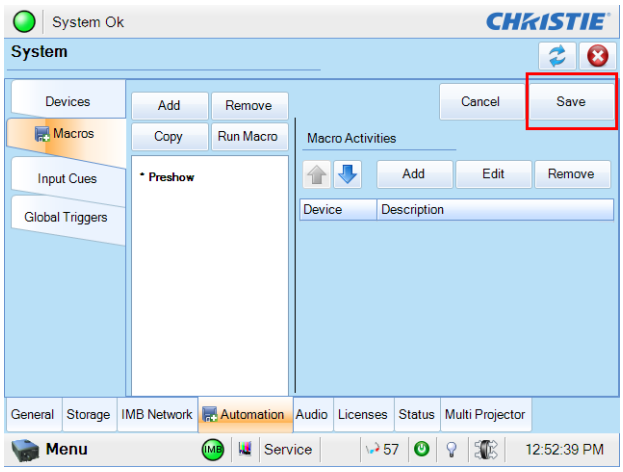
3. Tap **Add**.



4. Enter **Preshow** and then tap **Enter**.



5. Tap **Save**.

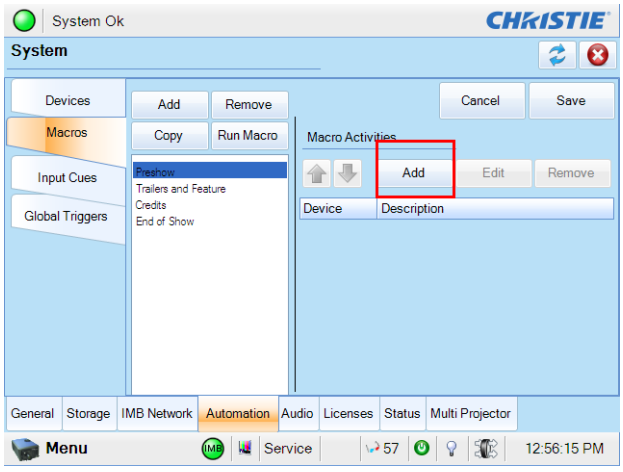


6. Repeat steps 2 to 5 to create these macros:
   - Trailers and Feature
   - Credits
   - End of Show

Add Activities to the Preshow Macro

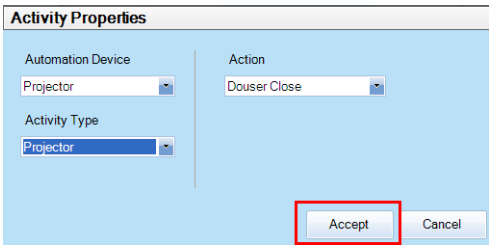
You cannot add GPO activities to Solaria One and Solaria One^{+} projectors because the communication panel does not include a GPI/O port.

1. Tap the **Preshow** macro in the left pane.
2. Tap **Add** in the **Macro Activities** list.



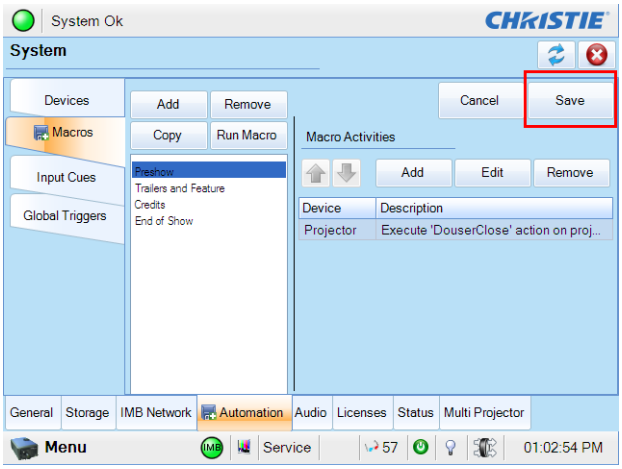
3. Select **Projector** in the **Automation Device** list.

4. Select **Douser Close** in the **Action** list.
5. Select **Projector** in the **Activity Type** list.
6. Tap **Accept**.



The new activity is added to the **Macro Activities** list.

7. Tap **Save**.



8. Repeat steps 2 to 7 and add these activities:

Automation Type	Field Settings
Lamp On	Automation Device: Projector
	Activity Type: Projector
	Action: Lamp On
Lights 50% (GPO 4 High, GPO 5 Low)	Automation Device: IMB Automation
	Activity Type: GPO Set
	PIN Number: 4
	Signal Direction: High
Lights 50% (GPO 4 High, GPO 5 Low)	Automation Device: IMB Automation
	Activity Type: GPO Set
	PIN Number: 5
	Signal Direction: Low

Automation Type	Field Settings
Dolby CP750 volume at 5.0	Automation Device: IMB Automation
	Activity Type: Serial String Output
	Serial String: cp750.sys.fader 50\0D
	IP Address: 192.168.1.20
	Port: 61408
Douser Open	Automation Device: Projector
	Activity Type: Projector
	Action: Douser Open

Add Activities to the Trailers and Feature Macro

You cannot add GPO activities to Solaria One and Solaria One^{+} projectors because the communication panel does not include a GPI/O port.

1. Tap the **Trailers and Features** macro in the left pane.
2. Tap **Add** in the **Macro Activities** list.
3. Select **IMB Automation** in the **Automation Device** list.
4. Select **GPO Set** in the **Activity Type** list.
5. Select **4** in the **Pin Number** list.
6. Select **Low** in the **Signal Direction** list.
7. Tap **Accept**.
8. The new activity is added to the **Macro Activities** list.
9. Tap **Save**.
10. Repeat steps 2 to 9 and add this activity:

Automation Type	Field Settings
Lights 50% (GPO 4 High, GPO 5 Low)	Automation Device: IMB Automation
	Activity Type: GPO Set
	PIN Number: 5
	Signal Direction: Low

Add Activities to the Credits Macro

You cannot add GPO activities to Solaria One and Solaria One+ projectors because the communication panel does not include a GPI/O port.

