

USB-Based Flash Storage Solution

# uDiskOnChip

Unmatched Speed, Reliability  
and Security



uDiskOnChip™ (uDOC™) merges M-Systems' expertise in the USB 2.0 high-speed interface with its decades of flash know-how in embedded systems. The result is the industry's highest performance, uncompromising reliability and built-in security to encrypt data and code.

uDiskOnChip is the ideal storage solution for a vast array of markets such as gaming, industrial PCs, thin clients, POS workstations, servers and telecom infrastructure equipment.



uDiskOnChip. Never before has so much added value come together in a single, cost-effective flash storage device.

### USB FLASH DISK LEADERSHIP

M-Systems holds the patent for the first, USB flash drive platform, implemented in DiskOnKey. Today, M-Systems remains the worldwide leader in this area. uDiskOnChip benefits from this expertise.

### FASTEST PERFORMANCE IN THE MARKET

uDiskOnChip uses a high-speed standard USB interface enhanced with M-Systems' Fly-By™ algorithms. uDiskOnChip delivers Read rates as high as 20MB/sec, resulting in the fastest OS boot and application loading rates. Write rates up to 10MB/sec enable faster file caching.

### UNMATCHED DATA INTEGRITY

M-Systems' TrueFFS®, an industry standard for reliability, is built into uDiskOnChip's firmware, requiring no software integration.

### DATA SECURITY AND ENCRYPTION

The SuperMAP™ cryptographic engine used in uDiskOnChip is backed by over 15 patents and has been field-tested in tens of millions of smart cards. Developed by M-Systems' Data Trust division (formerly Fortress), SuperMAP enables full-speed code and data encryption, PKI key exchange and authentication. Boot and application partitions are secured by a 64-Byte RSA Key.

### LESS SILICON, MOST COST-EFFECTIVE

uDiskOnChip is currently based on Single-Level Cell (SLC) NAND flash technology. Multi-Level Cell (MLC) NAND is planned for use in the next generation product, enabling further cost benefits.

### PERFORMANCE

- Up to 64MB: Read 13MB/sec, Write 7MB/sec
- 128MB and higher: Read 20MB/sec, Write 10MB/sec

### SECURITY

- SuperMAP cryptographic engine
- Provisions for: DES/3DES, SHA-1, RSA, AES
- Low Profile configuration: hardware Write protection

### OS SUPPORT

- Microsoft XP Embedded
- Microsoft Windows for Point Of Service
- Microsoft Win.CE
- Microsoft XP Pro
- Linux
- VxWorks


### RELIABILITY

- TrueFFS flash management and static/dynamic wear leveling
- On-the-fly EDC/ECC: up to 4 errors/page
- Mean Time Between Failure (MTBF): Up to 4.66 million hours

### FORM FACTOR

- 2x5 header, x86 internal USB standard
- Configurations: Horizontal, Low Profile

### WIDE OFFERINGS

- Capacity range: 32MB - 4096MB
- RoHS compatibility 

### ELECTRICAL

- DC supply voltage: 5V (±10%)
- Active mode: 100 mA (typ)

### ENVIRONMENTAL

- Commercial temperature: 0°C to +70°C
- Extended temperature: -40°C to +85°C
- Storage temperature: -55°C to +95°C

### ORDERING INFORMATION

J = Mechanical support connector  
 T = Extended temperature  
 P = RoHS support

- Horizontal: MDI665-DXXXX-J-T-P (XXXX=32MB-4096MB)
- Low Profile: MDI675-DXXXX-T-P (XXXX=32MB-4096MB)

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