ELEGANCY
ELJ-1400
User's Guide

Product Name :	ELJ-1400
Manual Reversion :	1.0
Release Date :	DEC. 2001

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Notice

Trademarks

General Safety Guidelines

DO NOT place the ELJ-1400 on uneven or unstable work surfaces. Seek servicing if the casing has been damaged.
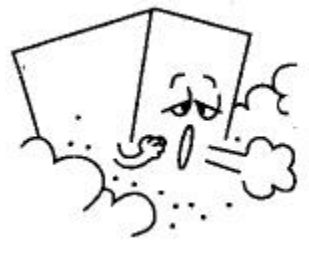
DO NOT expose ELJ-1400 to dirty or dusty environments.

DO NOT expose ELJ-1400 to liquids, rain, or moisture.

DO NOT expose ELJ-1400 to magnetic field.

DO NOT expose ELJ-1400 to extreme temperatures (below 5"C or above 45"C) or to direct sunlight.

About your User's Guide

Welcome to your ELJ-1400 Storage System User's Guide. This manual covers everything you need to know in learning how to install or configure your system on an assumption that you know the basic concepts of FC-AL storage technology.

Contents

CHAPTER 1.   INTRODUCTION

The Elegancy ELJ-1400 is the latest generation full fault-tolerant 19" rackmount Fibre JBOD storage solution in a dense 3 U height form factor. The dual fibre channel host interface provides the means of transferring data over long distance with the error checking at an outstanding rate of 1Gbit/sec. It also provides a full fibre channel addressing by allowing up to 8 Elegancy ELJ-1400 JBOD (8 x 14 disks) to be daisy-chained together to build a multi-terabyte configuration.

Modular and redundant components make the Elegancy ELJ-1400 easy to expand and service. With the hot swappable function, you can add or replace disks, cooling Fans, power modules, SES monitoring modules without shutting down the system,

The Elegancy ELJ-1400 is completely upgradeable to a ELA-1400 active-active Fibre RAID solution by adding a ELC-1400 1U controller box.

FEATURE HIGHLIGHT

The Elegancy ELJ-1400 is designed to meet today's demand for higher storage solutions to cope with the emerging needs of databases, e-mail, web servers and imaging systems. It provides a maximum data protection and exceptional performance in a storage subsystem. The ELJ-1400 is equip with easy integration, smooth data expansion and server migration.

The ELJ-1400 supports the following features:

- Fibre Channel-Arbitrated Loop Interface, up to 1Gb/sec.

- Supports up to 14 hot swappable 1-inch half-height disk drivers per shelf.

- JBOD (just bunch of drivers) support.

- 4 U, 19" standard Rackmount system.

- Cabless and Passive backplane design.

- Redundant 2+1 power supplies system with PFC (Power Fact Correction) function.

- Redundant and Hot Swap cooling Fans.

- Auto-sensing FC-AL bypass circuitry.

- Redundant and Hot Swappable SES (SCSI Enclosure Service) monitoring module. (N/A)

- I2C Monitoring module for Infortrend Controller.

- Field Upgradable to a ELA-1400 Fibre RAID Subsystem.

- SAN-Ready

- Browser based RAIDcare GUI monitoring Utility.

- Aluminium device cartridge for heat dissipation and emissions protection.

● Expandale system, up to 8 enclosure for very high capacity configuration.

CHAPTER 2. GETTING STARTED

UNPACKING & CHECKING THE EQUIPMENT

Before unpacking the ELJ-1400, prepare a clean, stable surface to put on the contents of your ELJ-1400 shipping container . Altogether, you should find the following items in the package :
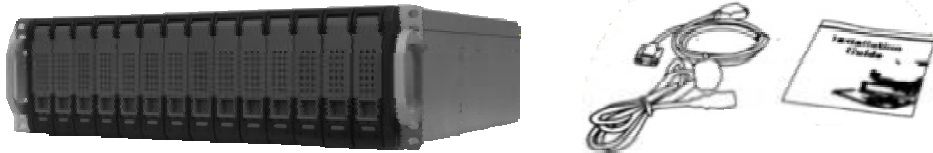
Remove all the items from the container. If anything is missing or broken, please inform your dealer. It is advice to keep the packaging, as you might ever need to ship your ELJ-1400 or send it in for service, you will need the shipping container.

