SS-1202-FC

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Salient JBOD or FC-AL to FC-AL RAID Array: rack mount or tower enclosure

Salient is an innovative family of high performance, modular and scaleable data storage products which supports the latest data storage technologies available, such as 15,000 rpm drives, FC-AL, Ultra (1, 2 & 160) SCSI and SSA. The construction method is based on aluminum extrusions, providing extraordinary rigidity and conductive cooling.

The SS-1202-FC is a 19" rack mountable, twelve disk, Fibre Channel Arbitrated Loop storage subsystem, with optional Dual Active RAID controllers. It provides a cost-effective system that is highly versatile and simple to upgrade. The entry point supports single or dual FC-AL host loops with up to twelve disk drives. Hot pluggable power supplies, fans, loop resiliency circuits, data storage devices and RAID controllers provide very high levels of data availability.

For expansion of drive capacity, up to seven 1202-FFx JBODs may be attached to the base, when fully configured this allows up to 96 disk drives on the two redundant FC-AL RAID loops from the SS-1202-FC-RAID, for a maximum total capacity of over 17 Terabytes.

The enclosure, designed for maximum flexibility, allows modification of the size of the system and the interface features to meet specific customer needs. Molded plastic inserts can be replaced or color coded to provide an identity unique to the customer.

Features

- Supports latest storage technologies including 15,000 rpm and 180GB drives
- High level of drive packaging density – 12 1" or 1.625" high disks in 7" (4U) rack space
- Cost effective, modular and flexible design allowing customization
- Hot pluggable disk drives, PSUs, fans, I/O modules, RAID modules & ops panel
- All modules fault tolerant
- High performance RAID (levels 0, 1, 0+1, 3, 5, 30, 50) controller option mounts in rear

- Second RAID controller option allows dual active automatic failover operation
- Second RAID controller may be remotely located up to 10 km away
- Expansion capability of the 2 FC-AL loops provides over 17 Terabytes capacity
- 200 MB/s (dual FC-AL loops)
- Expansion to 96 drives per RAID subsystem
- Two hot pluggable 550W PSUs & fans offering full redundancy
- Exceptional cooling and zoned RFI shielding
- Hot-pluggable, lockable FC-AL disk drive carriers using SCA-2 connector
- Disk drive operation and fault status LEDs on each carrier
- Enclosure services monitoring of power, cooling and drive bays
- SES (SFF 8067) compliant enclosure status reporting
- Copper (DB9) or Fibre (GBIC) host and drive expansion connection options
- FCC class A or B, CISPR-A or CISPR-B, CE (IEC950/EN60951), UL, cUL
- Optional Distributed Array Manager Configurator for Solaris, Linux and Irix operating systems
- Supports SAN Mapping to control access of servers to LUNs in the array

Technical Specification

General Description

Product code: SS-1202-FC

Number of FC-AL drives supported: 12 Per enclosure, expandable to 96

External interface: FC-AL copper: 1 x DB9 connector per host loop; FC-AL optical/copper, 1 x GBIC option

RAID controllers: *FC-AL host, two FC-AL disk drive loops* One or two; if second is installed, dual active, hot failover, cache coherent, hot swappable, battery cache protection

Device types supported: 4.5, 9.1, 18, 36, 73, 146 & 180GB FC-AL drives, 7,200, 10,000 & 15,000 RPM; SCA-2 40 pin connectors

Chassis & drive carrier material: Extruded aluminum

Hot-pluggable components: PSU/Fans, disk drive carriers, loop resiliency circuits, RAID controllers & ops panel

System Expansion: SS-1202-FCAL

Dimensions

	Tower	Rack
Height	22.4" (570 mm)	7" (177 mm)
Width	11.5" (293 mm)	17.5" (444 mm)
Depth	23.5" (598 mm)	23" (586 mm)

Weight

	Tower	Rack
Max configuration	113.3 lb. (51.5 kg)	88 lb. (40 kg)
Empty subsystem	55 lb. (25 kg)	26.4 lb. (12 kg)
Carrier inc. 1.625" drive	2.86 lb. (1.3 kg)	2.86 lb. (1.3 kg)
PSU/fan module	9.9 lb. (4.5 kg)	9.9 lb. (4.5 kg)

Power

Voltage	Nominal 100/230 V AC PFC & autoranging	
Frequency	47-63 Hz	
Power consumption	750 VA (max)	
Operational currents	6.5A peak @ 110 V max	
Inrush current	25ºC cold start 1 PSU	50 A @ 260 VAC

Environmental Characteristics

Temperature and humidity

Operational	Temp: 10º C to 40º C; RH: 20% to 80%, non condensing. Max wet bulb: 23º C
Non-operational	Temp: 0º C to 50º C; RH: 8% to 80%, non condensing
Shipping	Temp: -20º C to +60º C; RH: 5% to 100%, non condensing
Altitude	0 to 7000 feet (0 to 2133m)
Operational shock	Vertical axis 5g peak 1/2 sine, 10ms
Operational vibration	Spectrum available on request
Shipping shock	Packaging dependent
Acoustics	Free standing subsystem < 6.8 Bels
Orientation	19" rack mount (4 x EIA Units) to IEC 297 Tower configuration

RAID Features

- RAID levels 0, 1, 0+1, 3, 5, 10, 30, 50, and JBOD
- Transparent disk drive rebuild
- Online RAID expansion (M.O.R.E.)
- Up to 32MB I/O request sizes
- Variable stripe size per controller
- Variable cache line size per controller
- Mirrored cache
- Drive roaming during power off
- Cache coherency
- Active-Active operation
- Transparent failover
- Automatic error recovery
- Write through, write back & read-ahead support per logical device
- Automatic detection of failed drives
- Automatic rebuild of hot spare drive
- Hot-drive swapping support
- Clustering support—Windows NT and UNIX
- SANmapping-server to LUN mapping

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Member of the: FCIA

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