TEXT,C,55

DSP5300/535/5400
----DIGITAL-----

PRODUCT DESCRIPTION

The DSP5300/5350/5400 is a 5.25-inch high capacity, high reliability disc drive designed and manufactured for the OEM market. The drive features a formatted capacity of 3.00GB, 3.57GB and 4.00GB respectively. Its performance includes an average access time of 17.1 ms, achievable host transfer rates up to 20 MB/s, media transfer rate of 3.6 to 5.5 MB/s, a unique 512 KB (1024 KB for the DSP5400) segmented cache buffer, 264-bit error correction code (ECC), fully embedded servo, end-to-end error code (ECC), fully embedded servo, end-to-end error detection code (EDC) and exceptional reliability.

The disc drive is designed for applications where capacity, performance and space demands are critical, such as multi-tasking systems, local area networks and file servers. The following are typical uses:

* Array subsytems
* CAD/CAM
* Engineering workstations
* Electronic publishing
* Mirrored drive subsystems
* Network file servers
* Image processing
* Midrange, multi-user, multi-tasking systems

FEATURES

The disc drive boasts unique features that yield unequaled quality and performance:

* 3000, 3572 or 4000 MB formatted capacity (512 bytes/sector)
* Rotational speed of 5400 rpm
* Banded recording
* 300,000 power-on hour MTBF
* 512 or 1024 (DSP5400 only) KB segmented buffer
* Less than 12 ms average random seek time
* 17.1 ms access-to-data time
* Quadrature embedded servo
* Self-diagnostics
* Unique data protection and integrity
* Tagged command queuing
* Zero latency read and messages

* Spindle synchronisation
* RAID messages 12h and 13h
* Full SCSI-2 compliance (and backward-compatible with SCSI-1)
* 8-bit or wide 16-bit single-ended fast SCSI-2 interface

SPECIFICATIONS

	DSP5300	DSP5350	DSP5400
Drive Capacity (GB)			
Formatted	3.00	3.57	4.00
Unformatted	3.80	4.52	5.08

Interface Type
DSP5300/5350/5400 Fast SCSI-2 single-ended (8-bit)
DSP5300W/5350W/54OOW Fast Wide SCSI-2 single-ended (16-bit)

PHYSICAL PARAMETERS

	DSP5300	DSP5350	DSP5400
Heads	21	25	26
Cylinders	3058	3058	3058
Sectors/Track	79-119	79-119	79-119

PERFORMANCE
Interface Transfer Rate

Synchronous (8-bit/16-bit)	10/20 MB/s
Asynchronous (8-bit/16-bit)	5/10 MB/s

Media Transfer Rate 3.6-5.5 MB/s
Sustainable Transfer Rate

Cache Buffer

DSP5300/5350	512 KB
DSP5400	1024 KB

Seek Times

Average Track-to-Track	1.3 ms
Average Random	<12 ms
Average Access to Data	17.5 ms
Maximum	25.0 ms

Rotational Speed 5,400 rpm

Average Latency 5.6 ms

Controller Overhead <= 300 micro seconds

Start/Stop Times
Time to Attain Full rpm <20 s
Time for Internal Diagnostics <15 s
Time to System Availability <30 s
Spin Down Time <20 s

Interleave 1:1

RELIABILITY (PREDICTED)
MTBF 300,000 hours
Minimum Start/Stop Cycles 10,000

OPERATING ENVIRONMENT
Temperature - deg.C 10 to 50
- deg.F 50 to 122
Temperature Gradient
- deg.C per hour 11
- deg.F per hour 52
Humidity 10 to 90% RH-noncondensing
Altitude 8000 feet
2500 metres
Airflow Requirements
Net Airflow 10 CFM
Airflow Temperature
(as introduced to drive
enclosure) <50 deg.C (122 deg.F)
Airflow Direction Side to side
Pressure Drop
(side to side) 0.020 inches in water
Shock 10 G peak half-sine
10 ms duration (3 axes)
Vibration 22-500 Hz @ 0.5 G peak

NONOPERATING ENVIRONMENT
Temperature - deg.C -40 to 66
- deg.F -40 to 151
Temperature Gradient
- deg.C per hour 20
- deg.F per hour 68
Humidity 8 to 95%, noncondensing
Altitude 16000 feet
4876.8 metres
Shock (Unpackaged) 10 G, 10 msec, half sine
Shock (in shipping package) Drop tests from 30 in
(762 mm) on sides, edges
and corners
Vibration (Unpackaged) 22-500 Hz @ 0.5 G peak

PHYSICAL DIMENSIONS

Height	3.25"/82.6 mm
Width	5.75"/146.1 mm
Length	8.21"/208.5 mm

Weight

DSP5300	6.40 lbs/2.90 kg
DSP5350/5400	6.70 lbs/3.04 kg

SAFETY

Flame resistant in accordance with Bellcore Network Equipment Buliding Standard (NEBS) TR-NWT-000063, Test Number 3.

POWER CONSUMPTION

	DSP5300	DSP5350	DSP5400
Active (100% seeking)	30 W	35 W	35 W
Idle	24 W	29 W	29 W

CURRENT/POWER REQUIREMENTS

Spin-Up Mode

	Typical	Maximum
5 Vdc Supply Current, Peak	1.00 A	1.20 A
12 Vdc Supply Current, Peak	5.40 A	6.10 A

Idle Mode(A)

	DSP5300		DSP5350/5400	
	Typ	Max	Typ	Max
5 Vdc Supply Current, Avg	1.00	1.20	1.00	1.20
12 Vdc Supply Current, Avg	1.60	2.10	2.00	2.40
Total Power, Average	24.0	30.0	29.00	34.80

Continous Random Seek Mode (A)

	DSP5300		DSP5350/5400	
	Typ	Max	Typ	Max
5 Vdc Supply Current, Avg	1.00	1.20	1.00	1.20
12 Vdc Supply Current, Peak	3.33	3.60	3.73	4.00
12 Vdc Supply Current, Avg	2.10	2.50	2.50	2.90
Total Power, Average	30.0	35.0	35.0	40.80