IDE/SCSI Family

IDE Selection Guide

FFD 2.5" IDE Product

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CORPORATE MARKETS PRODUCTS SUPPORT DEVELOPER ZONE Monday, Nov. 6, 2006

Fast Flash Disk 2.5" IDE

FFD-250 High Performance IDE Flash Disk



- · 2.5" standard Form-factor
- 128 to 4096 Mbytes Capacity ATA-III Standard Interface
- Variety of packages heights: 17.0 mm, 12.0 mm & 8.0 mm.
- Support DMA 0-2 and PIO 0-4 transfer modes.
- 127 sectors per transfer in multiple r/w command.
- Built-in TrueFFS® technology
- Superior Endurance by using Dynamic Wear-leveling. Ensuring data reliability under unstable power conditions
- · Less than 0.1 ms Access Time
- Fast Security erase in 10 sec (typical).
- Rugged, no moving parts Support 'SMART' (Self-monitoring, Analysis and Reporting)
- >5,000,000 Write/Erase cycles, unlimited Read
- Technology) command
- Manufactured in USA & FMF available now upon request.
- · 5 Year Warranty
- For additional information please contact ffd@m-systems.com

M-Systems' Fast Flash Disk (FFD) is a state-of-the-art Solid-State IDE Disk based on Flash

Overview

technology. The FFD complies with the ATA-III standard interface and is fully compatible with existing systems. It can be used as a drop-in replacement for standard 2.5" magnetic disk drives with IDE interfaces.

seek time, latency and other electro-mechanical delays inherent in conventional disk drives. The FFD has a high capacity ranging from 128 Mbytes to 4096 Mbytes.

Due to its unique design the FFD has a performance advantage over other solutions. It eliminates

Designed for systems that require highly reliable data storage operating under harsh environmental

systems, military and airborne systems. The FFD continues M-Systems' tradition of superior performance and quality. It offers solid state reliability in an industry standard package. The FFD's outstanding performance is based on M-

conditions, it is a perfect solution for telecommunication, P.O.S, factory automation, high availability

Systems' state-of-the-art TrueFFS[®] technology, which provides high read and write transfer rates, enhanced endurance and maximum data integrity. M-Systems' FFD provides a cost effective solution without compromising speed, capacity, data

integrity, or portability, making it an ideal solution for demanding applications operating under harsh environmental conditions.

Capacity

Specifications:

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ATA-III Commands

- 128 to 4096 Mbyte

ANSI X3T10/2008D

ATA Modes

Industry Standard ATA-III

PIO 0-4 DMA 0-2

Entire Media Erase time 10 Sec (Typical)

Security Erase

Dimensions in Millimeters

Standard 2.5" Form Factor - 100.2(L) X 69.8(W) X 17.0(H)

Standard 2.5" Form Factor with 12mm' height case - 100.2(L) X 69.8(W) X 12.0(H)

3 casing options :

Standard 2.5" Form Factor with 8mm' height case - 100.2(L) X 69.8(W) X 8.0(H)

Weight Max of 0.2 Kg for 4096MB unit

Reliability **MTBF** 5,882,699 hours MTBF for 128MB unit

Built in test

BER (Bit Error Rate)

Preventive Maintenance

Based on British-Telecom-HRD5, GB, 25°C Embedded EDC/ECC, based on 48-bit Reed Solomon Algorithm EDC/ECC

Power-up Self Test

 $< 10^{-20}$ None required

2,857,224 hours MTBF for 512MB unit 2,381,009 hours MTBF for 1024MB unit

Self-monitoring, Analysis and Reporting Technology SMART endurance and reliability remote monitoring

Endurance Unlimited Read cycles

< 0.1 ms

16.7 Mbytes/sec

16.7 Mbytes/sec

>5,000,000 Write/Erase cycles TrueFFS® dynamic wear-leveling

Garbage collection process >10 years' data retention Performance Access time.

Burst Read Rate Burst Write Rate

Sustained Read Rate 3.6 - 3.2 Mbyte/sec Sustained Write Rate 2.0 Mbyte/sec 127 sectors per transfer in multiple r/w command Firmware Upgrade Field upgrade capability

Power Requirements Input Voltage 5VDC +5%

Power consumption Operating 2.3W to 2.75W capacity dependent

Stand-by 1W Power-down 0.6W

Operating Temperature

-40°C - +85°C

Commercial 0°C - +70°C Enhanced -25°C - +75°C

Storage Temperature

Humidity 5 to 95% non-condensing

Shock Operating & Non - operating:

Extended

-55°C - +95°C

Half Sine, 50G, 11ms Half Sine, 1500G, 0.5ms Per MIL-STD-810F

16.3G RMS

Vibration Operating & Non - operating:

Per MIL-STD-810F (Random, 20Hz to 2000 Hz, 3 vibrations axes)

Altitude Operating & Non - operating:

0 to 80,000 feet

Compliance CE,UL,FCC Part 15 Class B, EN 55022 Class B, EN 50082-1, IEC 61000-4

CCCC

Warranty Period 5 years

Ordering Information

Height

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FFD-250-IDE-CCCC-T-HXX

128, 256, 384, 512, 768, 1024,

17.0 mm

	Capacity (MB)	1152, 1280, 1536 2304, 2560, 2816 3584, 3840, 4096	, 3072, 3328,	768, 1024, 1152, 1280, 1536, 1792, 2048, 2304	384, 512, 768, 1024	
T: Temperature Range						
			Blank - Comi	- Commercial 0°C		
			N - Enhai	nced -25°C	-25°C - +75°C	

Height **H**:

Blank - 17.0 mm (standard) H12 - 12.0 mm H8 - 8.0 mm

- Extended

12.0 mm

128, 256, 384, 512,

8.0 mm

-40°C - +85°C

128, 256,

For additional information regarding FFD please contact ffd@m-systems.com

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