

INTRODUCTION

Overview

The Addonics family of Storage Rack is a 4U rack mount storage chassis designed to fit onto industrial standard computer rack. Designed to provide tremendous configuration flexibility, the Storage Rack is an ideal platform for creating a custom storage solution with multi-terabytes capability for video storage or editing, data archiving, uninterruptible storage, storage farm or any application that requires high performance or high storage capacity or both. Unlike many of the expensive proprietary storage solution in the market, the Storage Rack offer similar performance and capability at much lower cost per GB storage. In addition, the the Storage Rack can also be easily reconfigured, modified or upgraded at any time to meet your new application need without investing into new storage devices or new storage box.



The Storage Rack is constructed with heavy gauge sheet metal with dual 4" high CFM cooling fan to ensure efficient cooling. Also included is a built-in thermal management card that provides continuous temperature monitoring and over-temperature alarm as well as controlling the speed of cooling fan. Optional redundant power supply is also available for mission critical applications.

Rooms for multi-terabyte storage

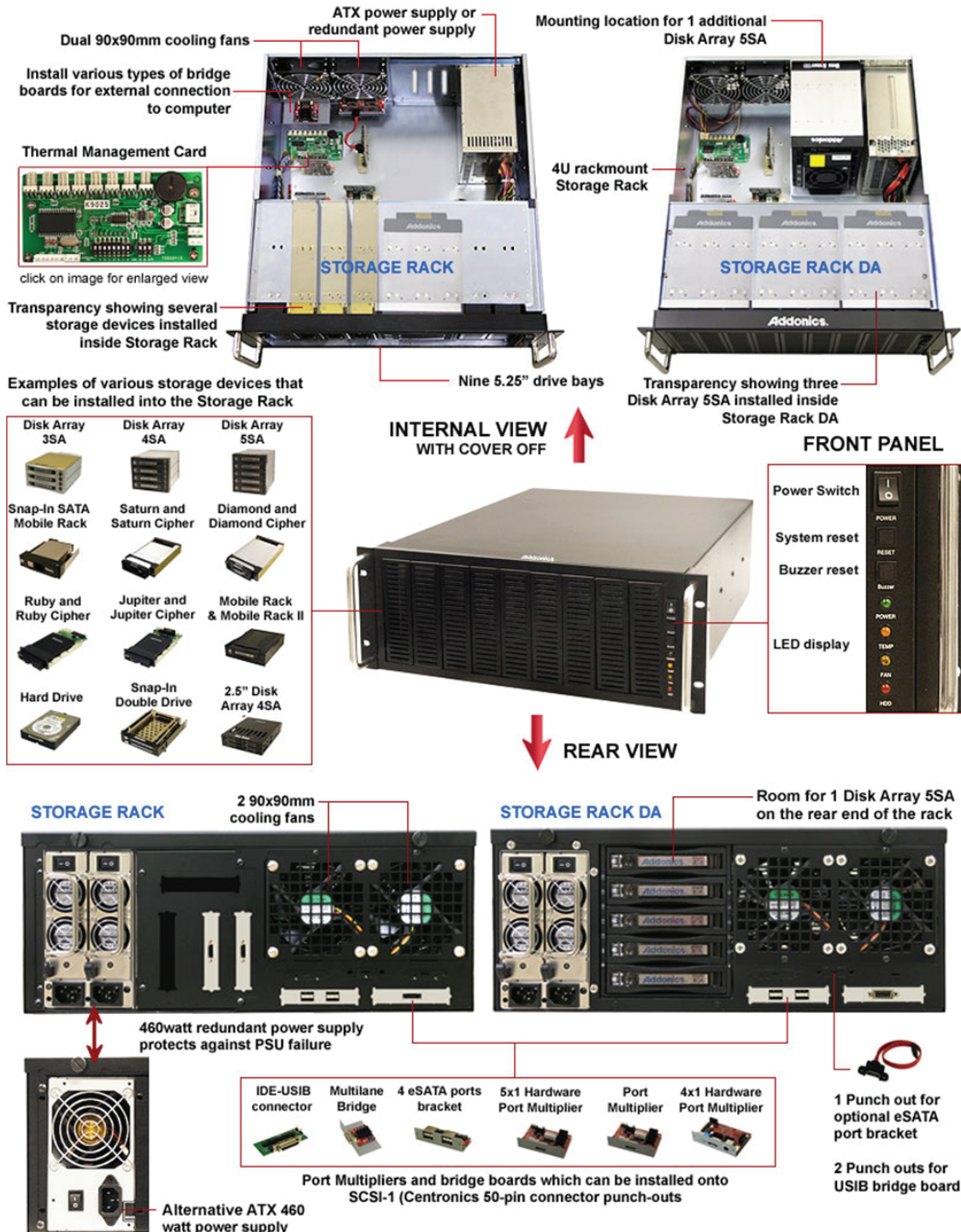
Both Storage Rack and the Storage Rack DA comes with 9 standard 5 1/4" drive bays in the front. Both Storage Racks can start with as little as one drive and expand to as many as 9 standard height optical devices or 9 3.5" hard drives. When combined with the Addonics optional 3.5" Disk Array or 2.5" Disk Array, up to 15 3.5" hard drives or 36 2.5" hard drives can be installed inside this Storage Rack. That is 22.5 terabytes of storage using the largest 1.5 TB 3.5" hard drive or almost 18 terabytes of storage using the largest 500 GB 2.5" hard drive in just one Storage Rack! The Storage Rack DA also provides additional space for mounting a Disk Array 5SA on the back to increase the total installable 3.5" SATA hard drives up to 20 units. That is a whopping 30 terabytes of storage in a 4 U rack using today's largest 1.5 TB hard drive! You can also mix and match optical drives, 3.5" and 2.5" hard drive with our without hardware encryption all in the same Storage Rack.

