NOTICES

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REGULATORY

The product has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the product is operated in a commercial environment. The product generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of the product in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at the user’s own expense.

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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GENERAL

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

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.

WARRANTY

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. Damage occurring during shipment, in either direction.
b. Projector lamps (See Christie’s separate lamp program policy).
c. 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 caused by combination of the product with non-Christie equipment, such as distribution systems, cameras, video tape recorders, etc., or use of the product with any non-Christie interface device.
e. Damage caused by misuse, improper power source, accident, fire, flood, lightening, earthquake or other natural disaster.
f. Damage caused by improper installation/alignment, or by product modification, if by other than a Christie authorized repair service provider.
g. 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.
h. 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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Christie ACT (Automation Controller) is an independent box that can be used to sequence Christie actions of multiple devices inside or outside of theatre environments. Christie ACT provides a simple user interface for operators, yet provides a rich interface for advanced users that need to configure the unit.

- 1.1 Using this Manual
- 1.2 Purchase Record and Service Contacts
- 1.3 Christie ACT Overview
Section 1: Introduction

1.1 Using this Manual

**USERS/OPERATORS:** This manual is intended for trained users authorized to operate electronic components within Christie ACT, located in restricted area such as projection rooms in theatres.

**SERVICE:** There are no serviceable parts within Christie ACT.

This manual contains the following sections:

- 1 Introduction
- 2 Installation and Setup
- 3 Operation
- 4 Maintenance
- 5 Troubleshooting
- 6 Specifications

**Disclaimer:**

Every effort has been made to ensure the information in this document is accurate and reliable. However, due to constant research, the information in this document is subject to change without notice. Christie Digital Systems assumes no responsibility for omissions or inaccuracies. Updates to this document are published regularly, as required. Please contact Christie Digital Systems for availability.

1.1.1 Typographical Notations

The following notations are used throughout this manual:

- References to specific areas of the document appear italicized and underlined. When viewed online the text appears in blue indicating a direct link to that section. For example, Section 6 Specifications.
- References to other documents appear italicized and bold, such as Christie User Manual.
- References to software menus, tabs, and available options appear bold, such as Operator Menu, Editor: Script Menu, and Config.
- User input or messages that appear on screen, in status display units or other control modules appear in Courier font. For example, “No Signal Present”, Login: christiedigital.
- Error codes, LED status appear in bold, e.g. LP, A1 etc.
- Operational states of modules appear capitalized, such as “power ON, power OFF”.
- Signal words, such as Warning, Caution and Notes are used in this manual to point the reader to specific information or instructions that warn of safety related hazards which may be present and how to avoid them.
1.2 Purchase Record and Service Contacts

Whether this product is still under warranty or the warranty has expired, Christie’s highly trained and extensive factory and dealer service network is always available to quickly diagnose and correct malfunctions. Should you encounter a problem with this product, please contact your dealer listed on the back cover of this manual. If you have purchased the product, fill out the form below and keep with your records.

Table 1.1 Purchase Record

<table>
<thead>
<tr>
<th>Dealer/Christie Sales Contact:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Dealer/Christie Sales Contact Phone Number:</td>
<td></td>
</tr>
<tr>
<td>Christie ACT Serial Number*:</td>
<td></td>
</tr>
<tr>
<td>Purchase Date:</td>
<td></td>
</tr>
<tr>
<td>Installation Date:</td>
<td></td>
</tr>
</tbody>
</table>

* The serial number can be found on the license label located on the side panel of the product.

1.2.1 RS232 IN Settings

Table 1.2 Serial Port Default Settings

<table>
<thead>
<tr>
<th></th>
<th>RS-232 IN</th>
<th>RS-232 OUT</th>
<th>RS-422</th>
<th>RS-232 OUT (Audio)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baud Rate (Bits Per Second)</td>
<td>115,200</td>
<td>115,200</td>
<td>19,200</td>
<td>9,600</td>
</tr>
<tr>
<td>Data Bits</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Parity</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Stop Bits</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Mode</td>
<td>8N1</td>
<td>8N1</td>
<td>8N1</td>
<td>8N1</td>
</tr>
<tr>
<td>Flow Control</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

Determine the IP Address Using the Serial Port

You can determine Christie ACT’s current IP address by connecting to Christie ACT using the RS232 IN port and rebooting Christie ACT (reboot by unplugging the power cord and plugging it back in). As Christie ACT boots up it will display the current Ethernet settings over the serial connection.

The Ethernet settings can also be queried by using these serial commands:

(net+eth0?) - query the current IP Address
(net+sub0?) - query the current Subnet Mask
(net+gate?) - query the current Gateway
Configure the IP Address Using the Serial Port

To configure the IP address over RS232 IN:

1. Connect a serial cable to the RS232 on Christie ACT.

2. Use a terminal program (for example HyperTerminal) to connect to Christie ACT. NOTE: If you cannot connect to this device and you do not know the IP address, see Section 5.1.4 Manually Resetting RS-232 IN Port.

3. Log into Christie ACT using the command: (UID "service" "service")

4. Set the IP Address using: (net+eth0 "192.168.1.90")
   where '192.168.1.90' is replaced with the IP Address to be set.

5. Set the Subnet Mask using: (net+sub0 "255.255.255.0")
   where '255.255.255.0' is replaced with the Subnet Mask to be set.

6. Set the Gateway using: (net+gate "192.168.0.1")
   where '192.168.0.1' is replaced with the Gateway to be set.

1.2.2 Ethernet Settings

At manufacture, the following Ethernet settings were defined for Christie ACT:

Table 1.3 Ethernet Settings

<table>
<thead>
<tr>
<th>Setting</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Default Gateway</td>
<td>192.168.10.1</td>
</tr>
<tr>
<td>DNS Server</td>
<td>n/a</td>
</tr>
<tr>
<td>Default IP Address</td>
<td>192.168.1.89</td>
</tr>
<tr>
<td>Subnet Mask</td>
<td>255.255.0.0</td>
</tr>
</tbody>
</table>

NOTE: Christie ACT listens for incoming TCP/IP ethernet cues on port 6001.

1.3 Christie ACT Overview

Christie ACT incorporates two basic user interface systems a control interface and a web user interface.

- Control Interface - 8 programmable buttons on the front panel of the unit that trigger a single isolated event or initiate the start of a programmed sequence.

The web user interface - a web based interface served internally by Christie ACT and displayed in a web browser over a local area Ethernet network. The web user interface is a full function setup and diagnostic tool that can be used for setup, configuration of “scripts,” defining button functions, and creating event sequences.
1.3.1 Key Features

- Inputs - 16 opto-isolated inputs
- Outputs - 14 relays Single Pole Single Throw (SPST)
- GPIO - 7 non-isolated with 12V rail
- Control Interface - 8 front panel buttons
- Power - Dual voltage (120/240 V AC) input
- Accessory Power - 12V and 5V terminals
- Dimensions - 2 Rack Unit Height
- Web User Interface
- Serial Control RS232 and RS422
- Ethernet
- RS232 (loop-through)
- 14 programmable LEDs
- Status LEDs
- Available Buzzer (user configured)

1.3.2 Inputs

There are 16 inputs (32 terminals) located on the back panel of Christie ACT. (Figure 1-2). There is an option to internally pull up any of the inputs to an isolated 5V via software control. The input pull-up feature is disconnected by default.

The internal pull-up to 5V is useful when interfacing with other equipment's contact closures (such as relays). The internal input pull-ups provide a voltage to active the inputs.

If available, an emergency situation input can be connected and the automation is able to control the appropriate auditorium functions (lights up, projector off, etc.) in case of an emergency. Refer to Section 3 Operation.

1.3.3 Outputs

There are 14 relay outputs (28 terminals) all of which are normally open (N/O) single pole single throw (SPST) located on the back panel of Christie ACT. The first 12 are rated for 1A, and the last two are rated for 8A. The external power terminals can be connected to allow the relay outputs to carry some voltage.

Relays can be grouped together (connect common for multiple signals) by using jumper leads at the connectors.
1.3.4 List of Components

Ensure you received the following components with your ACT:

- ACT with pre-installed ears for rack mounting (2-RU)
- 6 ft. power cord
- Magnetic “C” Channel Label Holder
- Adhesive Rubber Feet
- User Manual
This section explains how to install, connect, and get Christie ACT up and running. For operation details, refer to Section 3 Operation.

- Section 2.1 General Information
- Section 2.2 Front Panel
- Section 2.3 Back Panel
- Section 2.4 I/O Connections and Communications
- Section 2.5 Installation
- Section 2.6 Communications Setup
Section 2: Installation & Setup

2.1 General Information

The Christie ACT unit is designed for installation in a CP2000 projector pedestal or, more typically, in a Mounting Rack like the CP2000ZX or M rack stand.

**NOTE:** The Christie ACT unit is intended for installation in a RESTRICTED ACCESS LOCATION only.

**WARNING** 1) Installation to be performed by a Qualified Service Technician only. 2) Disconnect all power before servicing!

Before you begin installation, it is important to fully understand all site requirements and characteristics.

**WARNING** Christie ACT DOES NOT have an internal battery. If AC Power is interrupted Christie ACT will abort the ongoing program and will reset to an OnDeviceStartup condition which means the system will re-initialize.

2.2 Front Panel

2.2.1 Mounting Points

Mounting points enable Christie ACT to be installed in the rear of the CP2000 pedestal, or be rack-mounted in a separate standard 19-inch rack. Refer to Section 2.5.1 Rack Mount Installation.

![Figure 2-1 Christie ACT Front Panel](image)

2.2.2 Front Display Panel

| STATUS LEDS | Used to display the status of I/O scripts. They are programmable under script control. |
| Buttons (1-8) | These are programmable buttons that provide event control via the front panel of Christie Act. They are programmable under the Script tab by adding a Button Action. For example, a button can be configured to provide a cue to open a relay or send an output signal via RS232 or any other output sequence of events. |
| White label boxes/magnetic ‘C’ channel label | Used to identify the button function. |
| CUE led | Indicates that a cue is active. |
| READY led | Indicates that power is ON, the system has booted up and is ready. |
| ERROR led | Indicates an error condition. Use the web interface to determine the error. |
| USB port | Deferred feature located on the front panel of Christie ACT. |
2.3 Back Panel

2.3.1 Back Display Panel

Communications

- Ethernet Management - Connect with an Ethernet switch for transmission of control and status communications.
- RS232 - Connect with a server, PC or other device for serial communication.
- RS422 - Connect an RS422-compatible controller for unusually long-distance serial communication.
- GPIO - This is a digital GPIO. Connect the desired GPIO-compatible device here for integration of Christie ACT with an established control system. Devices connected via GPIO can operate in tandem with Christie ACT, or vice versa and is often used for automation of regularly scheduled events. Refer to Section 6.7 GPIO for input and output voltages.