1. Tap the **Credits** macro in the left pane.
2. Tap **Add** in the **Macro Activities** list.
3. Select **IMB Automation** in the **Automation Device** list.
4. Select **GPO Set** in the **Activity Type** list.
5. Select **4** in the **Pin Number** list.
6. Select **Low** in the **Signal Direction** list.
7. Tap **Accept**.
8. The new activity is added to the **Macro Activities** list.
9. Tap **Save**.
10. Repeat steps 2 to 9 and add this activity:

Automation Type	Field Settings
Lights 50% (GPO 4 High, GPO 5 Low)	Automation Device: IMB Automation
	Activity Type: GPO Set
	PIN Number: 5
	Signal Direction: Low

Add Activities to the End of Show Macro

You cannot add GPO activities to Solaria One and Solaria One+ projectors because the communication panel does not include a GPI/O port.

1. Tap the **End of Show** macro in the left pane.
2. Tap **Add** in the **Macro Activities** list.
3. Select **IMB Automation** in the **Automation Device** list.
4. Select **GPO Set** in the **Activity Type** list.
5. Select **4** in the **Pin Number** list.
6. Select **High** in the **Signal Direction** list.
7. Tap **Accept**.
8. The new activity is added to the **Macro Activities** list.

9. Tap **Save**.
10. Repeat steps 2 to 9 and add these activities:

Automation Type	Field Settings
Lights 50% (GPO 4 High, GPO 5 High)	Automation Device: IMB Automation
	Activity Type: GPO Set
	PIN Number: 5
	Signal Direction: Low
Douser Close	Automation Device: Projector
	Activity Type: Projector
	Action: Douser Close
Lamp Off	Automation Device: Projector
	Activity Type: Projector
	Action: Lamp Off

Add Christie ACT Automation to a Macro

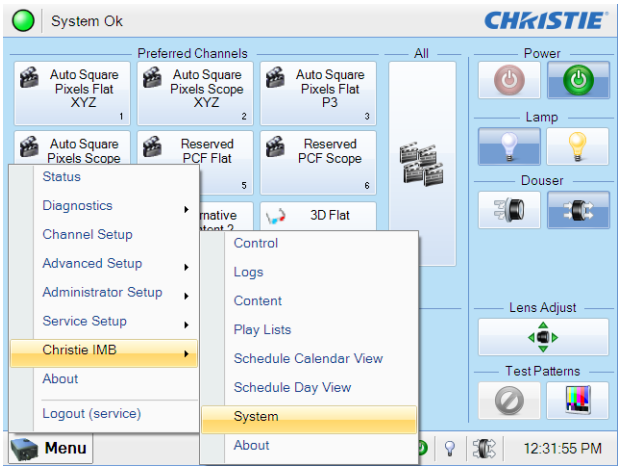
You can use a GPIO control or an external automation device such as a Christie ACT to control automated events in your theatre. To add Christie ACT automations to a macro, you must add the Christie ACT to the **Device Type** list and define its connection parameters including the IP address, log in user name, and password.

In this example, the Christie ACT uses these scripts to control lighting:

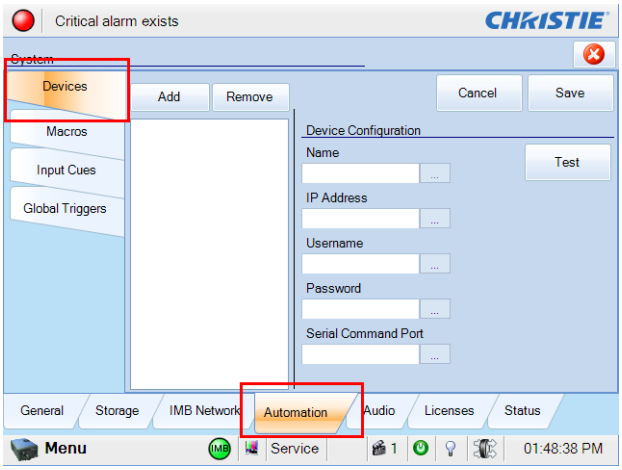
- Lights-0 - lights at 0%
- Lights-50 – lights at 50%
- Lights-100 – lights at 100%

Add the Christie ACT to the Device Type List

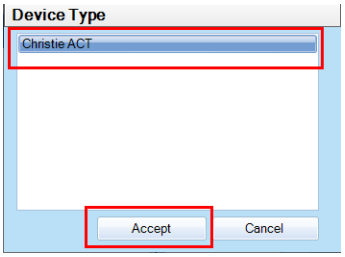
1. Tap **Menu** > **Christie IMB** > **System**.



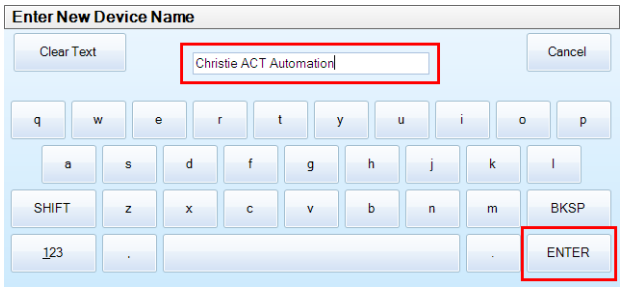
2. Tap the **Automation** tab.
3. Tap the **Devices** tab.



4. Tap **Add > Christie ACT > Accept**.

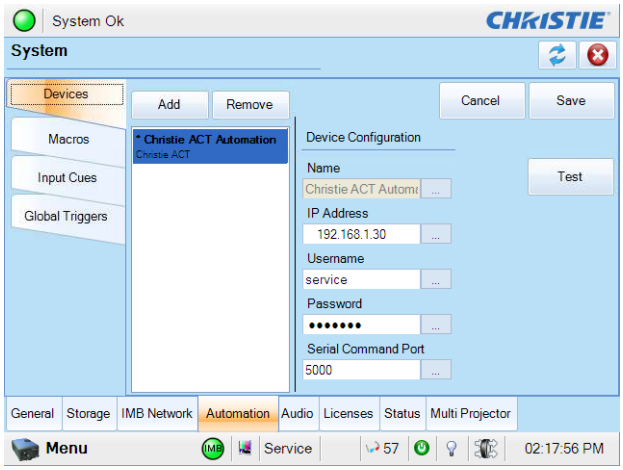


5. Enter **Christie ACT Automation** and then tap **Enter**.



6. Enter the IP address, user name, and password for the Christie ACT in the Device Configuration pane.

   In this example, use IP address 192.168.1.30 and **service** (the default setting) for the user name and password.



