



Use Solid State or Hard Disk on SMD Controllers

AEM-1, Plug-Compatible Replacements for SMD, SMD-O and SMD-E Disk Drives.

FEATURES

- SMD thru SMD-E interface compatibility
- 8 MB to 3.3 GB capacity - Defect Free for traditional SCSI Disk
- AFD offers both commercial grade (MLC) and industrial grade (SLC) flash technology media.
- Data transfer rates up to 24 Mbits per second
- Single Port interface, Dual Port optional
- Available with fixed, removable, or MO disk
- Rack Mount or FSD/RSD enclosure
- Data Erase per DOD 5220.22-M

NEW CAPABILITIES UPGRADE SMD DRIVES.

Optional Features:

- Arraid Flash Drive (AFD) - Solid State SCSI Disk replacing traditional mechanical SCSI drives (DAT, QIC, Tape & Magneto Optical Disk)
- 100% Verified Backup to disk, 4 mm DAT, QIC tape, or Magneto-Optical disk
- Internal Mirroring and On-line Copy
- Multiple Volumes on a single drive.

NETWORK FEATURE

AFD network feature option offers LAN network (ethernet-based) back-up and restore capability directly from the AFD using the on board RJ45 Network port. No additional software or register changes are required to the legacy host.

Image shown is the AEM-1 with Arraid Flash Drive "AFD" solid state SCSI drive option (SLC & MLC grade flash options available). If required mechanical SCSI drive options can still be supported

Includes FLASH2GUI Software - Optional ethernet support feature for centralised backup and restore capability removing the need to rotate media. Primary data storage is always written to the CF card. Only available on AEM with AFD drive installed.

PLUG COMPATIBLE WITH SMD, SMD-O & SMD-E

No hardware or software modifications are required to use the latest SCSI drives on SMD thru SMD-E controllers. Unplug the existing SMD disk drive and install the AEM-1, using the same cables. Requires no changes to the diagnostics or operating software.

The AEM-1 replaces most disk drives that use the industry standard SMD thru SMD-E interface. It can be configured to emulate drives from Ampex, Century Data, Control Data, Imprimis/Seagate, Fujitsu, Hitachi, Memorex, NEC, Pertec, Priam, Wang and many others.

MANY CONFIGURATIONS AVAILABLE

The AEM-1 is a modular system and is available with numerous options. 19" rack mount, RSD/FSD and custom mounting configurations are available.

MULTI-VOLUME OPTION

With the Multi-Volume Option users can partition the SCSI drive to create multiple volumes. The supporting software also allows for copying between volumes. The external Multi-Volume switch indicates the selected active volume.

HIGHER DATA TRANSFER RATES

Some host controllers are capable of data transfer rates well beyond those of the original SMD disk drive. The AEM-1 supports up to 24 Mbits per second, which can provide a threefold increase in transfer rate when used with these controllers. Increased read/write transfer speeds when integrating the solid state AFD.

OFF-LINE BACKUP, DISK COPY

The off-line backup option allows the user to backup, copy, and verify the SMD image to either the solid state Arraid Flash Drive (AFD) or a disk, tape, or cartridge unit.

A 300 MB image can be copied in as little as five minutes to another removable hard drive or MO drive. Backing up the same 300 MB image to an internal 4 mm DAT or QIC tape takes as little as 10 minutes. Refer also to the FLASH2GUI Network features which support the AFD.

DISK MIRRORING

Internal Disk to Disk Mirroring is another option to the AEM-1. Alternating reads continually assure the user of a valid mirror. Internal Disk to Disk Mirroring also provides on-line, continuous backup of critical data.

CACHE BUFFERING FOR FAST ACCESS TO DATA

The standard AEM-1 includes cache buffering of a portion of the disk image. With read ahead logic, caching insures rapid access to the data used most often. The AEM-1C is fully cached, storing the entire disk image in cache for demanding applications.

REDUCED POWER AND COOLING

The AEM-1 uses significantly less power and requires less cooling than the older SMD drives it replaces, up to 95% less in some cases. Floor space requirements can also be reduced up to 95%. Further decreased when integrating the solid state AFD.

