

# FFD™ IDE PLUS

## Mission-Critical Flash Disks



M-Systems' Fast Flash Disk (FFD) IDE Plus, available in 2.5" and 3.5" form factors, delivers top read/write performance and capacity. Equipped with sanitize functionality and fast security erase in just seconds, FFD IDE Plus is an ideal storage solution for mission-critical applications that operate in harsh environments, such as military and aerospace, telecommunications, public safety and transportation, and Point Of Sale (POS) systems. M-Systems' TrueFFS® flash management is embedded in FFD IDE Plus to guarantee data reliability and over 5 million write/erase cycles, far exceeding any comparable flash solutions.

FFD IDE Plus is a drop-in replacement for 2.5" and 3.5" IDE/ATA rotating disks, without the risk of mechanical parts failure.

**CAPACITY (MB)**

Unformatted: 256, 512, 1024, 2048, 3072, 4096, 5120, 6144, 7168, 8192, 9216, 10240, 12288, 14336, 16384, 18432, 20480, 22528, 24576, 26624, 28672, 30720, 32768, 34816, 36864, 38912, 40960, 43008, 45056, 47104 (3.5" up to 28672)

**IDE COMPATIBILITY**

ANSI-X3.298-1997 (ATA-3); ANSI-X3.279-1996 (ATA-2)

**PERFORMANCE**

Burst Read/Write: 16.7 MB/sec  
 DMA-2 Transfer Mode:  
     Sustained Read: 8.2 MB/sec  
     Sustained Write: 8.0 - 9.8 MB/sec  
 PIO-4 Transfer Mode:  
     Sustained Read: 7.2 - 7.4 MB/sec  
     Sustained Write: 5.7 - 8.5 MB/sec  
 Access Time: <0.04 ms

**PHYSICAL**

Form Factor: 2.5" & 3.5"  
 Mounting: Industry standard  
 2.5" Dimensions (mm): 100.2(L) x 69.8(W) x 8.5 - 34.2(H)  
 3.5" Dimensions (mm): 146.0(L) x 101.6(W) x 25.4(H)  
 2.5" Weight: 0.1 kg for 1GB; 0.38 kg for 47GB  
 3.5" Weight: 0.45 kg for 28GB

**ENVIRONMENTAL**

Operating Temperature  
     Commercial: 0°C to +70°C  
     Enhanced: -25°C to +75°C  
     Extended: -40°C to +85°C  
 Storage Temperature: -55°C to +95°C  
 Humidity: 5% to 95% relative, non-condensing  
 Operating Altitude: Up to 80,000 ft  
 Operating Shock: 1,500G, MIL-STD-810F  
 Operating Vibration: 16.3 G RMS MIL-STD-810F (random, 20 Hz to 2000 Hz)

**POWER**

Input Voltage: 5VDC (4.75-5.25V range)  
 Typical Power Consumption for 10GB unit  
     Power Mode STANDBY 1.6 W/320 mA  
     Power Mode IDLE 2.2 W/450 mA  
     Sustained Write/Read 2.8 W/550 mA  
     Sanitize ERASE/FILL 2.9 W/590 mA

**COMPLIANCE**

CE, UL, EN 55022 Class B, CISPR 22 Class B, AS/NZS 3548 Class B, BSMI CNS 13438 Class B, CAN/CSA-V-3/2001.04 (VCCI), FCC Part 15 Class B, EN 61000-3-2, EN 61000-3-3, IEC 61000, MIL-STD-810F

**RELIABILITY**

MTBF: 1,804,403 hours for 1GB  
 Telcordia SR-332, GB, 25°C  
 EDC/ECC: on-the-fly, based on 48-bit Reed Solomon algorithm  
 BER (Bit Error Rate) <10<sup>-20</sup>  
 Built-In Power-Up Self-Test (BIT)  
 Manual and automatic self-diagnostics  
 TrueFFS bad block management  
 Data integrity under power-cycling  
 SMART (Self-Monitoring, Analysis and Reporting Technology)

**ENDURANCE**

Unlimited read  
 >5,000,000 write/erase cycles  
 TrueFFS dynamic wear-leveling  
 >10 years data retention

**USER INTERFACE & CONFIGURATION**

Interface: 16-bit  
 Master/Slave Mode: Jumper-selectable  
 Firmware Upgrade: Field upgrade capability  
 Format: Factory low-level format  
 Drivers: None required  
 Access Indicator: Green LED

**ENHANCED SECURITY ERASE**

Fast security erase in seconds  
 Sanitize complies with DoD NISPOM 5220.22-M, NSA 130-2, Air Force AFSSI 5020, Army 380-19, Navy NAVSO P-5239-26 and IREC (IRIG) 106  
 Software and hardware interrupt secure erase/sanitize  
 Auto-resume security erase/sanitize on power down  
 Partial/selective security erase  
 LED indication for secure erase/sanitize

**WARRANTY**

5 years

**CUSTOMIZATION**

PCB conformal coating  
 Faster read/write rates  
 Made in the USA & for FMF

**ORDERING INFORMATION**

2.5": FFD-25-IDEP-CCCCC-T-H  
 3.5": FFD-35-IDEP-CCCCC-T  
 CCCCC: Unformatted capacity (MB) 256 to 47104  
 T: Operating temperature range  
     Blank – Commercial: 0°C to +70°C  
     N – Enhanced: -25°C to +75°C  
     X – Extended: -40°C to +85°C  
 H: Case Height (mm) for 2.5" only  
     A–8.5 mm up to 2GB; B–11.3 mm up to 10GB  
     C–14.5 mm up to 16GB; D–18.5 mm up to 22GB  
     F–26.6 mm up to 34GB; H–34.2 mm up to 47GB

FFD IDE Plus - 48-PT-0504-00

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**USA** Tel: +1-510-494-2090 Fax: +1-510-494-5545  
**Japan** Tel: +81-3-5423-8101 Fax: +81-3-5423-8102  
**Taiwan** Tel: +886-2-8770-6226 Fax: +886-2-8770-6295

**China** Tel: +86-755-8348-5218 Fax: +86-755-8348-5418  
**Europe** Tel: +972-9-764-5011 Fax: +972-3-548-8666  
**E-mail** ffd@m-sys.com

