Jupiter

Catalyst XL Hardware Manual

Canvas Enabled

September 29, 2022

A-CXL-000-01, Rev. I

Notice of Regulatory Compliance

Note: This equipment 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 equipment is operated in a commercial environment.

This equipment generates, uses, and can radiate radio frequency (RF) energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case users will be required to correct the interference at their expense. The user is cautioned that changes or modifications not expressly approved by Jupiter can void the user's authority to operate this equipment. The entire risk of the use or the result of the use of this Hardware and Software and documentation remains with the User. Information in this document is subject to change without notice. No part of this document may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any language in any form or by any means, electronic or mechanical, including photocopying without express written permission of Jupiter.

Jupiter Systems

31015 Huntwood Avenue

Hayward, CA 94544-7007

510-675-1000 (v)

info@jupiter.com

support@jupiter.com

510-675-1007 (v)

Jupiter

Table of Contents

This page has been intentionally left blank

Chapter 1

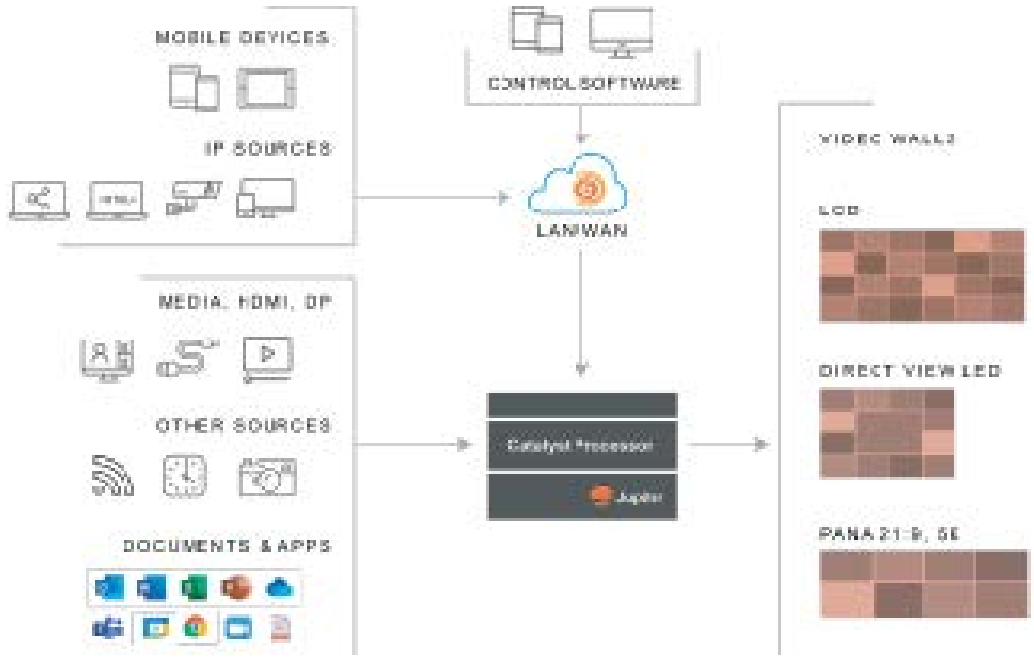
INTRODUCTION

Catalyst XL is the workhorse of the Catalyst line, ideal for medium to large sized video wall installations such as control rooms, government command centers, surveillance rooms, and utility centers. The Catalyst XL delivers the best in class solution for essential and critical control rooms as it can display any amount or type of data required to enhance operations.

1.1 Solution Architecture

Catalyst display processors capture, distribute, display, and control digital and analog video streams. Catalyst input boards capture a wide variety of source signals and output boards display them on a single display or display wall array. The Catalyst scaling and communications engine allows a single source to be replicated into 1,2 or 4 independently scaled windows, depending on the resolution and frame rate. This architecture provides the flexibility needed for current control room projects, large or small.

Figure 1.1: Catalyst Solution Architecture



1.2 Catalyst XL

The Catalyst XL is comprised of two main components — the CPU Chassis and the Express Fabric Chassis (EFC). The Express Fabric Chassis houses input and output boards. The CPU Chassis controls the EFC and runs Canvas Client. The CPU Chassis main function is to control the flow of data between input and output channels in the Express Fabric Chassis.

With cabling shown in *Section 3.3, Configurations with Multiple Express Fabric Chassis on page 9*, Catalyst XL systems may be extended to multiple Express Fabric Chassis which will appear as a single, unified system with no software configuration and no other hardware configuration.

Figure 1.2: One CPU Chassis Control up to Four Express Fabric Chassis

Chapter 2

CATALYST XL HARDWARE SPECIFICATIONS

Catalyst XL features

- Enterprise grade Xeon processors
- Windows 10
- Up to 1500+ IP streams
- Up to 39 4K inputs
- Web/VNC/Application support
- HDCP compliant
- Standalone or Canvas Enterprise
- Compatible with PANA 21:9, 5K displays
- Compatible with LCD, LED, cubes and projectors display technologies
- RAID & redundant power supplies

2.1 CPU Chassis

The Catalyst XL CPU Chassis is a1RU, 19" XL system control chassis with capacity to control up to four Express Fabric chassis (Catalyst XLe)

Figure 2.1: Catalyst XL CPU Chassis Front Panel

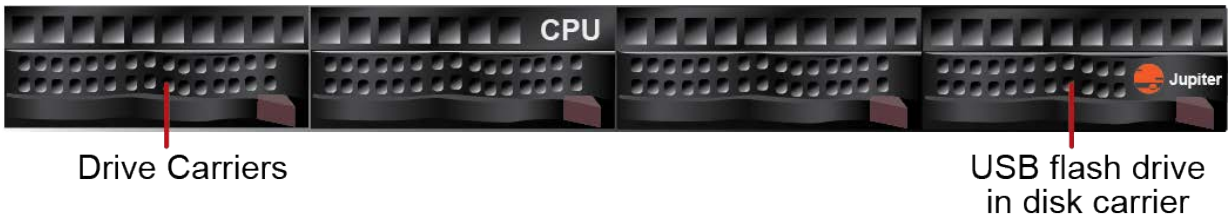


Figure 2.2: Catalyst XL CPU Chassis Rear Panel

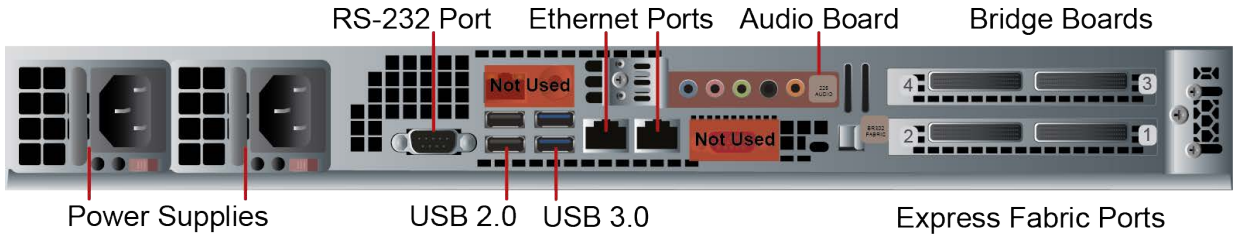


Table 2.1: CPU Chassis Specifications

Feature	Description
CPU Processor	Xeon: 1.9 GHz (6 Core), 2.4 GHz (10 Core), 2.9 GHz (16 Core)
RAM	64 – 192 GB RAM
Operating System	Windows 10 Enterprise
Network Interface: Ethernet	Standard Dual 100/1000 Mbps RJ45 ports
Drives	1 – 3 Drives 500GB or 1TB SSD
RAID	RAID 1 + Hot Spare
USB and Input Devices (USB)	2 USB 3.0, 4 USB 2.0, 104-key keyboard and mouse
Physical and Environmental	
Form Factor	1RU
Dimensions	1.75" H x 19" W x 26.75" D (44.5mm H x 482.6mm W x 675.5mm D)
Operating Temperature	32° – 104° F (0° - 40° C)
Non-operating Temperature	14° – 150° F (-10° – 66° C)
Operating Humidity	10 to 90% non-condensing
Non-operating Humidity	5 to 95% non-condensing
Maximum Altitude	Up to 10,000 feet (3,048.0 m)
Power Consumption	240 Watt Redundant PSU
Regulatory	
Certifications	cULus, CB, RCM, EAC, FCC, CE, TAA" from "UL, TAA, CE, FCC

2.2 Express Fabric Chassis (Catalyst XLe)

The Catalyst XL Express Fabric Chassis is a resilient 4RU, 19" XL input/output expansion chassis with 10 PCIe slots and the ability to add 10 boards per XLe to the Catalyst XL system. At least one Catalyst XLe chassis is required for input/output.

Figure 2.3: Catalyst XL Express Fabric Chassis Front Panel

Figure 2.4: Catalyst XL Express Fabric Chassis Rear Panel

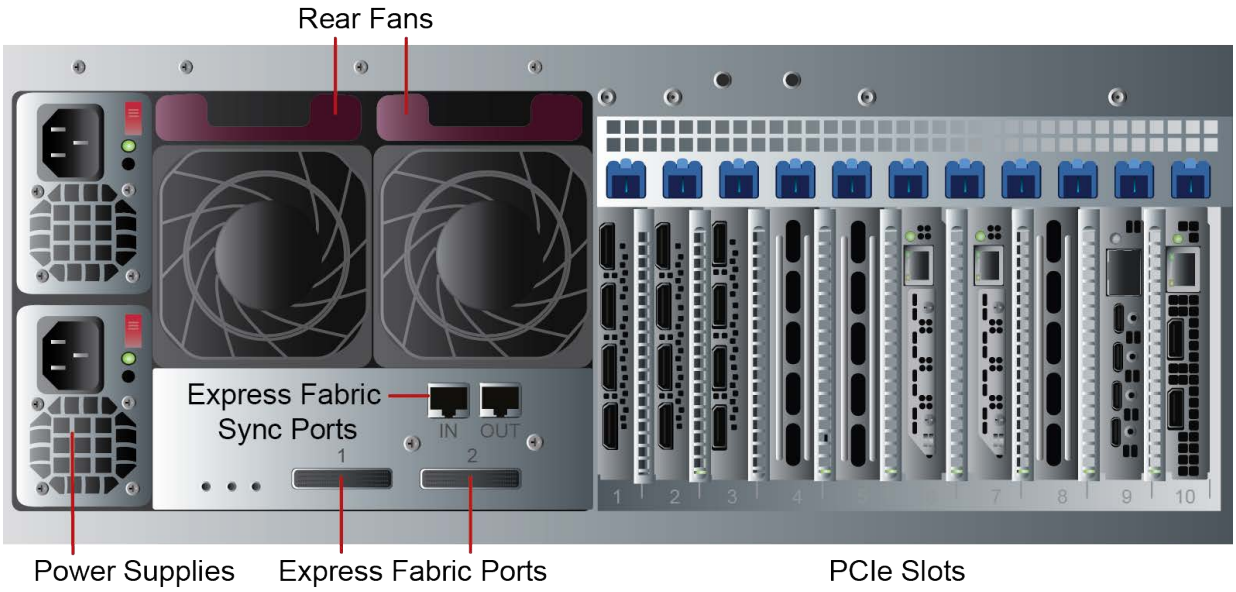


Table 2.2: Calalyst XL Express Fabric Chassis Specifications

Feature	Description
PCIe slots	10
Removable fans	2

Table 2.2: Calalyst XL Express Fabric Chassis Specifications

Feature	Description
Power supplies	2
Physical and Environmental	
Form factor	4RU
Dimensions	7.00" H x 19" W x 26.25" D (177.8mm H x 482.6mm W x 666.7mm D)
Operating temperature	32° – 104° F (0° – 40° C)
Non-operating temperature	14° – 150° F (-10° – 66° C)
Operating humidity	10 to 90% non-condensing
Non-operating humidity	5 to 95% non-condensing
Maximum altitude	Up to 10,000 feet (3,048.0 m)
Power consumption	500 Watt Redundant PSU
Regulatory	
Certifications	cULus, CB, RCM, EAC, FCC, CE, TAA" from "UL, TAA, CE, FCC

Chapter 3

SYSTEM CONFIGURATIONS

Catalyst display processors capture, distribute, display, and control digital and analog video streams. Catalyst input boards capture a wide variety of source signals and output boards display them on a single display or display wall array. The Catalyst scaling and communications engine allows a single source to be replicated into 1,2 or 4 independently scaled windows, depending on the resolution and frame rate. This architecture provides the flexibility needed for current control room projects, large or small.