AC Connector and Power Cord

**WARNING** 1) The North American rated line cord is provided with each unit. Ensure that you are using a line cord, socket and power plug that meets the appropriate local rating standards. 2) Use only an AC power cord recommended by Christie. Do not attempt operation if the AC supply and cord are not within the specified voltage and power range.

Use only the attachments and/or accessories recommended by Christie. Use of others may result in the risk of fire, shock or personal injury.

Use the Christie ACT power cord for any installation. Plug into an appropriate wall outlet or use the convenience outlet in the CP2000 pedestal. Christie ACT is rated for 100-240VAC. Refer to Section 6 Specifications for more information.

2.4 I/O Connections and Communications

**WARNING** Do not interrupt the Christie ACT while it is saving. This will interrupt any active script!

2.4.1 Input/Output Connector Types

**WARNING** Primary voltages MUST be connected by Qualified Electricians only!
2.4.2 Power Out

The power outputs are isolated and separate from the main electronics. They are located to the left of the relay outputs, facing the back panel (Figure 2-3). The Christie ACT accepts universal voltages, but includes a North American plug. There are 4 output voltage rails, two 5V, 2W rails and two 12V, 2W rails. These can be connected to the inputs/outputs as desired. A resettable (poly PTC type) fuse limits the total draw on these rails. The pull-ups to 5V is shared with one of the isolated rails. Refer to Section 6 Specifications for more information.

**Power Features**

- 2x 5V outputs, 2x 12V outputs
- One 5V rail; shared with input pull-ups
- Current limited
- Internally fused
- Voltages can be connected in series for higher output voltages
- Removable connector terminals for easy wire connection
- Isolated, electronically, from the internal electronics

2.4.3 Power Input

For specifications pertaining to power input refer to Section 6.2 Power.

2.4.4 Inputs

The Inputs are located on the back panel of the Christie ACT. There are two groups of 16 bi-directional inputs (32 terminals). Both groups have the optional 5V pull-ups via software control. The pull-ups are disconnected by default. Since a double-stacked connector is used, the matching pairs of terminals are arranged vertically. **NOTE:** For connection, the top inputs are positive and the bottom are negative. Refer to Section 6 Specifications for more information.

**Input Features**

- Removable connector terminals for easy wire connection
- Configurable internal pull-ups are useful when power is unavailable from the user device (dry contacts, such as un-powered relays, on the user device)
- 16 inputs, positive and negative input terminals
- +/- 30V Max. input voltage tolerance
- Optically-isolated from internal electronics
Section 2: Installation & Setup

![Diagram of Christie ACT User Manual](image)

**Figure 2-5 Inputs OFF State**

**Figure 2-6 Inputs ON State**

**Figure 2-7 Inputs With Internal Pull-ups (Active)**
2.4.5 GPIO

The 9-pin GPIO male connector is located on the back panel of the Christie ACT. Refer to . It provides a flexible method of interfacing a wide range of external input and output devices to Christie ACT, often so that an event on one device automatically triggers an event on the other. The GPIO pins 2 to 4 and pins 6 to 9 are for general purpose which are configured for input or output. Refer to the Config: Communication Tab, on page 3-17. Each GPIO pin can be set to input or output but is not isolated. Power provided is 12V, which is rated for 200 mA. Refer to Section 6 Specifications for more information.

**GPIO Features**

- Configurable inputs/outputs for signalling between devices.
- Easy integration within an established control system.
- Ability to trigger user configurable script/actions on input events.
2.4.6 Relay Outputs

The relay outputs are located on the back panel of the Christie ACT (Figure 2-2). There are 14 relay outputs (28 terminals) all of which are normally open single pole single throw. The first 12 are rated for 1A, and the last 2 are rated for 8A. Only the 8A high current connections are rated for line voltage connections. The external power output terminals (refer to Section 2.4.2 Power Out) can be connected to allow the relay outputs to carry some voltage. Relays can be grouped together (connect common for multiple signals) by using jumper leads at the connectors.
NOTE: Two connector pins are “NOT USED” as identified in Figure 2-12. Refer to Section 6 Specifications for more information.

**Relay Output Features**

- All contacts are normally open (N/O)
- Aligned vertically
- Contact closures
- Capacity: twelve 1 Amp and two 8 Amp
- Removable connector terminals for easy wire connection

*NOTE:* The two 8 Amp relays can be used to control primary voltages.

### 2.4.7 USB

The USB is located on the front panel of the Christie ACT and is a deferred feature (Figure 2-1).

### 2.4.8 Ethernet

The Ethernet connector is located on the back panel of the Christie ACT (Figure 2-2). The Ethernet connection is capable of 10/100 Base-T with 2 status LEDs. *NOTE:* Ethernet crossover cable is not required if connecting directly to a PC.

<table>
<thead>
<tr>
<th>Pin</th>
<th>Signal</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>+</td>
<td>Transmits data out</td>
</tr>
<tr>
<td>2</td>
<td>-</td>
<td>Transmits data out</td>
</tr>
<tr>
<td>3</td>
<td>+</td>
<td>Receives data in</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>Not connected</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>Not connected</td>
</tr>
<tr>
<td>6</td>
<td>-</td>
<td>Receives data in</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>Not connected</td>
</tr>
<tr>
<td>8</td>
<td></td>
<td>Not connected</td>
</tr>
</tbody>
</table>
2.4.9 Serial Port In/Out

There are 4 serial ports: **RS232 IN** (female port), **RS232 OUT** (male port), **RS232 OUT (AUDIO)** (male port) and **RS422** (female port). **NOTE:** Male and female port locations identified in Figure 2-14.

RS232

The RS232 port is used to receive serial cues or send serial commands for cues. The RS232 has options for which protocol to use. Refer to *Config: Communication Tab, on page 3-17*. RS232 IN is typically used for incoming signals and RS232 OUT is used by Device Libraries which primarily require outgoing signals, however all of the Christie ACT serial ports are bi-directional. **NOTE:** Hardware handshaking is not available. For pin identification refer to Figure 2-14.

<table>
<thead>
<tr>
<th>Pin</th>
<th>Signal Name</th>
<th>Direction</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>TXD</td>
<td>out</td>
<td>Transmits serial data to external device.</td>
</tr>
<tr>
<td>2</td>
<td>RXD</td>
<td>in</td>
<td>Receives serial data from external device.</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td>Not connected</td>
</tr>
<tr>
<td>4</td>
<td>GND</td>
<td>-</td>
<td>Ground return</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td>Not connected</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td>Not connected</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
<td>Not connected</td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td>Not connected</td>
</tr>
<tr>
<td>9</td>
<td></td>
<td></td>
<td>Not connected</td>
</tr>
</tbody>
</table>

**Figure 2-14 - Male and Female Port Locations**

![Female and Male Port Diagram]
RS422 With Non-Isolated Power

The RS422 12V has a maximum power out of 200mA. Pins 2 and 4 receive serial data from an external device, and Pins 3 and 5 transmit serial data to an external device. RS422 is used for both input and output and has longer cable distance than RS232.

<table>
<thead>
<tr>
<th>Pin</th>
<th>Signal Name</th>
<th>Direction</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>NC</td>
<td></td>
<td>Not connected</td>
</tr>
<tr>
<td>2</td>
<td>RXD-</td>
<td>in</td>
<td>Receives serial data from external device.</td>
</tr>
<tr>
<td>3</td>
<td>TXD-</td>
<td>out</td>
<td>Transmits serial data to external device</td>
</tr>
<tr>
<td>4</td>
<td>RXD+</td>
<td>in</td>
<td>Receives serial data from external device</td>
</tr>
<tr>
<td>5</td>
<td>TXD+</td>
<td>out</td>
<td>Transmits serial data to external device</td>
</tr>
<tr>
<td>6</td>
<td>NC</td>
<td></td>
<td>Not connected</td>
</tr>
<tr>
<td>7</td>
<td>GND</td>
<td></td>
<td>Ground</td>
</tr>
<tr>
<td>8</td>
<td>NC</td>
<td></td>
<td>Not connected</td>
</tr>
<tr>
<td>9</td>
<td>+12V</td>
<td>out</td>
<td>PWR</td>
</tr>
</tbody>
</table>

Expansion

For future use only.

RS232 Audio

This serial port controls audio devices through RS232. No audio signals are passed through this connection. The pin descriptions for the RS232 Audio port are the same as the other RS232 ports.

2.5 Installation

This section covers both the Rack Mount and CP2000 Pedestal (optional) installation.

2.5.1 Rack Mount Installation

Before installing Christie ACT in a rack mount, the following should be considered:

<table>
<thead>
<tr>
<th>Elevated Operation Ambient</th>
<th>If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient, therefore consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (ThermoMechanical Analysis) specified by the manufacturer.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduce Air Flow</td>
<td>Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.</td>
</tr>
<tr>
<td>Mechanical Loading</td>
<td>Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.</td>
</tr>
<tr>
<td>Circuit Overloading</td>
<td>Consideration should be given to the supply circuit equipment and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate equipment nameplate ratings should be used when addressing this concern.</td>
</tr>
<tr>
<td>Reliable Earthing</td>
<td>Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g. use of power strips).</td>
</tr>
</tbody>
</table>
Section 2: Installation & Setup

Installing Christie ACT in a Rack Mount

1. Insert the rear of Christie ACT into the open area of the rack.
2. Secure Christie ACT mounting ears to the rack frame using 4 screws.

2.5.2 CP 2000 Installation

Preparation for CP2000 Installation

1. Unlock and open the CP2000 pedestal doors (Figure 2-15).
2. Remove the 2 rack protector posts from the rear of the CP2000 pedestal. The screws are accessed from inside the pedestal.
3. Remove 2 security plates to create a 2RU opening for Christie ACT.

Pedestal Installation

1. Remove rack protectors (2) and security plates (2).
2. Insert the rear of Christie ACT into the open area of the pedestal so that the front of Christie ACT is visible.
3. Secure Christie ACT mounting points to the frame using 4 screws.
4. Re-install the 2 rack protector posts.
5. Close and lock the pedestal doors.

