

SuperDisk Technology



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Presented at THIC Meeting, San Mateo, CA - July 22-23, 1998

SUPER
120MB **DISK**

- **Agenda**
 - **What is SuperDisk?**
 - **The Evolution of a New Standard**
 - **SuperDisk Configurations**
 - **OEM Supporters**
 - **Encryption to Protect Your Data**
 - **Questions & Answers**

SuperDisk-What is the product?



“Wouldn't it be nice if once in a while, a new gadget came along that didn't make the old one obsolete? At last, there is such a gadget.”

—Cincinnati Enquirer



SUPER
120MB **DISK**

SUPER ***DISK***TM ***120MB***

120 MB



**Over 80 Times
the Capacity of
1.44 MB Diskettes**

***SUPER*DISK™ DRIVE**



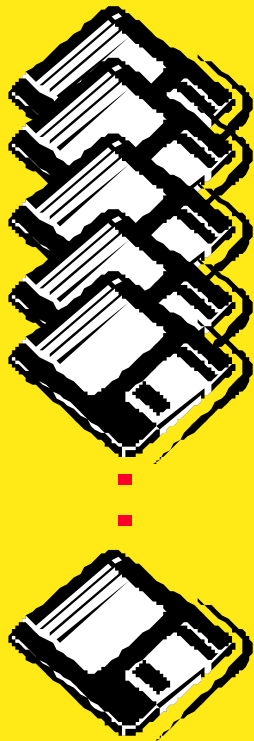
SuperDisk - What is the product?



- **It's a diskette**
 - 120 MB in a familiar format
 - “Something new you don't have to learn”
 - 5x faster than conventional diskettes
 - 300 to 500 Kbps
- **It's a Drive**
 - Read and write 120 MB superdisks
 - Read and write existing 1.44 MB & 720 KB disks
 - IDE internal, external parallel, USB, SCSI, PCMCIA

SUPER DISK
120MB

**83 HD Diskettes can be stored on just ...
... one single SuperDisk™ 120MB Diskette.**

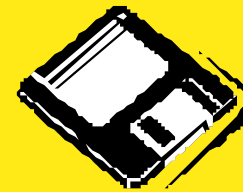


- Reads/Writes 5 times faster than 2MB Diskettes
- Reads/Writes existing 1MB and 2MB Diskettes up to 2.5 times faster

Capacity



Compatibility



Super Disk™ Convenience for Users



Familiar, easy to use diskette technology

Provides flexibility in media choice

**Guarantees interchange with the
universally available storage device**

– 1.44 MB floppy

**Provides capacity and performance for
new applications**

- Color, motion and sound
- Desktop publishing
- Image and graphics
- X-Ray Image Distribution
- Presentations