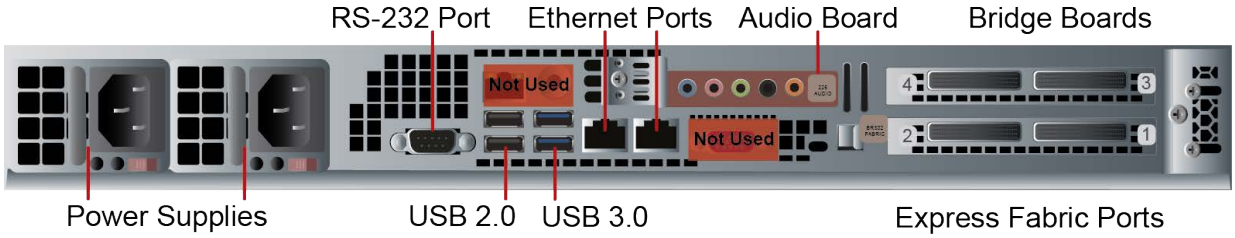
The Catalyst XL solution uses two basic components (or more for extending the number of input/output boards in a system — the Catalyst CPU Chassis which provides control and the Catalyst XL Express Fabric Chassis (Catalyst XLe) which provides slots for input and output boards. Up to four Catalyst XLe chassis may added in one system, but at least one is required.

This chapter describes how to connect Catalyst XLe chassis to the Catalyst XL CPU Chassis.

3.1 CPU Chassis Configuration

The Catalyst XL CPU Chassis function is to control the flow of data between input and output channels in the Express Fabric Chassis. The CPU chassis has no slots for input and output boards.

Figure 3.1: CPU Chassis Rear Panel



See *Section 3.3, Configurations with Multiple Express Fabric Chassis on page 9* for using one to four chassis in the Catalyst XL system.

3.2 Express Fabric Chassis Configuration

The Express Fabric Chassis has 10 PCI-E Gen 2 slots for input and output boards. The slots are numbered left to right. Ports are numbered from bottom to the top.

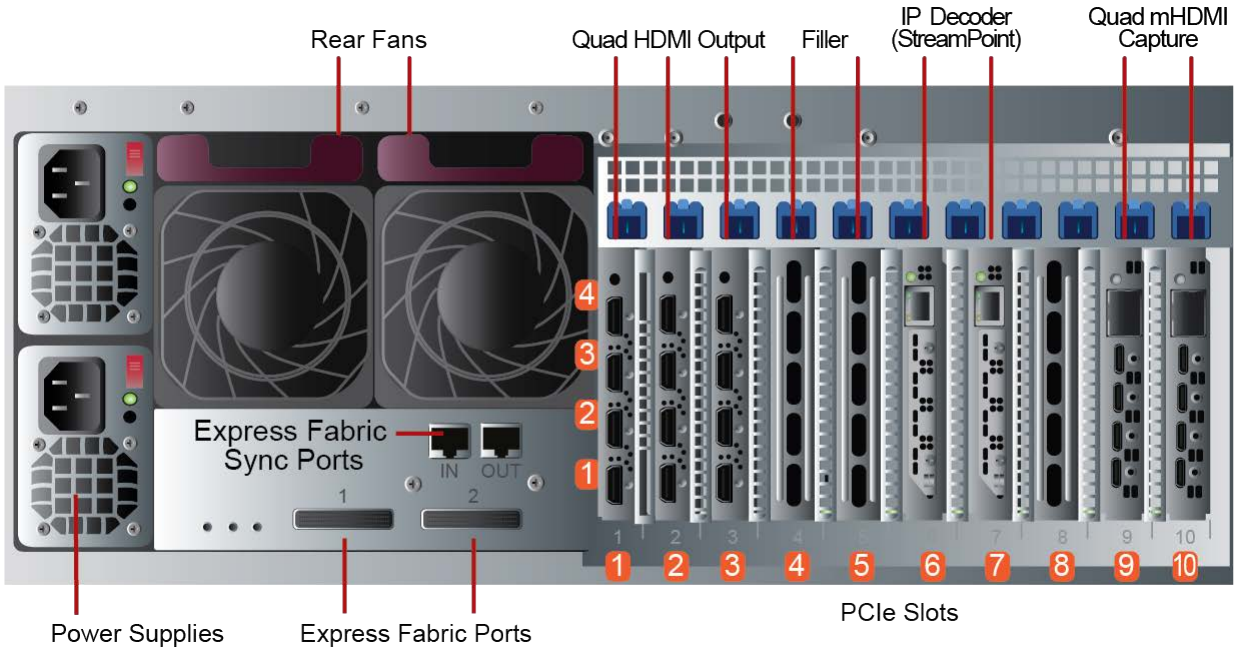
Each Express Fabric Chassis requires:

- Two expansion links to the CPU Chassis for 4K signals
- One expansion link to the CPU Chassis for HD signals

The Express Fabric Chassis is configured with Output boards in the leftmost slots. Each Cat XLe system supports a maximum of four Output boards.

Input Boards can be located in any slot in the Express Fabric Chassis.

Figure 3.2: Catalyst XL Express Fabric Chassis Rear Panel



The Express Fabric Chassis shown above includes the following boards:

- 4K Ouput boards in slots 1, 2, and 3
- IP Decoder board in slots 6 and 7
- Quad mHDMI Input / Decoder Board in slots 9 and 10.
- Blanks in Slots 4, 5, and 8

3.3 Configurations with Multiple Express Fabric Chassis

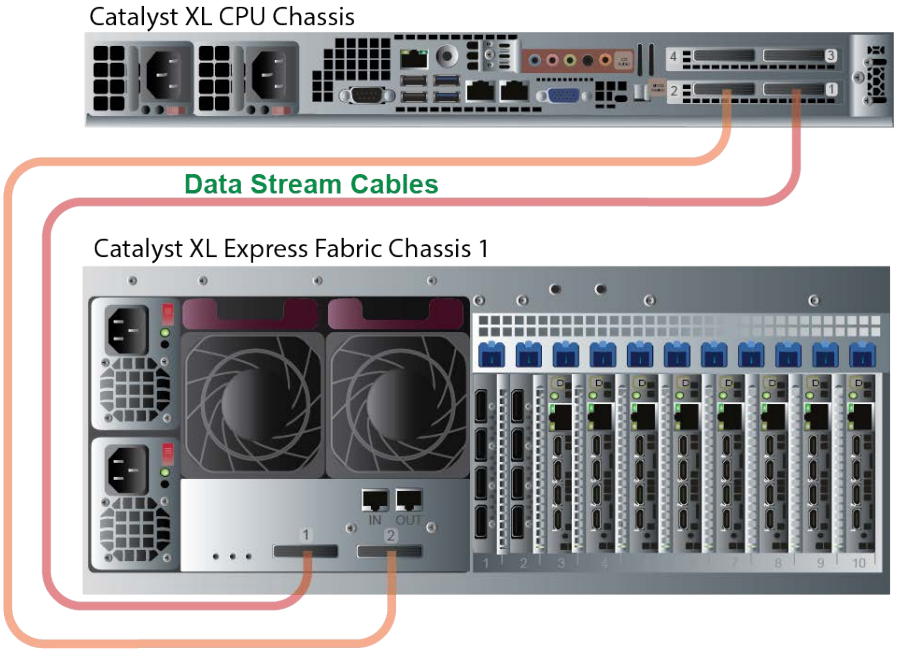
Catalyst XL systems may be extended to multiple Express Fabric Chassis which will appear as a single, unified system with no software configuration and no other hardware configuration than the cabling examples shown in this section.

The Express Fabric Chassis will appear in the VSConfig virtual screen configuration software in the order defined by the bridge ports on the CPU chassis.

The 4RU Express Fabric Chassis requires a sync cable in addition to the cables transmitting the data streams.

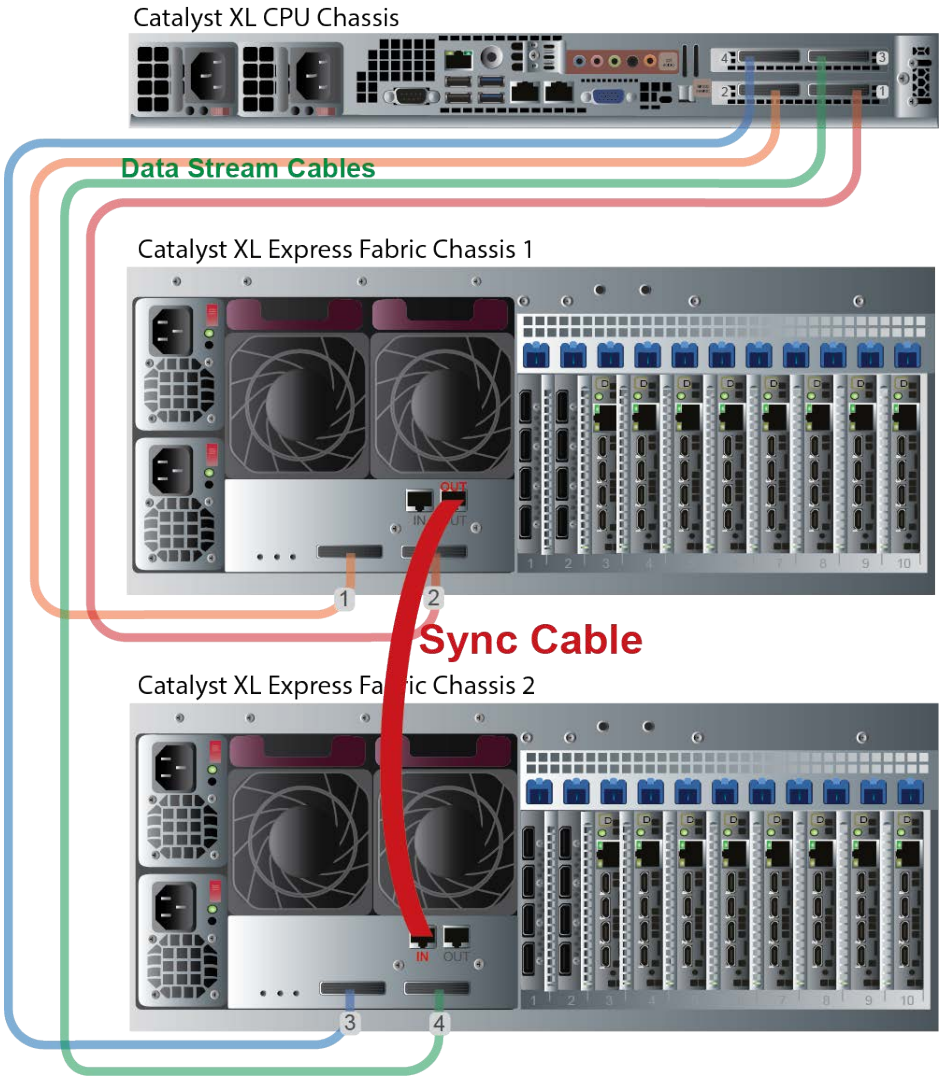
3.3.1 Configuration with One Express Fabric Chassis

Figure 3.3: Catalyst XL with one Express Fabric Chassis



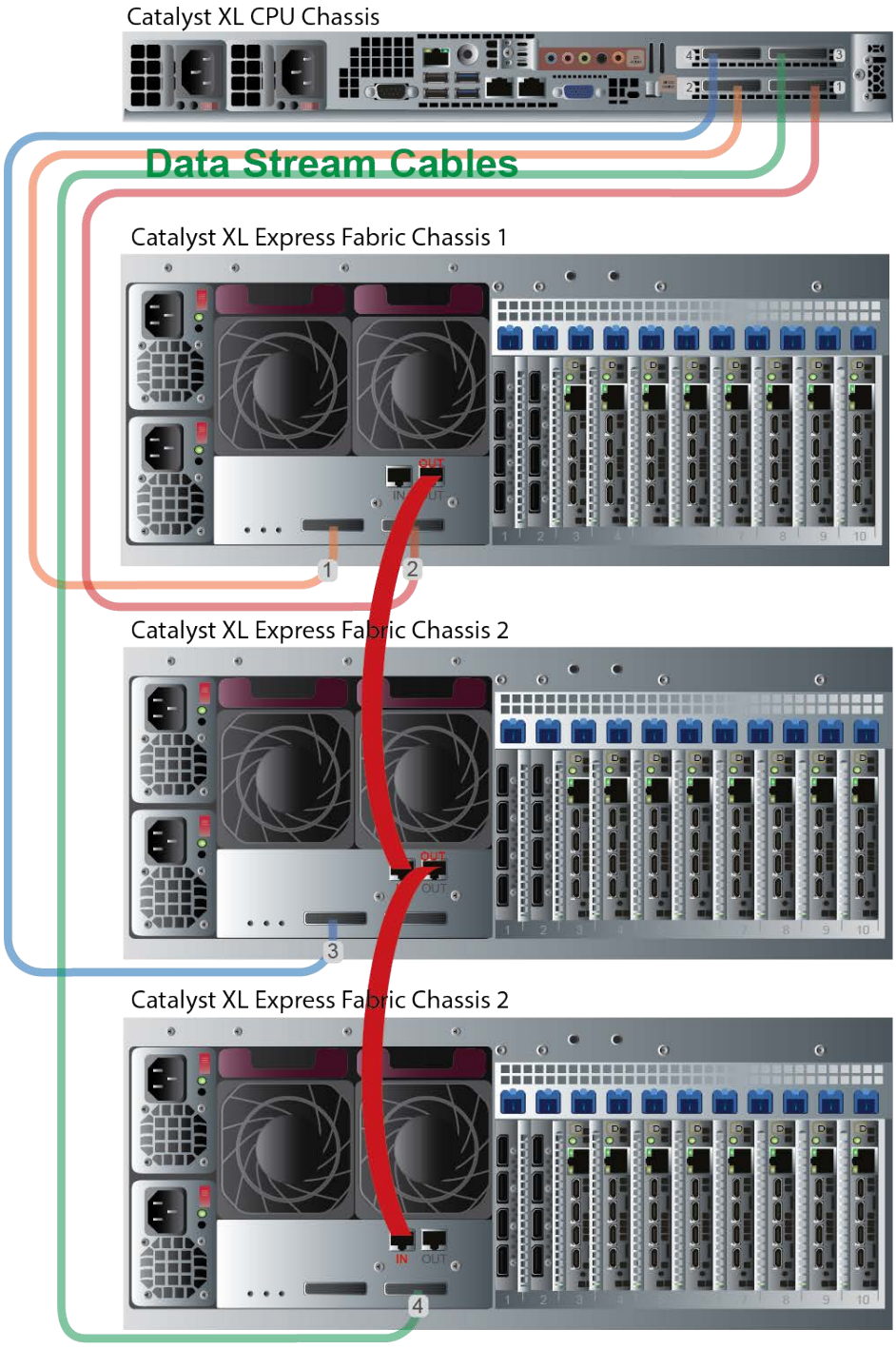
3.3.2 Configuration with Two Express Fabric Chassis

