The Micropolis 1598 high performance 5 ¼-inch Winchester disk drive offers:

- 1.2 gigabyte capacity and a SCSI-2 interface in a full-height form factor.
- Using the same field-proven mechanical package as in the 380- and 780-megabyte Micropolis drives, the 1598 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.

**High Performance Embedded SCSI-2 Controller**
The 1598 drive is equipped with a high performance, on-board Small Computer System Interface (SCSI-2) controller, which conforms to both the common command set and SCSI-2 definitions. This SCSI-2 controller has been specifically designed to provide many high-performance features.

- The multi-segmented Read Ahead feature provides higher data throughput during read operations by allowing many accesses to be served from the 256 KByte dual-ported buffer, rather than by physical access.
- The complementary optional write caching feature (write behind) provides up to a 300% improvement in write performance by allowing multiple sequential write accesses per disk revolution.
- Fast command processing reduces overhead; commands take less than 500 microseconds to process, making for overall faster command response and greater data throughput. Full disconnected/ arbitrate/reconnect operation allows the bus to be freed while accessing data.
- Data integrity is enhanced through the use of interface parity through the buffer, automatic retries using servo and data strobe offsets, thermal calibration, and a 48-bit computer-generated ECC.
- The SCSI-2 controller provides sophisticated defect handling via in-line defect management and optional automatic bad block reassignment for both read and write operations.

Examples of other powerful SCSI-2 features supported on the 1598 disk drive are zero latency read transfers, prefetch, logging functions, surface analysis, and search command.

- The 1598 is available in both single-ended and differential versions which support synchronous data transfers at up to 4.8 megabytes per second.

**Innovative Design Features**
A sealed head-disk assembly contains all of the moving parts, including a patented high-speed, precision balanced single-piece rotary positioning, up to 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.

**Advanced Servo Technology**
The 1598 drive uses an advanced servo system which provides superior on-track and seek performance throughout its 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 disk drives consistently top the list for high "plug and play" and 150,000 hour mean-time-between-failure performance. The 1586 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.

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 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 1598-15
Per Drive (MB) 1,305
Per Track (B) 41,664
Per Surface (MB) 80
Cylinders 1,925
Data Heads 15

Formatted
Model 1598-15
Per Drive (MB) 1,034
Per Sector (B) 512
Sectors/Track 71
Cylinders 1,919
Data Heads 15

*Based on typical spindle (user programmable)

Performance

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

Effective Access Time* 3.9 msec

Latency Time (average) 8.33 msec

Rotational Speed 3600 RPM

Internal Data Rate 20 MHz

Interface

Compatibility SCSI-2

Data Transfers Synchronous 4.0 MB/sec
Asynchronous 1.6 MB/sec

Command Overhead

Less than 500 microseconds

Buffer

256 KByte with parity

Defect Management

Track or cylinder oriented

Drivers/Receivers

Single-ended or differential

Commands Supported

Cache Control Reserve (sp)
Functions Retrieve Unit
Format Track Search
Format Unit Seek (0)
Inquiry Seek (10)
Mode Select* Send Diagnostic
Mode Sense Standby
Prewash (sp)* Text Unit Ready
N-segmented User Configurable
Read Ahead Options
Read (6) Verify
Read (10)* Write (6)
Read Buffer Write (13)
Read Capacity Write & Verify
Read Data Checksum Write Buffer
Read Long Write Caching
Read/Write Blocks Functions
Receive Diagnostics Write Long
Release Zero Latency
Request Sense Read

*Common-Command Set

Physical

Form Factor (Industry-standard for
5¼-inch full-height)
Height 3.25 inches (82.6 mm)
Width 5.75 inches (146 mm)
Depth 8.00 inches (203 mm)
Weight 9.25 pounds (4.2 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 sinoidal 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 0.00666, peak-peak
40-300 Hz 0.5 G peak

non-operating (unpacked)
5-31 Hz 0.02%, peak-peak
31-69 Hz 1 G peak
69-98 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 66°C
gradient 24°F/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
+ 5V ± 5%, 2.0A Avg

Power Dissipation -Typical
24 Watts

Acoustic Noise

40 dBA

Mounting

standard 5¼-inch disk drive,
any orientation

Reliability

MTBF 150,000 power-on hours
MTTR 15 minutes

Electronic Adjustments
data Integrity

Automatic retry with early/late
strobe, track offset
all bit ECC polynomial
Parity through buffer

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* Application dependent

Specifications subject to change without notice.