120 MB LS-120



1.44 MB

**SUPER
120MB DISK**

SuperDisk™ Specifications



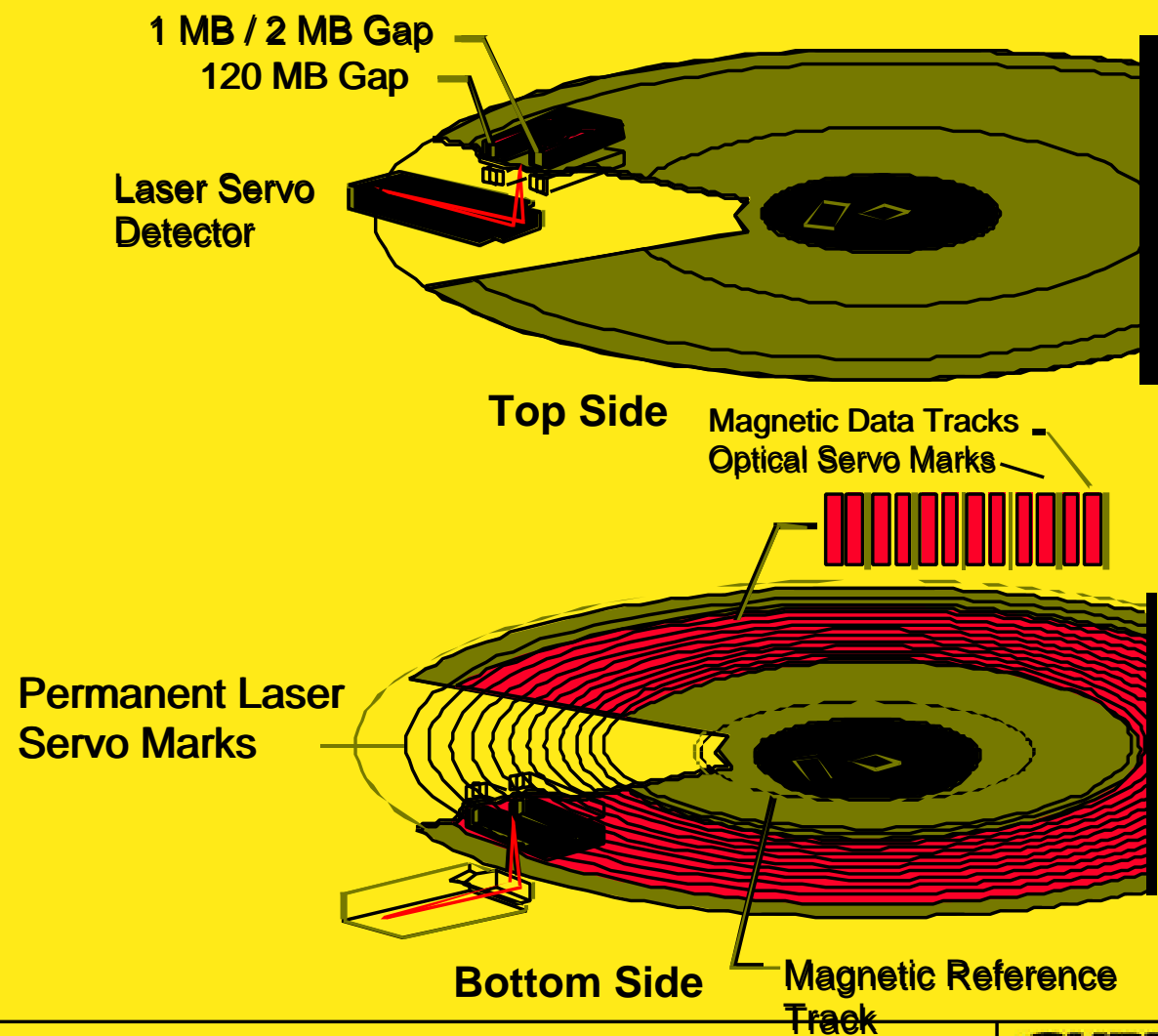
1500 Oersted MP Media

<u>Specifications</u>	<u>2MB</u>	<u>120MB</u>
Formatted Capacity	1.44 MB	120 MB
Linear Density (max.)	17.4 Kfci	33.6 Kfci
Transfer rate (max.)	56 KB/s	484 KB/s
Seek Time (ave.)	90 ms	65 ms
Track Density	135 tpi	2490 tpi
Number of Tracks	160 x 2 sides	1736 x 2 sides
Rotational Speed	300 rpm	720 rpm
Power Consumption	+5V, 1.5W	+5V, 1.5W
Drive Dimensions	12.7- 25 mm	12.7- 25 mm

SUPER DISK
120MB

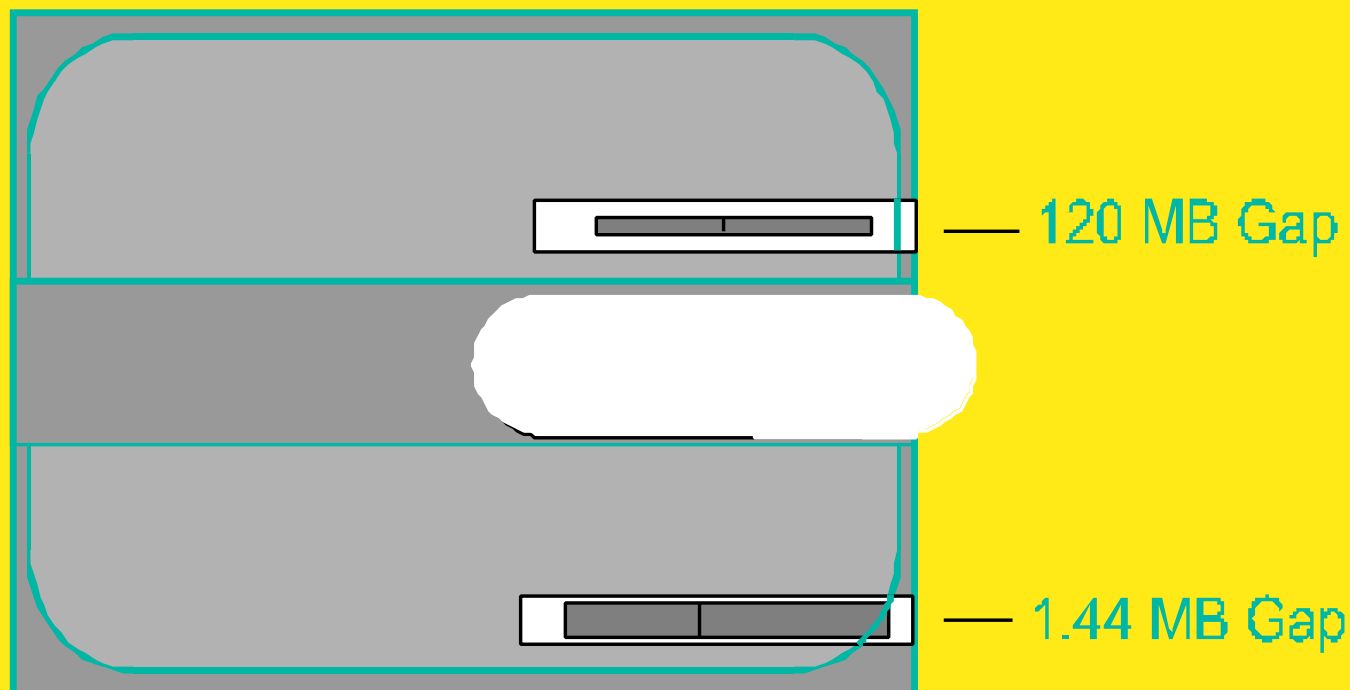
- **Lifetime warranty**
- **Tested to 10,000,000 passes**
Off-load / on-load entire 120MB contents 2 times per week, 50 weeks per year, for 2+ years
- **Go-anywhere features, anti-fungal**
- **Broad operating temperature range 5° - 60°C**
Note: Computers rated to 45°C,
Competitive disks rated to 32°C
- **Familiar, proven technologies**

