

E-Disk® VME SCSI Wide Series



Ideal for storage applications in:

- Computer Telephony
- Carrier Grade Equipment
- Real-Time Machine Control
- Industrial Automation
- Military Systems and Avionics
- Real-Time Data Acquisition
- Control and Instrumentation

Inject Speed Into Your Network

Today's data explosion has created the need for a faster and higher performance storage solution for high-speed networking, broadband communications, mobile computing, military, aerospace, and industrial applications. BitMICRO® Networks has responded with a storage solution designed specifically for these emerging high performance applications - Solid State, Flash-based storage - E-Disk®. Incorporate this new storage product as a stand-alone solution or as an embedded plug and play component in the system. E-Disk® provides increased performance by eliminating seek time and latency for faster I/O rates, and provides the advantages of exceptional performance, superior reliability, and unprecedented durability.

Reliable & Secure Solid-State, Flash-Based Storage

BitMICRO® Networks utilizes proven solid-state, flash-based E-Disk® technology, a non-volatile storage solution in industry standard double slot VME 6U form factor. Our Fibre Channel-based Flash storage modules are designed to replace conventional rotating media such as hard disks and tape drives that are not only prone to short production life, but often fail in mobile computing and industrial environments where temperature fluctuations, shock, vibration, dust, moisture, or magnetic fields are present.

Given today's critical national security and defense requirements, the powerful and user-customizable securErase® data security feature guarantees that device sanitization of sensitive data is performed beyond retrieval. Patented PowerGuard® also ensures that within 6 hours of losing power to the disk, securErase® can still be activated to resume and complete the erase process.

E-Disk® VME SCSI Wide Series

BitMICRO® Networks E-Disk® VME products deliver a solid solution for data storage and protection while providing the powerful performance and speed today's data-intensive applications demand. They feature patented FlashBus™ storage technology to speed performance, eliminate system bottlenecks, and offer durable storage for easy installation and start-up. E-Disk® all-electronic VME solid state hard disk drive and flash drive solutions require no device drivers for installation and operation, do not need hard disk drive battery back-up nor UPS for data storage non-volatility. The convection-cooled module comes in 6U double slot form factor and can hold storage capacities ranging from 1024 MB to 114.6 GB. The module boasts I/O rates of up to 11,700 IOPS, burst rates of up to 320 MB/sec, sustained rates of up to 44 MB/sec.

Product Highlights

Increased High Speed Networking

- Operating System Independent
- Up to 11,700 IOPS*
- 48 µsec access time*

Facilitate Quick Data Transfers

- 320 MB/sec Burst (44 MB/sec Sustained)
- 40 MB/sec Burst (34 MB/sec Sustained)

Highest Storage Capacities

- 1024 MB to 114.6 GB

Unparalleled Operating Performance

- Pure Solid State/Non-Volatile
- Up to 1,500 Gs Operating Shock*
- 0 to 70 °C
- 500,000 Hours MTBF*
- 120,000 feet Altitude

Industry Standard SCSI Interface

- No Device Driver Required
- Ultra320 SCSI
- Completely bootable

Data Security Features

- DataSentinel
- PowerGuard®
- securErase®

*Preliminary/Projected Feature

SPECIFICATIONS FOR E-DISK® VME SCSI WIDE SERIES

Flash Disk and Solid State Disk Storage Solutions

Physical Specifications:

Form Factor	6U	
Type of Cooling	Convection	
Number of Drives	1-2	
Storage Capacity	D6S40V	1024 MB to 98.3 GB
	D6S320V	2048 MB to 114.6 GB
Dimensions	Width	160 mm (6.3 in)
	Length	233.35 mm (9.187 in)
	Height	Double slot: 1.6 in
Weight*	1,174.78 – 2,152.56 gms (41.43 – 75.92 oz)	
Connector	32-pin x 3 rows (P1), 32-pin x 3 rows (P2) VMEbus IEEE 1014-1987	

*Includes E-Disk® Drive(s); PowerGuard® Weight not included

Power Requirements:

Current *	0.1 – 0.6 Amps (max.)
Voltage	5 Vdc ±5%

*Preliminary / Projected

Performance Specifications:

Access Time*	48 µsec
Burst Rate	40 MB/sec, 320 MB/sec
Sustained Rate*	34 MB/sec, 44 MB/sec
I/O Operations per Second*	9,500 IOPS, 11,700 IOPS
Read Bit Error Rate	< 10 ⁻²⁰