2.6 Communications Setup

There are several communication methods available to access Christie ACT. An ethernet connection via the web interface is the recommended method of configuration. Refer to Section 3 Operation. NOTE: A configured IP address is required. The default address 192.168.1.89.

2.6.1 Ethernet Communications

To add Christie ACT to an Ethernet network with other equipment such as controllers and other projectors, connect a standard CAT5 Ethernet cable between your Ethernet controller (or switches) and the Ethernet port on the Christie ACT back panel. Refer to Figure 2-2 for the location of the ethernet port. NOTES: 1) Ethernet crossover cable is not required if connecting directly to a PC. 2) Downloading new software to Christie ACT via Ethernet is supported.

To use a specific static IP address for Christie ACT, you can set this address, refer to Config: Network Tab, on page 3-15 or via an ASCII serial command.

For more information on determining and configuring the IP Address refer to,

- Section Determine the IP Address Using the Serial Port, on page 1-3.
- Section Configure the IP Address Using the Serial Port, on page 1-4.
2.6.2 RS232 Serial Communications

From most computers, connect a standard RS232 serial communication cable between the computer and Christie ACT serial port labeled RS232 IN. Then ensure that Christie ACT baud rate matches that of your computer. To change the baud rate, refer to Config: Communication Tab, on page 3-17.

For additional information concerning the serial ports, refer to Section 2.4.9 Serial Port In/Out. **NOTE:** There are three RS232 ports: RS232 In, RS232 Out, RS232 Out (audio).

2.6.3 RS422 Serial Communications

⚠️ CAUTION Do not use an RS422 port unless you are using equipment with RS422 capability. The voltage levels of this signal can damage incompatible equipment.

Some computers can provide RS422 serial communications (often through a plug-in adapter or external converter) rather than the more common RS232 standard. RS422 communication has differential “transmits-and receives” and is generally better suited for longer distances than RS232 communication. **NOTE:** RS422 is NOT compatible with RS232. Connecting an RS232, compatible PC to RS422 can damage the equipment at either end.

![Figure 2-17 Serial Communications](image)

The 9-pin RS422 connector is located on the back panel of Christie ACT, refer to Figure 2-17. When using the port, ensure that the baud rate matches that of your RS422 controlling device. Refer to Config: Communication Tab, on page 3-17.
This section describes the basic and advanced operation features of Christie ACT using the web user interface (Web UI). It includes:

- 3.1 Logging into Christie ACT
- 3.2 Navigating the Web User Interface
- 3.3 Setting Christie ACT's Configuration
- 3.4 Basic Operation
- 3.5 User Access and Rights
- 3.6 Advanced Operation and Configuration
- 3.7 Configuring Christie ACT
- 3.8 Upgrading Christie ACT Software
- 3.9 Using Christie ACT

The Christie ACT Web UI is accessed over a local area Ethernet network. The Web UI is a full function setup and diagnostic tool that can be used for setting up Christie ACT, configuring “scripts,” defining button functions, and creating event sequences.
3.1 Logging into Christie ACT

To login to Christie ACT:

1. Open a web browser and type the IP address assigned to your Christie ACT unit (default http://192.168.1.89). The Christie ACT Login window appears. **NOTE:** Internet Explorer V6.0 has known performance issues and is not recommended to be used as the primary web browser for the Christie ACT Web UI. It is recommended to use Internet Explorer V7.0 or greater, or Firefox V2.0 or greater.

![Christie ACT Login Window](image)

Figure 3-1 Christie ACT Login Window

2. Enter your User Name and Password (both are case sensitive) in the appropriate locations. The default User Name is service and default Password is service.

3. Click Login.

For information on permission levels and access privileges, refer to Section 3.5 User Access and Rights.

Auto Login is accessed through the Christie ACT Login window (Figure 3-1). When enabled by the administrator, it will automatically enter the password when the username is entered. For more information refer to Section Config: Users Tab, on page 3-16.

3.2 Navigating the Web User Interface

When navigating Christie ACT in the web browser, DO NOT use the browser’s navigational buttons, i.e. Back and Forward. Using these buttons will cause you to lose your web connection to Christie ACT.

3.2.1 Using the Toolbar

Each window in the Christie ACT Web UI has the same main tool bar from which you can:

- Select a specific Christie ACT from within a network and view the assigned IP address.
- View the current time on the device.
- Close the window and logout (exit) from the Web UI.
- See the device name of the selected Christie ACT.
- Navigate through the Christie ACT interface using the tabs.

![Common Toolbar](image)

Figure 3-2 Common Toolbar
Section 3: Operation

Viewing a Specific Christie ACT

To browse for available Christie ACT devices,
1. Click the Device button to open the Christie Devices window (Figure 3-3).
2. Select an address from the displayed list of IP addresses.

![Figure 3-3 List of Christie Devices](image)

Viewing the Current Status

When a tab is clicked, the information for that selection is displayed in the center of the window. When the Editor, Status and Config tabs are selected, additional sub tabs are presented at the bottom of the window. Each sub tab opens a new window that is relative to the original tab selection.

3.3 Setting Christie ACT's Configuration

Christie ACT must be configured before it can be used. Use the Setup and Configuration Manual to configure Christie ACT. For now, refer to Section 3.7 Configuring Christie ACT to configure Christie ACT.

3.4 Basic Operation

This section discusses the four basic tabs that an operator can view: Main tab, Operator tab, Status tab, and About tab. Other tabs are discussed in Section 3.6 Advanced Operation and Configuration.

3.4.1 Main Tab

The Main tab provides a series of programmable buttons that mimic the front of Christie ACT. There are a series of 14 LED lights that turn ON and OFF depending on the state of the selected button. They are for display only and cannot be turned ON or OFF from this tab.

![Figure 3-4 Main Tab](image)
3.4.2 Operator Tab

The Operator tab provides a view of the user-defined operator buttons where each button performs a specific action initiating the start of a programmed sequence. Operator buttons extend the system beyond the 8 buttons available on Christie ACT. Buttons are created in the Editor: Operator Buttons tab. You must have the proper permission to create or modify buttons. For more information on adding or editing buttons, refer to Section 3.9.6 Adding an Operator Button.

![Operator Tab](image)

Figure 3-5 Operator Tab

3.4.3 Status Tab

The Status tab provides an overall view of Christie ACT’s status.

**Status: Summary Tab**

This tab provides status information about Christie ACT’s log files (Figure 3-6).

![Status: Summary Tab](image)

Figure 3-6 Status: Summary Tab
Status: State Summary Tab

The **Status: State Summary** tab provides a list of system and device properties created by the script.

![Figure 3-7 Status: State Summary Tab](image)

Status: Execution Summary Tab

The **Status: Execution Summary** tab is a summary of the Cue actions that were executed from the system reset.

![Figure 3-8 Status: Execution Summary Tab](image)
**Section 3: Operation**

### Status: Interrogator Tab

The **Status: Interrogator** tab enables the collection of advanced-level status information that can assist in the diagnostics of Christie ACT’s components. A .tar file is created and saved to the location you specify.

![Figure 3-9 Status: Interrogator Tab](image)

### 3.4.4 About Tab

The **About** tab is a read-only window that lists important information about Christie ACT such as the current level of software, critical hardware components, and the manufacture date.

![Figure 3-10 About Tab](image)

Christie ACT comes with one of two flash boards, 9.1.1 or 9.1.3. The new flash board version number is 9.1.3. To determine the version number, telnet into the machine and run the command `cat/proc/hardware`. 
### 3.5 User Access and Rights

Accessing different Web UI tabs and functions depends on your login permission level. There are five distinct password-protected levels of users as identified in **Table 3.1**. Each progressive level of security has increased rights and the rights of previous levels.

#### Table 3.1 Permission Levels

<table>
<thead>
<tr>
<th>User Security Levels</th>
<th>Access to Tabs...</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Status</strong></td>
<td>Main Status About</td>
<td>Any user can view basic Christie ACT status and diagnostic information.</td>
</tr>
<tr>
<td><strong>Operator</strong></td>
<td>Main Operator Status About</td>
<td>Operators can view additional operator control buttons.</td>
</tr>
<tr>
<td><strong>Advanced</strong></td>
<td>Main Operator Editor Status Relay Test Config (All except Users) About</td>
<td>Advanced Operators cannot access the <strong>Config: Users</strong> tab.</td>
</tr>
<tr>
<td><strong>Administrator</strong></td>
<td>Main Operator Editor Status Relay Test Config (All) About</td>
<td>This can include defining new Ethernet settings (IP network address). <strong>NOTE</strong>: Administrators can add users and set user access rights from its level and below only.</td>
</tr>
<tr>
<td><strong>Service</strong></td>
<td>Main Operator Editor Relay Test Config (All) About Administrator Password</td>
<td>Installers and other service personnel can access additional tabs. This allows them to define remote access rights and the ability to add administrators.</td>
</tr>
</tbody>
</table>
3.6 Advanced Operation and Configuration

To perform the more advanced operations that are documented in this section, you must have administrative privileges to Christie ACT. Refer to Section 3.8 Upgrading Christie ACT Software for details.

3.6.1 The Christie ACT Design Concept

Christie ACT is designed to give the application developer (or system integrator) freedom to configure the automation as required for the installation. Christie ACT can be configured to run independently or require user intervention to initiate actions. This is up to the design choices of the application developer.

The system integrator is given the ability to build and manage applications whether simple or complex via the Editor tab.

The Editor: My Devices tab is where the integrator chooses which devices are to be used for a given application. Devices are created in the Editor: Library tab.

The Editor: Library tab (Figure 3-13) encapsulates device interfaces or other concepts into objects with simple named interfaces. The interface is designed to allow combinations of basic primitive actions and cues into objects to build device interfaces. Device interfaces help to manage the complexity of applications.

The library definitions are open, allowing the system developer the ability to create their own objects or to modify existing objects. These library objects can be instantiated and combined to build up solutions to complex requirements, while allowing the developer the ability to manage and understand how the pieces fit together. The library can define a practically unlimited number of devices. Not all devices are required for any given application. Libraries can be exported and appended.

The Editor: Script tab (Figure 3-12) is where the mapping of input events to output actions takes place. By choosing device library interface names and device instantiation names carefully, it is possible to design high level scripts that are very generic yet can be applied to many applications by choosing which devices are instantiated. The default scripts provide an example of a framework that allows this flexibility.

The Editor: Operator Buttons tab is where you create virtual buttons, which are just like another button cue. Users can associate cue handlers (call subroutines) with these buttons. This makes Christie ACT extensible by essentially allowing it to support more cues than it can physically.
**Actions**

An action is a command that is executed by Christie ACT. For example, turning LED 1 ON. Actions are output events that Christie ACT sends to external devices.