Connectivity options

The various storage devices inside the Storage Rack can be connected to the system via individual eSATA cable for maximum throughput or via multiple Port Multipliers or Multilane connectors or USB connectors through the back panel of the Storage Rack. The USB connector enables individual each storage device to connect to system via USB 2.0 or Firewire using one of Addonics optional USB interface cable. When combined with the wide range of Addonics removable storage systems, IO converters and cables, IDE or SATA storage devices from 1.8" to 3.5" form factors can all be mixed into the same chassis and hot swap in and out like a tape cassette. Up to 6 port multipliers or other SCSI-1 centronics form factor devices can be installed onto the Storage Rack..

Model: SRDA460S, SRDAP46SL, SR460S, SR46S4R5HM, SR460SPM, SR460SPML, SR460SES2ML, SR46S5HMX, SRDA460R, SRDAP46RSL, SR460R, SR46R4R5HM, SR460RPM, SR460RPLM, SR460RES2ML, SR46R5HMX, RNPS, SRDANPS

The diagram below is for illustration purpose only. The removable drive system, Disk Arrays, Port Multipliers and some of the components shown in the diagram may or may not be included depending on the model. The thermo management card and the two cooling fans are included in all models of Storage Rack and Storage Rack DA

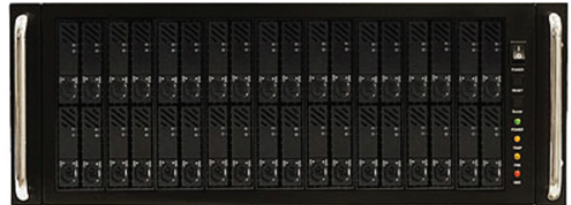


Examples of various storage devices that can be installed into the Storage Rack

Storage Rack with 3x Disk Array 5SA
(for a maximum of 15 3.5" SATA hard drives)



Storage Rack with 9x 2.5" Disk Array 4SA
(for a maximum of 36 2.5" SATA hard drives)



Storage Rack with 9x Optical Drives



Storage Rack with 9x Mobile Rack



Mix and match according to your requirements



Disk Array 5SA,
4SA, or 3SA

Ruby or Jupiter Mobile
Rack / Drive Cartridge
System

Mobile
Rack II



Snap-In SATA
Mobile Rack

Saturn or Diamond
Mobile Rack / Drive
Cartridge System

2.5" Disk
Array 4SA

Optical
Drive

When combined with various Addonics Mobile Racks, the Disk Array 5SA, Disk Array 4SA, and Disk Array 3SA, 2.5" to 3.5" IDE converter and the optional drive mounting brackets, the configuration possibilities for the Storage Rack become almost endless.

Below is a list of Addonics components that can be installed into the Storage Rack

For mounting onto the 6 SCSI-1 punch outs on the back Panels

4 Port eSATA Bracket (AD4ESASB)



A bridge to connect up to 4 internal SATA devices externally using 4 individual eSATA cables.