Figure 3.4: Catalyst XL with two Express Fabric Chassis



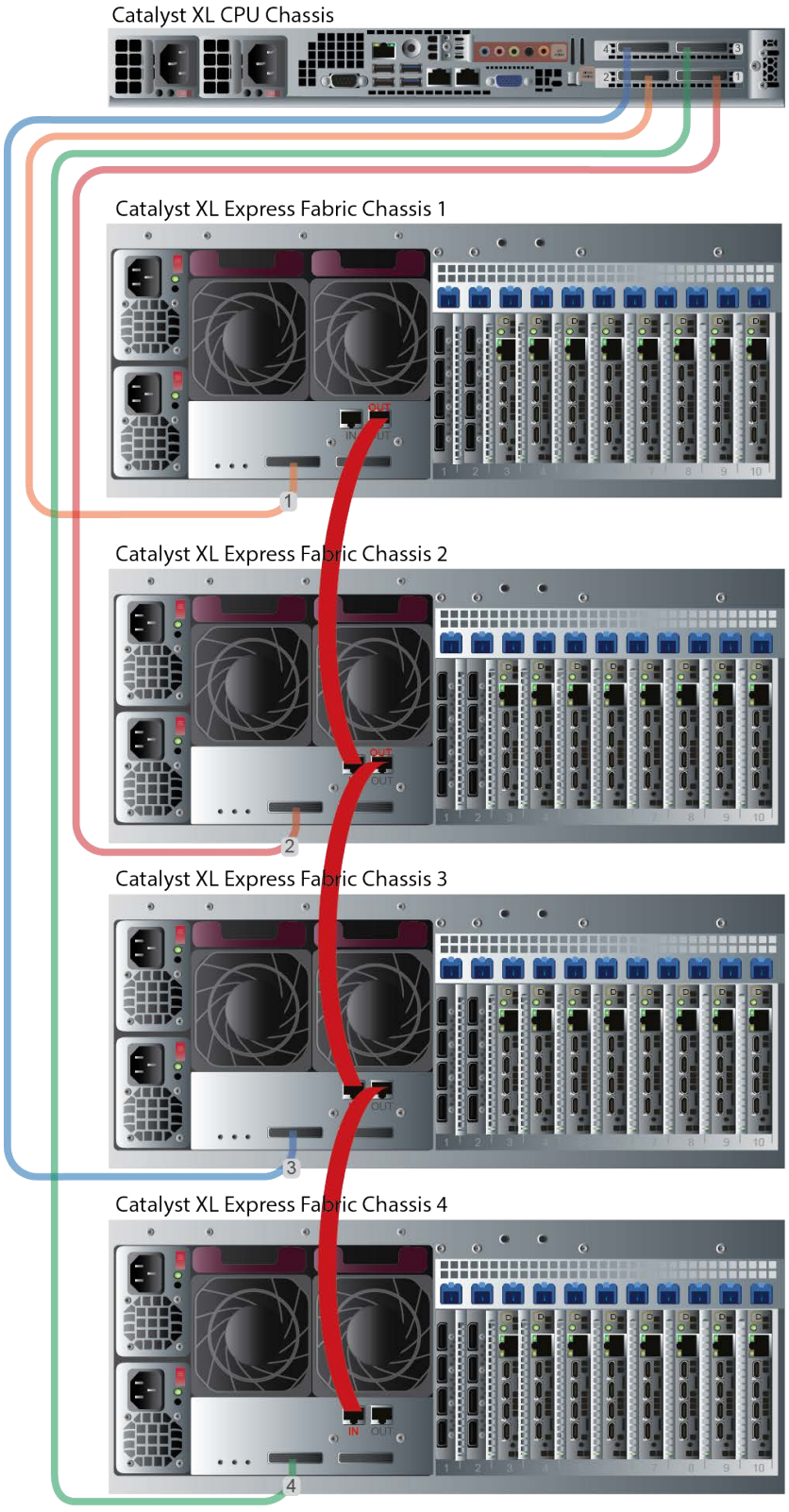
3.3.3 Configuration with Three Express Fabric Chassis

Figure 3.5: Catalyst XL with three Express Fabric Chassis



3.3.4 Configuration with Four Express Fabric Chassis

Figure 3.6: Catalyst XL with four Express Fabric Chassis



Chapter 4

BOARDS AND ACCESSORIES

Catalyst display processors capture, distribute, display, and control digital and analog video streams. Catalyst input boards capture a wide variety of source signals and output boards display them on a single display or display wall array. The Catalyst scaling and communications engine allows a single source to be replicated into 1,2 or 4 independently scaled windows, depending on the resolution and frame rate. This architecture provides the flexibility needed for current control room projects, large or small.

4.1 Output Boards

Jupiter output boards have advanced capabilities:

- Drive up to four high resolution displays (DisplayPort or HDMI)
  - 5K DP output may be extended to 4 FHD HDMI with J4DPe multi-monitor board
  - 4K HDMI may be extended to 4 FHD HDMI with J4HDMIe multi-monitor board
- Smooth video playback and graphics performance with up to 4 GB of graphics memory
- Secure connectors
- HDCP Compliant

4.1.1 Quad DisplayPort Graphics (3-540-337-00)

The Quad DisplayPort Output has 4 x DP 1.4 video outputs. Maximum resolution 4x 5120x3200 @ 60Hz.

Figure 4.1: Quad DisplayPort Graphics Output Board

Table 4.1: Quad DisplayPort Graphics Output Specifications

Bus Type	PCIe 3.0 x16
Video Output Connectors	4x DisplayPort 1.4
Maximum Resolution	4x 5120x3200 @ 60Hz
Memory	4 GB GDDR5
HDCP Compliance	Yes
Cooling	Active
Power Consumption	50 W

4.1.2 Quad HDMI Output (3-540-338-00)

The Quad HDMI Output has 4 x HDMI video outputs. Maximum resolution 4x 4096x2160 @ 60Hz

Figure 4.2: Quad HDMI Output Board

Table 4.2: Quad HDMI Output Specifications

Bus Type	PCIe 3.0 x16
Video Output Connectors	4x HDMI
Maximum Resolution	4x 4096x2160 @ 60Hz
Memory	4 GB GDDR5
HDCP Compliance	Yes
Cooling	Active
Power Consumption	50 W

4.2 Input Boards

4.2.1 Dual DP Video Capture (3-540-313-01)

Dual DP Video Capture card provides 4K video capture in true 24-bit color on up to two DisplayPort sources.

Figure 4.3: Dual DP Video Capture Board

Table 4.3: Dual DP Video Capture Specifications

Bus Type	PCIe x16 Gen 2 mechanical (x8 electrical)
Video Input Connectors	2 x DisplayPort 1.2
Memory	8 GB (34 GB/sec)
HDCP Compliance	Capture, display, and scale HDCP sources
Typical Power Consumption	24.6W (12V), 6.105W (3.3V) [Total: 30.705W]

4.2.2 Quad Mini-HDMI Video Capture (3-540-334-01)

The Quad Mini-HDMI Video Capture board includes 4 mini HDMI input channels. Automatic format detection provides plug-and-play simplicity. The inputs support custom resolutions.

Figure 4.4: Quad Mini-HDMI Video Capture

Table 4.4: Quad Mini-HDMI Video Capture Specifications

Connections	Four mini-HDMI Female HDMI to Male Mini-HDMI adapters are included. See *Figure 4.5. Female HDMI to Male Mini-HDMI Adapter (4-750-163-00)*
HDMI Support	• 4 x 1080P60 inputs • 2 x 4K30 YUV4:2:0 inputs • 1 x 4K60 YUV4:2:0 inputs* * Captures signals up to 4096x2160 @ 60Hz resolution In YUV 4:2:0, 12 bits per pixel (8 bits per component).
Video Modes	RGB 24, YUV 4:2:2, YUV 4:2:0 Future
Memory	8 GB (34 GB/sec)
Backplane Connection	PCIe x16 Gen 2 mechanical (x8 electrical)

Figure 4.5: Female HDMI to Male Mini-HDMI Adapter (4-750-163-00)

4.2.3 IP Decoder (3-450-304-02)

Figure 4.6: IP Decoder

Table 4.5: IP Decoder Specifications

Connections	1 x RJ-45	
Memory	8 GB (34 GB/sec)	
Bus Type	PCIe x16 Gen 2 mechanical (x8 electrical)	
Decoding Capability	**Resolution**	**Number of Streams per Board**
	3840x2160x60	2
	3840x2160x30	4
	1920x1080x60	8
	1920x1080x30	16
	1280x720x60	32
	704x480	50

4.2.4 Quad BNC SDI Video Capture (3-540-312-01)

The Quad BNC SDI Video Capture board includes 4 SDI Input capture channels. Automatic format detection provides plug-and-play simplicity.

Figure 4.7: Quad BNC SDI Video Capture Board

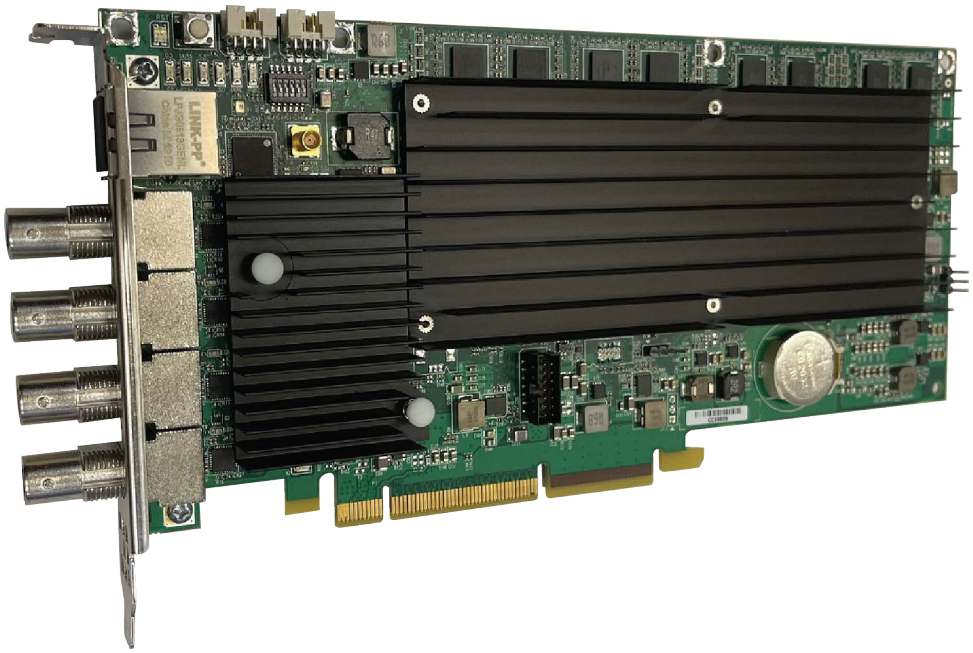


Table 4.6: Quad BNC SDI Video Capture Specifications

Connections	2 x 12G SDI, 2x 3G SDI
Customer Resolutions	• SD-SDI • HD-SDI • 3G-SDI
Memory	8 GB (34 GB/sec)
Bus Type	PCIe x16 Gen 2 mechanical (x8 electrical)

4.3 J4 Multi-Monitor Control Boards

Like Jupiter's J4 standalone solutions which provide the means to extend displays from a single source onto multiple monitors quickly and easily, each J4 board, depending on whether it is HDMI or DP from a single 4K source can be drive up to four full HD displays.