<table>
<thead>
<tr>
<th>Actions</th>
<th>Action Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>LED</td>
<td>On/Off/Pulse/Flash</td>
</tr>
<tr>
<td>Relay</td>
<td>Open/Close/Pulse Open/Pulse Close</td>
</tr>
<tr>
<td>GPO</td>
<td>Low/High/Pulse Low</td>
</tr>
<tr>
<td>Serial</td>
<td>Port/Signal/Termination Character</td>
</tr>
<tr>
<td>Ethernet</td>
<td>IP/Port/Signal/Termination Character</td>
</tr>
<tr>
<td>Buzzer</td>
<td>Time in msec.</td>
</tr>
<tr>
<td>Wait</td>
<td>Time in msec.</td>
</tr>
<tr>
<td>SET</td>
<td>Name/Value</td>
</tr>
<tr>
<td>IF</td>
<td>Condition/True Actions/False Actions</td>
</tr>
<tr>
<td>WHILE</td>
<td>Condition/Loop Actions</td>
</tr>
<tr>
<td>CALL</td>
<td>Subroutine</td>
</tr>
</tbody>
</table>

The serial ports addressed in the scripts are as follows:

<table>
<thead>
<tr>
<th>Serial Ports</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 RS232 IN</td>
</tr>
<tr>
<td>2 RS232 OUT</td>
</tr>
<tr>
<td>3 RS422</td>
</tr>
<tr>
<td>4 RS232 Audio</td>
</tr>
</tbody>
</table>

**Cues**

Actions sent from external devices to the Christie ACT which Christie ACT will then activate an action on.

<table>
<thead>
<tr>
<th>Cue</th>
<th>Cue Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Button</td>
<td>Click/Hold</td>
</tr>
<tr>
<td>Input</td>
<td>OFFtoON/ONtoOFF/PulseON/PulseOFF</td>
</tr>
<tr>
<td>GPI</td>
<td>LowToHigh/HighToLow/PulseHigh/PulseLow</td>
</tr>
<tr>
<td>Time</td>
<td>Time of day with Start Date/End Date/Days of Week Selection</td>
</tr>
<tr>
<td>Ethernet</td>
<td>Signal to match</td>
</tr>
<tr>
<td>Serial</td>
<td>Port/Signal to match</td>
</tr>
</tbody>
</table>
3.6.2 The Editor Tab

The Editor tab provides four sub tabs (My Devices, Script, Library, and Operator Buttons) for developing the functionality to automate the device(s) that are connected to Christie ACT. The Editor: My Devices sub tab enables you to create unique devices to be used in scripts. The Editor: Script tab enables you to manage and configure scripts. The Editor: Library tab allows you to define your own library item. The Editor: Operator Buttons tab is where you manage and configure the operator button(s).

Editor: My Devices Tab

The Editor: My Devices tab provides the ability to manage devices that interact with Christie ACT. You can select predefined devices, projectors, audio, lighting systems, etc. that are in your auditorium environment. To add a device, refer to Section 3.9.8 Editing a Device. NOTE: GPO will not appear in the drop-down list unless it is configured using the Config: Communication tab. Refer to Section Config: Communication Tab, on page 3-17. Device types are built in the Editor: Library tab.

Table 3.2 Summary of the Editor: My Devices Tab

<table>
<thead>
<tr>
<th>EDITOR: MY DEVICES TAB OPTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add Device</td>
</tr>
<tr>
<td>Save</td>
</tr>
<tr>
<td>Edit</td>
</tr>
<tr>
<td>Delete</td>
</tr>
<tr>
<td>Up</td>
</tr>
<tr>
<td>Down</td>
</tr>
</tbody>
</table>

NOTE: The Save, Edit, Delete, Up, and Down buttons are available in the My Devices, Script, and Operator Buttons tabs.
Editor: Script Tab

The Editor: Script tab provides the core functionality to the system. It is where you manage and configure the scripts that control Christie ACT. A set of pre-configured device cues are available. For more information on adding scripts, refer to Section 3.9 Using Christie ACT.

Table 3.3 Summary Editor: Script Tab Options

<table>
<thead>
<tr>
<th>EDITOR: SCRIPT TAB OPTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add Subroutine</td>
</tr>
<tr>
<td>Add Cue</td>
</tr>
<tr>
<td>Add Action</td>
</tr>
<tr>
<td>Revert</td>
</tr>
<tr>
<td>Check Scripts</td>
</tr>
</tbody>
</table>

Subroutines

A subroutine is a collection of actions. For more information, refer to Section 3.9.2 Adding a Subroutine to a Script or Library.

Cues

A cue is an input event which allows Christie ACT to perform associated actions. For example, pressing button 1 will result in an event taking place. By adding a cue, you are configuring Christie ACT to respond to an input event. For more information, refer to Section 3.9.5 Adding a Cue to a Script or Library.

Actions

An action is an output event executed as a response to a cue. For example, sending a GPO pulse or ethernet command to another device. For more information, refer to Section 3.9.3 Adding an Action to a Script or Library.
Editor: Library Tab

The Editor: Library tab provides access to library definitions that are pre-configured. If a device requires specific configuration that is not provided as a part of the default set, you can define your own and add it to the library. When a library item is selected, a drop-down menu is displayed with the library item properties, cue(s) and subroutine(s). For more information on creating a library, refer to Section 3.9 Using Christie ACT.

![Editor: Library Tab](image)

Figure 3-13 Editor: Library Tab

### Table 3.4 Summary Editor: Script Tab Options

<table>
<thead>
<tr>
<th><strong>EDITOR: LIBRARY TAB OPTIONS</strong></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add Device Type</td>
<td>Adds a library device.</td>
</tr>
<tr>
<td>Add Cue</td>
<td>Adds a cue to the current library. Click to open a drop-down list prompting you to define a cue.</td>
</tr>
<tr>
<td>Add Property</td>
<td>Adds a new property. A device property is an attribute of a device type. For example, the “cp2000” device type will contain a [device].IP property.</td>
</tr>
<tr>
<td>Add Subroutine</td>
<td>Adds a new subroutine.</td>
</tr>
<tr>
<td>Add Action</td>
<td>Adds a new action to a subroutine.</td>
</tr>
<tr>
<td>Manage Library</td>
<td>This offers features to manage your library. The Manage Library window appears.</td>
</tr>
<tr>
<td></td>
<td>• Append Library - allows you to append a device library to the entire library of devices.</td>
</tr>
<tr>
<td></td>
<td>• Export Entire Library - allows you to export the entire library.</td>
</tr>
<tr>
<td></td>
<td>• Export Selected Device Type - allows you to export a single device type.</td>
</tr>
<tr>
<td></td>
<td>Highlight the library device you want to export.</td>
</tr>
</tbody>
</table>
Editor: Operator Buttons Tab

The Editor: Operator Buttons tab allows you to create virtual buttons. Each button is associated with a subroutine, which essentially allows Christie ACT to support more cues than it can physically. Once a button is created, it is displayed to the Operator tab. Refer to Section 3.4.2 Operator Tab.

![Figure 3-14 Editor: Operator Buttons Virtual Buttons](image)

1. Click Add Button. The Operator Button window opens.
2. Type the name of the new button.
3. Click the subroutine button and select a Subroutine from the list.

3.6.3 Relay Test Tab

The Relay Test tab () allows you to toggle the relay states.

![Figure 3-15 Relay Test Tab](image)
3.7 Configuring Christie ACT

The Config tab consists of five sub tabs (General, Network, Users, Communication, File Management) that enable advanced operators, administrators, and users to define system operating parameters, change Ethernet settings, and configure communication settings.

**Config: General Tab**

The Config: General tab provides access to various system parameters that must be defined according to your requirements.

![Figure 3-16 Config: General Tab](image)

Table 3.5 Summary of Config: General Tab

<table>
<thead>
<tr>
<th>CONFIG: GENERAL TAB OPTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language</td>
</tr>
<tr>
<td>From the displayed list, select the desired language. Default is English.</td>
</tr>
<tr>
<td>Data Logging</td>
</tr>
<tr>
<td>Select the level of data logging from the displayed tab. Options are Minimal, Normal, Debug. Default is Normal.</td>
</tr>
<tr>
<td>Date</td>
</tr>
<tr>
<td>Select the date from the displayed calendar.</td>
</tr>
<tr>
<td>Time</td>
</tr>
<tr>
<td>Enter the hours, minutes and seconds. <strong>NOTE:</strong> If the 24 Hour Time option is check marked, the Select a Time window will not display the AM/PM selection option. In 24 Hour Time, click to add a checkmark to display time in a 24 hour format or AM/PM format (default). This can be toggled without requiring re-configuration.</td>
</tr>
<tr>
<td>Time Zone</td>
</tr>
<tr>
<td>Select your time zone from the list of world time zones.</td>
</tr>
</tbody>
</table>
Config: Network Tab

The **Config: Network** tab is used to define or change the Ethernet settings for Christie *ACT*.

![Figure 3-17 Config: Network Tab](image)

<table>
<thead>
<tr>
<th><strong>CONFIG: NETWORK TAB OPTIONS</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Identification</strong></td>
<td><strong>Device Name</strong></td>
</tr>
<tr>
<td><strong>Device Group</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Ethernet Remote Access Control</strong></td>
<td><strong>Level</strong></td>
</tr>
<tr>
<td><strong>SNMP Configuration</strong></td>
<td><strong>On/Off</strong></td>
</tr>
<tr>
<td><strong>SNMP V2 Management IP</strong></td>
<td></td>
</tr>
<tr>
<td><strong>IP Address</strong></td>
<td><strong>IP Address</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Net Mask / Gateway</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Apply Button</strong></td>
</tr>
</tbody>
</table>
Section 3: Operation

Config: Users Tab

The Config: Users tab provides options for the management of users, passwords and user access rights. Depending on your login level, you can manage users having the same or fewer access rights than yourself.

Figure 3-18 Config: Users Tab

To configure settings for users that will have access to Christie ACT, refer to Table 3.7 for options and instructions. **NOTES:** 1) Do not use capitalization for usernames or passwords. If Capitalization is used for the username or password, Christie ACT will automatically convert it to lower case. 2) Usernames can be a minimum of 4 and maximum of 32 characters. Passwords can be a minimum of 4 and maximum of 128 Characters.