7. Tap **Test** to test the connection to the Christie ACT.

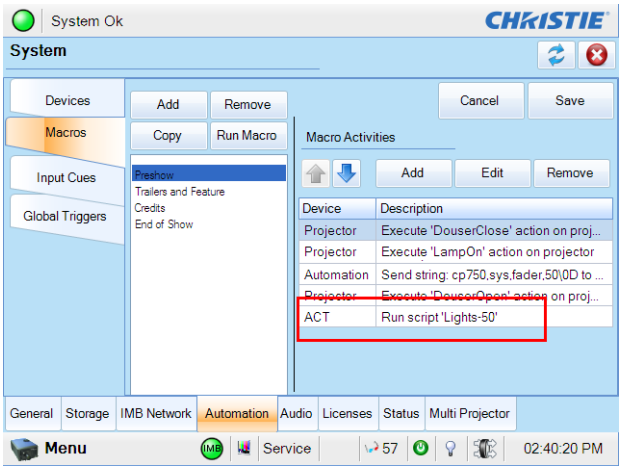
   If you enter an invalid IP address, an error message appears.

8. Tap **Save**.

Add the Christie ACT to the Preshow Macro

1. Tap the **Macros** tab.
2. Tap the **Preshow** macro in the left pane.
3. Tap **Add** in the **Macro Activities** list.
4. Select **ACT** in the **Automation Device** list.
5. Select **Run Script** in the **Activity Type** list.
6. Enter **Lights-50** in the **Script Name** field.

7. Tap **Accept**. The new activity appears in the **Macro Activities** list.



8. Tap **Save**.

Add the Macros to a Play List

In this example, you will:

- Ingest content
- Create the Blockbuster play list
- Add the ingested content to the play list
- Add the macros to the play list

Ingest Content

When ingesting a movie, you must ingest both the movie and its decryption key (Key Delivery Message). An decryption key is not required for trailers and other unencrypted content. The KDM key is typically provided on a USB flash drive or by email. To generate the KDM keys, you must provide the electronic serial number (eSN) of the Christie IMB. See *Identifying the Christie IMB Electronic Serial Number* on page 4.

To ingest content, you can use a USB hard drive or connect a hard drive to the eSATA port. Typically, using the eSATA port to ingest content is faster, but you might need to restart the Christie IMB so the data on the eSATA hard drive is recognized.

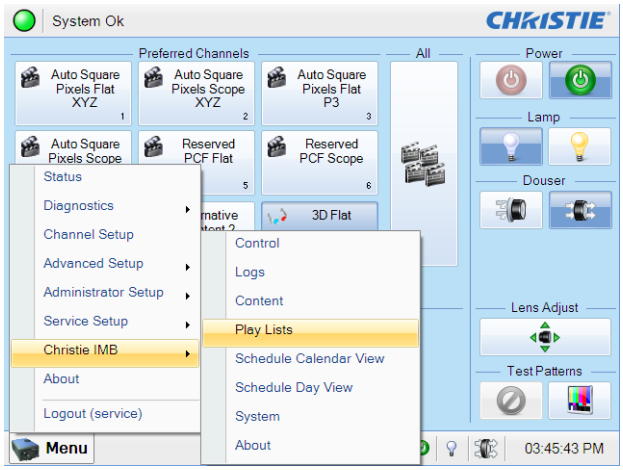
This procedure ingests a fictitious advertisement (Coke), trailer (Muppets), and a main feature (Sintel) so they can later be added to the play list. You can ingest your own content, or add existing content to the play list. If you will add existing content to the play list, move to Create a Play List.

1. Connect the device containing the KDM keys and content you want to ingest to the **Ingest** port on the IMB.
2. Tap **Menu** > **Christie IMB** > **Content**.

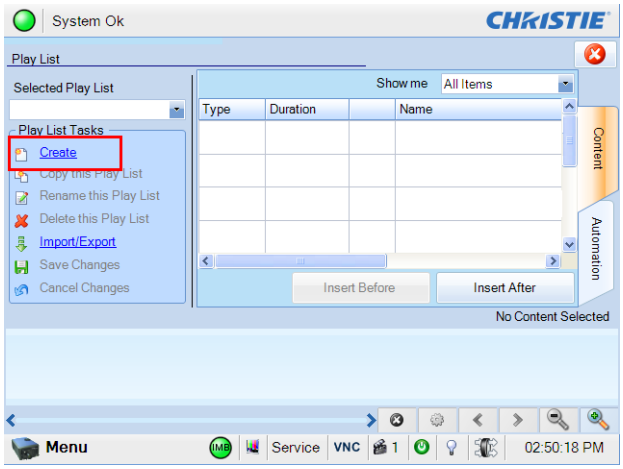
3. Tap the **Ingestible Content** tab.
4. Select **Coke** in the **Ingestible Content** list.
5. Tap **Ingest**.
6. Repeat steps 3 and 4 to add the trailer and the main feature.

Create a Play List

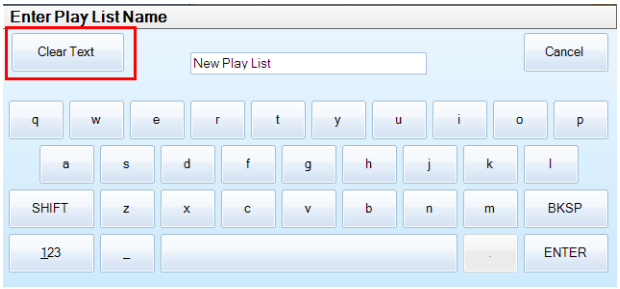
1. Tap **Menu** > **Christie IMB** > **Play Lists**.