SuperDisk™ Optical Tracking

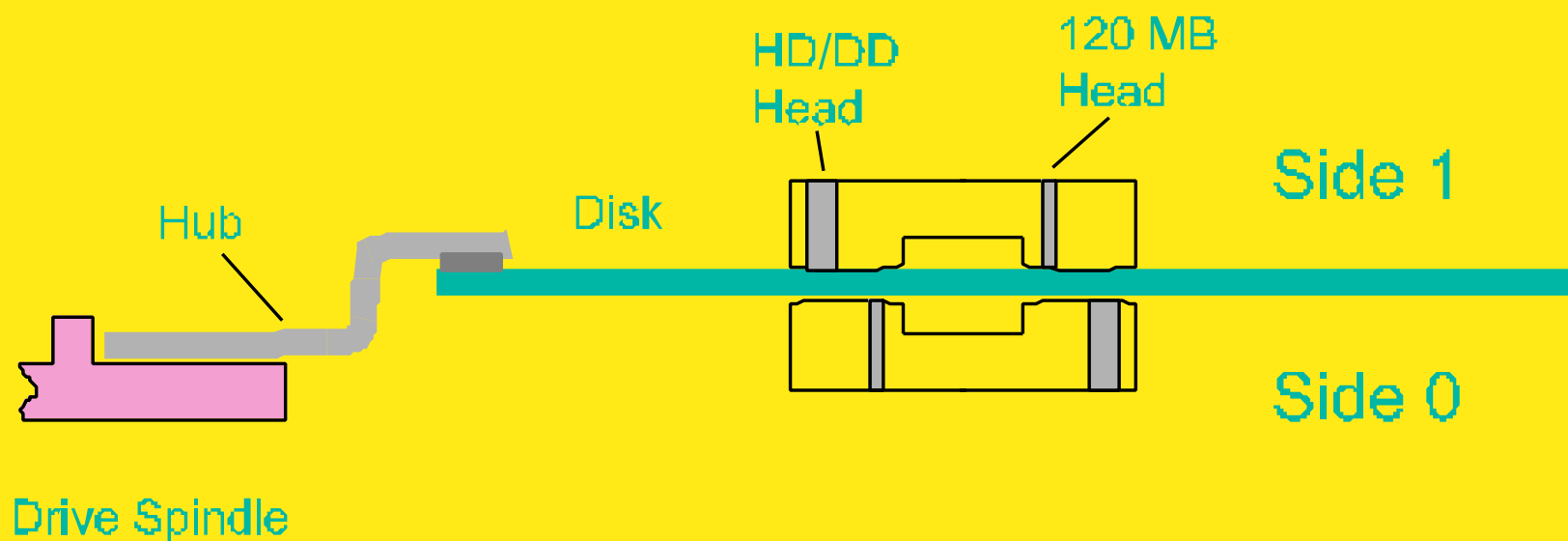


SUPER
120MB DISK

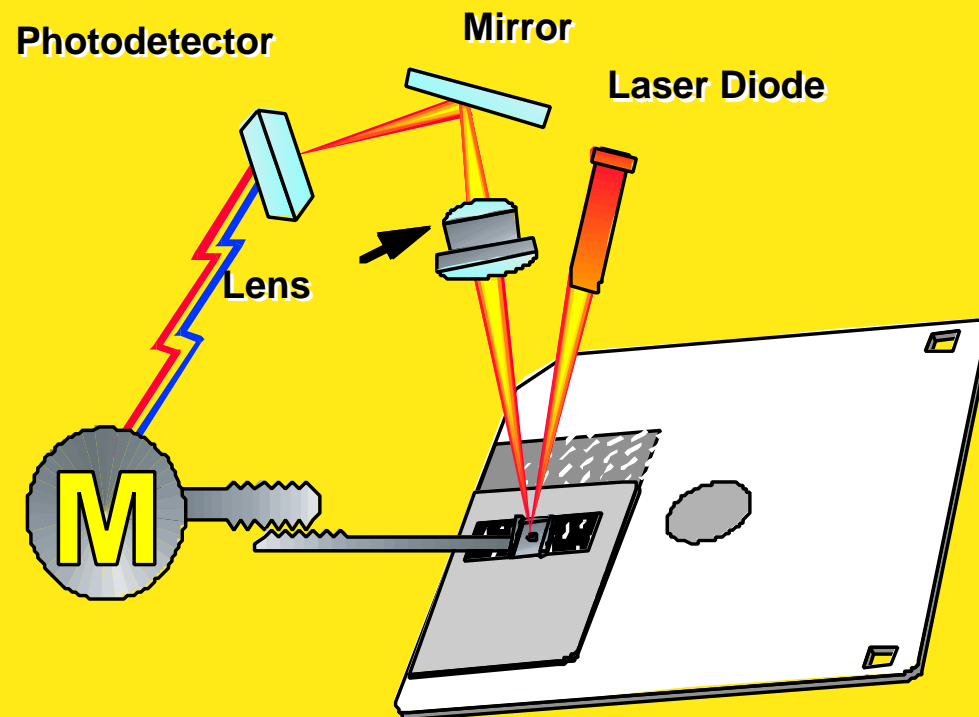
SuperDisk Drive Head Construction



Heads and Disk Layout