<table>
<thead>
<tr>
<th>Table 3.7 Configuring Users</th>
<th>Task</th>
<th>Procedure</th>
</tr>
</thead>
</table>
| Add a user and password     | 1. Click the **Add** button to open the **Add User** window.  
2. Type the user name and password.  
3. Click **OK**. | |
| Edit a password             | 1. Select a user from the **Users** list.  
2. Click the **Password** button to open the **Edit Password** window.  
3. Type the new password.  
4. Click **OK**. | |
| Editing a user’s permission level | 1. Select a user from the **Users** list.  
2. Click the Permission Level button to the right of the text region to open the **Permission Level** window.  
3. Select the permission level from the list.  
4. Click **OK**. | |
| Enabling and Disabling the Auto-Login | 1. Click Auto-Login to add a checkmark (enabled).  
2. The **Operator Login Verification** window appears.  
3. Type the Username and Password of the operator. | |
**Config: Communication Tab**

The **Config: Communication** tab provides the ability to configure the communication settings on Christie *ACT*. Configure the direction of each GPIO by toggling each GPIO button between input (I) and output (O). These changes instantly change the pin configuration of the device. You can also enable or disable the internal input pull-up on the opto-isolated inputs by checking the appropriate boxes next to the inputs.

![Figure 3-19 Config: Communication Tab](image)

**Table 3.8 Summary of Config: Communication Tab Options**

<table>
<thead>
<tr>
<th><strong>CONFIG: COMMUNICATION TAB OPTIONS</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GPIO Settings</strong></td>
<td>Click the buttons to toggle the direction of the specified pin.</td>
</tr>
<tr>
<td><strong>Input Pull-up</strong></td>
<td>Input pull-ups allow internal pull-up connection to signal incoming source if required.</td>
</tr>
<tr>
<td><strong>Serial Configuration</strong></td>
<td>Select the serial port to be configured from the list.</td>
</tr>
<tr>
<td><strong>Port</strong></td>
<td>Select the serial port to be configured.</td>
</tr>
<tr>
<td><strong>Baud</strong></td>
<td>Select the baud rate from the list to match the controlling device (<em>ACT</em>) baud rate.</td>
</tr>
<tr>
<td><strong>Protocol</strong></td>
<td>Select the protocol from the list. Options include:</td>
</tr>
<tr>
<td></td>
<td>• <strong>Christie Protocol</strong> talks to the port in Christie formats, for example the commands used when making a terminal connection. (NET+ETH0?) Refer to <a href="#">Section Configure the IP Address Using the Serial Port</a> on page 1-4.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Raw Protocol</strong> does nothing and is designed to free the port for external uses.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Script Protocol</strong> is used if you want to use input from that port in a script.</td>
</tr>
<tr>
<td><strong>Mode</strong></td>
<td>Select the mode of the serial port.</td>
</tr>
<tr>
<td><strong>Flow Control</strong></td>
<td>Select the type of serial flow to control the serial port selected.</td>
</tr>
</tbody>
</table>
Config: File Management Tab

The **Config: File Management** tab allows you to backup and restore files, as well as reboot into fail-safe mode.

![Figure 3-20 Config: File Management Tab](image)

**Table 3.9 Summary of Config: File Management Tab**

<table>
<thead>
<tr>
<th>CONFIG: FILE MANAGEMENT OPTIONS</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Backup</strong></td>
<td>Backing up your configuration files.</td>
</tr>
<tr>
<td></td>
<td>1. Click the button to open the <strong>Backup</strong> window.</td>
</tr>
<tr>
<td></td>
<td>2. Select an item to backup from the list.</td>
</tr>
<tr>
<td></td>
<td>3. Click <strong>Backup</strong> to create and save a backup .tar file for the selection. The file is automatically assigned a name based on the selection.</td>
</tr>
<tr>
<td><strong>Upload and Restore</strong></td>
<td>To restore you must have done a Backup to create the necessary files.</td>
</tr>
<tr>
<td></td>
<td>1. Click the <strong>Browse</strong> button to open the Windows <strong>Choose File</strong> window.</td>
</tr>
<tr>
<td></td>
<td>2. Navigate and select the files that were backed up on your network and click <strong>Open</strong>.</td>
</tr>
<tr>
<td></td>
<td>3. Click the <strong>Restore</strong> button to open the <strong>Restore</strong> window.</td>
</tr>
<tr>
<td></td>
<td>4. Select from the list what you are restoring (scripts, users, preferences, or config).</td>
</tr>
<tr>
<td></td>
<td>5. Click <strong>OK</strong>.</td>
</tr>
<tr>
<td></td>
<td>6. Click the <strong>Restore</strong> button.</td>
</tr>
<tr>
<td><strong>Rebooting to Failsafe</strong></td>
<td>This reboots Christie <strong>ACT</strong> into a Failsafe mode which is the first step required when conducting a software upgrade. The <strong>Upgrade/Versioning</strong> window appears.</td>
</tr>
<tr>
<td><strong>Versioning</strong></td>
<td>The <strong>Versioning</strong> tab displays the software currently installed on Christie <strong>ACT</strong>.</td>
</tr>
<tr>
<td><strong>Reboot System</strong></td>
<td>This will re-load / re-initialize the system as if it had just been powered on and booted up. This will also execute the OnDeviceStartup event when boot-up is complete.</td>
</tr>
<tr>
<td><strong>Factory Defaults</strong></td>
<td>Click to restore factory defaults for Christie <strong>ACT</strong>’s scripts and users. Click the appropriate radio button to revert to Default Scripts or Default Users. <strong>NOTE:</strong> You can make only one reset option at a time.</td>
</tr>
</tbody>
</table>
3.8 Upgrading Christie ACT Software

The software installed on Christie ACT can be upgraded by using the Config: File Management tab. You must have the required access level to upgrade Christie ACT. The upgrading process may take between 7 -10 minutes depending on your computer and network. To upgrade Christie ACT:

1. Login into Christie ACT using the Service login and password.
2. Go to the Config: File Management tab (Figure 3-20).
3. Click Reboot to Failsafe and then click Yes when you see the confirmation dialog with the following text, “Are you sure you want to reboot into Failsafe?” The Upgrade/Versioning window displays as shown in Figure 3-21.

**NOTE:** If you try to download to an older package assuming you’re using the new board, an error should return. (Figure 3-22).

4. Download the new .shar file onto your C drive from the Christie Website.
5. Open a Windows Explorer window.
6. In the Explorer window, type FTP://YOUR ACT IP ADDRESS and press ENTER.

7. Drag and drop the upgrade file into the Explorer window.
8. In the Christie ACT Upgrade/Versioning window, click Refresh. The file that was selected appears.
9. Click the file to highlight it and click Upgrade.

During the upgrade process, a status message will show the progress of the operation.

10. When the upgrade is complete, click Reboot to restart Christie ACT.
Section 3: Operation

3.9 Using Christie ACT

This section contains instructions on how to use the Christie ACT web browser interface to enter and manipulate data within Christie ACT. You must have the proper permission level to perform these Christie ACT operations. **Warning!** 1) DO NOT save a script during a show. Saving a script resets Christie ACT’s script management engine. If Christie ACT is in the middle of running a script and another script is saved, the current active script will be interrupted. 2) DO NOT change or save scripts during a show.

- 3.9.1 Creating a Library
- 3.9.2 Adding a Subroutine to a Script or Library
- 3.9.3 Adding an Action to a Script or Library
- 3.9.4 Adding a Device to MyDevices
- 3.9.5 Adding a Cue to a Script or Library
- 3.9.6 Adding an Operator Button
- 3.9.7 Adding a Property to a Library
- 3.9.8 Editing a Device
- 3.9.9 Editing a Script
- 3.9.10 Aborting a Script in Progress
- 3.9.11 Deleting a Property

3.9.1 Creating a Library

1. Select the Editor: Library tab.
2. Click Add Device Type.
3. Type the name of the library in the Your Device Name window.
4. Click OK to add the name to the Library Items list.

3.9.2 Adding a Subroutine to a Script or Library

A subroutine can be added to a script or to a library.

1. Select the Editor: Script tab or the Editor: Library tab.
2. Highlight a script from the Scripts tab or a device type in the Library tab.
3. Click Add Subroutine.
4. Type the subroutine name in the Subroutine Name window (Figure 3-24).

![Figure 3-24 Adding a Subroutine to a Library](image-url)
When adding a subroutine to a library, the **Subroutine Name** window opens with the prefix of [device]. already populated in the text region. This is needed to connect the Subroutine to a selected device type. If you remove this entry, the subroutine will not work as intended.

5. Click **OK** and then **Save** to save this new subroutine.
6. Select the **Editor: Script** tab.
7. Highlight a script from the **Scripts** list.
8. Click **Add Action** and then select **CALL**. The **Call** window opens.
9. Click the Subroutine button to open a list of options. The new subroutine will display (Figure 3-25).

![Figure 3-25 Displaying the New Subroutine](image)

### 3.9.3 Adding an Action to a Script or Library

The following instructions will guide you in adding various actions depending on the specific action selected. To create an action, you must first create a Subroutine so that it appears in the Script area. **Section 3.9.2 Adding a Subroutine to a Script or Library**.

1. Select the **Editor: Script** tab or the **Editor: Library** tab.
2. Highlight a subroutine or cue. Adding an action is only available when you have a subroutine or cue selected.
3. Click **Add Action** to open the **Select an Action** drop-down menu.
4. Select a specific action from the list to either open a window to configure that action (as in the GPIO shown in Figure 3-26) or to select a predefined action (as in SubroutineName shown in Figure 3-25).

![Figure 3-26 Adding a Call Action](image)
All of the selections displayed in the Select an Action drop-down list require you to make selections or to type entries. Each option is outlined in Table 3.10.