Each display can have its own resolution, be independently rotated (90, 180, and 270 degrees), cropped, upscaled, downscaled, and positioned anywhere.

4.3.1 J4DPe Board (4-540-371-00)

Easily expand one 4K DP output from Catalyst (using a DP to mini-DP adapter) to four FHD mini-HDMI to extend the number of displays in a video wall.

Figure 4.8: J4DPe Mini-DP 4K to 4 Mini-HDMI 1080P Multi-Monitor Control Board

Table 4.7: J4DPe Multi-Monitor Control Board Specifications

Input Connector	1x Mini DisplayPort 1.2 with video & audio support
Max Input Resolutions	3840x2160 @60Hz, 3840x2160 @30Hz, 7680x1080 @60Hz, 7680x1080 @30Hz, 1920x4320 @60Hz, 1920x4320 @30Hz Other input resolutions including 8Kx8K are supported. Contact your Jupiter Sales Representative for more details.
Output Connectors	4x mini-HDMI with video & audio support
Max Output Resolutions	1920x1080 @60Hz, 1920x1080 @30Hz, 1920x1200 @60Hz, 1920x1200 @30Hz Other output resolutions are supported. Contact Jupiter Sales Representative for more details
Out-of-box Supported Configurations	2x2 (default), 4x1, 3x1, 2x1, 1x2, 1x3, 1x4, Clone in both landscape and portrait modes and other non-rectangular/artistic configurations
Features	Rotation, Multi-unit support, Bezel management, Clone mode, and HDCP support
Video & Audio Processing	Multi-channel Video Scaling, Video Cropping, AAC, PCM, Stereo, and Mono Audio format. Audio sampling rate 44.1 KHz and 48 KHz, 16-bit stereo

4.3.2 J4HDMIe Board (4-540-372-00)

Easily expand one 4K HDMI output from Catalyst (using an HDMI to mini-HDMI adapter) to four FHD Mini-HDMI to extend the number of displays in a video wall.

Figure 4.9: J4HDMIe Mini-HDMI 4K to 4 Mini-HDMI 1080P Multi-Monitor Control Board

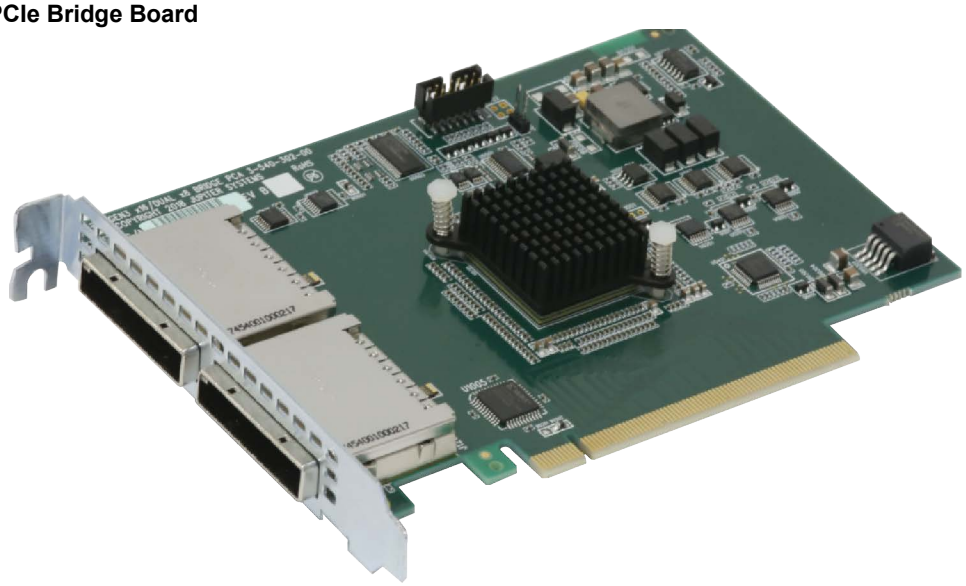
Table 4.8: J4HDMIe Multi-Monitor Control Board Specifications

Input Connector	1x mini-HDMI with video & audio support
Max Input Resolutions	3840x2160 @60Hz, 3840x2160 @30Hz, 7680x1080 @60Hz, 7680x1080 @30Hz, 1920x4320 @60Hz, 1920x4320 @30Hz Other input resolutions including 8Kx8K are supported. Contact your Jupiter Sales Representative for more details.
Output Connectors	4x mini-HDMI with video & audio support
Max Output Resolutions	1920x1080 @60Hz, 1920x1080 @30Hz, 1920x1200 @60Hz, 1920x1200 @30Hz Other output resolutions are supported. Contact Jupiter Sales Representative for more details
Out-of-box Supported Configurations	2x2 (default), 4x1, 3x1, 2x1, 1x2, 1x3, 1x4, Clone in both landscape and portrait modes and other non-rectangular/artistic configurations
Features	Rotation, Multi-unit support, Bezel management, Clone mode, and HDCP support
Video & Audio Processing	Multi-channel Video Scaling, Video Cropping, AAC, PCM, Stereo, and Mono Audio format. Audio sampling rate 44.1 KHz and 48 KHz, 16-bit stereo

4.4 Other Boards

4.4.1 PCIe Bridge Board (3-540-302-00)

Figure 4.10: PCIe Bridge Board



The CPU Bridge cable (4-750-115-01) connects the Bridge Board in the Catalyst XL CPU Chassis to the Express Fabric Chassis.

Figure 4.11: CPU Bridge Cable (4-750-115-01)

4.4.2 PCI Express Sound (3-540-225-00)

The PCI Express Sound Board delivers high quality Surround Sound audio.

Figure 4.12: PCI Express Sound Board

Note: A board other than the one shown may be provided.

Table 4.9: PCI Express Sound

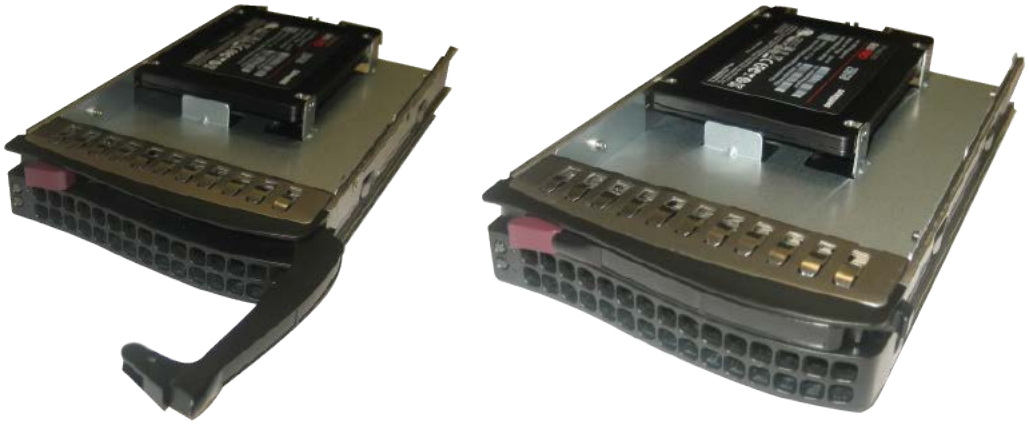
Connections	• Mic In/Line In (FlexiJack) • Headphone/Front Left & Right Speaker Output • Side Left & Right Speaker Output; Center/Sub Output • Rear Left & Right Speaker Output • Optical Digital Output/Input • Internal Intel HD Audio Compatible Front Panel Header (2x5pin)
Stereo/Surround	up to 24bit/96kHz; SPDIF: up to 24-bit/96kHz
Compliance	UAA (Universal Audio Architecture) Compliant

4.5 Chassis, Drives and Accessories

4.5.1 Catalyst XL CPU Solid State Drives

- 4-619-067-03 500 GB SSD in Carrier
- 4-619-070-01 1 TB SSD in Carrier

Figure 4.13: Catalyst XL CPU SSD in Carrier



4.5.2 CPU Chassis Power Supplies (5-612-056-00)

The CPU Chassis is powered by a 700W supply.

Figure 4.14: CPU Chassis Power Supplies

4.5.3 Express Fabric Chassis Power Supplies (5-612-061-00)

The Express Fabric Chassis is powered by a 2KW supply.

Figure 4.15: Express Fabric Chassis Power Supplies

4.5.4 CPU Chassis Fan (4-615-043-00)

The mid-chassis fans in the CPU Chassis are 40mm x 40mm x 56mm.

Figure 4.16: CPU Chassis Fan

4.5.5 Express Fabric Mid-Chassis Fan (4-615-049-00)

The mid-chassis fans in the Express Fabric Chassis are 90mm x 90mm x 25mm.

Figure 4.17: Express Fabric Mid-Chassis Fan

4.5.6 Express Fabric Rear-Chassis Fan (4-615-042-00)

The rear-chassis fans in the Express Fabric Chassis are 90mm x 90mm x 25mm.

Figure 4.18: Express Fabric Rear-Chassis Fan

Chapter 5

HARDWARE INSTALLATION

The front panels of the Catalyst XL CPU Chassis and Express Fabric Chassis are shown in the figures below. The front panel power switch is a soft power switch, which leaves some standby power applied to the system. The Reset switch generates a hardware reset.

5.1 Indicators and Buttons

Figure 5.1: Catalyst XL CPU Chassis Front Buttons and LEDs

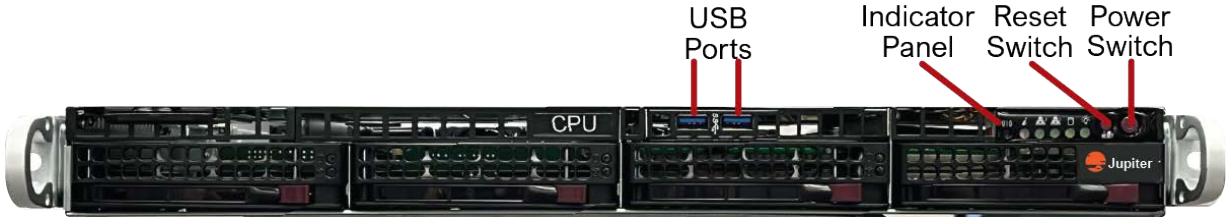


Figure 5.2: Catalyst XL CPU Chassis Indicator Panel

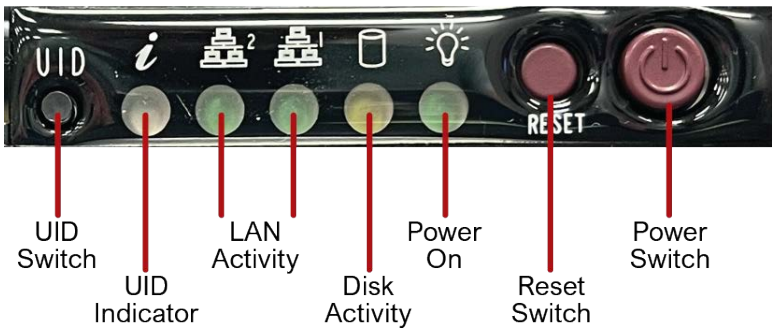


Table 5.1: Catalyst XL CPU Chassis Front Buttons and LEDs

Indicator or Button	Description
Power switch	A single press of the front panel power switch will apply power to the Catalyst XL. Only when momentary pressing of the power switch yields no results should the power switch be held for 4 seconds to turn power on/off. .
Power LED	The front panel power LED will light-up when the power switch is pressed. The power supply LEDs will not light-up until the front panel power switch has been turned on

Table 5.1: Catalyst XL CPU Chassis Front Buttons and LEDs

Indicator or Button	Description
System reset	Pressing the Reset switch will cause the system to do a hard system reset. Any data not saved will be lost. It is recommended that you not reset the system unless there is no other way to restart it.
Drive activity LED	The HDD (Hard Disk Drive) LED is illuminated when there is hard drive activity.
LAN LEDs	The LAN 1 and LAN 2 LEDs are illuminated when there is network activity.
UID switch	When you press the Unit Identifier (UID) switch, the UID LED will be turned on. Press the UID switch again to turn off the LED indicator.
UID indicator	The UID Indicator provides easy identification of a system unit that may be in need of service.

Figure 5.3: Catalyst XL Express Fabric Chassis (XLe) Front LEDs

Table 5.2: Catalyst XL Express Fabric Chassis (XLe) Front LEDs

Indicator or Button	Description
+3.3V LED	Illuminated whenever the power supply is supplying 3.3 Volts
POWER LED	Illuminated when the power supply detects that all its outputs are working within specifications
LINK LED	LINK LED is on solid when the PCIe switch in the Express Fabric chassis detects a full speed link to the CPU chassis

5.2 Rackmount Installation

Note: Provide sufficient clearance behind the chassis to remove the 13 5/8” long power supplies.