5X1 Rackmount Port Multiplier (ADSARPM-E)



A Port Multiplier to connect up to 5 internal SATA devices externally using a single eSATA cable. Requires PM compatible eSATA controller on the computer. Can also connect to USB using optional eSATA - USB adapter

5X1 Hardware Port Multiplier (AD5SAHPM-EA)



A Hardware Port Multiplier to connect up to 5 internal SATA devices externally using a single eSATA cable. Once configured, the connection can be attached to any eSATA port. Can also connect to USB using optional eSATA - USB adapter

4X1 eSATA / USB 2.0 Hardware Port Multiplier (AD4SR5HPMU-E)



A Hardware Port Multiplier to connect up to 4 internal SATA devices externally using a single eSATA cable or USB cable

5-port eSATA Hardware Port Multiplier Enclosure Version (AD5HPMRXA-E)



A Hardware Port Multiplier to connect up to 5 internal SATA devices externally using a single eSATA cable

2X1 eSATA / USB 2.0 Hardware Port Multiplier (AD2SAHPMEU)



A Hardware Port Multiplier to connect up to 2 internal SATA devices externally using a single eSATA cable or USB cable

Infiniband 4X Multilane Bridge (AD4SAML)



A bridge to connect up to 4 internal SATA devices externally using a Multilane 4X cable.

Power Supplies and Accessories



ATX power supply 500W (AATXPS500)

ATX 500W Power supply, RoHS, Energy Star compliant



Redundant 500W (AARDPS460) redundant power supply

The redundant power supply is an excellent option to consider when safeguarding against loss of data caused by a malfunctioning power supply.



Adapter for 15-pin SATA power to standard 4P power connector (AASA4PPC)



Adapter for standard 4P power to 15-pin SATA power connector (AA4PSAPC)

For mounting onto the SATA punch out



1 eSATA port PCI bracket (AASATAB-E)

To convert one a SATA device to eSATA connection



IDE - USB Connector Converter Kit with SCSI-1 bracket (AKIDEUSIB)

Includes IDE-USB Connector, USB PCB power cable, Addonics Cradle USB PCB power cable, SCSI-1 mounting bracket for USB PCB



SATA - USB Connector Converter Kit with SCSI-1 bracket (AKSAUSIB)

Includes SATA-USB Connector, USB PCB power cable, Addonics Cradle USB PCB power cable, SCSI-1 mounting bracket for USB PCB

For installing on to the internal mounting poles



Internal SATA Port Multiplier (AD5SAPM)

to connect up to 5 SATA devices through a single SATA cable. The single SATA cable can then be connected to the Multilane or 4 eSATA ports bracket mounted on the back panel for external connection.



5X1 Hardware Port Multiplier (AD5SAHPM-EA)

to connect up to 5 SATA devices through a single eSATA cable. The single eSATA cable can then be connected to the Multilane or 4 eSATA ports bracket mounted on the back panel for external connection. This PM can be mounted internally by removing the metal bracket.



5-port eSATA Hardware Port Multiplier System Version (AD5HPMSXA)

A Hardware Port Multiplier to connect up to 5 internal SATA devices internally using a single eSATA cable

Other Accessories



Infiniband Multilane 4X cable 150 cm (AAIB4C150)

150cm Infiniband SATA2 External cable. Compliant with SFF 8470 and include SATA2 blocking keys



eSATA - SATA converter cable (AASA2SAP15C) 15cm



Internal SATA Data Cable (AASAI18) 18" cable length



Left angle 13 cm. internal SATA cable (AASA90L13C) 13 cm. cable length



eSATA - eSATA cable, 1 or 2 meters (AAESATA100C, AAESATA200C)

1 meter or 2 meters length eSATA - eSATA data cable with heavy duty connector and shielding for reliable external connection to external storage device.



IDE Ribbon Cable (AAIDE80-18) 18" cable length



NAS Adapter (NASU2)

The Addonics NAS Adapter is a convenient and economical solution for adding any USB storage devices onto your LAN (Local Area Network). Once on the network, the USB storage can be shared by any network user, just like an ordinary NAS device.