Table 3.10 Options and Commands for Adding Actions

<table>
<thead>
<tr>
<th>Adding Actions</th>
<th>Description</th>
</tr>
</thead>
</table>
| **LED**        | 1. Select LED to open the LED Configuration window.  
2. Click the LED button to open the LED window.  
3. Highlight the LED number from the drop-down list (1-14) and click OK.  
4. Click the State button to open the State window.  
5. Highlight the State from the drop-down list (Off, On Flash, Pulse) and click OK.  
6. In the LED Configuration window, click OK to add the action. |

| **Relay**      | 1. Select Christie ACT Relay option to open the Relay Configuration window.  
2. Click the Relay button to open the Relay window.  
3. Highlight the Relay number from the drop-down list (1-14) and click OK.  
4. Click the State button to open the State window.  
5. Highlight the State from the drop-down list (Open, Close, PulseOpen, PulseClose) and click OK.  
If you select PulseOpen or PulseClose, the Relay Configuration window appears with an area for you to type the duration (in ms) of the pulse. The pulse duration can be 100 - 1000 ms.  
6. In the Relay Configuration window, click OK to add the action. |

| **GPO**        | 1. Select GPO to open the GPO Configuration window.  
2. Click the GPO button to open the GPO window.  
3. Highlight the GPO number from the drop-down list and click OK.  
4. Click the State button to open the State window.  
5. Highlight the State from the drop-down list (Low, High, PulseLow) and click OK.  
If you select PulseLow, the GPO Configuration window appears with an area for you to type the duration (in ms) of the pulse. The pulse duration can be 100 - 1000 ms.  
6. In the GPO Configuration window, click OK to add action to Christie ACT. |
## Adding Actions

### Serial

1. Select **Serial** to open the **Serial** **Msg** window.
2. Click the **Ports** button to open the **Ports** window.
3. Highlight the Port number (**RS232 IN**, **RS232 OUT**, **RS422**, **RS422 Out (Audio)**) from the drop-down list and click **OK**.
4. In the **Serial** **Msg** **Configuration** window, type the signal.
5. Click the **Termination character** button to open the **Termination character** window.
6. Highlight the Termination character (**[none]**, **<CR>**, **<LF>**, **<CR><LF>**) from the drop-down list and click **OK**.
7. In the **Serial** **Msg** window, click **OK** to add action to Christie **ACT**.

![Serial configuration](image)

### Ethernet

1. Select **Ethernet** to open the **Ethernet** **Msg** window.
2. From the **Ethernet** **Msg** window, type the **IP**, **Port**, **Signal**, and **Termination character** information.
3. Click **OK** to add action to Christie **ACT**.

![Ethernet configuration](image)

### Buzzer

1. Select **Buzzer** to open the **Buzzer Time** window.
2. Type the buzzer time duration in ms.
3. Click **OK** to add action to Christie **ACT**.

![Buzzer duration](image)

### Wait

1. Select **Wait** to open the **Wait Time** window.
2. Type the wait time duration in ms.
3. Click **OK** to add action to Christie **ACT**.

![Wait time](image)

### SET

1. Select **Set** to open the **Set Property** window.
2. Type the Name and Value of action. These can be any variable.
3. Click **OK** to add action to Christie **ACT**.

![Set property](image)

### IF

1. Select the **IF** option to open the **IF Condition** window. This can be any variable.
2. Type the first action for the IF condition.
3. Select the appropriate symbol (**==** or **!=**)
4. Type the second action. This can be any variable.
5. Click **OK** to add action to Christie **ACT**.

![IF condition](image)
Adding Actions

### WHILE

1. Select the **WHILE** option to open the **WHILE Condition** window. This can be any variable.
2. Type the first action for the WHILE condition.
3. Select the appropriate symbol (== or !=)
4. Type the second action. This can be any variable.
5. Click **OK** to add action to Christie ACT.
6. To add loop actions, from the **Device Types** window, highlight the **true** option and click **Add Action**. These actions will execute repeatedly as long as the While condition is true.

### CALL

1. Select **CALL** to open the **Call** window.
2. Click the **Subroutine** button to display a list of subroutines.
3. Select an action or cue from the drop-down list that appears.
4. Click **OK** to select the routine.
5. Click **OK** a second time to add the selection to Christie ACT.

---

Table 3.11 Editor: My Device Selections (Factory Defaults)

- ACT Buttons (Button definitions [Sample1])
- ACT Buzzer (Base Library Status Buzzer [Christie])
- ACT Front Panel (Base Library Status LEDs [Christie])
- Audio (Processor Dolby CP650)
- Cues (Cue Library Serial [Christie])
- Projector (DLP2K Christie CP2000)
- Relays 1 Amp (Base Library R1 - R12 [Christie])
- Relays 8 Amp (Base Library R13 - R14 [Christie])
- Server (D-cinema player DoReMi DCP2000 (Ethernet API))
- Show Control (Cue Definitions [Sample1])
## Table 3.12 Device Libraries

<table>
<thead>
<tr>
<th>My Devices Name</th>
<th>Library Name</th>
<th>Subroutine Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Projector</td>
<td>DLP2K Christie CP2000</td>
<td>OpenDouser</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CloseDouser</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PowerWake</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PowerStandby</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LampOn</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LampOff</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Channel 01</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Channel 02</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Channel 11</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Channel 15</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Channel 16</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Get Status CHANNEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Get Status LAMP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Get Status DOUSER</td>
</tr>
<tr>
<td>Server</td>
<td>[selected Server Device Library]</td>
<td>Play</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pause</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stop</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fire Alarm</td>
</tr>
<tr>
<td>Audio</td>
<td>[selected Audio Device Library]</td>
<td>6 Ch Analog 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6 Ch Digital 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Non Sync 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Microphone</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mute Audio</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Unmute Audio</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Set Audio Level to 7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Set Audio Level to Feature</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Get Status Input</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Get Status Volume</td>
</tr>
<tr>
<td>ACT Buzzer</td>
<td>Base Library Status Buzzer [Christie]</td>
<td>Short</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Medium</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Long</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 2 3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No Go Warning</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fire Alarm Loop Buzzer</td>
</tr>
<tr>
<td>Relays 1 Amp</td>
<td>Base Library R1 - R12 [Christie]</td>
<td>Masking Flat 1.85</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Masking Flat 2.39</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Masking Other</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lights Up</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lights Mid</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lights Down</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lights All Clear</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Relay #7 Spare</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Relay #8 Spare</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6 Ch Digital 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6 Ch Analog 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Non Sync 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mute Audio</td>
</tr>
</tbody>
</table>
## Table 3.14 Cue Libraries

<table>
<thead>
<tr>
<th>My Devices Name</th>
<th>Library Name</th>
<th>Subroutine Options</th>
</tr>
</thead>
</table>
| Relays 8 Amp    | Base Library R13 - R14 [Christie] | Latch Relay Hold  
Latch Relay Clear  
Slide Relay Hold  
Slide Relay Clear  
Slide Relay Toggle  |
| ACT Front Panel | Base Library Status LEDs [Christie] | LED Clear All  
Pulse All  
Play Circle Small Loop  
Play Circle Medium Loop  
Play Circle Big Loop  
Play Circle 671314  
LED Bar Dance  
Block 1 Flash  
Block 2 Flash  
Block 3 Flash  
Block 4 Flash  
Block 5 Flash  
Block 6 Flash |
| My Devices Name | Library Name                  | Subroutine Options                                                                 |
| ACT Buttons     | Button Definitions [Sample1]  | Button Click  
• 1 = START_FLAT  
• 2 = FEATURE  
• 3 = CREDITS  
• 4 = END  
• 5 = 6 Channel Digital  
• 6 = Lights Up  
• 7 = Masking Flat  
• 8 = Server Play  
Button Hold  
• 1 = START_SCOPE  
• 2 =  
• 3 =  
• 4 = Preshow Toggle  
• 5 = 6 Channel Analog  
• 6 = Lights Down  
• 7 = Masking Scope  
• 8 = Server Pause  |
| Cue             | Cue Library Ethernet [Christie] | Cues call Show Control subroutines below:  |
### Table 3.15 ACT Library Structure (Factory Defaults)

<table>
<thead>
<tr>
<th>My Devices Name</th>
<th>Library Name</th>
<th>Subroutine Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Show Control</td>
<td>Cue Definitions [Sample1]</td>
<td>START \nSTART_FLAT \nSTART_SCOPE \nSTART_3D_FLAT \nSTART_3D_SCOPE \nFEATURE \nEND \nCUE_1 \nCUE_2 \nPROJECTOR_WAKE \nPROJECTOR_SLEEP</td>
</tr>
</tbody>
</table>

#### SCRIPTS

**OnDeviceStartup**

[Fire Marshall] Check Safety Status

#### CUE LIBRARIES

**ACT Buttons**

* Button Definitions [Sample1]

**Cues**

* Cue Library Ethernet [Christie]  
* Cue Library Serial [Christie]

#### CUE DEFINITIONS

**Show Control**

* Cue Definitions [Sample1]

#### DEVICE LIBRARIES

**Projector**

* DLP2K Christie CP2000

**Server**

* D-cinema player Dolby DSS100 (serial)  
* D-cinema player DoReMi DCP2000 (Ethernet API)  
* D-cinema player DoReMi DCP2000 (GPIO Only)  
* D-cinema player GDC SA2100 (Ethernet)

**Audio**

* Processor Dolby Cp650  
* Processor DTS XD10P  
* Processor Relay Only Processor  
* UltraStereo JSD-80

**Video**

* Scaler Christie Cine-IPM 2K (Ethernet)  
* Scaler Christie Cine-IPM 2K (RS232 Serial)  
* Scaler Christie Cine-IPM 2K (RS422 Serial)  
* Scaler Gefen AV Cinema Pro 1

#### BASE LIBRARIES

* Base Library Status Buzzer [Christie]  
* Base Library R1 - R12 [Christie]  
* Base Library R13 - R14 [Christie]  
* Base Library Status LEDs [Christie]
### 3.9.4 Adding a Device to MyDevices

1. Select the Editor: My Devices tab.
2. Click Add Device.
3. In the Add Device dialog, type the Device Name then click the Device Type button. From the drop-down list, select a device type and click OK.
4. In the Add Device dialog, click OK. The new device name appears in the My Devices list.
5. Click Save. The subroutine appears in the Editor: My Devices tab.

### 3.9.5 Adding a Cue to a Script or Library

1. Select the Editor: Script tab or the Editor: Script tab.
2. Click the Add Cue button to open the Select a new Cue drop-down list.
3. Select a new cue. All of the selections displayed in the Select a new Cue drop-down list require you to make selections or type entries. Each option is outlined in Table 3.16. **Warning!** DO NOT save a script during a show. Saving a script resets Christie ACT’s script management engine. If Christie ACT is in the middle of running a script and another script is saved, the current active script will be interrupted.