IDENTIFYING PARTS OF THE ELEGANCY

The illustrations below identify the various features of the system . Get yourself to familiar with these terms as it will help you in further reading the sections.

FRONT VIEW

Disk Cartridge

Release-button   Latch

Device Status Indicator
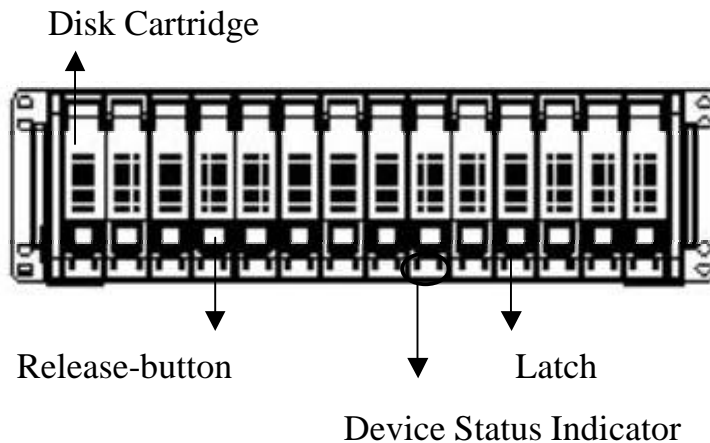
REAR VIEW

1. **Fibre Channel Interface Module A.**
2. **Power Module 1.**
3. **Power Module 2.**
4. **Power Module 3.**
5. **Power Switch**
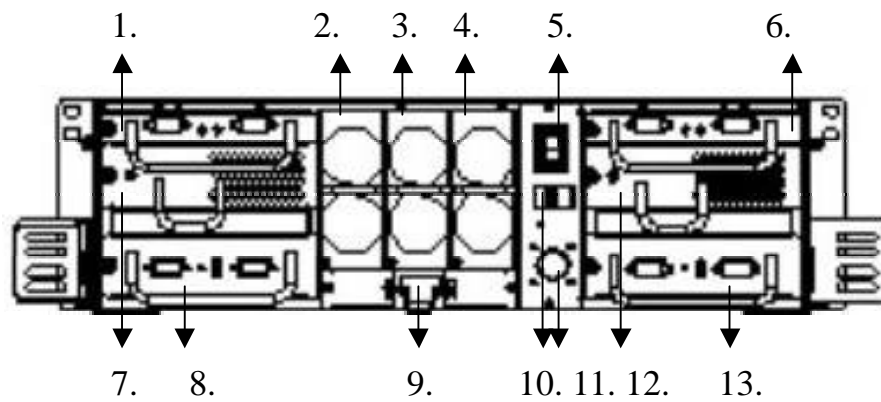6. **Fibre Channel Interface Module B.**
7. **Blower A.**
8. **SES Module or I 2C module**
9. **Power Inlet**
10. **Fibre ID setting switch**
11. **Power Extended Connector for ELC-1400**
12. **Blower B.**
13. **Secondary SES monitoring Module.**

Disk Cartridge

The Elegancy ELJ-1400 includes 14 hot swappable disk cartridges. The following section describes how to install disks into ELJ-1400 subsystem.

Slot1 Slot2 Slot3 Slot4 Slot5 Slot6 Slot7 Slot8 Slot9 Slot10 Slot11 Slot12 Slot13 Slot14
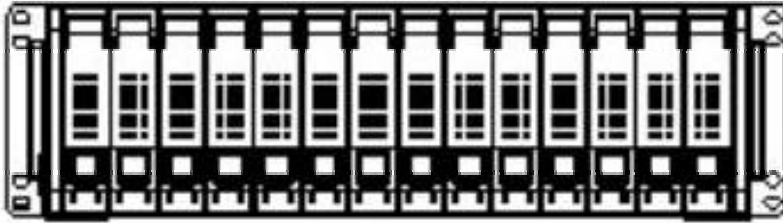
Location of devices in ELJ-1400