SuperDisk™ Optical Tracking



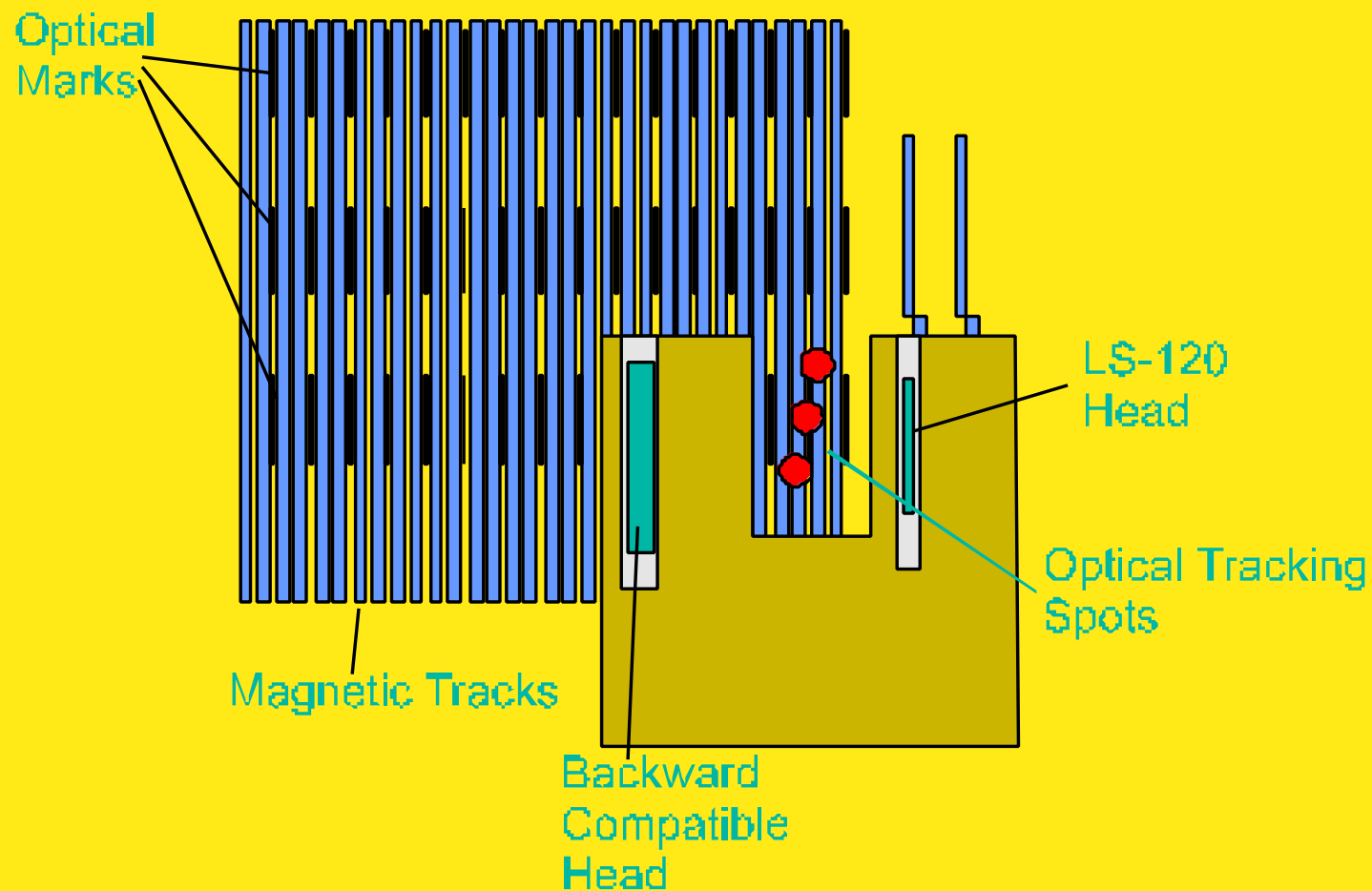
- 120 MB
- 33.6 Kfci MP Media
- 2490 TPI
- Zone Bit Recording
- Servo Tracking
- 720 RPM
- 65ms Access Time