EASE OF USE

User controls and indicators are similar to the original SMD disk drives. Operators already familiar with the various SMD drives will find the AEM-1 easy to work with.

FLEXIBLE ARCHITECTURE

The AEM-1 uses a combination of microprocessor control and Field Programmable Gate Array logic for optimum performance and flexibility. As a result, configuration changes and field upgrades can easily be implemented as software/firmware changes.

USER CONFIGURABLE

Drive emulation parameters may be changed by the user through an RS-232 serial port. For example; number of heads, cylinders, track size, sector size, etc., can be changed by the user. This allows the AEM-1 to be reconfigured in the field to emulate any one of many SMD drive models. Software updates and some optional features can be installed in the AEM-1 by downloading from a PC.

MAINTENANCE FREE

The AEM-1 carries a 1 year warranty and uses the latest technology SCSI disk drives for low maintenance operation. Disk drives carry a 1 year warranty, plus the remaining manufacture's warranty. Many drives are rated in excess of 500,000 hours MTBF.

SPECIFICATIONS

INTERFACE

SMD, SMD-0, SMD-H, SMD-X, SMD-E. Single port standard, dual port optional. Daisy-chain interface compatibility.

Control/Maintenance: RS-232 serial port, ASCII DB-9 or Modular connector.

DATA TRANSFER RATE

6 to 24 Mbits per second. Crystal controlled.

EMULATION

All parameters programmable
Cylinders 1024 max SMD
2048 max SMD-0
4096 max SMD-E

Heads 64 max SMD
32 max SMS-E

Track Length 30,720 or 61,440 Bytes max (Soft sectored)
32,768 or 65,535 Bytes max (Hard sectored)

Sector Length Programmable
0 - 32,768 Bytes

CACHE BUFFER

Size 2 to 64 MB
Capacity 64 to 1024 Tracks
The AEM-1C may be fully cached to 2 GB

SEEK TIMES

Drive and Emulation Dependent
Track to Track 0 - 20 ms
Average 4 - 10 ms
Maximum 20 - 30 ms
Average Access 11 - 28 ms
Average Latency 6.2 - 8.4 ms

RELIABILITY

MTBF 200,000+ hours
MTTR 15 minutes

POWER

Input Voltage 90 - 135, 180 - 264 VAC (Selectable)
Frequency 47 - 63 Hz
Power 50 - 90 Watts (Maximum)

PHYSICAL

H x W x D x Weight
Rack Mount 5.25 in. x 19 in. x 17.5 in., 23lbs
133 mm x 483 mm x 445 mm, 10.5 kg
Drive Module 1.7 in. x 4.6 in. x 8.2 in., 3lbs
43.2 mm x 117 mm x 208 mm, 1.4 kg

Specifications subject to change without notice.

COMMON OPTIONS

Opt-21 - Dual Port SMD Interface
Opt-25 - MultiVolume Support
Opt-51 - Disk to Disk Image Copy/Backup
Opt-55 - Disk Mirroring and On-line Copy
Opt-05 - Mounting Shelf for RETMA Cabinets
Opt-03 - SMD Bus Terminator
Opt-CE - CE compliance for EU countries

More Options Available.

Arraid Flash Drive (AFD) – Plug & Play Solid State Upgrade

Opt-XX - DRV-ASFD-HD

*Arraid SCSI Flash Drive/Solid State Disk Drive – (HDD Upgrade)**

Opt-XX - DRV-ASFD-MO

*Arraid SCSI Flash Drive/Solid State Disk Drive – (Magneto-Optic Upgrade)**

Opt-XX - DRV-ASFD-T

*Arraid SCSI Flash Drive/Solid State Disk Drive – (Tape Upgrade)**

**A further AFD Network feature option offers LAN network (ethernet-based) back-up and restore capability directly from the AFD. No additional software or register changes are required to the legacy host.*

FLASH2GUI Software - Optional ethernet support feature for centralised backup and restore capability removing the need to rotate media. Primary data storage is always written to the CF card. More details on FLASH2GUI backup & restore software.