The Catalyst XL rack mounting kit is designed for a standard 19-inch rack with RapidRack rails with square 3/8” holes for the rack slides. Adapters for tapped rails are provided. Rear rack rails are required for supporting the rear of the chassis.

To secure the rack, refer to the instructions that came with it from the rack manufacturer. One method for securing the rack is to bolt it to the floor or wall. Another method for securing the rack is to fasten it to another rack that is bolted to the floor or the wall, or to anchor the rack to something stable.

WARNING! If a rack is not properly secured, adding the Catalyst or other equipment to the rack may make the rack unstable.

CAUTION: Adhere to the following guidelines for optimal and safe use of the system.

1 *Keep the maximum recommended ambient temperature (TMRA) below +40° C (104° F)*

   a *Beware of elevated operating ambient temperature*
   If the Catalyst is 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 Catalyst in an environment compatible with the TMRA.

   b *Beware of reduced air flow*
   Installation of the Catalyst in a rack should be such that the amount of airflow required for safe operation of the Catalyst is not compromised.

2 *Be aware of uneven mechanical loading*
Mounting of the Catalyst in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading. Consult rack manufacturers loading instructions for proper load distribution.

3 *Be aware of circuit overloading*
Consideration should be given to the connection of the Catalyst to the supply circuit and the effect that overloading of circuits might have on over current protection and supply wiring. Appropriate consideration of the Catalyst nameplate ratings should be used when addressing this concern.

4 *Make sure the Catalyst is reliably grounded*
Reliable grounding (earthing) of the Catalyst should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (i.e. use of power strips).

5.2.1 Rack Mount Parts Kit

The Rack Mount Parts Kit includes the following parts for installing the Catalyst XL into a 19-inch rack:

- One set of slides with mounting hardware
- RapidRack Adapters for tapped rack rails

5.2.2 Required Tools

To install the Catalyst XL in the rack, you need the following tool:

- Phillips head screwdriver

CAUTION: For safety and protection of the equipment, it is recommended that two people lift and install the Catalyst chassis into the rack.

5.2.3 Catalyst XL Rack Mounting Procedure

1. *Mount the inner left and right chassis portions of the slides on either side of the Catalyst chassis.*
2. *Mount the outer portion of the slides in the rack with the provided hardware. Location of the slides in the cabinet will be determined by the desired front panel position.*
3. *After installing the slide sections on the Catalyst and in the cabinet, slide the Catalyst into the cabinet.*
4. *The Catalyst may be slid into the rack and secured using the two 10-32 x 3/4" front panel screws.*

5.3 Cabling

5.3.1 Power Connections

Install the power cords to the Catalyst. Plug the power cords into AC outlets.

5.3.2 Display Device Cables

For each display device, connect the graphics cables to the connectors on the back of the displays.

5.3.3 Mouse and Keyboard Cables

Plug the mouse and keyboard cables into any one of the USB ports.

5.3.4 Ethernet Cables

Connect the Twisted Pair (Cat 6) cable to the appropriate RJ45 connector on the rear panel of the Catalyst.

Jupiter

Chapter 6
REMOVING & REPLACING COMPONENTS

This Chapter describes how to remove and replace the components listed below in the Catalyst XL:

- Memory Modules (DIMMs)
- PCI Express Boards
- Power Supplies
- Battery
- Hard Drive
- Chassis Fans

WARNING! Due to the risk of personal injury and damage to the equipment, **only a qualified technician should attempt to remove and/or replace components in the Catalyst chassis!** There are **NO** user serviceable parts inside the Catalyst chassis.

CAUTION: Static electricity can damage integrated circuits. Always use static protection when handling any internal components! **Always make sure you are properly grounded.**

6.1 First Things First

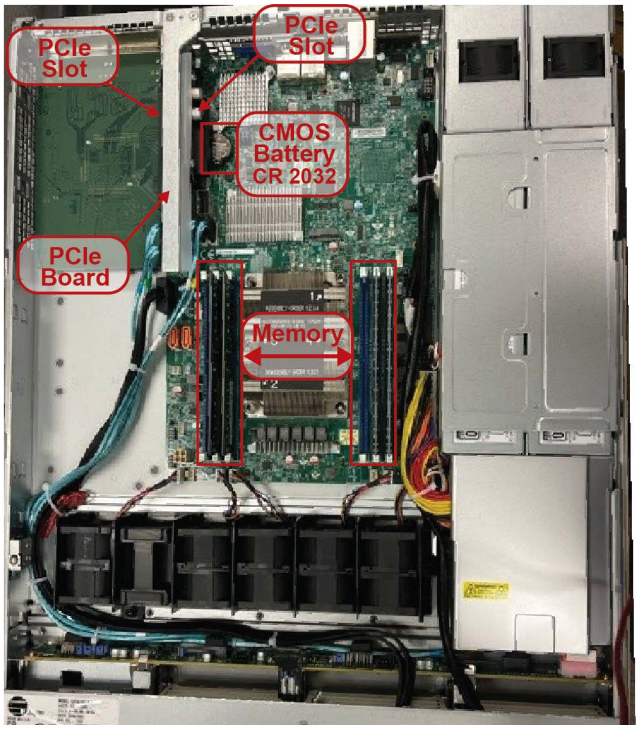
1 Perform an orderly shutdown of the system
   - **a** Close/Stop Remote Sessions
   - **b** Save Layouts as needed
   - **c** Close Canvas Client(s)
   - **d** Quit Canvas Server
   - **e** Shut down Windows

2 Disconnect all appropriate cables from the Rear Panel connector(s) on the board/assembly you are replacing.

CAUTION: Unplug the AC power cords from the **Catalyst XL CPU Chassis** and all **Express Fabric Chassis** in the system.

6.2 Catalyst XL CPU Chassis

Figure 6.1: Catalyst CPU chassis internal components



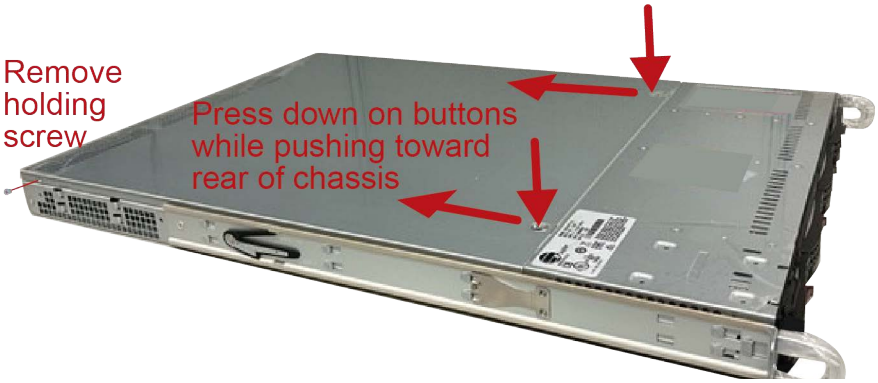
The Catalyst XL CPU Chassis has the following replaceable components:

- Battery
- Memory module (DIMMs)
- PCI Express boards
- Solid State Drives (SSDs)
- Power supplies

6.2.1 CPU Chassis Top Cover Removal

You will need to remove the top cover from the CPU to have access to the components.

Figure 6.2: Removing CPU top cover



1. Perform the steps in *Section 6.1, First Things First on page 31*
2. Remove the holding screw which secures the cover to the Catalyst CPU chassis
3. Simultaneously press down on the two cover buttons while pushing the cover toward the rear of the chassis
4. Lift the cover from unit

6.2.2 CPU Chassis Top Cover Replacement

Figure 6.3: Replacing CPU top cover

1. Place the top cover so that it aligns with the side and the end with the buttons is not quite at the front end of the top opening
2. Slide the cover shut until you hear a click
3. Replace holding screw

6.2.3 CPU Chassis Battery

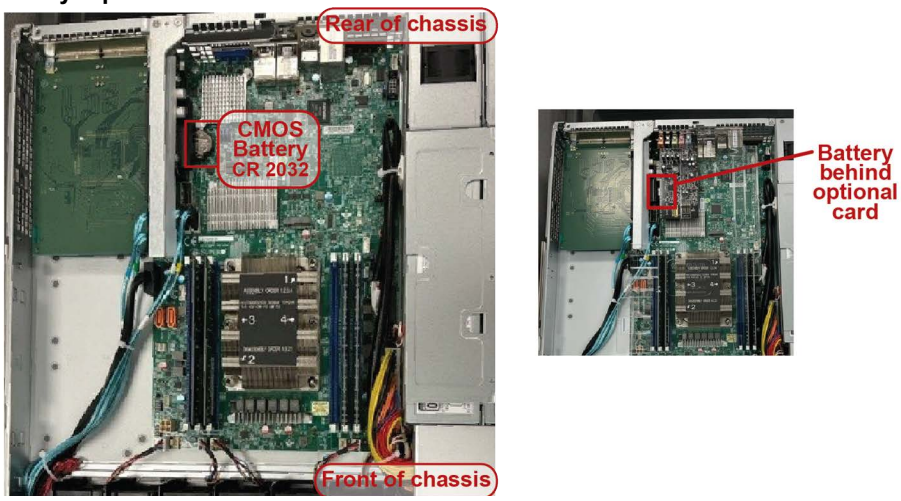
The battery supports key information such as the date, boot order and RAID settings when power is not being supplied to the CPU chassis.

WARNING! There is danger of explosion if the battery is incorrectly replaced. Replace only with the same or equivalent type recommended by Jupiter Systems. Dispose of used batteries according to the manufacturer's instructions.

ATTENTION: Il y a danger d'explosion s'il y a remplacement incorrect de la batterie. Remplacer uniquement avec une batterie du même type ou d'un type équivalent recommandé par le constructeur. Debarrassez-vous et recyclez les piles usagées conformément aux instructions du fabricant.

The battery may be hidden beneath an optional card as shown in the inset.

Figure 6.4: Battery replacement



CAUTION: Removing the battery will erase key information such as the date, boot order, and RAID settings. Therefore, write down the current values for the aforementioned settings before removing the battery.

1 Perform the steps in *Section 6.1, First Things First on page 31*

2 Perform the steps in *Section 6.2.1, CPU Chassis Top Cover Removal on page 33*

3 Locate the battery on the motherboard

The battery is located near the PCIe slots toward the rear of the chassis.

If there is a card in the PCIe slot above where the battery is located, perform the steps in *Section 6.2.5.1, CPU PCIe Boards Removal on page 37*.

4 Using your finger or fingernail, pry back the holder/latch and release the battery

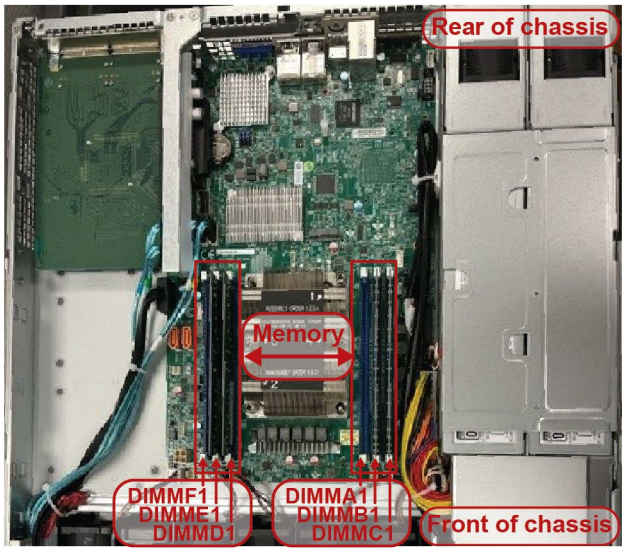
5 To replace the battery put the far edge in first, up under the metal spring clip/contact, then press the battery down into the latch

CAUTION! Be sure to observe the battery polarity when inserting into the holder. The positive (+) pole should be up. Note plus sign (+) on the battery.

6.2.4 CPU Chassis Memory

The memory DIMMs (Double Inline Memory Modules) are located near the center of the CPU chassis.

Figure 6.5: Memory location



6.2.4.1 Memory Support

The Catalyst XL CPU Chassis supports up to 192 GB using 2666MHz ECC DDR4 SDRAM 72-bit, 288-pin / 1.2V DIMMs.

Memory is provided in 16, 32, or 64 GB increments consisting of two 8, 16, or 32 GB DIMMs. The figure has the four 16 GB DIMMs which is the 64 GB base configuration.