*Preliminary / Projected

Environmental Specifications:

Operating Temperature	0 to 70 °C
Humidity	8% to 90% RH, Non-Condensing
Shock (Operating)*	1000 Gs
Vibration (Operating)*	16.5 grms
Conformal Coating	Acrylic, Silicone, or none
Altitude*	-1,200 to 120,000 feet

*Preliminary / Projected

Reliability:

MTBF*	> 500,000 hrs (MIL-STD-217 GB)	
Undetected Data Errors	< 10 ⁻³⁰	
Data Reliability	Built-in EDC/Interleaved Reed-Solomon ECC Corrects up to Six Random Byte Error per 528-Byte Block; Detects Burst Errors up to 9 Bytes Long	
Data Integrity	10 years	
Write Endurance	1 GB E-Disk®	4.6 GB E-Disk®
	27 years @ 100GB/day erase/write cycles	123 years @ 100GB/day erase/write cycles
Read Endurance	Unlimited	
Security Erase Compliance	NISPOM DoD 5220.22-M, NSA 130-2, Air Force AFSSI 5020, Army 380-19, IRIG-106	
Diagnostics	Built-in Power-up Self Test Self-Monitoring Diagnostics Database	

*Preliminary / Projected

User Interface:

SPECIFICATIONS FOR E-DISK® VME SCSI WIDE SERIES

Flash Disk and Solid State Disk Storage Solutions

Front Panel Indicators	Power (green) Busy (green)
Front Panel Connector	68-pin SCSI ANSI Standard
Firmware	Field Upgradeable
SCSI Compatibility	ANSI SCSI-2 Standard X3.131-1994 ANSI SCSI-3 Standard X3T10/1071D

 **Performance Matrix:**

MODEL NAME	FORM FACTOR	SCSI WIDE INTERFACE	SUSTAINED RATES*	BURST RATE	ACCESS TIMES*	IOPS*	STORAGE CAPACITY
E-Disk® VME 6S40V	6U	Ultra-Wide	34 MB/sec	40 MB/sec	48 µsec	9,500	1024 MB – 98.3 GB
E-Disk® VME 6S320V	6U	Ultra320	44 MB/sec	320 MB/sec	48 µsec	11,700	2048 MB – 114.6 GB

*Preliminary / Projected

 **Product Part Number:**

Part Number	Model Number + Capacity + Options	
	PFIRRRR + XXXXXX + TGV (CFWC)	
Example	D6S040V 036864 CNN (V2MA) *Note: (V2MA) Sub-Part Number	
Model Number	PFIRRRR	
P: Product Type	D: E-Disk®	
F: Form Factor	6: 6U	
I: Interface	S: SCSI	
R: Burst (Sustained) Rate**	040: 40 MB/sec (34 MB/sec) 320: 320 MB/sec (44 MB/sec)	
C: Connector Type	V: 32-pin x 3 rows (P1), 32-pin x 3 rows (P2) VMEbus IEEE 1014-1987	
Capacity (MB)	XXXXXX	
X: Capacity (MB)	D6S40V	1024, 2048, 5120, 9216, 10240, 13312, 16384, 18432, 20480, 26624, 32768, 36864, 49152, 53248, 65536, 98304
	D6S320V	2048, 4096, 6144, 8192, 10240, 12288, 14336, 16384, 20480, 24576, 28672, 40960, 49152, 57344, 81920, 114688
	Custom	Could be made available
Options	TGM	
T: Temperature (Operating)	C: Commercial (0 to +70 °C)	
G: PowerGuard®	N: No PowerGuard® Option (default) 1: Auto-Save Cache to Flash on Power Down	
V: Input Power Voltage	N: 5V	
Sub-Part Number*	(CFWC)	
C: Casing	V: Convection Cooled	
F: No. of Disks	1: One E-Disk® 3S40 or 3S320 2: Two E-Disks® 3S40 or 3S320	
W: Type of Wiring	M: Motorola Wiring	
C: PCB Coating	N: No conformal coating S: Silicone Conformal Coating A: Acrylic Coating	

* Consult E-Disk® Part Numbering Guide

** Preliminary / Projected

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U.S. Patent No. 5,822,251; 5,956,743;
6,000,006; 6,317,330; 6,496,939;
6,529,416; 6,744,635; 6,757,845;
6,970,890; 6,981,070. Patents Pending.

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