Release button

Hard disk driver

Device Status Indicator

Latch

Handle
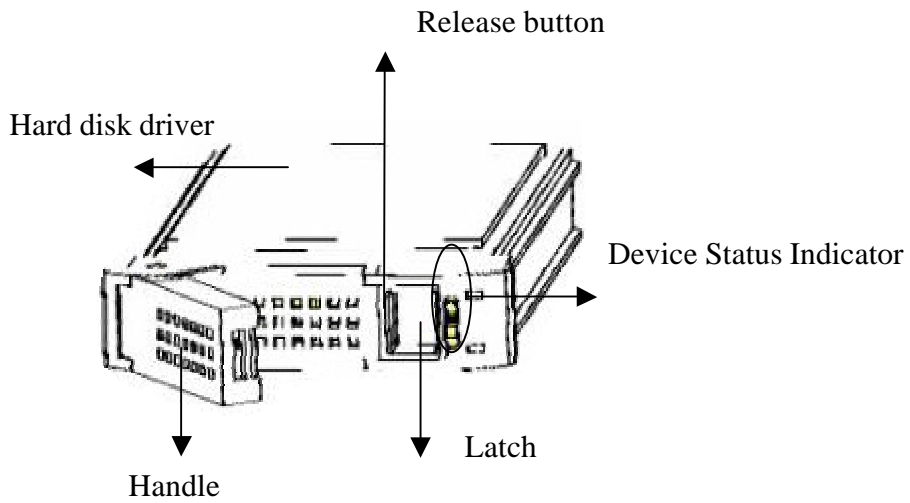
Latch

LOCK	🔒
UNLOCK	🔓

Device Status Indicator

LED	Colors	Indicate
	Green	HDD On Line

	Green & Flash	HDD Access
	Red	HDD Error

Installing the disk

1. Insert HDD into the cartridge.

2. Fasten the screws to mount the drive in the disk cartridge. Make sure the drive is properly tightened

Installing the disk cartridge

1. Make sure the handle is up and the latch is on the position of unlock .
2. Gently slide the disk cartridge to the end of the slot then firmly push until the face plate of the disk cartridge is flush with the front panel of the ELJ-1400.
3. Push down the handle to secure the disk cartridge into the ELJ-1400
   NOTE: If the ELJ-1400 is powered up, the disk LED will turn from red to green to indicate that power has been applied to the disk drawer.
4. Slide the latch to the position of lock.

CHARPER 3. CONFIGURING THE FIBRE CHANNEL

This Chapter provides a detail information for the cabling of ELJ-1400 and the device ID setting.

Cabling

Port A In/Out

Port A In/Out

Port B In/Out

Port B In/Out

0-7 Thumbwheel ID switch

0-15 Thumbwheel ID switch
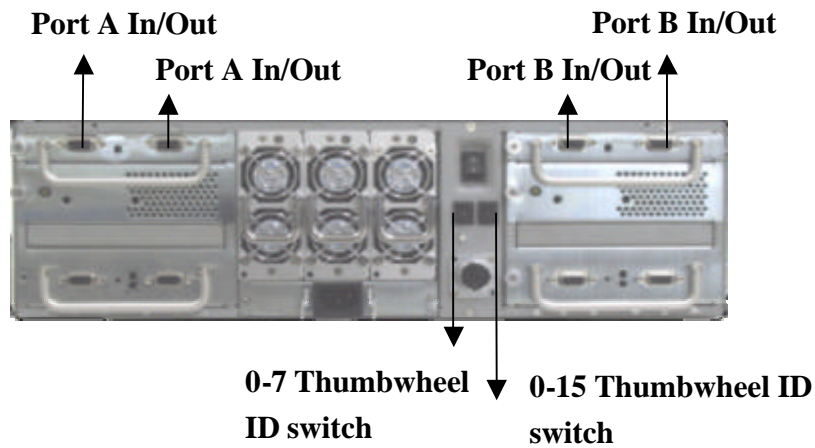
The Fibre channel Interface module at the rear panel provide the connectivity between the host computer and disk drives by a DB9 connector on a Fibre channel cable. Each and every ELJ-1400 install 2 Fibre channel Interface module as the standard, representing that there is a full redundancy and hot swappable for the Fibre channel Loop. In a daisy chain configuration, up to 8 of ELJ-1400 can be connected on the loop.

