DiskOnChip® 2000

The Industry-Standard Local Storage Solution

- Single-chip flash disk
- Easy to use interface
- Up to 288 Mbyte capacities (Future capacities: 576 Mbytes and up)
- Pinout & S/W Compatible with 8 Mbyte DiskOnChip Millennium
- 32-pin DIP JEDEC standard
- EPROM/FLASH compatible electrical interface
- High performance - 1.4/0.5 Mbytes/sec sustained Read/Write
- EDC/ECC for maximum data reliability
- Full boot capability
- Built-in TrueFFS® provides full hard disk emulation
- Broad CPU and O/S support
- Optimal Windows CE persistent storage solutions
- 8 Kbyte memory window
- Cost effective solution
- Low power consumption

Overview
M-Systems DiskOnChip® 2000 is a high performance single-chip flash disk in a standard 32-pin DIP package. This unique data storage solution offers cost effective data storage beyond that of traditional hard disks. Perfect for applications with limited space and varying capacity requirements. The DiskOnChip 2000 is simply inserted into a 32-pin DIP socket on your CPU board and you have a bootable flash disk.

Optimal Solution for Internet Appliances, Thin Clients & Embedded Mother Boards
The DiskOnChip 2000 has become the standard modular flash disk for Internet Appliances (such as set-top-boxes) and embedded single board computers.

TrueFFS
The DiskOnChip 2000 includes M-Systems proprietary TrueFFS® (True Flash File System) technology built-in, providing complete read/write capability and hard disk emulation. TrueFFS provides hard disk compatibility at both the sector and file level. The DiskOnChip 2000 works in all major operating systems including DOS, Windows 2000/CE/Embedded NT, pSOS+, VxWorks and QNX. It is also relatively easy to customize to work in O/S-less and non-x86 environments.

Reliability
The use of TrueFFS, in conjunction with the built-in EDC/ECC, provides maximum data reliability, even under harsh operating conditions such as power failures. A advanced wear leveling ensures long flash life for maximum usage.
Compatibility
Full hard disk emulation
Host O/S Support
DOS 3.3 and higher, Windows 2000, WinCE, WinNT, Linux, FreeBSD, VxWorks, QNX, pSOS+ (can be customized for other environments)

Capacity
16, 24, 32, 48, 64, 72, 80, 96, 112, 144, 160, 192, 288 Mbytes

Performance
Sustained Read Speed: 1.4 Mbytes/sec
Sustained Write Speed: 500 Kbytes/sec
Burst Transfer Read Rate: 5 Mbytes/sec
Burst Transfer Write Rate: 5 Mbytes/sec

Package Type
32-pin DIP, 600 mil. width, JEDEC standard

Dimensions in Millimeters
Low profile: 43.75 x 18.10 x 5.80
High profile: 43.75 x 18.10 x 12.80

Ordering Information
MD 220y-Dxxx-xx-t

Capacity
16 - 16 Mbytes
24 - 24 Mbytes
48 - 48 Mbytes
72 - 72 Mbytes
96 - 96 Mbytes
112 - 112 Mbytes
144 - 144 Mbytes
160 - 160 Mbytes
192 - 192 Mbytes
288 - 288 Mbytes

Supply Voltage
V3 - 3.3V
Blank - 5V

Temperature Range
X - Extended -40°C - +85°C
Blank - Commercial 0°C - +70°C

Current Consumption
Standby 60µA (typical), 100µA (maximum)
Read 25mA (typical), 40mA (maximum)
Write 30mA (typical), 40mA (maximum)

EDC/ECC
The enhanced Reed-Solomon EDC/ECC logic provides the following detection and correction capability for each 512-byte block of data:
• Corrects up to two 10-bit symbols, including two random bit errors
• Corrects single bursts up to 11 bits
• Detects single bursts up to 31 bits and double bursts up to 11 bits
• Detects up to 4 random bit errors

^ Contact M-Systems for availability
^ Performance measured in an ISA bus system with no wait states and a Pentium 133 MHz