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Data Storage Solutions

AEM-3
HISI Drive Emulation System

Use Solid State or Hard Disk on Honeywell Controllers

AEM-3, Plug-Compatible replacements for Honeywell Multiplex (HISI) disk drives.

FEATURES

- Honeywell HISI interface compatibility
- 8 MB to 3.3 GB capacity - Defect Free
- Data transfer rates up to 10 Mbits per second
- Available with fixed, removable, or MO disk
- Rack Mount or FSD/RSD enclosure
- Data Erase per DOD 5220.22-M

NEW CAPABILITIES UPGRADE HISI DRIVES.
Optional Features:

- Arraid Flash Drive (AFD) - Solid State SCSI Disk replacing traditional mechanical SCSI drives (DAT, QIC, Tape & Magneto Optical Disk)
- AFD offers both commercial grade (MLC) and industrial grade (SLC) solid state flash technology
- 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.

Includes FLASH2GUI Software - Optional ethernet support feature for centralised backup and restore capability removing

Image shown is the AEM-3 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

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 HISI DRIVES

No hardware or software modifications are required to use the latest SCSI drives on SMD and SMD-E controllers. Unplug the existing SMD disk drive and install the AEM-3, using the same cables. Requires no changes to the diagnostics or operating software.

The AEM-3 replaces most disk drives that use the industry standard Honeywell Mux interface controllers found on DPS6 and Level06 computers. It can be configured to emulate drives from Control Data, MPI and Honeywell.

MANY CONFIGURATIONS AVAILABLE

The AEM-3 is a modular system and is available with numerous options. 19" rack mount 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-3 supports up to 10 Mbits per second, which can provide an 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,

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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-3. 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-3 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-3C is fully cached, storing the entire disk image in cache for demanding applications.

REDUCED POWER AND COOLING
The AEM-3 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.

MEDIA
The CompactFlash (CF) media in the ARRAID FLOPPYFlash Drive (AFFD) is treated exactly the same as the floppy disk media. All drive data is stored on the CF media as if were the original floppy diskette media. Media rotation procedures can be maintained.

EASE OF USE
User controls and indicators are similar to the original HISI disk drives. Operators already familiar with the various drives will find the AEM-3 easy to work with.

FLEXIBLE ARCHITECTURE
The AEM-3 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-3 to be reconfigured in the field to emulate any one of many HISI drive models. Software updates and some optional features can be installed in the AEM-3 by downloading from a PC.

MAINTENANCE FREE
The AEM-3 carries a 1 year warranty and uses the latest technology solid state or mechanical 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.

INTERFACE
Honeywell Information Systems. 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
Heads	64 max
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-3C 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+ hrs (The AFD offers 8,000,000+ hrs)
MTTR	15 minutes

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

PHYSICAL	High x Wide x Deep 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-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-CE - CE compliance for EU countries

More Options Available.

Arraid Flash Drive (AFD) – Plug & Play Solid State Upgrade
Opt-XX - DRV-ASFD-2-HD
Arraid SCSI Flash Drive/Solid State Disk Drive – (HDD Upgrade)*
Opt-XX - DRV-ASFD-2-MO
Arraid SCSI Flash Drive/Solid State Disk Drive – (Magneto-Optic Upgrade)*
Opt-XX - DRV-ASFD-2-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.

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