6.2.4.2 Memory Module Removal and Replacement

1. Perform the steps in *Section 6.1, First Things First on page 31*
2. Perform the steps in *Section 6.2.1, CPU Chassis Top Cover Removal on page 33*
3. Locate the memory DIMMs on the motherboard

   The DIMMs are located near the center of the chassis.
4. Remove current DIMMs
   - **a** Release the DIMM by gently pushing the release tab outwards on both ends of the DIMM slot to unlock it
   - **b** Lift the DIMM straight up and out of its connector
5. Insert new DIMMs

   Insert the desired number of DIMMs into the memory slots following the memory population sequence in the *Table 6.1: DIMM population sequence on page 36*

   For optimal memory performance, Jupiter System sells memory module kits of the same type and speed.

Table 6.1: DIMM population sequence

Number of DIMMs	Memory Population Sequence
2	DIMMA1 / DIMMD1
4	DIMMB1 / DIMMA1 / DIMMD1 / DIMME1
6	DIMMC1 / DIMMB1 / DIMMA1 / DIMMD1 / DIMME1 / DIMMF1

a Align the key of the DIMM module with the receptive point on the memory slot

b Align the notches on both ends of the module against the receptive points on the ends of the slot

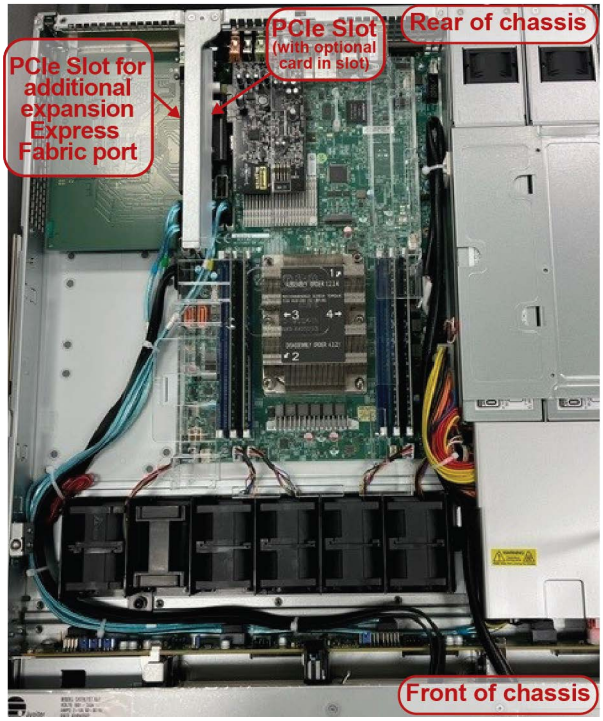
c Use two thumbs together to press the notches on both ends of the module straight down into the slot until the module snaps into place

d Press the release tabs to the lock positions to secure the DIMM module into the slot

6.2.5 CPU PCIe Boards

The PCIe slots are near the rear of the chassis

Figure 6.6: PCIe slots



6.2.5.1 CPU PCIe Boards Removal

1. Perform the steps in *Section 6.1, First Things First on page 31*
2. Perform the steps in *Section 6.2.1, CPU Chassis Top Cover Removal on page 33*
3. Remove any cables attached to the board to be removed
4. Remove the screw holding the PCI Express board in place at the rear panel
5. Rock the board out of its socket and gently remove the board from the chassis

   It is sometimes helpful to use the connector on the outside of the board bracket to help lift it out of the socket.

6.2.6 SSD Replacement

The Catalyst XL must go through an orderly shutdown before removing the drive carrier from the receiver bay.

Figure 6.7: CPU Chassis SSD Carrier

The first SSD is in the leftmost carrier. SSDs are added moving to the next carrier to the right. Only the three leftmost carriers may be used.

1. Perform the steps in *Section 6.1, First Things First on page 31*
2. Push down on the red lever that holds the retention latch
3. Swing the drive retention latch away from the chassis
4. Carefully, but firmly, pull the drive module out of the bay
5. Insert the replacement drive into the bay

   When inserting the drive, it is important to make sure the drive carrier is completely seated into the receiver bay to insure correct electrical contact.

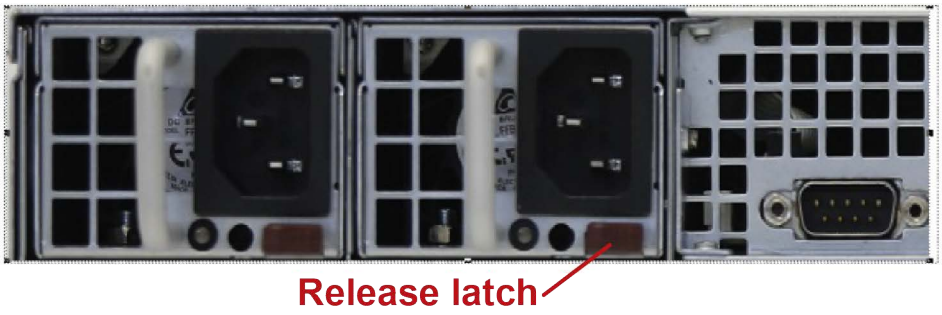
6.2.7 CPU Chassis Power Supplies (5-612-056-00)

The power supply modules are located at the left side of the rear panel of the CPU Chassis.

The power supplies are hot-swappable, so the system can stay on — IF only one power supply is removed and the other is operating properly.

CAUTION: The system must be shut down before removing both power supplies.

Figure 6.8: CPU power supply



6.3 Catalyst 4RU Express Fabric Chassis (EFC)

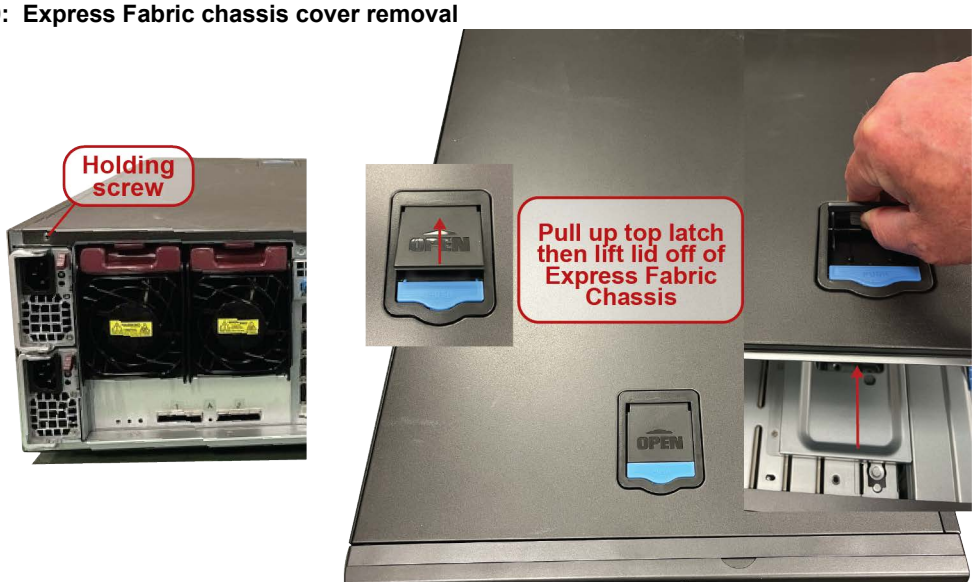
Figure 6.9: Express Fabric Chassis internal layout

The Express Fabric Chassis has several replaceable components:

- PCI Express boards
- Mid-chassis fans
- Rear chassis fans
- Power supplies

6.3.1 Catalyst XLe Top Cover Removal

Figure 6.10: Express Fabric chassis cover removal



1. Remove the holding screws
2. Push the blue latch which releases the latch
3. Pull up top latch
4. Keep pulling on the top latch until you can grasp the lid
5. Lift lid off of chassis

6.3.2 EFC Cover Replacement

1. Align the cover with the latch end toward the front of the chassis
2. With the rear end of the cover slightly lifted, set the cover into the chassis
3. With the cover flat, push it toward the front of the chassis
4. Push down the top latch
5. Replace the holding screw

6.3.3 EFC Input/Output PCIe Board Removal

1. Perform the steps in *Section 6.1, First Things First on page 31*
2. Perform the steps in *Section 6.3.1, Catalyst XLe Top Cover Removal on page 40*
3. Remove any cables attached to the board to be removed
4. Remove the screw holding the board in place at the rear panel
5. Rock the board out of its socket and gently remove the board from the chassis

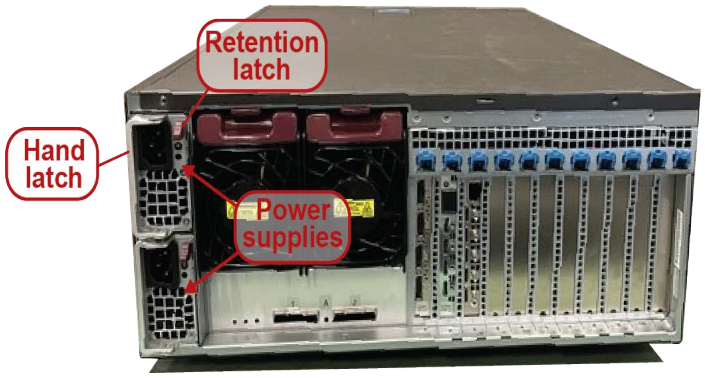
   It is sometimes helpful to use the connector on the outside of the board bracket to help lift it out of the socket.

6.3.4 EFC Power Supplies (5-612-061-00)

The power supply modules are located at the left side of the rear panel of the Express Fabric Chassis.

The power supplies are hot-swappable, so the system can stay on — IF only one power supply is removed and the other is operating properly.

Figure 6.11: EFC power supplies



WARNING: The system must be shut down before removing both power supplies.

6.3.4.1 EFC Power Supply Removal

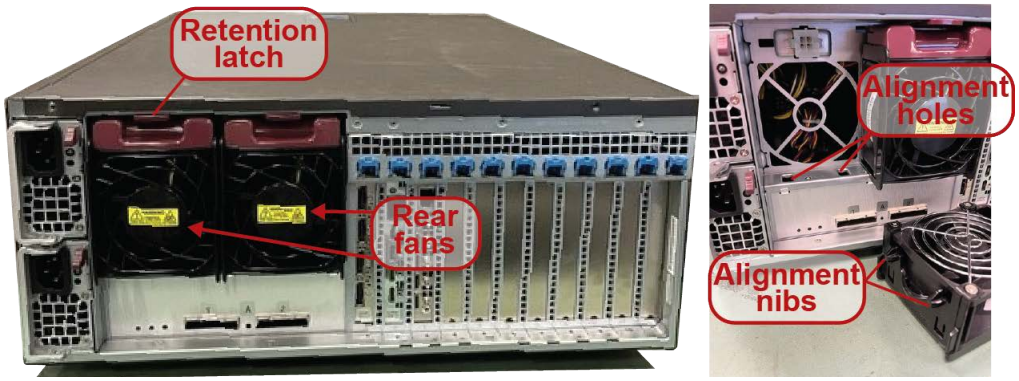
1. Unplug the power cord
2. Pull out the hand latch
3. While gently pulling the hand latch press the red retention latch down with your thumb and carefully pull the power supply out of its frame

6.3.4.2 EFC Power Supply Replacement

1. Pull out the hand latch
2. Align the power supply with its frame
3. Gently push the power supply in
4. When the power supply is nearly in press the red latch down and gently push the power supply the rest of the way in

6.3.5 EFC Rear Fans (4-615-042-00)

Figure 6.12: EFC rear fans



6.3.5.1 EFC Rear Fan Removal

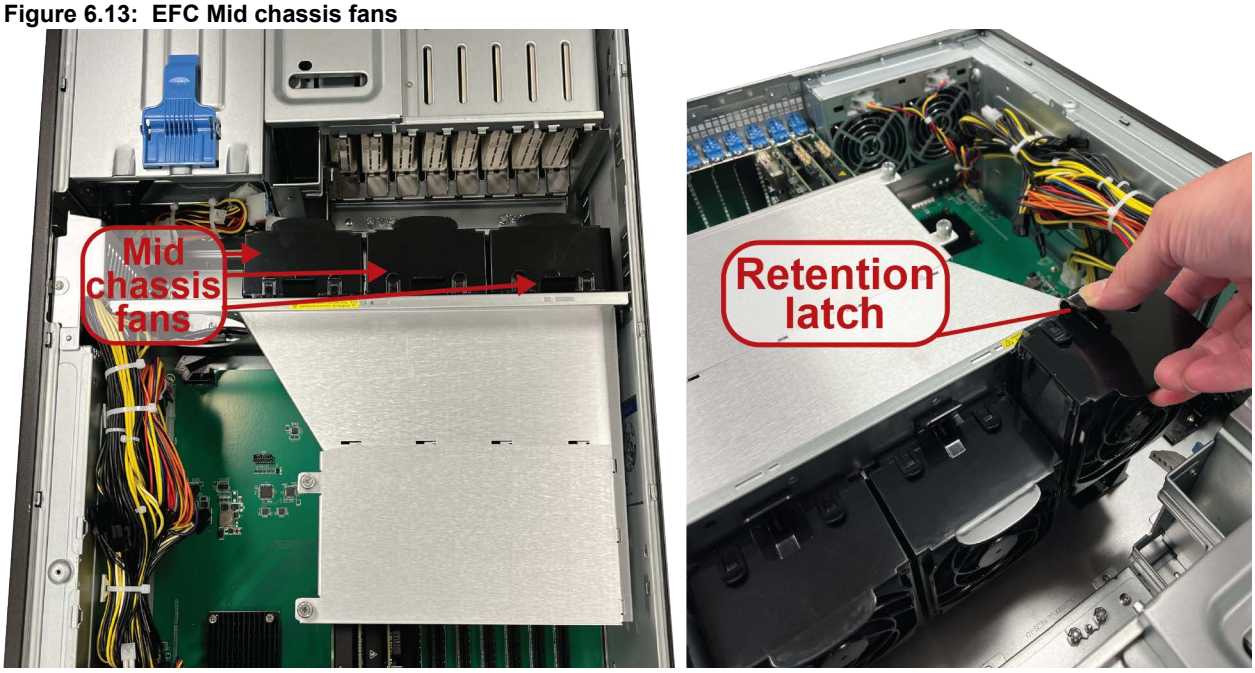
1. Press down the retention latch
2. Tilt the fan outward
3. Pull the fan out