2. Tap **Create** in the **Play List Tasks** list.



3. Tap **Clear Text**.

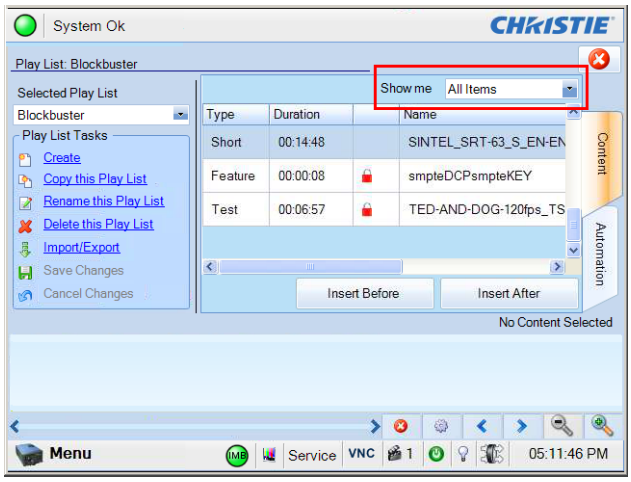


4. Enter **Blockbuster**.
5. Tap **Enter**.
6. Tap **Save Changes** in the **Play List Tasks** list.

Add Content to the Play List

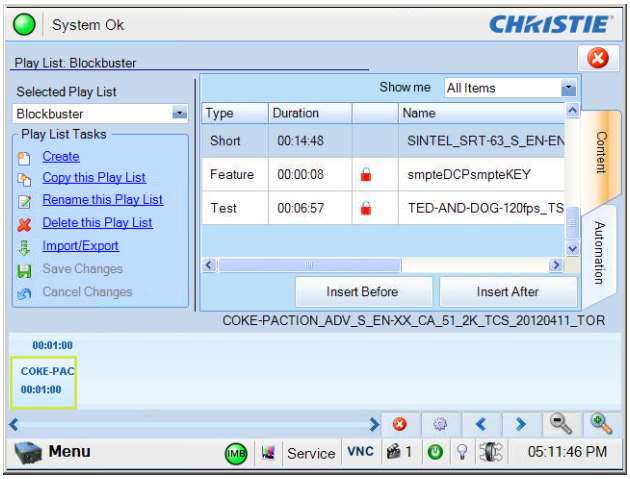
This procedure adds an advertisement, a trailer, and the main feature to the play list. You can add your own content to the play list, or move to Add the Preshow Macro to the Play List.

1. Tap **Menu** > **Christie IMB** > **Play Lists**.
2. Select **Blockbuster** in the **Selected Play List** list.
3. Tap the **Content** tab on the right side of the screen.
4. Select **All Items** in the **Show me** list.

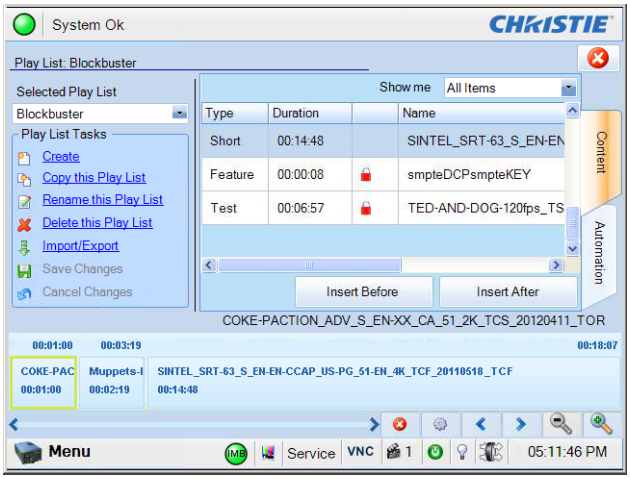


5. Tap the advertisement (Coke) in the content list.

6. Tap **Insert Before** or drag and then drop the content in the time line. The advertisement appears in the time line at the bottom of the play list window. If you insert content in the wrong location, drag and drop it to a new position.



7. Repeat steps 5 and 6 to add the trailer and the main feature to the play list. The trailer should appear after the advertisement and the main feature should appear after the trailer.

