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Find the *Elma / Act/Technico cPCI RAIDstor* at our website: *Click HERE*

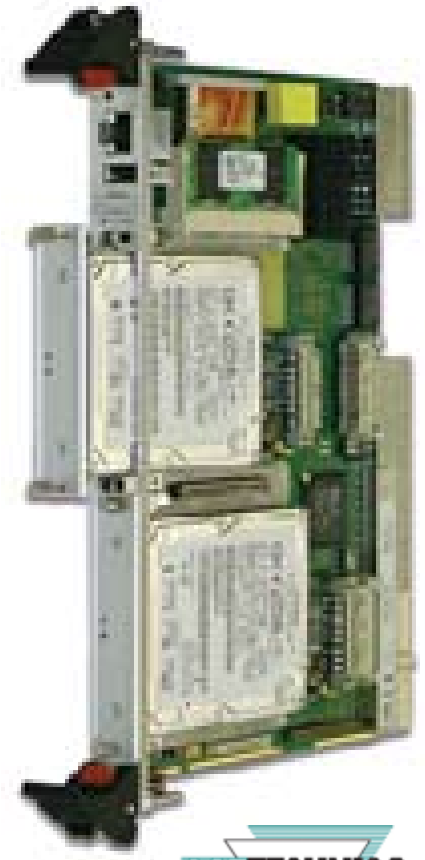
ELMA
Your Solution Partner

CPCI RAIDSTOR

6U Single Slot cPCI / 2.16
Network Attached Storage RAID Blade

The RAIDStor NAS is an innovative appliance approach to seamless, reliable embedded storage.

Drive level hot swap in a 6U cPCI / PICMG 2.16 form factor make ACT/Technico's RAIDStor the first network centric RAID blade solution in the embedded space. Key features include:



- **Dual gigabit Ethernet ports**
- **The lowest MTTR in the industry**
- **Automatic and transparent duplication of data across the network**
- **Automatic data re-sync with no impact to the top level application**
- **Instantaneous drive to drive fail over with no service interruption**
- **A much smaller footprint than conventional box level RAID storage**

The cPCI RAIDStor represents leading edge technology in highly available (HA) systems designed for maximum data security, preservation and integrity. This Network Attached Storage device is a leap in technology over conventional box level RAID solutions. An advancement in embedded storage technology, RAIDStor eliminates difficult file synchronization issues required when implementing HA systems. Used in a dual star network, the RAIDStor is a client/server model for storage access.

- **Drive shuttles allow removal through the front panel**
- **Manage cPCI RAIDStor as an appliance or via SNMP**
- **Web browser interface with e-mail for event notification**
- **Heartbeat support for seamless fail over**
- **Windows, Linux and Solaris *diskless* client boot support**
- **Configurable RAID levels: 0, 1, 0+1, 1+1, and 5**

ACTTECHNICO
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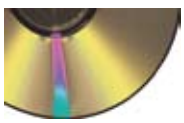
Embedded Systems By Design


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(800) 445-6194 ◆ www.acttechnico.com

Description

ACT/Technico's *RAIDStor* provides the user with a board level Network Attached RAID solution in a proven 6U x 160 mm industrial form factor. It is hot swappable at the drive and blade level, and designed to implement highly available solutions. Each RAIDStor provides two cPSB compatible Gigabit Ethernet RJ45 ports to enable connections to two different networks. When used in a dual-star cPSB compatible backplane, an Ethernet connection is made to two fabric switches, allowing redundant Ethernet connections to be made to other node boards within the cPSB chassis.

The *RAIDStor* is designed to use a multi-tasking kernel providing network services via TCP/IP. Network Attached Storage is supported through NFS. Logical drives are available to clients via NFS export.