SUPER
120MB *DISK*

SuperDisk™ Optical Tracking



LS-120 SuperDisk™



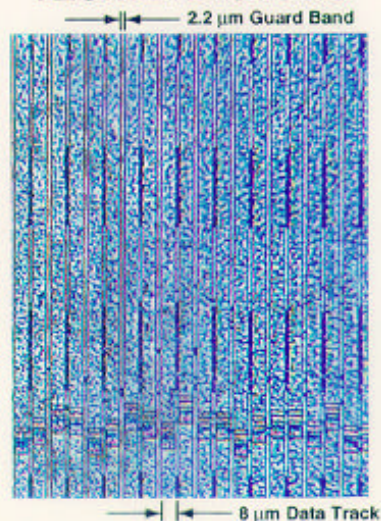
SUPER
120MB **DISK**

SuperDisk™ Optical Tracking



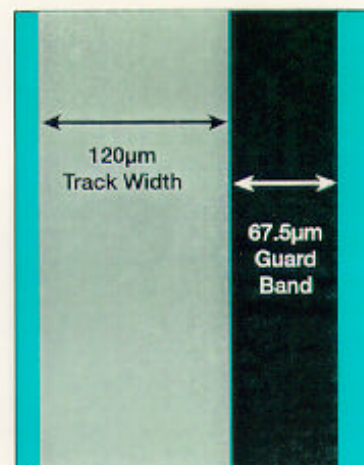
120MB Laser Servo Diskette Closer Spacing → Greater Capacity

