

MD Data Drives

NEW 140 MB REWRITABLE MINIDISC DATA DRIVES FOR PORTABLE MULTIMEDIA

FEATURES

- Ultra-thin form factor (17 mm model)
- 140 MB storage capacity uncompressed
- Ultra-compact 2.5" mini disk
- Proprietary hologram laser pick-up for high reliability
- Compact, reliable mechanism proven through volume production of audio MD
- Three configurations:
 - Internal bare drive (17 mm)
 - Internal bare drive (41 mm) multi-drive interface
 - Portable stand-alone drive, SCSI interface
- Music playback capability

MINIATURIZED, REMOVABLE STORAGE WITH MUSIC PLAYBACK CAPABILITY

With its new MD (MiniDisc) Data Drive, Sharp introduces a powerful storage solution for portable PC based multimedia applications. Evolved from audio MD, Sharp's drives can record up to 140 MB of data—color images and sound—on a super-compact mini disk measuring just 2.5 inches (63 mm). That's 100 times the capacity of current floppies—at a drastically reduced per-megabyte cost.

APPLICATIONS:

- Multimedia computing
- Music/sound recording
- Data/package software
- Still photography
- Video recording

To encompass a wide range of application requirements and user demands, the new drive is available in a choice of three different configurations.

Music playback capability is offered as a standard feature with the stand-alone unit.

Sharp backs this breakthrough performance with exceptional reliability using a proprietary holographic read head. The

thin-profile, lightweight pick-up integrates all components into a single package, for dependable operation at the desk or on the road. Thermo-assisted magnetic field modulation ensures MD data integrity and security.

Available for immediate delivery, Sharp's new drive is the solution best able to answer the need for removable, high capacity storage—so compact you can hold it in the palm of your hand.

MINIDISC DATA DRIVE TENTATIVE SPECIFICATIONS

Product Type	Stand Alone Unit	41.3 mm	17 mm	12.5 mm
Prototype Schedule	1/95	8/95	2/96	8/97
Mass Production	Now	2/96	8/96	3/98
Data Transfer Rate	150KB/S	150KB/S	150KB/s-300KB/s	600KB/S
Access Time	~600ms	~300ms	~300ms	TBD
Loading Type	Clam Shell	Front	Front	Front
Interface	SCSI	**MDIC	MDIC	MDIC
Capacity	140MB	140MB	140MB	650MB~700MB
Cache Buffer	128KB	128KB	128KB	128KB
Power	AC and Battery	2W/5V	2W/5V	>2W/5V
MTBF *(10%)	50,000 POH	50,000 POH	50,000 POH	50,000 POH
Loading	10,000	10,000	10,000	10,000

* Assumption: device is on 10% of the time.

** MDIC: Multi Drive Interface Cell, new, low cost i/f developed by Sharp/NSC.

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#	Question	Answer
1 2	What is the positioning for MD Data? Where are the applications for MD Data?	MD Data is being positioned as a floppy replacement for the personal computer. In addition, a line-up of MiniDisc-based consumer products is in planning (PDA, Still Camera, ViewCam, etc.). MiniDisc will offer a single media across many application platforms.
3	During the transition period, will floppy disk coexist with MiniDisc?	Yes, both storage options will coexist. Because the MiniDisc Data drive is being multiplexed over the existing floppy cable, the same storage slot can accommodate either an FDD or an MDD. The MDD i/f function will be handled on the motherboard of the host via a cell within the Super I/O chip (for more information, please visit the National Semiconductor booth).
4	What about CD-ROM?	CD-ROM and MiniDisc Data are complimentary storage technologies. CD-ROM is read only and an excellent tool for software distribution. MDD is rewriteable and its very compact form factor makes it an ideal portable storage solution for authoring personal multimedia content.
5	What is the schedule for the first MD Data product?	We will sample the 17mm drive after Q1 '96 with mass production in Q3 '96.
6	What is the target price of the data drive?	Target is \$200 OEM.
7	What about other form factors?	In 8/97 we are planning the release of a 12.5mm drive with a target 4X capacity.
8	Who makes the 2.5" media today?	There are multiple sources for the media: Sony, Kurare, TDK, Hitachi, Maxcell, Idemitsu, and Zeus.
9	Is there any plan for speed increases? Capacity increases?	A 2x speed desktop drive will be introduced at the end of 1996. A capacity jump to 650MB (4x) is planned for 1997.
10	What about multimedia capabilities?	Today, the 140MB disk can contain 365 still pictures plus 40 minutes of audio. However, the motion picture standard has not been finalized.
11	What is the power consumption of the 17mm drive?	2W/5V
12	What are the physical dimensions?	101.6mm x 123mm x 17mm
13	What kind of interface (i/f) does it use?	"MDIC" (Multidrive Interface Controller) developed by National Semiconductor as an enhancement to the floppy disk controller. NSC designed a cell within the Super I/O to control the software implementation of most of the i/f functions of the drive. In this manner, the drive cost and integration ease were significantly streamlined.
14	Who offers MiniDisc Data drives?	Today, Sony and Sharp. But, many AV manufacturers are jumping into the MD Audio market: JVC, Kenwood, Columbia, Sanyo, Fujitsu-Ten, Pioneer, Ten, Matsushita, etc.
15	Is the 140MB compressed data?	No, Minidisc data is uncompressed data at writing. Using popular compression algorithms available on the PC, 140MB can be compressed to 280MB+.
16	What are some of the specifications?	Data transfer rate: 150KB/s Access time: ~300ms Buffer memory: 512KB
17	Can the same data minidisk be used in Macintosh and AT/PC environments?	Yes.

Specifications subject to change without notice.