RAIDStor Features

- 6U x 160 mm single slot cPCI blade compatible with PICMG 2.16
- PowerPC based Single Board Computer
- 128 MB Compact Flash
- In single blade systems, **500 GB** mirrored within the blade. (Inquire about higher drive capacities)
- Dual Gigabit Ethernet ports routed to the backplane
- Front panel serial console port, reset switch and USB port
- Linux based NAS Blade

Applications

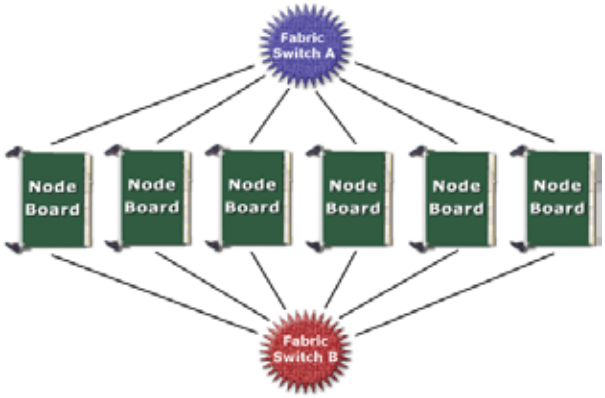
The RAIDStor lends it self to a wide number of applications:

- Active/Active NAS solution
- Boot server
- Distributed storage in PICMG 2.16 & VITA 31.1 switched fabric applications
- Embedded file server
- Embedded military applications
- High availability systems
- Message processing
- Network centric applications
- Redundant self hosted web server
- Redundant storage repository
- Transaction processing and logging
- Voice over IP
- ... and much more

Redundant NAS Architecture

RAIDStor's advanced features allow automatic network synchronization of data written to an active RAIDStor operating in a mirrored NAS configuration. Using redundant NAS controllers, data can be mirrored between RAIDStor blades over the network or within each blade in RAID 1, 0+1 or 1+1 configuration. Automatic fail over between RAIDStors provides a highly available storage solution, achieved by implementing an active/active architecture across the network.

The NAS architecture supports fail over and recovery of an individual drive, a NAS controller, a fabric switch, or an Ethernet port on the client requesting a transaction.



Typical dual star implementation with RAIDStor
Dual Star Architecture
Extensible to 18 node slots or 16 client slots

Web Browser Interface

The web browser interface makes managing the RAIDStor as easy as an appliance – from anywhere in the world. With the look and operability of a web page, RAIDStor's web browser allows the user to:

- Unified control, command, and event reporting via Web Browser or SNMP interface
- Monitor system status; primary/secondary blade status, synchronization level, synchronization status, system bandwidth, system uptime, network link status.
- Monitor drive status
- Halt and reboot blades after repair and replacement
- Edit email notification targets and events
- Log in to the system with password protection
- Protocols such as FTP, Telnet, relogin and others

Expansion Kits

RAIDStor expansion kit is now available. The single-slot, 6U expansion module holds two high capacity rotating or solid state hard drives, and attaches directly to the RAIDStor host board. The result is a two-slot, four-drive, high capacity NAS solution.



This dual slot RAIDStor Expansion Kit offers 500 GB of storage in only two slots. In a dual architecture network, it can offer over a terabyte of storage, with two 500 GB RAIDStor Kits communicating across the network. Usable capacity depends on the configured RAID level.

In addition to supporting RAID levels 0 and 1, the dual slot RAIDStor Expansion Kit supports RAID 5 capability to a Network Attached Storage system. An extra Expansion Module can be added which enables a DVD-R/W to be incorporated with the NAS board-level solution.

Specifications

Protocols Supported

Network File System	NFS Version 3+. Linux / Unix CIFS/SMB MS Windows
Transport	TCP/IP UDP
IP	IPv4 IPv6
Boot	DHCP BootP PXE
File	UFS, NTFS, FAT32 Journal FS (EXT3)

Network Performance

Under NFS or CIFS/SMB:

- Reads 7 to 11 MB/sec
- Writes 4 to 7 MB/sec

Reliability

The availability of the RAIDStor is expected to be four nines or better.

