

# IDE 3000 2.5" Flash Disk

## Best Price-Performance 2.5" IDE Solid-State Disk



### Technology Overview

M-Systems' IDE 3000 IDE 2.5" flash disk is a state-of-the-art, solid-state disk based on flash technology and containing no moving parts.

The IDE 3000 design is an upgrade over the IDE 2000 product family and provides higher capacities of up to 1GB, with faster read/write performance and an improved cost structure.

Due to its unique design, the IDE 3000 2.5" eliminates seek time, latency and other electro-mechanical delays inherent in conventional disk drives. The IDE 3000 supports PIO 0-4 transfer modes and 2.5/2.0 MBytes/sec sustained read/write rates.

The IDE 3000 2.5" is fully compatible with the ATA-4 interface, and has the same mechanical dimensions as traditional mechanical disks. As such, the IDE 3000 2.5" is a true drop-in replacement for rotating disks where top reliability is required.

### Applications

The IDE 3000 2.5" provides an ideal storage solution for mission-critical applications that operate under harsh environmental conditions.

The IDE 3000 2.5" is used in telecommunication systems within optical and ATM switches, IP gateways, wireless base stations core routers, access systems and PBXs, providing NEBS level-3 compliance, top reliability and a maintenance-free solution.

Top reliability and high MTBF (>3,000,000 hours) enables using IDE 3000 2.5" in Factory Automation (FA) systems, Point Of Sale (POS) systems, assembly and robot controllers, and within manufacturing and medical systems.

M-Systems' family of flash disks has been used since 1997 as a mass storage solution for data recorders, moving maps, sonar, radar, fire control systems, black boxes, data acquisition systems, C4ISR, and rugged laptops and servers in air force, navy and army installations worldwide.

The IDE 3000 2.5" provides the most cost-effective solution without compromising speed, capacity, or data integrity, making it an ideal solution for demanding applications operating under harsh environmental conditions.

### IDE/SCSI Product Line

M-Systems' IDE/SCSI product line offers complete solutions for customers who require rugged and high-performance solid-state flash disks. M-Systems product offering includes IDE/ATA, Narrow SCSI and Ultra-Wide SCSI interfaces in 1.8", 2.5" and 3.5" form factors:

- FFD 2.5" IDE
- FFD 2.5" IDE Plus
- IDE 3000 2.5"
- IDE 3000 3.5" and 1.8"
- FFD 2.5" SCSI
- FFD 3.5" SCSI
- FFD 3.5" Ultra-Narrow SCSI
- FFD 3.5" Ultra-Wide SCSI



### Main Features

- Best flash disk cost structure
- 32MB to 1.0GB disk capacity
- 2.5" standard form factor
- 6.0 mm case height
- ATA-4 interface
- PIO 0-4 transfer modes
- 16.6 MBytes/sec burst read/write
- 2.5 MBytes/sec sustained read rate
- 2.0 MBytes/sec sustained write rate
- 1,000,000 write/erase cycles
- Improved endurance by controller media wear-leveling management
- ECC/EDC based on 48-bit Reed-Solomon Algorithm
- No driver required
- True "drop-in replacement" for 2.5" mechanical disks
- MTBF > 3,000,000 hours
- Lowest power consumption lower than 80 mA for read/write operations
- No moving parts
- 1000G operating shock
- 15G RMS operating random vibration
- -55°C to +95°C storage temperature
- -40°C to +85°C operating temperature
- 50,000 feet operating altitude
- 3-year warranty

## IDE 3000 2.5" Specifications

### Disk Capacity

Unformatted (Mbytes): 32, 64, 80, 96, 128, 192, 256, 320, 384, 512, 640, 768, 896, and 1024

### IDE Compatibility

Industry Standard ATA-4 (Not supporting DMA)

### Performance

Burst Read/Write: 16.6 MBytes/sec  
Sustained Read: 2.5 MBytes/sec  
Sustained Write: 2.0 MBytes/sec  
Access time: <0.1ms

### Physical

Form factor: 2.5"  
Mounting: Industry standard  
Case dimensions (mm) 100.2(L) X 69.8(W) X 6.0(H)  
Weight: <80g /0.08Kg for 1024 MB unit

### Environmental

Operating temperature  
Commercial: 0°C to +70°C  
Extended/Industrial: -40°C to +85°C  
Storage temperature: -55°C to +95°C  
Humidity: 8% to 95% relative, non-condensing  
Operating altitude: 50,000 feet  
Operating shock: 1,000G (half sine 0.5ms)  
Operating vibration: 15G RMS

### Power

Input voltage: 5VDC (4.7V to 5.5V)  
Power consumption for 1GB unit:  
Read/Write mode: <80.0mA (0.42 Watt)  
Idle/Sleep mode: 2.0mA

### Compliance

UL, CE, FCC Part 15 Class B, EN 55022 Class B, CISPR 22 Class B (MIC), V-3/2001.04 Class B (Japan), AS/NZS 3548 Class B (Australia/NZ), BSMI CNS 13438 Class B (Taiwan), CAN/CSA-CISPR 22-96 Class B (Canada), CFR 47 FCC Class B, EN 55024, EN 61000 (EMC)



### Reliability

MTBF: 7,325,120 hours MTBF for 256MB  
3,293,270 hours MTBF for 1GB  
Based on Telcordia SR-332, GB, 25°C  
EDC/ECC: EDC/ECC based on 48-bit Reed Solomon algorithm

### Reliability features

Built-in power-up self-test (BIT)

### Endurance

Read unlimited  
1,000,000 write/erase cycles based on Toshiba NAND flash components  
100,000 write/erase cycles based on Samsung NAND flash components  
Improved endurance by controller media management  
>10 years data retention

### User Interface & Configuration

Interface: 8-bit  
Master/Slave mode: Jumper-selectable  
ATA transfer modes: PIO 0-4  
Firmware upgrade: Field upgrade capability  
Drivers: None required

### Warranty

3 years  
Additional warranty of up to 7 years is available

### Customization

PCB conformal coating  
Customizing case dimensions

### Contact Us

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### Ordering Information

IDE-25-CCCC-T  
CCCC: Unformatted capacity (MB) 32 to 1024  
T: Temperature range  
Blank – Commercial: 0°C to +70°C  
X – Extended: -40°C to +85°C



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