Host Computer

Loop A.

Loop B.

Loopback Plug .

Loopback Plug .
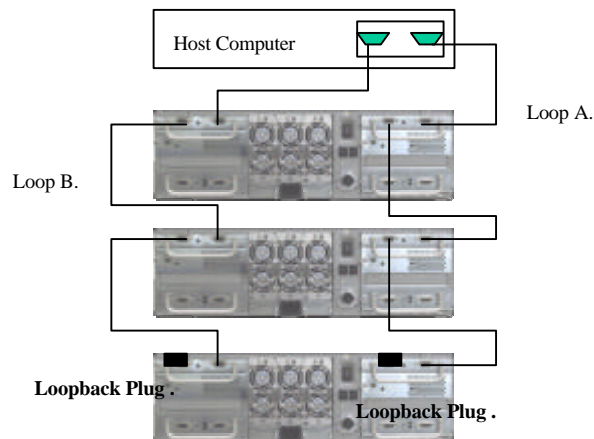
Setting Fibre ID

There are two thumbwheel switches located on the rear panel. These switches set the drive IDs within the enclosure. 0-7 thumbwheel switch, control the drive ID addresses which is multiplied by 16, the 0-15 thumb wheel switch is using to set the offset to the 0-7 thumb wheel switch. The Slot 0 starting address is set by both switches. The default setting for both switches is "0". Following show the slot numbering sequence and the default ID setting.
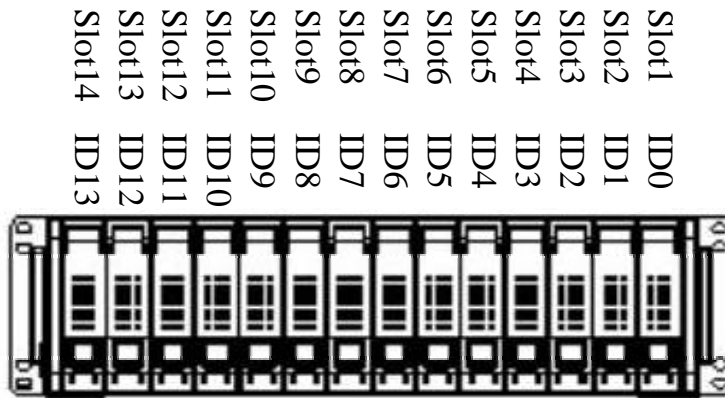
Slot number and default ID mapping.

|		0-15 Thumbwheel ID switch														
		0	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
0-7 Thumbwheel ID Switch	**0**	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	1	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	2	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
	3	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
	4	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
	5	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
	6	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111
	7	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	0

Drive ID address Switch Setting (Slot 0 Starting)

Chapter 4. Environment Monitoring

The ELJ-1400 supports two type of monitoring module, one is the SES monitoring module, another is I2C module, this chapter covers all the information require for both modules :

I2C monitoring module :