### Table 3.16 Adding Script Cues

<table>
<thead>
<tr>
<th>Button</th>
<th>Options and Commands</th>
</tr>
</thead>
<tbody>
<tr>
<td>Button</td>
<td>Highlight the button number from the drop-down list (numbered 1-8) and click OK.</td>
</tr>
<tr>
<td>State</td>
<td>Highlight the state from the State drop-down list (Click, Hold) and click OK.</td>
</tr>
</tbody>
</table>

---

**Figure 3-27 Adding a Device in the Editor: My Devices Tab**

**Figure 3-29 Add a Cue to a Script**
### Adding Script Cues - Options and Commands

<table>
<thead>
<tr>
<th><strong>Input</strong></th>
<th><img src="image" alt="Input Configuration" /></th>
</tr>
</thead>
</table>
| 1. Select the inputs number from the drop-down list (numbered 1-16) and click **OK**.  
2. Select the state from the State drop-down list (**OFF** to **ON**, **ON** to **OFF**, **Pulse** **ON**, **Pulse** **OFF**) and click **OK**. | ![Input Configuration](image) |

<table>
<thead>
<tr>
<th><strong>GPI</strong></th>
<th><img src="image" alt="GPI Configuration" /></th>
</tr>
</thead>
</table>
| 1. Select the GPI number from the drop-down list (numbered 1-7) and click **OK**.  
2. Select the state from the State drop-down list (**Low** to **High**, **High** to **Low**, **Pulse** **High**, **Pulse** **Low**) and click **OK**. Only pulses greater than 15 ms will be detected. Pulses less than 15 ms in duration are considered to be noise. | ![GPI Configuration](image) |

<table>
<thead>
<tr>
<th><strong>Time</strong></th>
<th><img src="image" alt="Time Cue" /></th>
</tr>
</thead>
</table>
| 1. Click the **Start Date** button to open the Select a Date window. Select a date.  
2. Click the **Time of Event** button to open the Select a Time window. Enter the duration using the arrow buttons to scroll through the times. Click **OK**.  
3. Select the days of the week by clicking to add a checkmark (you can check more than one).  
4. Click the **End Date** button to open the Select a Date window. Select a date.  
5. Click **OK**. | ![Time Cue](image) |

<table>
<thead>
<tr>
<th><strong>Ethernet</strong></th>
<th><img src="image" alt="Ethernet Configuration" /></th>
</tr>
</thead>
</table>
| 1. Enter the signal in the Signal text region.  
2. Click **OK**. | ![Ethernet Configuration](image) |

<table>
<thead>
<tr>
<th><strong>Serial</strong></th>
<th><img src="image" alt="Serial Configuration" /></th>
</tr>
</thead>
</table>
| 1. Select the Port number from the drop-down list (**RS232** **IN**, **RS232** **OUT**, **RS422**, **RS232** **OUT** (Audio)).  
2. Type the signal.  
3. Click **OK**. | ![Serial Configuration](image) |
**3.9.6 Adding an Operator Button**

1. Select **Editor: Operator Button** tab.
2. Click **Add** to open the **Operator Button** window.
3. Type the Name and click the Subroutine button to open a list of **Subroutine** options.
4. Click **OK** to accept the highlighted subroutine.
5. In the **Operator Button** window, click **OK** to add your button to the Virtual Buttons list.

**3.9.7 Adding a Property to a Library**

To add a property you must have a library item. Refer to Section 3.9.1 Creating a Library.

1. Select the **Editor: Library** tab.
2. Highlight a library from the **Device Types** list.
3. Click **Add Property** to open the **Add Property** window.
4. Type the **Name** and **Value** properties.
5. Click **OK** to add the property to the Library items.

**3.9.8 Editing a Device**

1. Select the **Editor: MyDevices** tab.
2. Select the device name in the **MyDevices** list.
3. Click the **Edit** button.
4. The **Your Device Name** window appears.
5. Type the new device name.
6. Click **OK**.

---

**Device Cues**

1. Any cues inside selected Device Libraries will also be available.
2. This includes cues within the ACT Buttons library, the Cues library, and any other devices added to the My Devices page by end-users.
3. If the Library Device Cues already have actions associated (Functional Device Cues), and Library actions associated with this cue will be overridden.

**Note on using Device Cues:**

If Cue actions are only defined in the **Library** tab (Functional Device Cues), the Library actions will execute.
If Cue actions are only defined in the **Scripts** tab, the Script actions will execute.
If Cue actions are defined in both the **Script** and **Device** tabs, only the Script actions will execute. A pop-up dialog will display asking that you confirm overriding the library actions with the Script cue.
3.9.9 Editing a Script

1. Select the Editor: Script tab.
2. Select the script from the Scripts list.
3. Click the Edit button. The Button Configuration window appears.
4. Edit the script name in the Cue Name text region.
5. Select the Button Number and State from the appropriate lists.
6. Click OK.

3.9.10 Aborting a Script in Progress

The user can abort any in progress script by manually resetting the system. This is accomplished by either holding down Buttons #1 and #5 together for 5 seconds on the Christie ACT controller or pressing the Save button in the Editor: Script window. The CUE / READY / ERROR lights will flash ON when the reset has been triggered.

Upon completing the reset, Christie ACT will execute the OnUserReset event and any associated actions. Refer to Section 3.9.5 Adding a Cue to a Script or Library.

3.9.11 Deleting a Property

Use the Delete button to delete properties, buttons or information by selecting the item and clicking the Delete button. The item will disappear from the list but is not permanently deleted until you click the Save button. If you attempt to move to another window without saving your changes, you will be prompted to save.

If you choose not to save your changes and you want to revert to your last saved configuration, click the Revert button.

3.9.12 Managing a Library

The Editor: Library tab contains a Manage Library button where you can append a library, export an entire library or export a selected device type.

Figure 3-30 Manage Library Options

3.9.13 Checking Scripts

The Editor: Script tab contains a Check Scripts button where you can validate the scripts you have created. Simply click the Check Scripts button to determine if any errors exit.
4 Maintenance

Read through this section in its entirety and understand all warnings and precautions before attempting to operate Christie ACT. This section contains:

- 4.1 Safety Warnings and Guidelines
- 4.2 Maintaining Proper Cooling
4.1 Safety Warnings and Guidelines

4.1.1 Labels and Markings

Observe and follow any warnings and instructions marked on the Christie ACT.

The exclamation point within the equilateral triangle indicates related operating/maintenance instructions in the documentation accompanying Christie ACT.

The lightning flash and arrowhead symbol within the equilateral triangle indicates non-insulated “dangerous voltage” within Christie ACT’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock.

4.1.2 General Precautions

Always follow the precautions and warnings provided with your projector - for example, consult the projector User Manual for all warnings pertaining to the use of that projector. Be aware of the following general precautions in all installations:

⚠️ WARNING 1) Position all cables where they cannot contact hot surfaces or be pulled or tripped over. 2) Do not open the Christie ACT. There are no serviceable parts within the Christie ACT.

Christie ACT must be installed in an environment that meets the operating range specifications in Section 6 Specifications.

4.1.3 AC Power Precautions

⚠️ WARNING 1) Do not attempt operation if the AC supply is not within the specified voltage range. 2) Only Qualified Electricians should connect primary voltages.

- Do not allow anything to rest on the power cords. Locate the projector where cords cannot be abused by persons walking on it or objects rolling over it. Never operate Christie ACT if the power cable appears damaged in any way.
- Do not overload power outlets and extension cords as this can result in fire or shock hazards.
- Only qualified service technicians are permitted to open any enclosure on the product, and only if AC has been fully disconnected from the product.

4.1.4 Power Cords and Attachments

⚠️ WARNING 1) The North American rated line cord is provided with each unit. Ensure that you are using a line cord, socket and power plug that meets the appropriate local rating standards. 2) Use only an AC power cord recommended by Christie. Do not attempt operation if the AC supply and cord are not within the specified voltage and power range.

Use only the attachments and/or accessories recommended by Christie. Use of others may result in the risk of fire, shock or personal injury.
4.2 Maintaining Proper Cooling

4.2.1 Ventilation

Mesh side grills provide ventilation. Never block or cover these openings. Do not install the product near a radiator or heat register, or within a small enclosure. Christie ACT does not contain a cooling fan or other cooling mechanism.

4.2.2 Air Filter

There is no air filter in the Christie ACT.
If Christie ACT does not appear to be operating properly, note the symptoms present and use the following guide to assist you. If you cannot resolve the problems yourself, contact your dealer for assistance.

- **5.1 Power**
- **5.2 Ethernet**
- **5.3 Input or Relays are Not Functioning**
5.1 Power

5.1.1 Christie ACT Will Not Start

1. Check the Ready light that indicates it is powered and started up.
2. Check the status of the LEDs on Christie ACT. If there is no activity (READY not lit) then check the wall circuit breaker to see if it’s ON.
3. Is there a problem with the wall circuit breaker “tripping” OFF? Have a certified electrician investigate any electrical problem.
4. If plugged into the AC convenience outlet inside a pedestal, make sure the corresponding breaker labeled “Internal” is ON. This breaker is located on the side of the operator’s side of the pedestal.

5.1.2 If Christie ACT Loses AC Power

Christie ACT DOES NOT have an internal battery to keep it running during a power interruption. If AC power is interrupted, Christie ACT will abort the ongoing program and will reset to an OnDeviceStartup condition. This system will re-initialize and all unsaved data will be lost.

5.1.3 Manually Resetting Christie ACT

This is accomplished by holding down buttons #1 and #5 together for 5 seconds. The CUE / READY / ERROR lights will flash ON when the reset has been triggered. The reset stops the Christie ACT engine, reloads all scripts (devices, scripts, libraries, and buttons), starts the engine, and then calls any user-defined OnUserReset actions defined in the Editor: Scripts tab.

5.1.4 Manually Resetting RS-232 IN Port

If you cannot connect to Christie ACT through Kore Librarian or HyperTerminal and you do now know the IP address, press and hold buttons #1 and #8 on Christie ACT for 5 seconds or until the Cue and Error LEDs blink. This sets serial communication to its default as indicated below. **NOTE:** If the buttons are released too early, the cues that are associated with holding down these buttons will be triggered.

<table>
<thead>
<tr>
<th>Port:</th>
<th>RS232 IN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baud:</td>
<td>115200</td>
</tr>
<tr>
<td>Protocol:</td>
<td>Christie Protocol</td>
</tr>
<tr>
<td>Mode:</td>
<td>8N1</td>
</tr>
<tr>
<td>Flow Control:</td>
<td>None</td>
</tr>
</tbody>
</table>

If you have the Web UI open and you press and hold button #1 and #8 for 5 seconds, the Web UI will not refresh the values displayed on the screen. You need to refresh the browser to see the update.
5.2 Ethernet

1. Check the Config tab to see if the IP address matches that of Christie ACT. Refer to Section 3.7 Configuring Christie ACT.