120MB Diskette



- Permanent laser servo marks
- 2490 tracks/inch
- 10.2 μm center-center

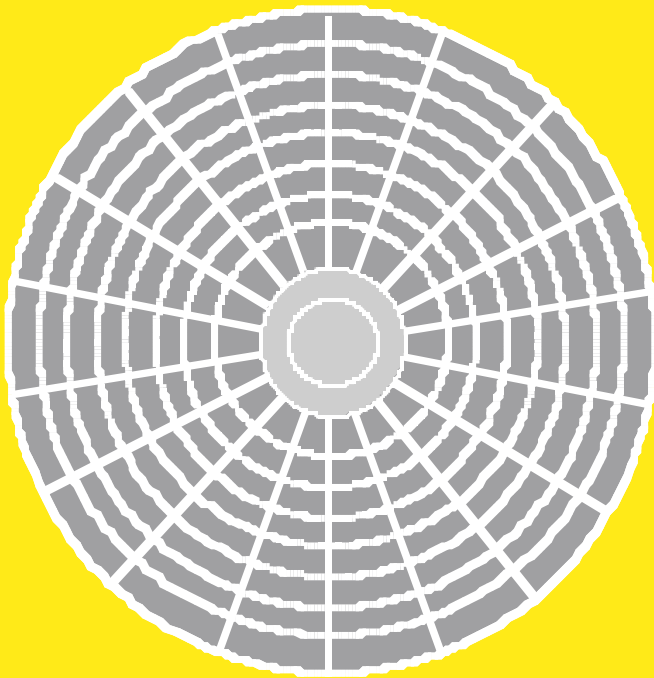
1.44MB Diskette



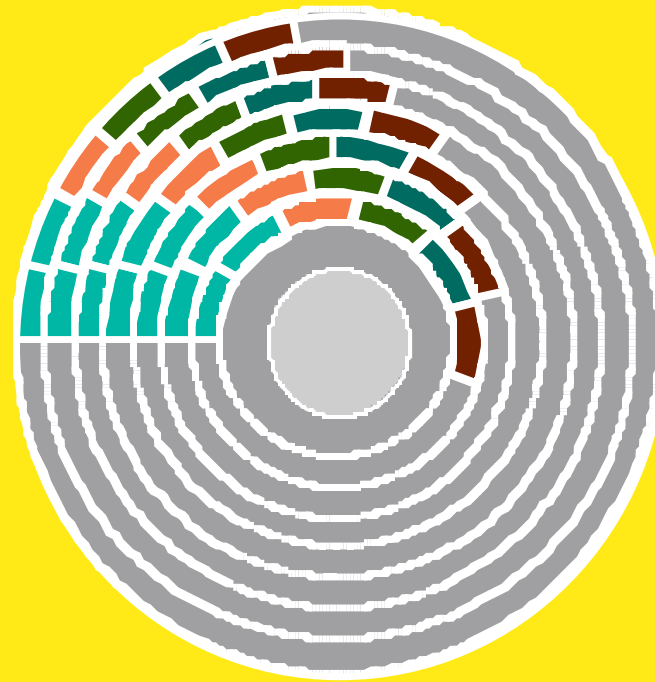
- No servo (open loop)
- 135 tracks/inch
- 187.5 μm center-center

SUPER
120MB DISK

Zone-Bit Recording



1.44 MB
80 Tracks/Side
18 Sectors/Track
9.2KB/Track (512Byte/Sector)



120 MB
1736 Tracks/Side
51 - 93 Sectors/Track
26-47 KB/Track (512Byte/Sector)

- **ZONE-BIT RECORDING**
 - 55 ZONES PER SIDE
 - MAINTAINS SIMILAR RECORDING DENSITY ON ALL TRACKS
 - ZONE 0, SIDE 1 HAS 93 PHYSICAL SECTORS
 - ZONE 109 ON SIDE 0 HAS 51 PHYSICAL SECTORS
 - ZONES 108 & 109 HAVE SPARE SECTORS

- Dual head design -- transparent compatibility
- Faster spin speeds
- Powerful error correction
 - Interleaved Reed-Solomon code will correct a burst of up to 80 bits - (10 Bytes together) per sector
- Metal particle coating
- High bit density
- Lifetime warranty

What Makes a “Standard?”



- High-quality product that meets a compelling customer need
- Technology and manufacturing framework
- Competitive price and performance points
- Ease of use and adoption
- Universality and non-proprietary technology
- Broad, cross-manufacturer and cross-platform acceptance

Why is SuperDisk the logical new standard in removable media?



- Addresses the limited capacity of the 1.44 MB floppy drive
- SuperDisk protects the value of your legacy media
- SuperDisk has multiple manufacturers (drives/media)
- Meets the interchange requirement for all PCs and platforms
- Provides a very low cost media option

SUPER DISK
120MB

- BIOS and native OS support
 - Phoenix, Intel, Award, AML, etc
 - Windows 95, 98, NT
- Multiple platform availability
 - Full height for desktops
 - True 12.7mm for notebooks
 - PPD, USB and SCSI for external add-on
 - PCMCIA for legacy notebooks
- Multiple drive and diskette manufacturers
 - Mitsubishi, MKE, OR Tech and NEC making drives
 - Imation and Maxell making media

Operating Systems Support LS-120 supported by Microsoft

- Windows NT 4.0
- Windows 95 (OSR2) and Windows 98
- Drivers available for Windows NT 3.51 and Windows 3.1

Award, Phoenix, AMI modified their BIOS

- to enable LS120 to be installed as a bootable device

Promise Technology

- Offer “Floppy MAX” bootable, plug and play ATAPI controller.

Why SuperDisk Technology?



- Billions of diskettes still sold annually, emphasizing the need for backward compatibility
 - 4 Billion in 1997 alone.
- 120 MB SuperDisk solves capacity, compatibility, ease-of-use and pricing challenges for the user
- Non-proprietary technology, multiple companies, suppliers involved
- Opportunity to leverage reliability of established diskette technology
- Restores multi-functionality to diskette drive
- CUSTOMERS ARE UNDERSTANDING AND REQUESTING!