The I2C monitoring module is an interface that enables the communications between the ELJ-1400 and the RAID controller. It utilizes the I2C as the physical interface, and proprietary software protocols for Inter-communication. If there is more than one JBOD enclosures that are daisy chained together, then use the I2C DB9 connector to daisy chained all I2C modules to provide the monitoring of all enclosures in one. To avoid a I2C ID conflict occurs, every enclosure must set as a different ID numbers.
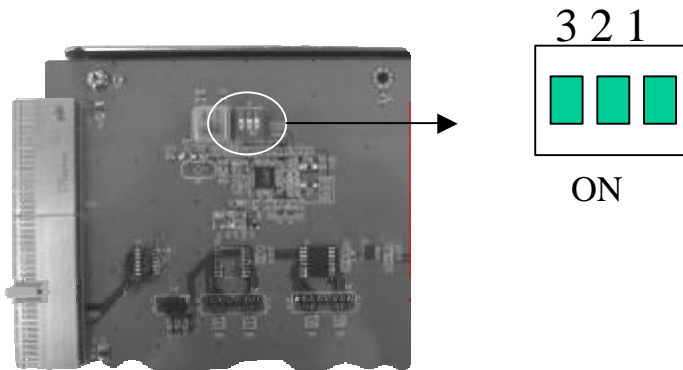
Switch 1	Switch 2	Switch 3	ID Number
OFF	OFF	OFF	0
ON	OFF	OFF	1
OFF	ON	OFF	2
ON	ON	OFF	3
OFF	OFF	ON	4
ON	OFF	ON	5
OFF	ON	ON	6
ON	ON	ON	7

SES Monitoring Module

N/A

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CHAPTER 5. HOT SWAP COMPONENTS

The BROWNIE ™ supports the hot-swappable disk cartridges, power supply modules and cooling fan unit. The following sections describe how to use the hot swap feature.

Hot Swapping the Disk Drive

To hot swap a disk, perform the following steps (Refer "Installing the disk").

1. Slide the latch to the position of unlock.
2. Open the cartridge handle by sliding the release button and wait for the drive to spin down (The disk LED on the drive bay will turn from green to red indicate the disk is powered down.).
3. Lift the handle to disengage the disk cartridge from the slot.
4. Gently pull the disk cartridge out of the slot.
5. Replace the HDD.
6. Holding the cartridge handle, insert the cartridge into the bay along the plastic guides until the handle begins to close.
7. Push down the handle to secure the cartridge into the ELEGANCY system.
8. Slide the latch to the position of lock.

The drive is now replaced. Once the drive has powered on, it will be added to the RAID configuration automatically.

Hot Swapping the Power Supply

Once the power supply has defective, the LED on front panel will turn from green to Red and the power supply buzzer will sound.

To hot swap a power supply module perform the following steps.
1. Push the reset button to stop the audible alarm on the rear panel.
2. Unscrew the defective power module unit.
3. Pull the handle to disengage the module from the power supply base.
4. Slide the module out completely from the power supply base.
5. Insert the new power supply module.
NOTE: Use the handle to slide the module in to the base until it engages to the base.
6. The LED will turn bright green to indicate it has powered on.

Power Status Indicator
Green : Power Okay
Red : Power Fail

Power "Alarm" Reset
Button

Screw
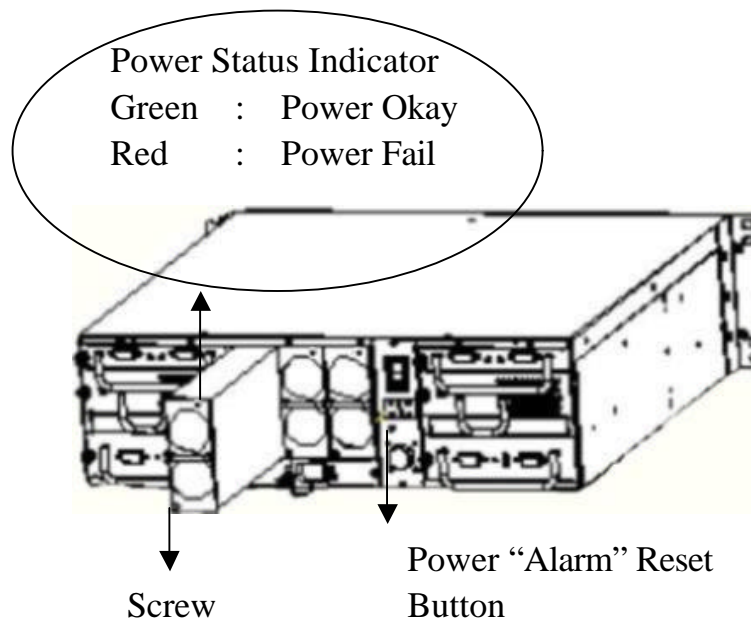
Hot Swapping The Cooling Fan Module

Once the system cooling fans module has defective, the LCD on front panel will display "Fail Fan" and audible alarm will be sound.

