



PRELIMINARY SPECIFICATIONS

SAS 3.5" Series

E3S3HL

When Size and Performance Matter
 Enhanced Productivity and System Performance



Ideal for Storage Applications in:

- Enterprise Systems
- Servers / Blade Servers
- Database and OLTP Applications
- Business Intelligence/Decision Support
- Video-On-Demand
- Military and Aerospace
- Imaging Applications
- Industrial Automation
- Real-Time Data Acquisition
- Control and Instrumentation

E-Disk® Altima™ SAS 3.5-inch Series

The future of storage is solid state, and BiMICRO Networks, Inc. brings you the most advanced solid state disk (SSD) solution with the E-Disk® Altima™ series. Powered by BiMICRO's proprietary "Enhanced Datamover and Storage Accelerator" (EDSA™) flash I/O controller and "Logical Unifier of Extensive Transfer Arrays" (LUNETATM) memory flash interface ASICs, E-Disk® Altima™ SSDs utilize high-density flash memory chips to create massive storage capacities in standard disk drive form factors. What's more, flash memory-based E-Disk® Altima™ SSDs boost system performance by eliminating seek time and latency for faster I/O and sustained transfer rates. With no moving parts, E-Disk® Altima™ SSDs set the bar for storage reliability, durability and endurance in all types of operating environments.

BiMICRO Networks E-Disk® Altima™ Serial Attached SCSI products offer optimum solution to address ever growing storage capacity requirements and performance demands of today's computing applications. It is designed without device driver requisites, making it easy to install and operate. Armed with patented FlashBus™ technology, E-Disk® Altima™ Serial Attached SCSI offers random I/O rates of up to 55,000/sec, 300 MB/sec burst rate, sustained rates of up to 230 MB/sec, and storage capacities of up to 1.6 TB.

Increased High Speed Performance

- 300 MB/sec Burst Rate
- Up to 230 MB/sec Sustained Rate
- Up to 55,000 IOPS
- 30 to 100 µsec Access Time

Highest Storage Capacities

- 3.5-inch: 16 GB to 1.6 TB*

**Up to 640 GB at 1-inch height*

Industry Standard SAS Interface

- No Device Driver Required
- SAS 1.1 (3 Gbit/sec) Dual Port
- Completely Bootable

Unparalleled Operational Capabilities

- Pure Solid State/Non-Volatile
- 1,500 Gs Operating Shock
- -40 to +85°C
- 2 Million Hours MTBF
- 120,000 ft Altitude

Data Security Features

- DataSentinel
- PowerGuard®
- securErase®
- Write Protect

Compliance

- EMI: CE, FCC, AS/NZS
- Safety: TUV, UL
- EU RoHS 2002/95/EC
- China RoHS SJ/T 11363-2006

SPECIFICATIONS FOR  SAS 3.5" SERIES
Flash Disk and Solid State Disk Storage Solutions

Performance Specifications:

Access Time	30 to 100 µsec
Burst Rate	300 MB/sec
Sustained Rate	Up to 230 MB/sec
I/O Operations per Second	Up to 55,000 IOPS
Fully Associative Cache	Up to 256 MB

Environmental Specifications:

Operating Temperature	Commercial	0 to 70 °C
	Industrial	-40 to +85 °C
Max Temperature Change Rate	5 °C/min	
Humidity	5 to 95% (Non-Condensing)	
Shock (Operating)	1,500 G	
Vibration (Operating)	16.4 G rms	
Altitude	-1,200 to 120,000 ft	
Airflow	None Required	

Power Requirements:

Input Voltage	5/12 VDC (±5%), Auto Detect	
Power Consumption	Write	TBD
	Read	TBD
	Idle	TBD

Reliability:

MTBF	>1.9 Million Hours at Bellcore Issue 6, Method I, Case 3
Bit Error Rate	<10 ⁻²⁷
Data Reliability	Built-in EDC/ECC Based on BCH Algorithm Corrects up to 9 Random Bit Errors per 528-Byte Block; Detects up to 10 Bit Errors
Data Integrity	10 years
Diagnostics	Built-In Power-Up Self Test Self-Monitoring Diagnostics Database

Endurance:

	16 GB	32 GB
Write Endurance	657 years @ 100 GB/day Erase/Write Cycles	1,315 years @ 100 GB/day Erase/Write Cycles
Read Endurance	Unlimited	

Compatibility/Compliance:

SAS Compatibility	SAS 1.0 – INCITS.376:2003 (3 Gb/sec) SAS 1.1 – T10/Project 1601 - D
EMI Compliance	CE, FCC, AS/NZS Regulations
Safety Compliance	TUV and UL
Security Erase Compliance	NISPOM DoD 5220.22-M, NSA 130-2, Air Force AFSSI 5020, Army 380-19, IRIG-106
RoHS Compliance	EU RoHS 2002/95/EC, China RoHS SJ/T 11363-2006

Physical Specifications:

Form Factor	3.5"	
Storage Capacity*	16 GB to 1.6 TB	
Dimension	Width	4.0 in (101.6 mm)
	Length	5.75 in (146.1 mm)
	Height	0.536 in (13.61 mm) to 1.787 in (45.38 mm)
Weight**	10.688 oz (303.00 gm) to 30.794 oz (873.00 gm)	
Mounting Considerations	HDD Industry Standard, All Orientations	
Connector	Serial Attachment (SAS SFF-8482) Connector	

*1 GB = 1,024 MBytes; 1 TB = 1,024 GBytes; Up to 640 GB at 1-inch height
**Weights are approximate

Product Part Number:

Part Number Options	E3S003H + XXXXY + TGM + AC
XXXX: Capacity <i>Last digit denotes single decimal number</i> (e.g. 0160G = 16.0 GB, 0016T = 1.6 TB)	GB: 16, 32, 64, 128, 192, 384, 640 >1" Height GB: 896 TB: 1.1, 1.3, 1.6
Y: Capacity Unit*	G: Gigabyte T: Terabyte
T: Temperature	C: Commercial (0 to 70 °C) I: Industrial (-40 to +85 °C)
G: PowerGuard®	N: No PowerGuard® 1: Save Mode on Power Down 2: Erase Mode on Power Down 3: Standby Erase Mode on Power Down
M: Media Type	L: Large Block SLC NAND Flash
A: Casing	R: Rugged Casing
C: Coating	N: No Conformal Coating (Default) A: Acrylic Conformal Coating S: Silicone Conformal Coating
Example	E3S003H0160GC1LRN

*1 GB = 1,024 MBytes; 1 TB = 1,024 GBytes

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.

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One gigabyte, or GB, equals 1,073,741,824 bytes when referring to solid state disk capacity. Actual usable storage capacity may vary based on various factors, including operating system, file size, file format, features, application software, and disk space reserved for flash management files.

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