Examples of Storage Devices



Diamond Hard Drive Kit
Designed for 5.25" drive bay



Saturn Hard Drive Kit
Designed for 5.25" drive bay



Mobile Rack II
Designed for 5.25" drive bay



Mobile Rack I
Designed for 5.25" drive bay



Disk Array 5SA, 4SA, and 3SA
Designed for 2-3 5.25" drive bays



2.5" Disk Array 4SA
Designed for 5.25" drive bay



Optical Drive
Designed for 5.25" drive bay

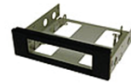


Snap-In SATA Mobile Rack
Designed for 5.25" drive bay

Devices Requiring 3.5" to 5.25" Bracket



3.5" to 5.25" Bracket (AAHDMK53)



3.5" to 5.25" mounting bracket
Designed for 5.25" drive bay
Mount 3.5" storage devices into the larger 5.25" drive bay.



SATA or IDE Hard Drive
Designed for 3.5" drive bay, mounted with 3.5" to 5.25" mounting bracket



Jupiter Hard Drive Kit
Designed for 3.5" drive bay, mounted with 3.5" to 5.25" mounting bracket



Ruby Hard Drive Kit
Designed for 3.5" drive bay, mounted with 3.5" to 5.25" mounting bracket

System Requirements

- PC/AT or Compatible System
- One of the following IO ports: USB 2.0/1.1, Firewire/iLink, eSATA, Multilane.
- Pentium II 350 MHz or Greater
- Minimum 64 MB RAM

FEATURES

- 4U rack mount storage chassis
- Storage Rack - Accommodate up to maximum 9 standard ATAPI optical devices, 15 3.5" SATA drives (requires 3 optional Disk Array 5SA), or 36 2.5" SATA drives (requires 9 optional 2.5" Disk Array 4SA)
- Storage Rack DA - Accommodate up to maximum 9 standard ATAPI optical devices, 20 3.5" SATA drives (requires 4 optional Disk Array 5SA), or 36 2.5" SATA drives (requires 9 optional 2.5" Disk Array 4SA)
- Constructed with heavy duty cold rolled electroplated steel
- Choice of standard ATX power supply or Redundant power supply
- Individual storage devices can be hot swapped* with optional Mobile Rack or Disk Array
- Dual 90x90mm cooling fans (51CFM each) included
- **Front Panel**
 - LED displays - Power, HDD Activity, Fan, and Temperature
 - Front accessible switches - Power On / Off, System Reset, Buzzer Reset
 - 9 standard 5.25" drive bays
- **Internal**
 - Storage Rack - mount up to 3 Port Multipliers
 - Storage Rack DA - mount up to 4 Port Multipliers
- **Rear panel For Storage Rack**
 - 6 SCSI-1 (Centronic 50) punch outs for installing up to 6 of the following connectors or devices: Hardware PM, Rack Mounted PM, eSATA/USB Hardware PM, Multilane connector or 4-eSATA port bracket
 - 1 eSATA connector punch out
 - up to 2 USIB connectors punch outs for use with Addonics series of USIB interface cable
- **Rear panel For Storage Rack DA**
 - space for 1 Disk Array 5SA (AE5RCS35NSA)
 - 2 SCSI-I (Centronic 50) punch outs for installing up to 2 of the following connectors or devices: Hardware PM, Rack Mounted PM, eSATA/USB Hardware PM, Multilane connector or 4-eSATA port bracket.
 - 1 eSATA connector punch out
 - up to 2 USIB connectors punch outs for use with Addonics series of USIB interface cable
- **Internal** - space for mounting the following Port Multipliers. Up to 3 units for the Storage Rack and 4 units for the Storage Rack DA.
 - Port Multiplier - AD4SR5HPMU-E, AD4SR5HPMUS, AD5SAHPM-EA, AD5SARPM-E, AD5SAPM
- **Intelligent Thermal Management Card included**
 - Supports connection of up to 8 cooling fans
 - Two ambient temperature detect terminals
 - Built-in overheat buzzer
 - LED connectors for fan, temperature, and power
 - On / Off control for each cooling fan and temperature setting (40°C, 50°C, 60°C)
 - Detailed diagram and specifications


Based unit of Storage Rack or Storage Rack DA includes the two cooling fans and the Intelligent Thermal Management Card and choice of ATX or redundant power supply.

* For eSATA connection, hot swap feature depends on the controller. All Addonics SATA controllers support the hot swap feature. The Storage Rack can be powered down and restarted to swap out hard drives without rebooting the system.