SUPER DISK
120MB

- **March 1997**
 - 100,000 Drives Shipped
- **March 1998**
 - 2 Million Drives Shipped
- **1999**
 - 10+ Million Drives to be Shipped

SuperDisk In Our Mobile World

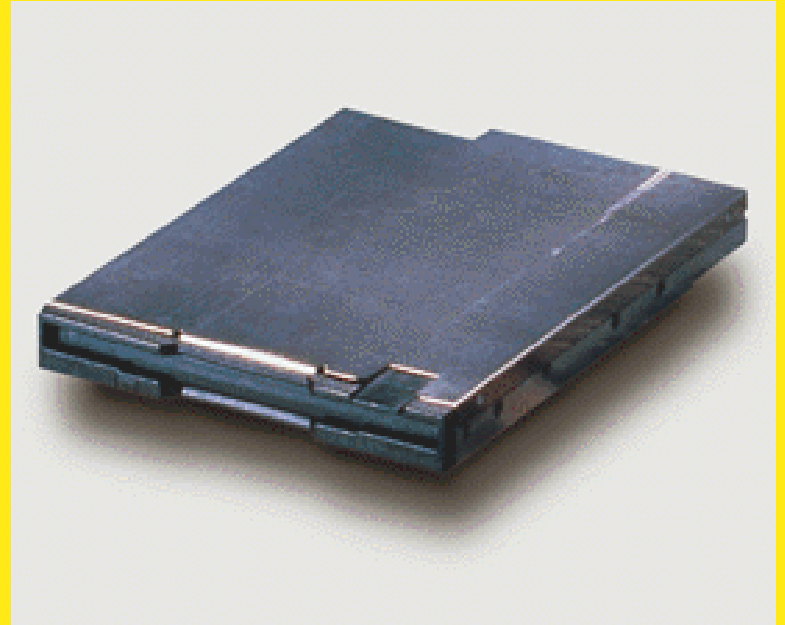
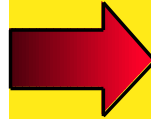
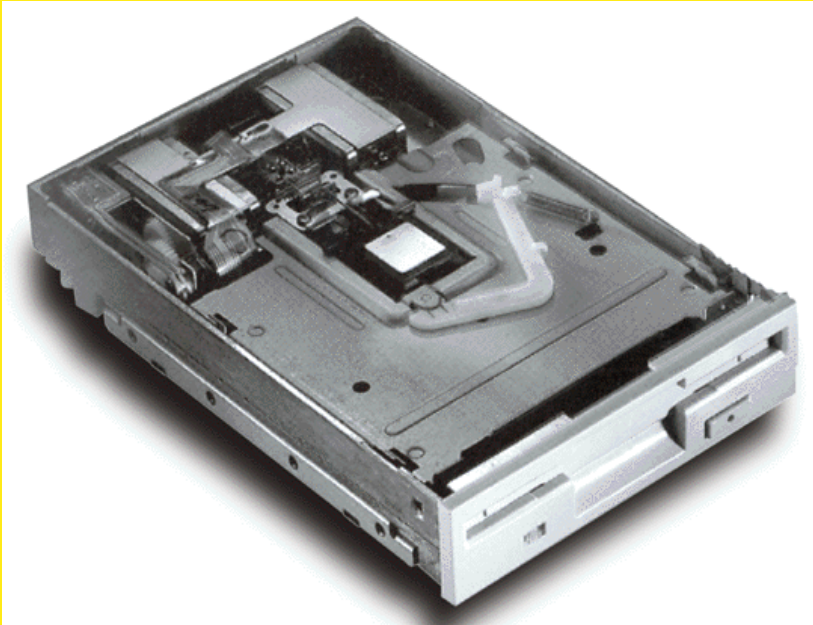


- Large Capacity Drive
- Dual Compatibility
- Ease of Use
- Remote Backup
- Secure Information
- Software Distribution
- Lower Power Consumption

- **ONE STANDARD !!!**

SUPER DISK
120MB

SuperDisk is Mobile !!



Full size
1 high
3.5 FF

Slim line
12.7 MM

SUPER DISK
120MB

Why SuperDisk in the notebook space?



- **Constrained space**
 - Power/Real estate
- **Multi-function device**
- **Price value vs alternatives**
- **Match up well with new Pentium II “Thin and Light”**
 - IBM 600/770
 - Compaq 7300/7700/7800
 - HP 4100 and 7100
 - Gateway
 - NEC SX
 - Acer

- **Growing OEM adoption (43!!)**
 - Pentium II notebooks showing strong support
 - Move to slim notebooks require true 12.7 mm height
- **Desktop upgrade kits readily available for installed users**
 - Hi-Val, USA Identity, Digital Research
- **Large SuperDisk conversions developing**
 - Ernst and Young (corp. std.)
 - Coopers and Lybrand (corp. std.)
 - Oracle, Price Waterhouse, Motorola
 - FAA, Dept. of Commerce, Air Force Academy

Major OEMs Supporting SuperDisk



And more!

