



PRELIMINARY SPECIFICATIONS

Fibre Channel 3.5"

E3F4FL

When Size and Performance Matter
 Enhanced Productivity and System Performance



Ideal for Storage Applications in:

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

E-Disk® Altima™ Fibre Channel 3.5-inch SSD

The future of storage is solid state, and BitMICRO Networks, Inc. brings you the most advanced solid state disk (SSD) solution with the E-Disk® Altima™ series. Powered by BitMICRO'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.

BitMICRO Networks E-Disk® Altima™ Fibre Channel 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™ Fibre Channel offers random I/O rates of up to 55,000/sec, 800 MB/sec full duplex burst rate, sustained transfer rates of up to 230 MB/sec, and storage capacities of up to 1.1 TB.

Increased High Speed Performance

- 800 MB/sec Full Duplex 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: 8 GB to 1.1 TB*
**Up to 464 GB at 1-inch height*

Industry Standard FC Interface

- No Device Driver Required
- 4 Gbit 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

- EMC: FCC, AS/NZS, ICES, VCCI, EN55022, EN55024
- Safety: UL, CSA and EN
- EU RoHS 2002/95/EC
- China RoHS SJ/T 11363-2006

SPECIFICATIONS FOR  FIBRE CHANNEL 3.5"

Flash Disk and Solid State Disk Storage Solutions

Performance Specifications:

Access Time	30 to 100 µsec
Full Duplex Burst Rate	800 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

*Dual ported 4 Gbit Fibre Channel

Environmental Specifications:

Operating Temperature	Commercial	0 to 70 °C
	Industrial	-40 to +85 °C
Non Operating Temperature		-45 to +90 °C
Max Temperature Change Rate		3 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		5V (± 5%) or 5V/12V (± 5%), Auto-Detect*
Power Consumption (typical)	Capacity	92 GB
	Write	18.58 watts
	Read	17.70 watts
	Idle	15.68 watts

*Auto-detect determines input voltage upon power-up whether it is 5V only or 5V and 12V dual supply. This feature allows the drive to operate at different supply voltages without the need to manually set the drive to the available input voltage.

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:

Write Endurance	8 GB	20 GB
	32.88 years @ 100 GB/day Erase/Write Cycles	76.71 years @ 100 GB/day Erase/Write Cycles
Read Endurance	Unlimited	

Compatibility/Compliance:

Fibre Channel Compatibility	FC-AL-2, FC-PH, FC-PLDA, FC-FCP, FC-FLA, FCA-IP, IETF-IPFC
EMC Compliance	ICES-003 Issue 4, February 7, 2004 Class A VCCI V-3/2008.04 and V-4/2007.04 Class A AS/NZS CISPR 22: 2006 Class A EN 55022: 2006 – Emissions EN 55024:2003 - Immunity
Safety Compliance	UL 60950 -1 CSA C22.2 No. 60950 -1 EN 60950 -1
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*	8 GB to 1.1 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**	8.889 oz (252.00 gm) to 30.159 oz (855.00 gm)	
Mounting Considerations	HDD Industry Standard, All Orientations	
Connector	40-Pin SCA-2 (Level 4 Hot Swap) Fibre Channel ANSI Standards	

*1 GB = 1,024 MBytes; 1 TB = 1,024 GBytes; Up to 464 GB at 1-inch height

**Heights and weights are approximate. Contact your Sales Representative for the specific configurations and tolerance levels.

Product Part Number:

Part Number Options	E3F004F + XXXXY + TGM + AC
XXXX: Capacity	<=1" Height
Last digit denotes single decimal number	GB: 8, 20, 44, 92, 136, 232, 276, 464
(e.g. 0920G = 92.0 GB, 0011T = 1.1 TB)	>1" Height
Y: Capacity Unit*	GB: 324, 416, 508, 600, 648, 832
	TB: 1.0, 1.1
	G: Gigabytes
	T: Terabytes
T: Temperature	C: Commercial (0 to 70 °C)
	I: Industrial (-40 to +85 °C)
G: PowerGuard®	N: No PowerGuard® Option
	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	E3F004F0920GC1LRN

*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. Formatted capacity will vary based on various factors, such as type of operating system, file sizes, file formats, optional features, and application software.