*Independent drive configuration is only supported with controllers with Silicon Image Sil3124 or Sil3132 chip set or via USB port.

*IDE and SATA hard drive can be mixed in the Storage Rack. IDE hard drives can be changed to SATA interface with the addition of IDE - SATA converter. SATA hard drives can be changed to IDE interface with the addition of SATA - IDE converter.

SPECIFICATIONS

Rack Mounted standard	4U EIA RS-310C 19" Rack mount Standard																													
Material of construction	Heavy Duty Cold Rolled Electroplated Steel																													
Drive Bay	9 standard 5.25" drive bays																													
Punch-outs on back panel	<ul style="list-style-type: none"> • 1 for eSATA port • 9 for USB ports • 2 for Multilane connector, Hardware PM, Racked Mounted PM, or 4-Port eSATA bracket 																													
Supported Operating Systems	<ul style="list-style-type: none"> • eSATA - DOS, Windows NT/SP6, 98SE, Me, 2000, XP, 2003, Linux kernel 2.4 and higher, Mac OS • Multilane - DOS, Windows NT/SP6, 98SE, Me, 2000, XP, 2003, Linux kernel 2.4 and higher, Mac OS • USB 2.0/1.1 - Windows 98SE, Me, 2000, XP, 2003, Linux kernel 2.4 and higher, Solaris 9.0 and higher • Firewire/iLink - Windows 98SE, Me, 2000, XP, 2003, Mac OS 9.0 																													
Choice of Power Supply:	<p>ATX 460W power supply</p> <table border="1"> <thead> <tr> <th>Output Voltage</th> <th>Current</th> <th>Current</th> </tr> </thead> <tbody> <tr> <td>+5V</td> <td>0.3A</td> <td>20A</td> </tr> <tr> <td>+12V</td> <td>1A</td> <td>17A</td> </tr> <tr> <td>+3.3V</td> <td>0.5A</td> <td>20A</td> </tr> <tr> <td>+5VSB</td> <td>0A</td> <td>2.5A</td> </tr> </tbody> </table> <ul style="list-style-type: none"> • 80mm low noise cooling fan • Industrial-grade protection circuitry prevents damage resulting from short circuits, power overloads, over voltage, and under voltage • Accurate power rating allows power supply to deliver its full rated power (24 hours a day rated at 50andordmC) • Universal input • Active Power Factor Correction (PFC) • PF value up to 99% • Safety approvals: UL, CUL, FCC, TandUumIV, CE, CB, C-tick, CCC <p>460W redundant power supply - dual power units for real time backup</p> <ul style="list-style-type: none"> • Universal Input, active PFC • Backward Compatibility, -5V available • Automatic Thermal Control(Fan Speed) • Hot-Swap / Hot-Plug Application • Industrial DIN-Connector for Reliability • Remote Sense on +5V, +3.3V and +12V • Power Failure Alarm and Signals • Power Status LED on Module • OVP (Over Voltage Protection) • UVP (Under Voltage Protection) • OCP (Over Current Protection) • SCP (Short Circuit Protection) • MTBF andgt 100,000 Hours <div style="text-align: center;">  </div> <table border="1"> <thead> <tr> <th>Output Voltage</th> <th>Current</th> </tr> </thead> <tbody> <tr> <td>+5V</td> <td>35A</td> </tr> <tr> <td>+12V</td> <td>30A</td> </tr> <tr> <td>+3.3V</td> <td>22A</td> </tr> <tr> <td>+5VSB</td> <td>2A</td> </tr> <tr> <td>-5V</td> <td>0.5A</td> </tr> <tr> <td>-12V</td> <td>1A</td> </tr> </tbody> </table>	Output Voltage	Current	Current	+5V	0.3A	20A	+12V	1A	17A	+3.3V	0.5A	20A	+5VSB	0A	2.5A	Output Voltage	Current	+5V	35A	+12V	30A	+3.3V	22A	+5VSB	2A	-5V	0.5A	-12V	1A
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Cooling fan	Two 90x90mm cooling fans (51CFM each) with temperature monitoring card supporting up to 8 cooling fans																													
Weight:	53.6 lb (24.3 kg) bare rack																													
Size:	19x20.1x7 in. or 483x510x177 mm. (W x D x H)																													
Operating Humidity:	20% - 80%																													
Operating Temperature:	0°C - 40 °C																													
Warranty:	One Year																													