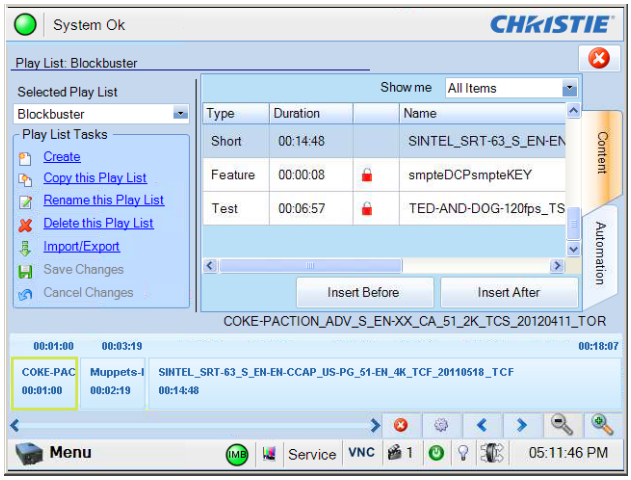


8. Tap **Save Changes** to save your changes.

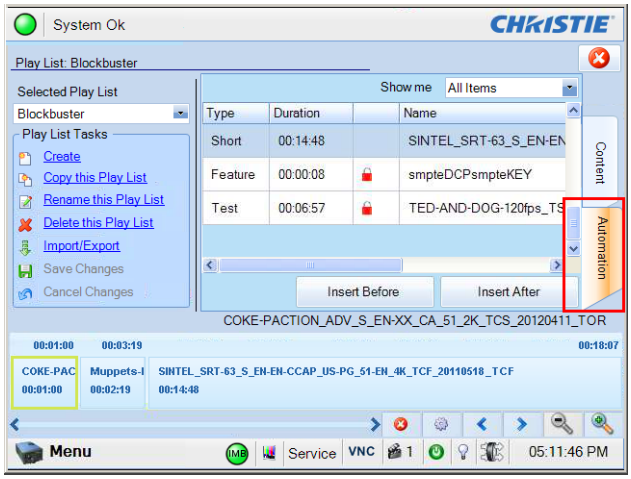
Add the Preshow Macro to the Play List

1. Select **Blockbuster** in the **Selected Play List** list.

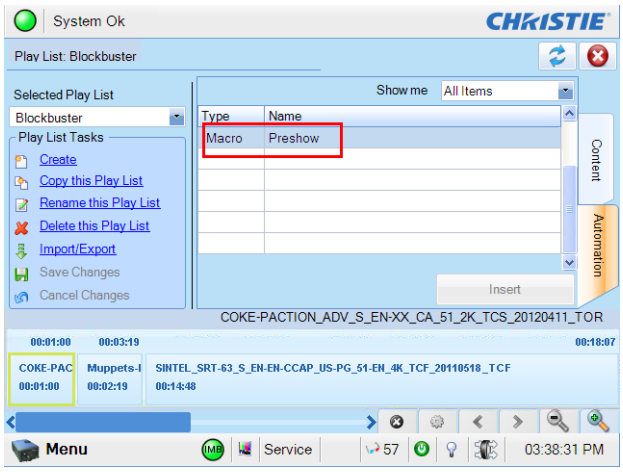
2. Select the advertisement content in the time line at the bottom of the play list. A yellow box appears around the content when you select it.



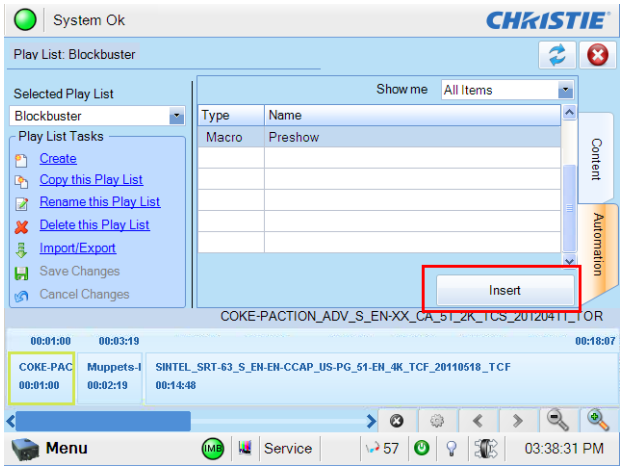
3. Tap the **Automation** tab.



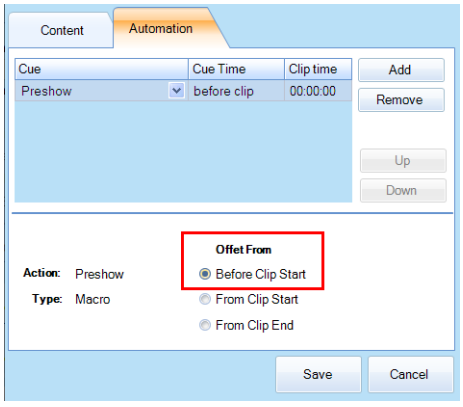
4. Select the **Preshow** macro in the top right pane.



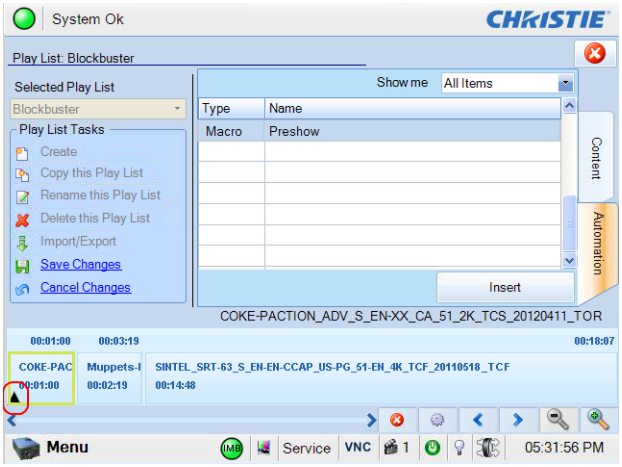
5. Tap **Insert**.



6. Tap **Before Clip Start** in the **Offset From** area.



7. Tap **Save**. A black triangle appears in the advertisement (Coke) content in the time line at the bottom of the play list window. This indicates that the Preshow macro will run before the advertisement plays. Tap the triangle to display the settings for the Preshow macro.



8. Tap **Save Changes**.

Add the Trailers and Features Macro to the Play List

1. Select **Blockbuster** in the **Selected Play List** list.
2. Select the trailer content in the time line at the bottom of the play list.
3. Tap the **Automation** tab.
4. Select the **Trailers and Features** macro in the top right pane.
5. Tap **Insert**.
6. Tap **Before Clip Start** in the **Offset From** area.
7. Tap **Save**.

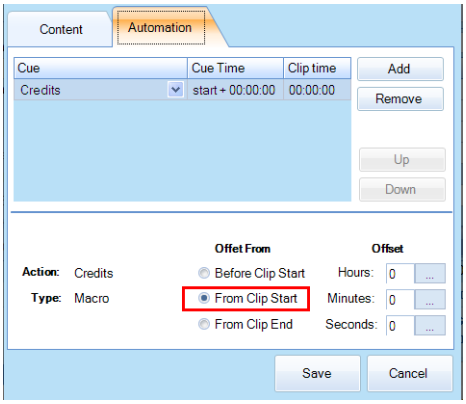
   A black triangle appears in the trailer (Muppets) content in the time line at the bottom of the play list window. This indicates that the Trailers and Features macro will run before the trailer plays. Tap the triangle to display the settings for the Trailers and Features macro.
8. Tap **Save Changes**.

Add the Credits Macro to the Play List

In this example, you want the Credits macro to run when the Sintel credits begin. The Sintel credits appear 12 minutes and 25 seconds from the start of the content.

1. Select **Blockbuster** in the **Selected Play List** list.
2. Select the feature content in the time line at the bottom of the play list.
3. Tap the **Automation** tab.

4. Select the **Credits** macro in the top right pane.
5. Tap **Insert**.
6. Tap **From Clip Start** in the **Offset From** area.



7. In the **Minutes** field, enter **12**.
8. In the **Seconds** field, enter **25**.
9. Tap **Save**.

   A black triangle appears in the feature (Sintel) content in the time line at the bottom of the play list window. This indicates that the Credits macro will run after when the feature credits appear. Tap the triangle to display the settings for the Credits macro.
10. Tap **Save Changes**.