Assembly Environmental Specifications

- Form Factor: 6U by 4HP (single slot)
- Processor Core: PowerPC
- 2 Gigabit Ethernet ports out a cPSB (PICMG 2.16) backplane
- Disks: Two 2½" ATA rotating drives
- Power: +5V @ 2.0 A , +3.3V @ 1.5A,
  +12V @50 ma, -12V @25 ma
- Operating Shock: 15Gs @ 11 msec (Standard drives)
  Consult factory for extension using rugged drives
- Operating Vibration: 2 Gs @ 10 to 150 Hz
- Operating Temperatures: -5 to +55°C Standard drives
  -20 to +75°C Extended Temp
- Operating Humidity: 8 to 95% non-condensing (Std.)
  5 to 95% non-condensing (Ext.)
- NEBS Compliance: designed to meet NEBS Level 3
- Regulatory: EN55022, Class A
- Safety: EN60950; UL 94V-0

Rotating Drive Specifications

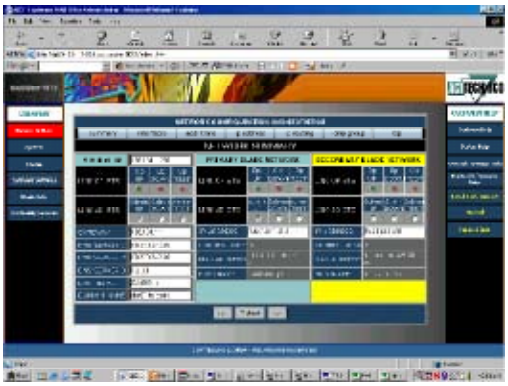
Drive capacities and specifications vary and change, so please verify available drives with ACT/Technico before ordering.

	2.5" Commercial	2.5" Extended Temp.
Rotational Speed (RPM)	5,400	5,400
Capacity GB	**120 / 160 / 250**	**40 / 60 / 80**
Average Seek Time	12 msec	12.5 ms
Data Transfer Rate		
Disk to Buffer	421 Mbits/s max	450 Mbits/sec max
Shock (half sine)		
Operating	250G @ 2 ms	150 Gs @ 11 ms
Non-Operating	900G @ 1 ms	900 Gs @ 1 ms
Vibration (Random)		
Operating	10-500 Hz, 0.0009 g2 /Hz	2.0 Gs (5 to 500 Hz)
Non-Operating	10-500 Hz, 0.0185 g2 /Hz	5.0 Gs (5 to 500 Hz)
Temperature (in °C)		
Operating	+5 to +55	-30 to +85
Non-Operating	-40 to +65	-40 to +95
Relative Humidity (non-condensing)		
Operating	8 - 90%	5 - 90%
Non-Operating	5 - 95%	5 - 95%

Examples of Web Interface Status Windows



Blade Status window



Network Status window

Please Ask About...

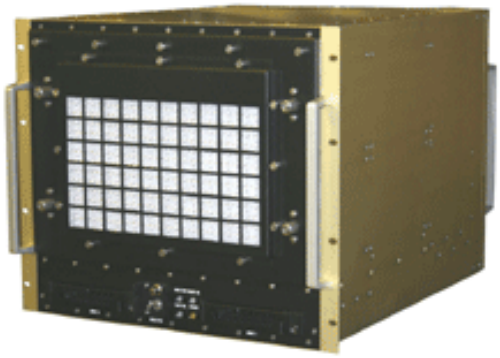
...our range of extended temperature and rugged storage media that can be implemented in a RAIDStor where applications require tougher specifications. Extended temperature 2.5" drives will operate in temperatures extending from -30°C to +85°C. The solid state flash drives will operate in a range up to -40°C to +85°C. Please ask about optional conformal coating, applied in accordance with MIL-I-46058C, Type UR.



...our systems and chassis for embedded NAS applications. We offer several solutions and configuration options.

...Visit our website for more information on storage options, chassis, and systems for embedded NAS applications.





Ordering Information and Part Number Guide

Please contact factory to put together an order number with your specific RAIDStor configuration. Below are the base part numbers:

6210-1	CPCI RAIDStor in single slot configuration with 2 drives
6210-2	CPCI RAIDStor in two-slot configuration with 4 drives
6210-3	CPCI RAIDStor in 3-slot configuration with 4 drives in 2 slots, plus an expansion slot with 1 DVDRW and 1 drive

Note: Total system capacity depends upon RAID level specified. RAID level is factory configured.

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