SUPER DISK
120MB

Worldwide OEMs and ODMs that are shipping or will ship SuperDisk



- Compaq
- IBM
- Hewlett Packard
- Gateway
- Acer
- NEC
- Fujitsu
- Hitachi
- Vobis
- Siemens Nixdorf
- American Computer Company
- Enorex Microsystems
- Advanced Technology Group - ATG (Acer Open supplier)
- Trademark Computer Systems
- USA Flex (a Division of Micro Warehouse)
- Systemax
- New MMI Corporation
- D&H Systems Group
- Everex
- Sharp
- Epson
- Toshiba
- Arsys
- SuperComm
- ASI
- Almo
- Epson Direct
- Twinhead
- Tiger Direct
- Midwest Micro
- Quanta
- Compal
- Inventec
- Clevo
- Mitac
- Samsung
- Amptech
- Unicent
- Asustek
- Chicony
- Dual
- FIC
- Kapok
- Fujitsu ICL

SUPER DISK
120MB

SuperDisk Advantages



- One Drive - Two Formats
- Choice of 120MB or 1.44MB
- Easy Back-up and Download
- Lower Support Costs
- Mobility with No Hassle
- Worldwide Availability of Drives & Media
- Durability
- Imation/3M Engineering Tradition
- Environmentally Friendly

SUPER DISK
120MB

SuperDisk development plans



- **USB support**
 - iMac support initially Aug 1998
 - Wintel support Oct 1998
- **PCMCIA support**
 - Accurite Available now
 - Addonics Available now
- **SCSI support**
 - Winstation Available now

- **Encryption is the scrambling of information to make it accessible only to specified parties. It requires a key or password for access.**
- **Information Security/Protection**
 - **Safeguard sensitive information...e.g. Financial Reports, Strategic Plans, Technical Information, Personnel Data**
 - **Protect information when you travel from theft or damage/loss**
 - **Protect large files that are sent via mail/courier/air express**

- No separate software purchase(s) required by originator or recipient - Supplied on disk
- Easy to use on Windows 95, Windows 98 and Windows NT with drag-and-drop simplicity
 - Version 3.0 - due for release Sept 98
- Creates a “secured drive” on your SuperDisk that is accessible only by your password
- Save encrypted and non-encrypted files on the same SuperDisk

- **Unique encryption product
(blowfish algorithm with 64-bit key)
carried on a special SuperDisk diskette**
 - **Very powerful level of encryption!**
 - **Application and data on same diskette
providing unique transport medium**
 - **Low cost of ownership**
 - **Simple, intuitive, drag and drop interface**

www.superdisk.com

Internet provides complete SuperDisk database
www.superdisk.com



More interactive
features

Links to computer
manufacturer
product sites

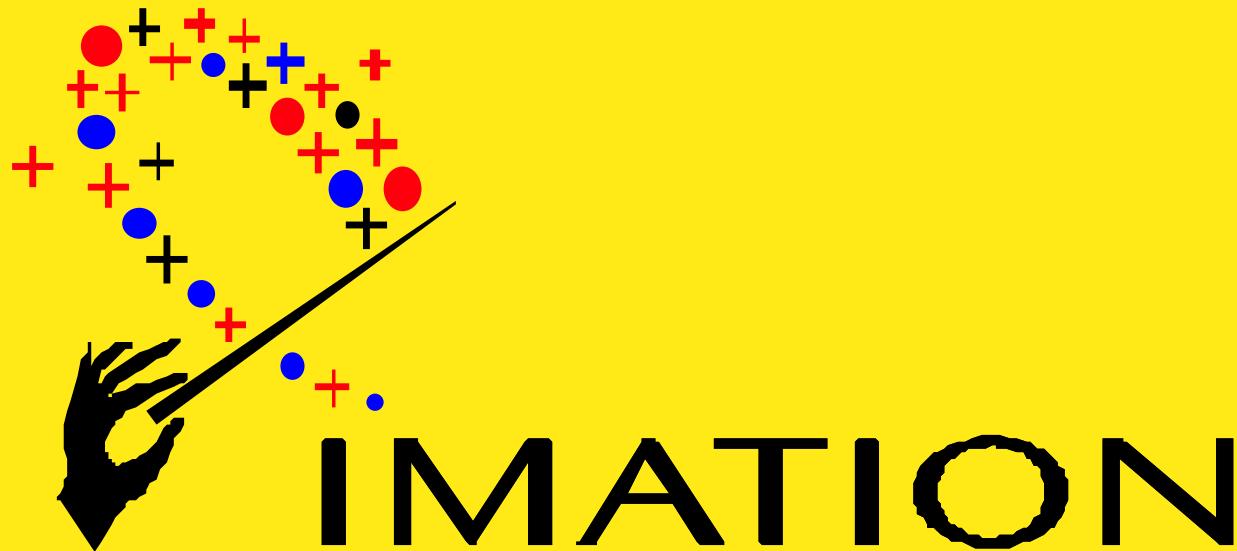
On-line
promotions



SUPER
120MB **DISK**

***SUPER* DISK™**

**The New Standard
in Removable Storage**



Borne of 3M Innovation

**The World's Leading Manufacturer
of Data Storage Media**

SUPER DISK
120MB