Add the End of Show Macro to the Play List

In this example, you want the End of Show macro to run when the Sintel content ends.

1. Select **Blockbuster** in the **Selected Play List** list.
2. Select the feature content in the time line at the bottom of the play list.
3. Tap the **Automation** tab.
4. Select the **End of Show** macro in the top right pane.
5. Tap **Insert**.
6. Tap **From Clip End** in the **Offset From** area.
7. Tap **Save**.

   A second black triangle appears in the feature (Sintel) content in the time line at the bottom of the play list window. This indicates that the End of Show macro will run after the feature finishes playing. Tap the triangle to display the settings for the End of Show macro.
8. Tap **Save Changes**.

CHRISTIE

Troubleshooting

This document provides troubleshooting information for the Christie Integrated Media Block (IMB).

The Christie Integrated Media Block User Manual and other publications referenced in this document are available on the Christie web site (*http://www.christiedigital.com/en-us/products/accessories/Pages/Christie-IMB-011-103895-XX.aspx*).

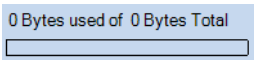
Diagnostic Troubleshooting

Problem	Resolution
How do I download projector diagnostic logs?	• Insert a USB flash drive in the USB port on the side projector touch panel controller (TPC). • On the projector TPC, tap **Menu** > **Diagnostics** > **System Logs** or **Menu** > **Diagnostics** > **Interrogator**.
How do I download Christie IMB diagnostic logs?	• Insert a USB flash drive in the USB port on the side projector touch panel controller (TPC). • On the projector TPC, tap **Menu** > **Christie IMB** > **System** > **Run Interrogator**. For more information about log files, see *Logs* in the Christie IMB User Manual.
Does the Christie IMB retrieve log information from the Link Decryptor (LD)?	No. The Christie IMB communicates with Integrated Cinema Processor (ICP) and not the LD. If a LD and a Christie IMB are installed in the same projector, the external server retrieves LD log information.
How do I download a SM certificate?	See *Download a Certificate* in the Christie IMB User Manual.

How do I retrieve the Christie IMB device and root certificates?	Download a SM certificate. See *Download a Certificate* in the Christie IMB User Manual.
	Open the certificate file in a text editor and locate these entries:
	`-----BEGIN CERTIFICATE-----`
	`<text> - Certificate #1 (device certificate)`
	`-----END CERTIFICATE-----`
	`-----BEGIN CERTIFICATE-----`
	`<text> - Certificate #2 (intermediate certificate)`
	`-----END CERTIFICATE-----`
	`-----BEGIN CERTIFICATE-----`
	`<text> - Certificate #3 (intermediate certificate)`
	`-----END CERTIFICATE-----`
	`-----BEGIN CERTIFICATE-----`
	`<text> - Certificate #4 (root certificate)`
	`-----END CERTIFICATE-----`
	The first entry is the Christie IMB device certificate and the last entry is the Christie IMB root certificate.
	To extract the certificate, copy the entire BEGIN CERTIFICATE and END CERTIFICATE entry and all of the dashes.

Why does my Christie IMB upgrade package not appear on the IMB Upgrade screen?	Only 5 upgrade packages can be uploaded at a time. If you attempt to upload a 6th upgrade package, it appears to succeed, but it does not appear in the Upgrade Files on Server list. To correct this issue, delete one or more upgrade packages and then upload the new upgrade package again.

Ingest Troubleshooting

Problem	Resolution
What file formats are supported by the Christie IMB?	Ingest drives can contain Microsoft Windows (FAT, FAT-32, NTFS) or Linux (ext3, ext4) file systems.
Why does my content not appear on the Content screen after it is ingested?	There might not be enough storage space for the content on the storage device. Before ingesting the content, verify there is enough room for the content on the storage device: Tap **Menu** > **Christie IMB** > **Content**. The graphic at the top of the screen indicates the amount of storage space available on the storage device:  A status alarm appears when only 10% of the available storage space remains on the storage device.
Why has it taken more than 10 hours to ingest my content?	• Review the SMS logs for this error message: `Ingest Error java.io.FileNotFoundException: /media/ingest_4001/wav_taken2_en_51hivi_0911_mpaa_24fps_enc_02718f9d-cbb7-45a9-87e5-8d2b569ae7ce_audio.mxf (Input/output error)` Occasionally, the ingested content does not appear on the Ingestible Content screen when the hard drive is connected to the Christie IMB ingest port. Replace the USB cable and the hard drive cradle. • When content is loaded or a movie is playing, the Christie IMB slows ingest speed to make sure playback is not interrupted. To prevent a long ingest, make sure there is no content loaded when you start an ingest.
Why did my theatre management system (TMS) fail to transfer content overnight?	If the projector enters standby mode or it is turned off, the Christie IMB cannot ingest content. On Solaria One and Solaria One^{+} projectors, you can keep the Christie IMB turned on when the projector enters standby mode and the cooling fans are off: • Tap **Menu** > **Administrator Setup** > **Preferences**. • Select the **IMB Powered in Standby Mode** check box.
How does the remote ingest process work?	The remote ingest process transfers content from a remote server to the Christie IMB using the file transfer protocol (FTP). A remote ingest can only be initiated by a Christie IMB or theatre management system (TMS) using the Christie IMB application programming interface (API). You cannot access the FTP server directly to ingest content. For more information, see *Ingest Remote Content from a Network IMB* in the Christie IMB User Manual and the topic *How do I set up a content network* in Troubleshooting.
What Ethernet ports can I use to remotely ingest content?	See *Ingest Remote Content from a Network IMB* on page 31.

