5 ¼-inch Full-Height Winchester Disk Drive

Capacity: 1.0 GBytes
Access Time: 14.5 msec
Interface: 20 MHz ESDI
MTBF: 150,000 hours

The Micropolis 1538 high performance 5 ¼-inch Winchester disk drive offers 1.0 GByte capacity and an ESDI interface in a full-height form factor. Using the same field-proven mechanical package as the 380- and 760-megabyte Micropolis drives, the 1538 is designed to provide a combination of high storage capacity, fast access and data transfer, and long periods of trouble-free operation.

- Fast and Reliable
  Data is transferred at 20 megahertz with an average access time of 14.5 milliseconds. And with an outstanding MTBF of 150,000 hours, repair and spare-parts costs can be substantially reduced.

- ESDI-Standard
  The 1538 drive implements the Serial Mode of the industry-standard Enhanced Small Device Interface—ESDI. This ESDI interface enables the 1538 to achieve a sustained data transfer rate of 20 megabits per second.

  By implementing the ESDI optional Power Sequencing feature, peak current demand on power supplies can be minimized in multi-drive installations.

- Innovative Design Features
  A sealed head-disk assembly contains all of the moving parts, including a patented high-speed, precision balanced single-piece rotary positioner, 15 read/write heads and eight 5 ¼-inch disks, plus the patented in-spindle motor. The drive is mounted in a rigid metal frame and suspended on specially designed shock mounts to provide protection from the effects of shock and vibration.

- Advanced Servo Technology
  The 1538 drive uses an advanced servo system which provides superior on-track and seek performance throughout the range of environmental conditions. The dedicated disk surface for servo data eliminates format constraints and permits more user-data capacity on each disk surface, as compared to embedded servo systems.

- Maintenance Free Design
  Micropolis drives consistently top the list for high "plug and play" and 150,000 hour mean-time-between-failure performance. The 1538 board and mechanical assemblies are independently replaceable units. No electronic or mechanical adjustments are ever required, making field replacement of electronic assemblies a simple, 15-minute repair.

- Better Design Flexibility
  For all applications requiring very high storage capacity, the 1538 drive is the low-cost, high-reliability solution.

Micropolis is the industry leader in volume high-capacity, high-performance 5 ¼-inch full- and half-height disk drives. Micropolis drives offer up to 2.0 gigabytes of storage capacity and are available with either an ESDI or a SCSI interface.

For more information on this and other Micropolis disk drives, contact the Micropolis Sales Office or Authorized Distributor nearest you.
Specifications:

Capacity

Unformatted
- Model: 1538-15
- Per Drive (MB): 1,203
- Per Track (MB): 41,664
- Per Surface (MB): 80
- Cylinders: 1,925
- Data Heads: 15

Formatted
- Model: 1538-15
- Per Drive (MB): 1,251
- Per Sector (B): 512
- Sectors/Track: 71
- Cylinders: 1,925
- Data Heads: 15

Performance

Seek Time (includes settling)
- Track to Track: 4 msec
- Average: 14.5 msec
- Maximum: 33 msec

Latency Time (average): 8.33 msec

Rotational Speed: 3600 RPM

Transfer Rate: 20 MHz

Interface

Data Transfer Rate: 20 Mbps/sec

Code (interface): NRZ

Features

ESDI serial mode
Hard sectoring
Power sequencing
Servo locked data
Extensive status and diagnostic information
Start/stop

Physical

Form Factor (industry-standard for 5½-inch full-height):

- Height: 3.25 inches (82.6 mm)
- Width: 5.75 inches (146 mm)
- Depth: 8.00 inches (203 mm)
- Weight: 8.2 pounds (3.7 kg) nominal

Environmental

Shock operating:
- 3 G - 5 msec
- 2 G - 11 msec
- 1 G - 20 msec

non-operating (unpacked):
- free-fall drop: 0.75 G
- ½ sinusoidal:
  - 40 G - 5 msec
  - 20 G - 11 msec
  - 15 G - 20 msec
  - 15 G - 50 msec
  - 20 G - 100 msec

Vibration operating:
- 5-40 Hz: 0.006", peak-peak
- 40-300 Hz: 0.5 G peak

non-operating (unpacked):
- 5-31 Hz: 0.2", peak-peak
- 31-63 Hz: 1 G peak
- 63-98 Hz: 0.004", peak-peak
- 98-300 Hz: 2 G peak

Ambient Temperature operating:
- 10° to 50°C
- gradient 2°C/5 minutes

non-operating:
- -40° to 65°C
- gradient 24°C/hour

Relative Humidity (non-condensing):
- operating: 10% to 90%
- non-operating: 10% to 90%
- wet bulb max: 26.7°C (80°F)

Altitude operating:
- -200 to 10,000 ft.
- non-operating:
  - -1,000 to 50,000 ft.

Other

Power Requirements – typical:
+ 12V ± 5%, 2.0A Avg
(4.3A max. during start-up)
+ 5V ± 5%, 1.5A Avg

Power Dissipation – typical:
24 Watts

Acoustic Noise:
49 dBA

Mounting:
standard 5¼-inch disk drive, any orientation

Reliability

MTBF:
150,000 power-on hours

MTTR:
15 minutes

Preventive Maintenance:
none

Electronic Adjustments:
none

Error Rates:

Soft Errors ≤ 10 in 10¹⁰ bits read

Hard Errors ≤ 10 in 10¹⁰ bits read

Seek Errors ≤ 10 in 10¹⁰ seeks

Specifications subject to change without notice.

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