2. Make sure the Ethernet settings are valid for your site. All network devices should have the same subnet mask and unique IP addresses.

3. Ensure Christie ACT is connected to the network when changing its IP address. Refer to Section 2 Installation and Setup.

4. If you still have trouble establishing communications with Christie ACT, contact your network administrator.

5.3 Input or Relays are Not Functioning

This problem can occur if the terminal blocks have been removed and then replaced. Check the terminal block connections to ensure that they are properly installed. The terminal blocks are factory installed. If you replaced a terminal block, ensure the Input and Relay connectors are fully inserted into the mating header located on the back panel of Christie ACT.

5.3.1 Terminal Block Installation

1. Ensure the terminal block is parallel to the mating header (Figure 5-1).

2. Maintain orientation while inserting the terminal block into the header (Figure 5-2). NOTE: Do not insert the terminal block at an extreme angle. This will damage the header causing the pins to be pushed back into the header.

3. Continue to push the terminal block until it is fully seated in the header (Figure 5-3). NOTE: Do not rock the terminal block from side to side while inserting it into the header.
This section provides detailed Christie ACT specifications including:

- 6.1 Performance
- 6.2 Power
- 6.3 Electrical Interface
- 6.4 Physical I/O Connectors
- 6.5 Buzzer
- 6.6 USB
- 6.7 GPIO
- 6.8 Regulatory
Section 6: Specifications

6.1 Performance

6.1.1 Operating Environment

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Min.</th>
<th>Nom.</th>
<th>Max.</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature</td>
<td>10</td>
<td>-</td>
<td>35</td>
<td>°C</td>
</tr>
<tr>
<td>Humidity (Standard non-condensing)</td>
<td>20</td>
<td></td>
<td>80</td>
<td>%</td>
</tr>
<tr>
<td>Altitude</td>
<td>0</td>
<td></td>
<td>3000</td>
<td>Meters</td>
</tr>
</tbody>
</table>

6.1.2 Input / Output Response Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Min.</th>
<th>Nom.</th>
<th>Max.</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum input rate</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>Hz</td>
</tr>
<tr>
<td>Minimum hold time</td>
<td>10</td>
<td></td>
<td>-</td>
<td>msec</td>
</tr>
<tr>
<td>Maximum latency for input trigger to output response</td>
<td>-</td>
<td>-</td>
<td>50</td>
<td>msec</td>
</tr>
<tr>
<td>Adjustable pulsed output</td>
<td>20</td>
<td></td>
<td>1000</td>
<td>msec</td>
</tr>
<tr>
<td>Tolerance on pulsed output</td>
<td>-</td>
<td>2</td>
<td>-</td>
<td>msec</td>
</tr>
</tbody>
</table>

6.2 Power

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Min.</th>
<th>Nom.</th>
<th>Max.</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input AC voltage</td>
<td>V_{ac}</td>
<td>85</td>
<td></td>
<td>264</td>
<td>V</td>
</tr>
<tr>
<td>Input frequency</td>
<td>f_{ac}</td>
<td>47</td>
<td></td>
<td>63</td>
<td>Hz</td>
</tr>
<tr>
<td>Hold-up time</td>
<td>T_{hold-up}</td>
<td>20</td>
<td></td>
<td>195</td>
<td>msec</td>
</tr>
<tr>
<td>Input current</td>
<td>I_{in}</td>
<td>-</td>
<td></td>
<td>1</td>
<td>A</td>
</tr>
<tr>
<td>Output voltage 12V (2 W)</td>
<td>V_{U1}</td>
<td>11</td>
<td>12</td>
<td>13</td>
<td>V</td>
</tr>
<tr>
<td>Reset-able fuse rating (continuous)</td>
<td>I_{OVL1}</td>
<td>-</td>
<td></td>
<td>0.2</td>
<td>A</td>
</tr>
<tr>
<td>Parameter</td>
<td>Symbol</td>
<td>Min.</td>
<td>Nom.</td>
<td>Max.</td>
<td>Unit</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>--------</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>------</td>
</tr>
<tr>
<td>Output voltage 12V (2 W)</td>
<td>V_{U2}</td>
<td>11</td>
<td>12</td>
<td>13</td>
<td>V</td>
</tr>
<tr>
<td>Reset-able fuse rating (continuous)</td>
<td>I_{OVL2}</td>
<td>-</td>
<td></td>
<td>0.2</td>
<td>A</td>
</tr>
<tr>
<td>Output voltage 5V (2 W)</td>
<td>V_{U3}</td>
<td>4.5</td>
<td>5</td>
<td>5.5</td>
<td>V</td>
</tr>
<tr>
<td>Reset-able fuse rating (continuous)</td>
<td>I_{OVL3}</td>
<td>-</td>
<td></td>
<td>0.5</td>
<td>A</td>
</tr>
<tr>
<td>Output voltage 5V (2 W)</td>
<td>V_{U4}</td>
<td>4.5</td>
<td>5</td>
<td>5.5</td>
<td>V</td>
</tr>
<tr>
<td>Reset-able fuse rating (continuous)</td>
<td>I_{OVL4}</td>
<td>-</td>
<td></td>
<td>0.5</td>
<td>A</td>
</tr>
<tr>
<td>Power isolation voltage</td>
<td>V_{iso}</td>
<td>1000</td>
<td></td>
<td></td>
<td>V</td>
</tr>
<tr>
<td>Wire size accept - Clip terminals</td>
<td>Gauge</td>
<td>28</td>
<td></td>
<td>16</td>
<td>AWG</td>
</tr>
</tbody>
</table>

Figure 6-1 Power Outputs
6.3 Electrical Interface

6.3.1 Inputs

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Min.</th>
<th>Norm.</th>
<th>Max.</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input voltage range</td>
<td>$V_{\text{max}}$</td>
<td>0</td>
<td></td>
<td>30</td>
<td>V</td>
</tr>
<tr>
<td>Isolation voltage</td>
<td>$V_{\text{iso}}$</td>
<td>1000</td>
<td></td>
<td></td>
<td>V</td>
</tr>
<tr>
<td>ON voltage level</td>
<td>$V_H$</td>
<td>3</td>
<td></td>
<td>30</td>
<td>V</td>
</tr>
<tr>
<td>OFF voltage level</td>
<td>$V_L$</td>
<td>1</td>
<td></td>
<td></td>
<td>V</td>
</tr>
<tr>
<td>Min. ON time</td>
<td>$t_{\text{min}}$</td>
<td>1</td>
<td></td>
<td></td>
<td>ms</td>
</tr>
<tr>
<td>Pull-up current</td>
<td>$I_{\text{PU}}$</td>
<td></td>
<td></td>
<td>10</td>
<td>mA</td>
</tr>
</tbody>
</table>

**Figure 6-2 Opto-Isolated Inputs**

6.3.2 Outputs

**Relay Outputs**

⚠️ **WARNING** Only Qualified Electricians should connect primary voltages.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Pin</th>
<th>Symbol</th>
<th>Min.</th>
<th>Nom.</th>
<th>Max.</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small relay contact ratings (continuous A)</td>
<td>1 to 12</td>
<td>$I_{\text{CMax}}$</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>A</td>
</tr>
<tr>
<td>Small relay contact ratings</td>
<td>13 &amp; 14</td>
<td>$V_{\text{CMax}}$</td>
<td>-</td>
<td>-</td>
<td>240</td>
<td>V_{\text{AC}}</td>
</tr>
<tr>
<td>Large relay contact ratings (continuous A)</td>
<td>-</td>
<td>$I_{\text{CMax}}$</td>
<td>0.1</td>
<td></td>
<td>8</td>
<td>A</td>
</tr>
<tr>
<td>Large relay contact ratings (resistive)</td>
<td>-</td>
<td>$V_{\text{CMax}}$</td>
<td>-</td>
<td>-</td>
<td>240</td>
<td>V_{\text{AC}}</td>
</tr>
<tr>
<td>Wire size accepted - Clip terminals</td>
<td>-</td>
<td>Gauge</td>
<td>28</td>
<td>-</td>
<td>16</td>
<td>AWG</td>
</tr>
</tbody>
</table>

**Figure 6-3 Relay Outputs**
6.4 Physical I/O Connectors

NOTE: Screw type connectors are available.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Pluggable lever terminal</td>
</tr>
<tr>
<td>Current rating</td>
<td>Varies depending on connection</td>
</tr>
<tr>
<td>Voltage rating</td>
<td>300V</td>
</tr>
<tr>
<td>Wire size</td>
<td>16-28 AGW</td>
</tr>
</tbody>
</table>

6.5 Buzzer

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Piezo</td>
</tr>
<tr>
<td>Sound pressure level @ 30cm/12VDC</td>
<td>Min. 85 dB</td>
</tr>
</tbody>
</table>

6.6 USB

USB Full-Speed (12 MBPS)

The USB is located on the front panel of Christie ACT and is a deferred feature.

<table>
<thead>
<tr>
<th>Pin</th>
<th>Direction</th>
<th>Description</th>
<th>Signal Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>In</td>
<td>Power</td>
<td>Vbus</td>
</tr>
<tr>
<td>2</td>
<td>I/O</td>
<td>Data -</td>
<td>D-</td>
</tr>
<tr>
<td>3</td>
<td>I/O</td>
<td>Data +</td>
<td>D+</td>
</tr>
<tr>
<td>4</td>
<td>-</td>
<td>Ground</td>
<td>GND</td>
</tr>
</tbody>
</table>

6.7 GPIO
6.8 Regulatory

This product conforms to the following regulations related to product safety, environmental requirements and electromagnetic compatibility (EMC):

6.8.1 Safety

CAN/CSA C22.2 No. 60950-1
UL 60950-1
IEC 60950-1

6.8.2 Electro-Magnetic Compatibility

Emissions

FCC CFR47, Part 15, Subpart B, Class A - Unintentional Radiators
CISPR 22/EN 55022, Class A - Information Technology Equipment

Immunity

CISPR 24 / EN55024 EMC Requirements - Information Technology Equipment

Environmental

EU Directive (2002/95/EC) on the retraction of the uses of certain hazardous substances (RoHS) in electrical and electronic equipment and the applicable official amendment(S)

EU Directive (2002/96/EC) on waste and electrical and electronic equipment (WEEE) and the applicable official amendment(s)


China Ministry of Information Industry Order No.39 (02/2006) on the control of pollution caused by electronic information products, hazardous substances concentration limits (SJ/T11363-2006), and the applicable product marking requirements (SJ/T11364-2006)