6.3.5.2 EFC Rear Fan Replacement

1. Put the fan with its frame with the bottom part touching the chassis and the alignment nibs aligned with the alignment holes
2. Tilt the fan toward the chassis
3. Gently push the fan in until you hear the retention latch click

6.3.6 EFC Mid-Chassis Fan (4-615-049-00)

Figure 6.13: EFC Mid chassis fans



6.3.6.1 EFC Mid-Chassis Fan Removal

1. Perform the steps in *Section 6.1, First Things First on page 31*
2. Perform the steps in *Section 6.3.1, Catalyst XLe Top Cover Removal on page 40*
3. Press your thumb on the retention latch and gently pull up until the fan is clear of the unit.

6.3.6.2 EFC Mid-Chassis Fan Replacement

1. Align the fan with the chassis frame with your thumb on the retention latch and the retention latch toward the rear of the chassis.
2. Gently press the fan down until it is seated

This page has been intentionally left blank

Chapter 7

RAID CONFIGURATION

A Catalyst XL processor will not boot with a failed RAID array. Follow the procedure below if it is necessary to rebuild the array:

Installing wipes the information on the drives. Before installing RAID:

- Completely backup your drives and reformat them

(or)

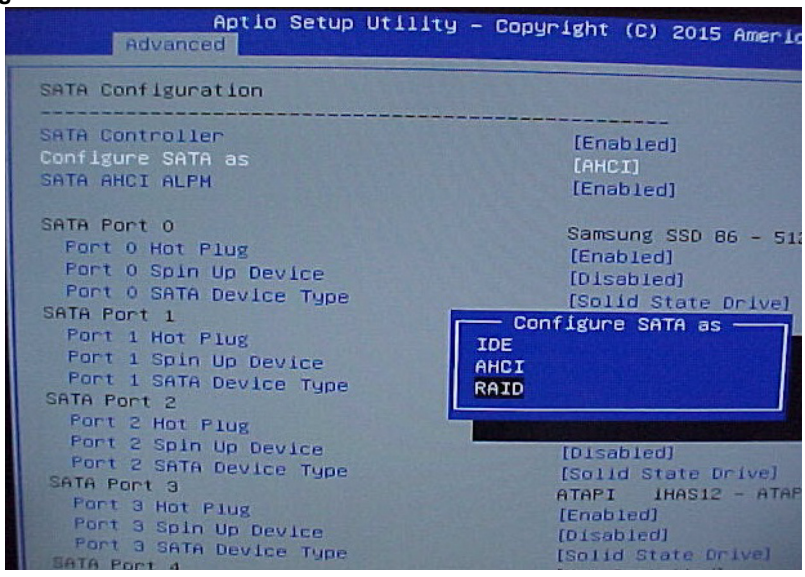
- Use entirely new drives.

Note: Jupiter recommends doing both of the above: backing-up the old drives and installing on new drives.

7.1 RAID 1 BIOS Setup

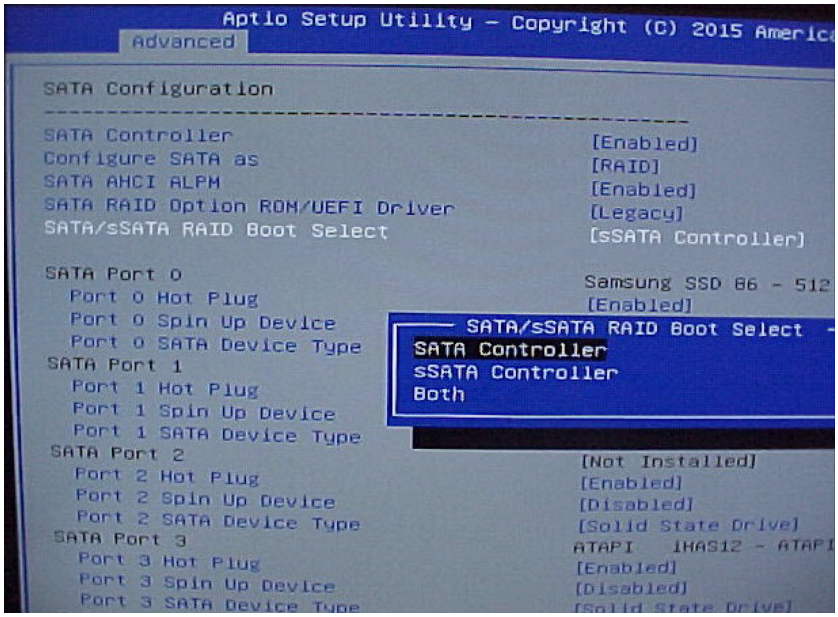
1. *Enter the* **BIOS Setup** *by holding down the* **Delete** *key while the system is booting.*
2. *In* **BIOS** *setup, go to* **Advanced > SATA Configuration** *and press* **<enter>**
3. *Next screen, arrow to* **SATA Controller***; set to* **[Enabled]**
4. *Arrow to* **Configure SATA as***, press* **<enter>** *and select* **[RAID]**

Figure 7.1: Configure SATA as RAID



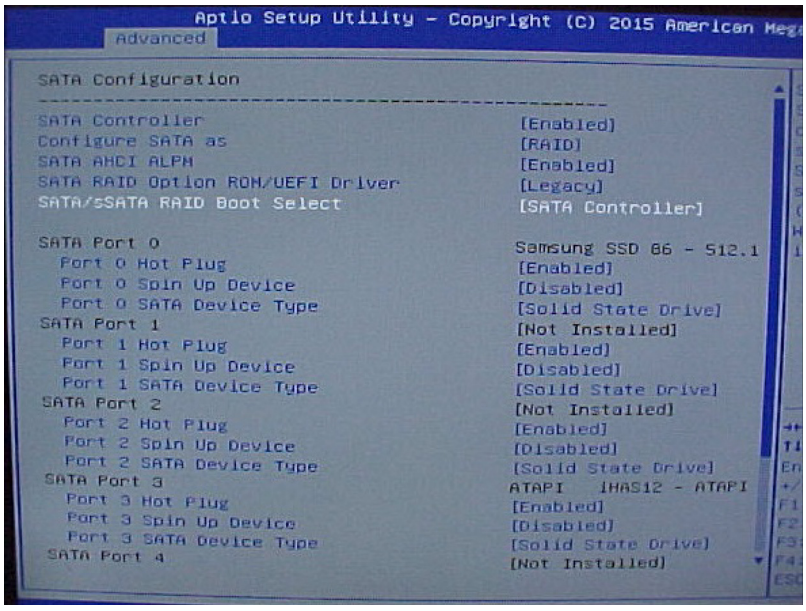
5 *Arrow down to* **SATA/sSATA RAID Boot Select***, press enter and select* **[SATA Controller]**

Figure 7.2: sSATA RAID Boot Select SATA CONTROLLER



6 *Typical settings for RAID 1 mode*

Figure 7.3: Typical settings for RAID 1



7 *Save changes and exit* **BIOS Setup**

7.2 Setup the RAID Array

Assign Drives to RAID Array

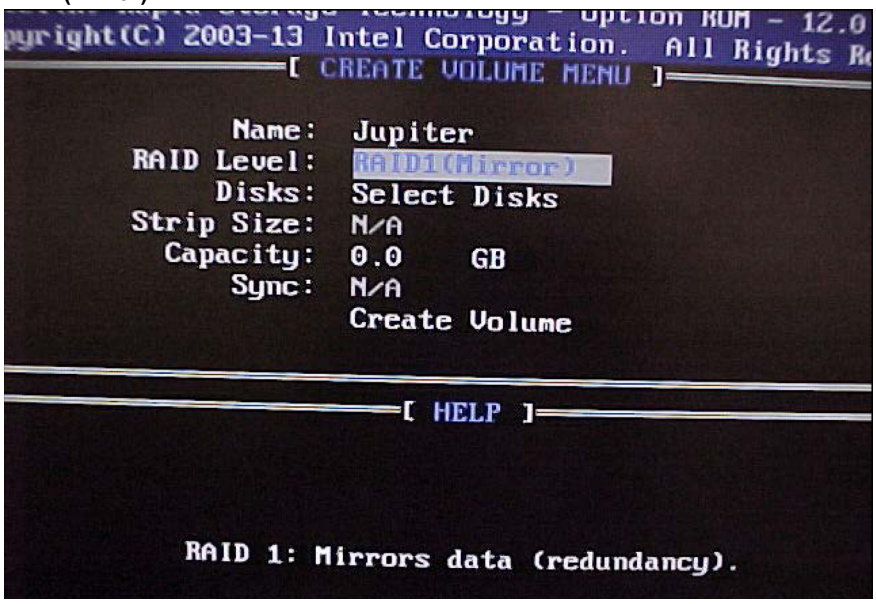
1. *Restart the Catalyst V. After the flash screen appears, press <Cntrl> < I> to enter into Intel Rapid Storage Tech set-up*
2. *At Main Menu (reference screen shot below), you should see both hard drives with status of Non-RAID Disk. If any of the hard drives are something other than non-RAID, you will need to reset each disk to Non-RAID.*
   - **a** *Select Main menu item 3 to reset disk; press <enter> key*
   - **b** *Next screen: Arrow up/down to highlight the disk intended to be reset*
   - **c** *Space bar to select disk.*
   - **d** *Press* **<enter>** *key to reset disk.*
   - **e** *Press* **<escape>** *key to return to* **Main Menu**
3. *Once both drive's show status as* **Non-RAID Disk***, use arrow keys to select menu item:* **1.Create RAID Volume** *then press* **<enter>**

Figure 7.4: Create RAID Volume

4. *Create Volume Menu*
   - **a** *In* **Name** *enter* **Jupiter***, then click* **<enter>**

In RAID Level arrow through the RAID level selections and select RAID 1 (Mirror)

Figure 7.5: Select RAID1 (Mirror)



5 *When prompted "Are you sure you want to create this volume?", enter* **Y** *for* **Yes** *to create volume*

6 *the status of the RAID drives should appear as shown in*

7 *Move the arrow to menu item* **6. Exit**

This action will exit you out of the Intel RAID setup. The System will reboot.

Chapter 8
TECHNICAL SUPPORT

This chapter includes the following sections:

8.1 Hardware Faults

If you require assistance with any suspected hardware fault, please contact the vendor from whom you purchased the device while within the full warranty period for the device.

If you require technical assistance, please contact Jupiter Systems' technical support team. Please provide as much information to the support team about the fault and any steps you have taken in trying to resolve the issue.

8.2 Contact Information

- Website
  www.jupiter.com /support
- Phone
  1-510-675-1000, option 1
- Email
  support@jupiter.com
- Mail (physical)
  ATTN: Technical Support
  Jupiter Systems
  31015 Huntwood Avenue
  Hayward, CA 94544-7007

This page has been intentionally left blank

Appendix A
RETURN MERCHANDISE AUTHORIZATIONS

This appendix details RMA policies and procedures.

A.1 Return Merchandise Authorization (RMA) Policy

To return any product for repair or replacement you MUST get an RMA number from Jupiter Systems BEFORE returning the product to us. In order to get an RMA number, you MUST speak to (or e-mail) a Tech Support person. The only person who can authorize an RMA is a Tech Support Representative.

Do NOT send products of any kind to Jupiter Systems – if they do not have a RMA number plainly displayed on the outside of the package they will be refused by the receiving department and returned. When receiving the RMA number, it is recommended that printing the page received in the email (See *Section A.3 Return Merchandise Authorization (RMA) Instructions on page 53*). This instruction set contains a shipping label with the RMA number on it, cut this label out and use it. All instructions for returning your product are in these instructions.

