E-Disk® VME SCSI Wide Series

Conduction Cooled

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 conduction- cooled module comes in 6U double slot form factor and can hold storage capacities ranging from 1024 MB to 81.9 GB in a single disk configuration. The module boasts I/O rates of up to 9,500 IOPS, burst rates of up 40 MB/sec, sustained rates of up to 34 MB/sec.

Product Highlights

Increased High Speed Networking
- Operating System Independent
- Up to 9,500 IOPS*
- 48 µsec access time*

Unparalleled Operating Performance
- Pure Solid State/Non-Volatile
- Up to 1,500 Gs Operating Shock*
- -40 to 85 ºC
- 500,000 Hours MTBF*
- 120,000 feet Altitude

Facilitate Quick Data Transfers
- 40 MB/sec Burst Rate
- 34 MB/sec Sustained Rate*

Industry Standard SCSI Interface
- No Device Driver Required
- Ultra Wide
- Completely bootable

Highest Storage Capacities
- 1024 MB to 81.9 GB

Data Security Features
- DataSentinel
- PowerGuard®
- securErase®
- Write Protect

**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		Conduction
Number of Drives		1
Storage Capacity		1024 MB to 81.9 GB
Dimensions	Width	160 mm (6.3 in)
	Length	233.35 mm (9.187 in)
	Height	Double slot: 1.6 in
Weight*		516.28 – 1,098.78 gms (18.23 – 38.78 oz)
Connector		32-pin x 5 rows (P1), 32-pin x 5 rows (P2) VME 64X

**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
Sustained Rate*	34 MB/sec
I/O Operations per Second*	9,500 IOPS
Read Bit Error Rate	$< 10^{-20}$

**Preliminary / Projected*

Environmental Specifications:

Operating Temperature	Commercial	0 to 70 ºC
	Extended	-25 to 75 ºC
	Industrial	-40 to 85 ºC
Humidity		5% to 95% RH, Non-Condensing
Shock (Operating)*		1500 Gs
Vibration (Operating)*		16.5 grms
Conformal Coating		Acrylic or none
Conduction Cooling		Optional
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*

SPECIFICATIONS FOR E-DISK® VME SCSI WIDE SERIES

Flash Disk and Solid State Disk Storage Solutions

User Interface:

Jumper Settings*	Write Protect
Firmware	Field Upgradeable
SCSI Compatibility	ANSI SCSI-2 Standard X3.131-1994 ANSI SCSI-3 Standard X3T10/1071D

**Available upon request*

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 - 81.9 GB

**Preliminary / Projected*

Product Part Number:

Part Number	Model Number + Capacity + Options
	PFIRRRC + XXXXXX + TGV (CFWC)
Example	D6S040V 034816 CNN (D1MA) *Note: (D1MA) Sub-Part Number
Model Number	PFIRRRC
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**)
C: Connector Type	V: 32-pin x 5 rows (P1), 32-pin x 5 rows (P2) VME 64X
Capacity (MB)	XXXXXX
X: Capacity	1024, 2048, 5120, 9216, 10240, 13312, 16384, 18432, 26624, 32768, 34816, 43008, 49152, 65536, 81920
	Custom capacities could be made available
Options	TGM
T: Temperature (Operating)	C: Commercial (0 to +70 ºC) E: Extended (-25 to 75 ºC) I: Industrial (-40 to +85 ºC)
G: PowerGuard®	N: No PowerGuard® Option (default) 1: Auto-Save Cache to Flash on Power Down 2: Erase Mode on Power Down 3: Standby Erase Mode on Power Down
V: Input Power Voltage	N: 5V
Sub-Part Number*	(CFWC)
C: Casing	D: Conduction Cooled
F: No. of Disks	1: One E-Disk® 3S40
W: Type of Wiring	M: Motorola Wiring
C: PCB Coating	N: No Conformal Coating A: Acrylic Conformal Coating only

* *Consult E-Disk® Part Numbering Guide*
** *Preliminary / Projected*

BiTMICRO's product specifications and engineering development objectives are subject to change at anytime without prior notice. All information provided herein is provided for design comparison and reference purposes only.

All product specifications are provided "AS IS" and without any warranty, express, implied or otherwise, regarding the accuracy or the performance of the product. BiTMICRO or any of its authorized representatives can address any inquiries regarding warranty terms, methodology and the parameters used in providing the specification.

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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