Problem	Resolution
What methodologies are available to ingest Digital Cinema Packages (DCP)?	You can ingest packages by packing list (PKL) or as composition play list (CPL). If you are using the projector touch controller (TPC) to manage the ingest, you can only ingest by PKL. Use the web interface to ingest by CPL or PKL. By default, the Christie IMB loads DCP packages by PKL. The PKL includes only the files for the current DCP. A version file (VF) DCP is typically a set of supplemental files such as sound settings or additional languages. The VF is dependent on the files contained in the original version (OV) DCP. If you ingest a VF DCP by PKL, and did not previously ingested the OV DCP, there might be missing assets and a Missing Assets error message might appear when you attempt to load the content. To ingest CPL files with the web interface: • Open an internet browser. • Enter the IP address of the Christie IMB in the address field. Press **Enter**. • Click **Login**. • Click the **Content** tab. • Click the black arrow icon to the left of a PKL file. A list the CPL files associated with the PKL appears. • Select a CPL file and click **Ingest**.
When ingesting content remotely, what is the user name and password for the Christie IMB?	See *Ingest Remote Content from a Network IMB* on page 31.

Key Delivery Message (KDM) Key Troubleshooting

Problem	Resolution
How do I upload a KDM key?	Insert the USB thumb drive with the KDM key into the Ingest port on the Christie IMB. You cannot use the USB port on the projector TPC to upload KDM keys. See *Ingest Content and KDM Keys* in the Christie IMB User Manual.
If a KDM expires during playback, does playback stop?	No. When a playlist is loaded, the Christie IMB verifies that all of the content in the playlist can be played within the time allowed by the KDM. In addition, the DCI specification allows a 6 hour grace period that allows playback to continue as long as the end of playback occurs within 6 hours of the KDM expiry.
Why were my KDM keys removed 30 minutes after they were ingested?	If you have a dual projector configuration, verify that you are not sharing a common NAS or DAS device. Maintenance routines on one Christie IMB will delete KDM keys ingested by a second Christie IMB. A single NAS or DAS device cannot be shared by multiple projectors.

Problem	Resolution
How can encrypted content play without a valid KDM key appearing on the **Keys** tab on the projector TPC?	KDM keys are stored in two locations. KDM keys used to unlock content are stored in the security manager (SM). KDM keys listed on the **Keys** tab are stored in the screen management system (SMS). The two systems can become unsynchronized and the KDM keys can exist on the SM but not the SMS (they do not appear on the **Keys** tab). This issue can occur when a NAS device or the Christie IMB is moved to another projector. Ingest the KDM keys again so they appear in the **Keys** tab.
How do I use the web interface to load KDM keys?	• Add the computer with the KDM key to the same subnet as the Christie IMB-S2. • Open an internet browser. • Enter the IP address of the Christie IMB in the address field. Press **Enter**. • Click **Login**. • Enter your user name and password and then click **Log In**. • Click the **Content** tab. • Click the **Keys** tab. • Click **Load Keys**. • Browse to the location of the KDM key, select it, and then click **Open**.

License Troubleshooting

Problem	Resolution
What optional features require a license?	See *Licensing* on page 4.
How do I upload a license key?	See *Upload a License Key* on page 6.
How do I obtain a Dolby 3D Color Correction license?	See *Dolby 3D Color Correction Licensing* on page 5.
How do I apply Dolby color calibration?	See the *Christie IMB Dolby Color Calibration* instruction sheet (020-100921-01). This document is included in the Dolby calibration software package available from Dolby laboratories.
How do I obtain a RealD 3D EQ license?	See *RealD 3D EQ Licensing* on page 5.
Where is the Electronic Serial Number (eSN) for my Christie IMB?	See *Identifying the Christie IMB Electronic Serial Number* on page 4.

Network-attached Storage Troubleshooting

Problem	Resolution
How do I test the performance of my NAS device?	See *Testing NAS and DAS Performance* on page 2.
How do I configure the NFS service for my Network Attached Storage (NAS) device?	See *Network Attached Storage Network File Settings* on page 3.

Problem	Resolution
Why do I receive buffer underrun errors when playing content from a QNAP NAS?	This error occurs when more there is more than 30 minutes between content in a playlist and hard disk standby mode is enabled on the QNAP NAS. When the QNAP NAS is in standby mode, it can take 5 to 10 seconds for it to respond. To turn hard disk standby off: • Log in to the QNAP NAS management screen. The default password and user name are **admin**. • Expand **System Administration**. • Click **Hardware** in the left pane. • Clear the **Enable hard disk standby mode...** check box in the right pane. • Scroll to the bottom of the screen and click **Apply**.

Playback Troubleshooting

Problem	Resolution
How do I play MPEG-2 content?	To play MPEG-2 content, this software must be installed on the projector: • Christie IMB-S2 Main Software v1.2 or later. • Solaria One Main Software v4.0.1 or later on Solaria One and Solaria One+ projectors. • Solaria Main Software v3.1.1 or later on all other Christie series 2 projectors. See also *Play MPEG-2 Content* on page 33.
How do I configure my audio settings?	See *Manage Audio Settings* in the Christie IMB User Manual and *Audio Mapping* on page 13.
If the lamp turns off unexpectedly, does playback stop?	Yes. If the lamp goes out, the Christie IMB pauses playback. As soon as the lamp is turned on, you can resume playback from where it was paused.
How do I play high frame rate (HFR) content?	• A HFR license is required to play HFR content. Verify the license is installed. • ICP version 4.0 or later is required to play HFR content on Christie 4K projectors. Solaria software version 3.1.0(3) and later includes the ICP software and firmware necessary to display HFR content. Download the latest Solaria software from the Christie web site.
After updating my Christie IMB software to version 3.1.1 my 3D images are inverted. Applying the 3D settings on the **Channel** tab temporarily corrects the problem. How do I permanently correct the inverted 3D images?	See information bulletin *020-200201-01 Christie IMB-S2 Default 3D Setting Files* on the Christie web site for corrective procedures for this issue.
Why do flashes appear on the screen during playback? Turning the projector or Christie IMB on and off does not correct the issue	Make sure the Christie IMB is firmly inserted into the IMB slot in the projector card cage. If it appears loose, remove it, re-seat it, and make sure it is securely locked in position.