Often, we find that the wall controller is not defective and the problem is in the installation setup. Please check our web site (www.jupiter.com) for the latest installation, software update, setup, and troubleshooting information for your wall controller.

If your system is no longer covered by a warranty, you will need to supply a credit card number or Purchase Order Number to cover repairs. We must have the PO# or credit card number BEFORE we issue an RMA.

A.2 Shipping Policy

In all cases the Customer must obtain an RMA number from Jupiter Systems and ship the unit or board to Jupiter Systems freight prepaid with the RMA number clearly indicated on the shipping label and on the waybill. Shipments that arrive without an RMA number will be refused and returned to the Customer at Customer's expense.

Proper packaging must be used on all return shipments. Customer is liable for any damage incurred in transit and will be charged if new shipping materials are required for return shipment.

A.2.1 Domestic

- Customer ships unit or board to Jupiter freight prepaid.
- Jupiter returns the unit or board to Customer according to Customer's shipping instructions. Freight is prepaid and added to bill.

A.2.2 International

- Customer ships unit or board to Jupiter freight prepaid.
- Jupiter returns the unit or board to Customer freight collect according to Customer's shipping instructions.
- On ALL international returns, Customer is responsible for any duties, broker's fees, or freight charges assessed to Jupiter Systems.
- All international returns must be marked:
  U.S. manufactured goods being returned for repair
- Foreign shipments should include our Customs Broker on all shipping documents:
  RF International, Ltd.
  Phone: 650-697-8150
  Fax: 650-697-8105
- All returns should be shipped freight prepaid. Any customs charges incurred by Jupiter on in-bound non-warranty shipments will be added to the repair charges. All systems are shipped back to the customer freight collect. Customer pays all customs charges incurred by using their own Customs Broker.

A.3 Return Merchandise Authorization (RMA) Instructions

1. *Make sure the product is securely and safely packaged or in its original packaging.*
2. *Place a letter using your letterhead inside the package describing the problem with the product and your PO# or credit card number, (or letter of credit for international customers). There are reasons for this request:*
   - We have an address and contact that we can keep with the unit and a method of contacting you if we have questions
   - Your description aids us in determining how to repair the product
   - There is an address on the inside of the box if the external address is destroyed in shipping
3. *Make sure you have adequate insurance on the product to cover its value before shipping*
4. *Make sure that the RMA number is plainly visible on the outside of the package you are sending. Receiving will refuse any packages without RMA numbers visible on the outside of the package.*

Note: Note Please print the next page, cut out and use the mailing label with the RMA number in the space provided.

Jupiter Systems
31015 Huntwood Avenue
Hayward, CA 94544-7007
USA

RMA # _____

Appendix B
SUPPORTED ADAPTERS

Table B.1: Jupiter Adapters

Description	Jupiter Part Number	For Use With...	Photo
DP to HDMI Active Adapter	4-750-158-00	4-540-337-00, Quad DisplayPort Output Board. Adapter purchased separately	
Mini-HDMI to HDMI Adapter	4-750-163-00	2-540-334-01, Video Capture Board, HDMI. Four Adapters come with board	
Mini-DisplayPort 1.2 to HDMI 2.0 Active Adapter	4-750-159-00	4-540-371-00, J4DPe Board Multi-monitor control board which takes 1 mini DP input to extend to 4 FHD mini HDMI output.	

Table B.2: Supported Adapters, 4-750-159-00

Description	Adapter Information		Photo
HDMI Adapter-Active Mini-DisplayPort 1.2 to HDMI 2.0 4K **Resolutions:** 4K3840 x 2160 @ 60 Hz 4096 x 2160 @ 24 Hz	Accell	Model# B086B-012B	
	Plugable	MDP-HDMI (UPC: 819927010692)	

Appendix C
WARRANTY

C.1 Statement of Limited Warranty

FOR CATALYST DISPLAY WALL CONTROLLERS

Jupiter Systems, (Jupiter) warrants that the Catalyst Display Wall Controllers sold by Jupiter are free from defects in material and workmanship and will perform in accordance with the product specification for a period of 24 months from the date of shipment from Jupiter. This warranty is in effect whether the product was purchased directly from Jupiter or through an authorized Jupiter distributor. Any product becoming defective within the time period specified will be repaired or replaced, at Jupiter's option and at Jupiter's factory or authorized repair center. The defective product must be returned to Jupiter or to the Jupiter authorized repair center at the expense of the customer. Expense for the return shipment of the product to the customer within the U.S. will be borne by Jupiter.

Products returned to Jupiter must have a Return Merchandise Authorization (RMA) number. To obtain an RMA number contact the Jupiter repair service center at the phone number listed on the Copyright page. PRODUCTS SHIPPED TO JUPITER WITHOUT A RETURN AUTHORIZATION NUMBER WILL NOT BE ACCEPTED.

JUPITER'S TOTAL LIABILITY UNDER THIS WARRANTY SHALL BE LIMITED TO THE REPAIR OR REPLACEMENT OF THE DEFECTIVE PRODUCT OR, AT JUPITER'S OPTION, RETURN OF THE PRODUCT TO JUPITER FOR A REFUND OF THE FULL PURCHASE PRICE. THE ABOVE WARRANTY IS THE ONLY WARRANTY APPLICABLE TO JUPITER'S PRODUCTS AND IS THE CUSTOMER'S SOLE AND EXCLUSIVE REMEDY FOR ANY DEFECT IN THE PRODUCTS.

Jupiter does not warrant the product for fitness for any particular purpose or application. Jupiter has no liability for statements of functionality, performance, or configurability beyond the written product specification for the specific Jupiter product. Jupiter shall not be held liable for incidental, indirect, consequential, general or special damages resulting from the use or the inability to use or the failure of a Jupiter product used in any application. No warranty, including this warranty, shall apply to any Jupiter products that have been modified in any way, by any organization other than the Jupiter factory. The warranty is void for products that have been subjected to misuse, improper maintenance, negligence, and/or damage by excessive current, temperature, or accident.

Jupiter neither assumes nor authorizes any representative or other person to assume for Jupiter any other warranty or liability in connection with the sale or shipment of Jupiter products. Jupiter reserves the right to make changes or improvements in its products without incurring any obligation to similarly alter products previously purchased.

C.2 Software Warranty and Special Provisions

C.2.1 Limited Warranty

Jupiter Systems warrants that the SOFTWARE will perform substantially in accordance with the accompanying written materials for a period of ninety (90) days from the date of sale. Any implied warranties on the SOFTWARE are limited to ninety (90) days.

C.2.2 Customer Remedies

Jupiter Systems' entire liability and your exclusive remedy shall be, at Jupiter's option, either (a) return of the price paid, or (b) repair or replacement of the SOFTWARE that does not meet this Limited Warranty and which is returned to Jupiter Systems with a copy of your receipt or purchase order number. This Limited Warranty is void if failure of the SOFTWARE has resulted from accident, abuse, or misapplication. Any replacement SOFTWARE will be warranted for the remainder of the original warranty period or thirty (30) days, whichever is longer.

C.2.3 No Other Warranties

To the maximum extent permitted by applicable law, Jupiter disclaims all other warranties, either expressed or implied, including but not limited to implied warranties of merchantability and fitness for a particular purpose, with regard to the SOFTWARE and the accompanying written materials.

C.2.4 No Liability for Consequential Damages

To the maximum extent permitted by applicable law, in no event shall Jupiter or its suppliers be liable for any damages whatsoever (including without limitation, special, incidental, consequential, or indirect damages for personal injury, loss of business, profits, business interruption, loss of business information, or any other pecuniary loss) arising out of the use of or inability to use this product, even if Jupiter has been advised of the possibility of such damages. In any case, Jupiter's entire liability under any provision of this agreement shall be limited to the amount actually paid by you for the SOFTWARE.

Appendix D
SOFTWARE LICENSE AGREEMENT

Please review the following terms and conditions before installing or using the software supplied. By opening the software package or by installing the software or by using the installed software, you indicate your acceptance of such terms and conditions. In the event you do not agree to these terms and conditions, you may not use the software, and should promptly contact Jupiter Systems.

This Software License Agreement (the Agreement) grants you a non-exclusive license to use the software supplied to you by Jupiter Systems (JUPITER), including software that may be owned by third parties and licensed to Jupiter, with the right to distribute and sublicense, which software (the Software) may be supplied to you on removable media, and/or as part of the equipment supplied by JUPITER. The Agreement also imposes certain restrictions on your use of the Software.

You may use the Software only on the equipment with which or for which it was supplied. For internal backup purposes, you may make copies of the Software on removable media but you may not use a copy on another piece of equipment and you may not transfer these copies to any other party. You may not make any other copies of the Software and you may not make any other copies of the written materials accompanying the Software and/or the equipment supplied by JUPITER.

You may not sublicense any rights granted in the Agreement. You may not transfer the Software, except upon: (i) a transfer of this License Agreement; (ii) a transfer of the JUPITER hardware equipment with which the Software was supplied; (iii) your providing the transferee with a copy of this Agreement; (iv) the transferee accepting the terms and conditions of the Agreement. If you transfer the Software to another party, you must at the same time either transfer all copies whether in printed or computer readable form to the same party or destroy any copies not transferred. Include all modifications and portions of the Software contained or merged into other programs. You must also reproduce and include the copyright notice on any copy. You agree to comply with all laws of the United States regarding the export and/or re-export of the software.

All intellectual property rights in the Software and user documentation are owned by JUPITER and/or its licensors and are protected by United States copyright laws, other applicable copyright laws, other applicable proprietary rights laws (including but not limited to trade secret laws) and international treaty provisions. **YOU MAY NOT USE, COPY, MODIFY OR TRANSFER THE SOFTWARE OR ANY COPY THEREOF, IN WHOLE OR PART, EXCEPT AS EXPRESSLY PROVIDED FOR IN THIS AGREEMENT. TO THE EXTENT PERMITTED BY APPLICABLE LAW, YOU MAY NOT DECOMPILE, REVERSE ENGINEER, OR DISASSEMBLE THE SOFTWARE, IN WHOLE OR IN PART. IF YOU TRANSFER POSSESSION OF THE SOFTWARE, ANY COPY OR ANY PORTION THEREOF, TO ANOTHER PARTY, YOUR LICENSE IS AUTOMATICALLYTERMINATED.**

JUPITER retains ownership of the Software (except those portions that may be owned by third parties which retain the ownership thereof) and no rights are granted to you other than a license to use on the terms expressly set forth in the Agreement. As defined in FAR section 2.101, DFAR section 252.227-7014(a)(1) and DFAR section 252.227-7014(a)(5) or other foreign government regulations regulating the use of commercial software by such government or otherwise, all software and accompanying documentation provided in connection with this Agreement are “commercial items”, “commercial computer software” and/or “commercial computer software documentation”. Consistent with DFAR section 227.7202, FAR section 12.212, and other applicable foreign government regulation, any use, modification, reproduction, release, performance, display,

disclosure or distribution thereof by or for the U.S. or other foreign government shall be governed solely by the terms of this Agreement and shall be prohibited, except to the extent expressly permitted by the terms of this Agreement. You shall ensure that each copy used or possessed by or for the government is labeled to reflect the foregoing.

Upon any violation of any of the provisions of the Agreement, your rights to use the Software shall automatically terminate and you shall be obligated to return the Software to JUPITER or to destroy all copies of the Software. If you destroy such Software, you agree to send JUPITER written notification of such destruction. This Agreement shall be governed by California law, other than its provisions concerning the applicability of laws of other jurisdictions.

The only warranties are those specifically granted by JUPITER pursuant to its Standard Terms and Conditions of Sale, which are expressly incorporated herein. The liability of JUPITER, and its licensors, is specifically limited as set forth in these Standard Terms and Conditions of Sale.

YOU ACKNOWLEDGE THAT YOU HAVE READ THIS AGREEMENT, UNDERSTAND IT, AND AGREE TO BE BOUND BY ITS TERMS AND CONDITIONS; YOU FURTHER AGREE IT IS THE COMPLETE AND EXCLUSIVE STATEMENT OF THE AGREEMENT BETWEEN US WHICH SUPERSEDES ANY PROPOSAL OR PRIOR AGREEMENT, ORAL OR WRITTEN AND BY ANY OTHER COMMUNICATIONS BETWEEN US RELATING TO THE SUBJECT MATTER OF THIS AGREEMENT.

Jupiter

List of Figures

Chapter 1. Introduction

Chapter 2. Catalyst XL Hardware Specifications

Chapter 3. System Configurations

Chapter 4. Boards and Accessories

Chapter 5. Hardware Installation

Chapter 6. Removing & Replacing Components

Chapter 7. RAID Configuration

Chapter 8. Technical Support

Appendix A Return Merchandise Authorizations

Appendix B Supported Adapters

Appendix C Warranty

Appendix D Software License Agreement

List of Tables

This page has been intentionally left blank

Index

Symbols

Numerics

A

C

I

J

K

L

M

O

P

Q

R

S

T

U

V

W