To hot swap a system cooling fan module perform the following steps.

1. Release the thumb screws on the fan module, the Fan fail LED on the module should be turn bright red.
2. Slide the module out completely from the cooling Fan module base.
3. Replace with a new Fan module and insert it into the cooling fan module base.
4. The error message on LCD will be turn to normal and the audible alarm will be stopped automatically after above processes.
5. Fasten the thumb screws.

Thumb screw

Fan Fail LED
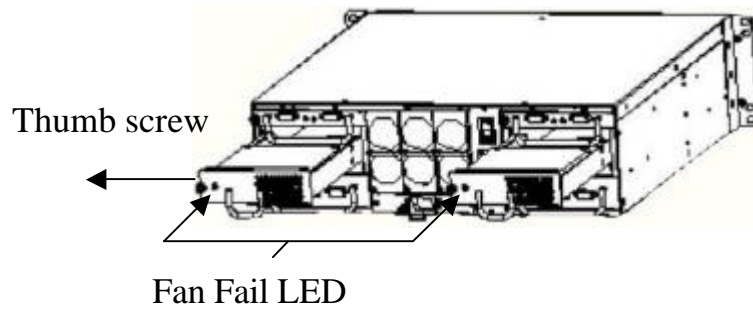
APPENDIX A. SPECIFICATION

Specifications

	ELA-1400FC-D	ELA-1400FC-R	ELJ-1400FC	ELC-1400FC
RAID Controller		Same	no	Same
RAID Level	0, 1, 0+1, 3, 5, 10, 30, 50, NRAID, JBOD			
Catch Memory	Up to 1GB maximum cache size on single SDRAM DIMM socket with ECC support per controller board			
LUN Support	Multiple host support and host-LUN mapping for multiple server environments, up to 8 logical drives of variable RAID levels			
Online Raid expansion	Online RAID expansion, add drive or replace drives with drive of larger capacity			
Redundant controller	Support optional active/active redundant dual controllers			
Fault Detection, Monitor and Recovery	Auto rebuilding, background rebuilding, hot spare drive operation, disk hot swapping, memory parity check			
Host Interface	Up to two Fibre Channel interfaces, 100MB/s each, 200MB/s total Media Interface Adapter (MIA) support	Same	Same	Same
Disk Drive Interface	Dual, independent Fibre Channel Interfaces, 100MB/s each. With optional daughter board support up to four Fibre Channel interface.	Same	Dual, independent Fibre Channel Interfaces, 100MB/s each.	Same
Number of FCAL Disk drive	40Pin SCA-2 HDD x 14 bays, 1" HDD supported	Same	Same	No
Monitoring System	I2C interface (default)	Same	Same	Same
	SES (SCSI Enclosure services) Compliant enclosure Monitoring (optional)	Same	Same	No
Cooling System	2 x Blower Module	Same	Same	Same
Power System	2+1 Power Module, 600w+300w (3 bays) Input: 90~230 VAC; 50~60HZ Output: +5V 60A, +12V 30A	Same	Same	Power supply from ELJ-1400FC
Redundant and Hot Swappable parts	Disk Drives, Cooling Modules, Up to two FCAL loop modules, Power Supply modules, Raid Controllers	Same	Disk Drives, Cooling Modules, Up to two FCAL loop modules, Power Supply modules.	Cooling Modules, Raid Controllers
Failure Notification	Fault LED indicators Audible alarms Monitoring system notification	Same	Same	Same
Dimensions	Height: 133.35mm(3U) Width: 446mm Depth: 500mm	H x W xD 527x241x483 (unit: mm)	H x W x D 133x445x483 (unit:mm)	H x W x D 44x445x483 (unit:mm)
Operating Environment	Temperature: 5¡C~ 40¡C Relative Humidity: 10% ~ 90% (none condensing)	Same	Same	Same

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