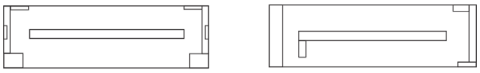
Problem	Resolution
How do I create a black time delay between clips in a playlist?	See *Create and Add a Black Delay to a Play List* on page 10.
Why does 2D and 3D content appear vertically or horizontally compressed?	See *My content appears vertically or horizontally compressed* in the Christie IMB User Manual.
If I create a macro and select **Disable Subtitles** in the **Activity Type** list, is this setting applied to all content?	No. The subtitles are only disabled if the macro is added to a playlist. To create a macro to disable subtitles, see *Create a Macro to Disable Subtitles* on page 11.
How do I present a single projector presentation with a dual projector configuration?	• Turn the lamp off on one of the projectors. • Run the content on the slave projector. If you select this option, all audio and automation controls must be moved to the slave projector.
On a dual projector configuration, how do I correct image flashing and synchronization issues on the slave projector?	The slave projector is not receiving a correct synchronization signal from the master Christie IMB. • Remove all 90 degree adapters on the synchronization cable. • Replace the RG-6 cable.

Set Up and Connection Troubleshooting

Problem	Resolution
How do I remotely connect to the projector?	Open an internet browser and then enter the IP address for the projector in the address field. Add**:5800** to the end of the IP address. For example, 192.168.1.2:5800. If you are using Internet Explorer version 8 or older, add a forward slash after the port number. For example, 192.168.1.2:5800/.
How do I connect to the web interface for the Christie IMB?	Open an internet browser and then enter the IP address for the projector in the address field. For example, 192.168.1.2. To use the web interface, you must have Microsoft Silverlight installed and the computer must be on the same network as the projector in which the Christie IMB is installed.
How do I control the projector with Virtual Network Computing (VNC)?	Download and install a VNC client such as TinyVNC. Set the remote host of the VNC viewer to the IP address of the projector.
I cannot access the TPC. How do I access the web interface and what is the user name and password?	• Press the Emergency Start button on the PIB faceplate. • Connect one end of an Ethernet cable to a computer and the other end to the PIB Ethernet port. • Open an internet browser and then enter the projector IP address in the address field. Press **Enter**. • Click **Login**. • In the user name field, enter **EmergencyUser** and in the password field, enter **cdsclub**. • Click **Log In**.
When setting up my Christie IMB, what are the IP address and subnet considerations?	See *IP and Subnet Considerations* on page 3.

Problem	Resolution

Why are the **Control**, **System**, and **About** menus the only menus that appear on projector touch panel controller (TPC)?	• If the IP address for the NAS device is incorrect, a network conflict occurs and the Christie IMB cannot to communicate with the TPC and verify the log in credentials. To correct this issue:
	  • Disconnect the Ethernet cable connecting the NAS device to the Christie IMB.
	  • On the TPC, tap **Menu** > **Christie IMB** > **IMB Network**.
	  • Correct the IP address and then tap **Save**.
	  • Reconnect the Ethernet cable.
	• This issue can also occur when you log in to the projector and it is in standby mode and then you move the Christie IMB to full power mode. To see all of the Christie IMB menus, log out and then log in again.

What are the benefits of using the eSATA port to ingest content?	Using the eSATA port to ingest content is faster than using the USB port. However, you might need to restart the Christie IMB so the data on the eSATA hard drive is recognized. Typically, ingest drives provided by distributors have a SATA connection. The Christie IMB ingest port uses an eSATA connection.  eSATA Connector SATA Connector To connect a device with a SATA connection to the Christie IMB requires eSATA-to-SATA cable.
Why are the new features not appearing on the web interface after I have updated my Christie IMB software?	Refresh or restart your internet browser after an upgrade to view new features.
Why am I unable to marry a Christie IMB and a Link Decryptor at the same time?	This feature is not supported by backplanes that are version 3.2.1 or older. To determine your backplane version, run a projector interrogation and look in the interrogaTemp.txt file for the BackplaneInfo entry. To use the Link Decryptor on a newer backplane, select the **Link Decrypter** check box on the Config 2 Channel Setup screen.
I enabled RealD 3D EQ or Dolby color correction. Why does the **Value** column for these features on the System screen indicate FALSE?	If you added a license file to enable RealD 3D EQ or Dolby color correction, the feature will be active when you next play content even if the **Value** column indicates FALSE. Restart the Christie IMB to update the information in the **Value** column.
How are macros, input cues, and global triggers different?	See *Manage Automation* in the Christie IMB User Manual.
How I do I install and configure dual projectors?	See *Configure Dual Projectors* in the Christie IMB User Manual. You do not need to change any settings on the slave projector to enable dual projector playback. If you cannot display content: • Remove all 90 degree adapters from the BNC synchronization cable. • Make sure you have ingested identical content into both projectors and each projector has a valid KDM key.

CHRISTIE

Terminology

Term	Description
CMB	Christie Media Block See IMB. This term is used primarily in Christie Solaria One and Solaria One^{+} documentation.
CPL	Composition Play List A file that specifies the picture, sound, subtitle, and closed-caption assets which are required to play a single digital cinema work such as a feature or a trailer.
DAS	Direct-attached storage Computer data storage directly connected to a server or workstation, without a network in between.
DCP	Digital Cinema Package The set of files containing the digital cinema content which is ingested by an IMB or cinema server.
DHCP	Dynamic Host Configuration Protocol A network protocol that configures network devices so that they can communicate on an IP network.
ICP	Integrated Cinema Processor
IMB	Integrated Media Block The Christie IMB is a printed circuit board that is installed in the projector card cage. The Christie IMB is connected to an external storage device and its role is to decrypt encrypted content stored on the external storage device.
KDM	Key Delivery Message A digital decryption key used by the Christie IMB to decrypt encrypted content.
NAS	Network-attached storage Computer data storage connected to a computer network.
LMS	Library Management System
NFS	Network File System A distributed file system protocol.
OV	Original Version The original version of a feature distributed by a studio.
PIB	Projector intelligence board
PKL	Packing List File A file that specifies the contents of a Digital Cinema Package (DCP).
SM	Security manager
SMS	Screen management system
TMS	Theatre Management System
TPC	Touch panel controller A touch-sensitive screen used to control the projector.
VF	Version File A supplemental version of a feature that enhances a previously released Original Version (OV). This can include enhanced sound and alternative language files. The VF can also include corrections to issues in the OV file.

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