



S A M S U N G H A R D D I S K D R I V E



VOYAGER 4



The HDD Power that gets you ahead in business - Samsung HDD

VOYAGER 4

VG34324A / VG38404A

Features

- 5,400 rpm Spindle Speed
- 10 ms Average Seek Time
- 164 Mbits/sec Maximum Data Rate
- 512KB Segmented Read/Write Cache Buffer
- Ultra ATA Interface
- Adaptec Sabrecat chip set
- Data defect auto reassign
- Flying stiction and landing zone algorithm
- Error correction on the fly (Multi-Burst)
- PIO Mode 4 Multi World DMA Mode 2
- Automatic / Host Power Saving Mode
- S.M.A.R.T.

Drive Architecture

Formatted Capacity	
Gbytes per Drive	4.3/8.4
Megabytes per Surface	1,440
Bytes per Sector	512
Physical Organization	
Disks	2/3
Data Surfaces	3/6
Read / Write Heads	3/6

Functional Specifications

Actuator Type	Rotary Voice Coil
Interface	ULTRA ATA
Servo	Embedded Sector Servo
Recording Method	EPR4
Recording Density (bpi, max.)	203Kbpi
Flux Density (fcpi, max.)	215K
Track Density (tpi)	10,300

Performance Specifications

Seek Time (RD / WT typical)	
Track to Track	<2 ms
Average	10 ms
Full Stroke	20 ms
Average Latency	5.6 ms
Spindle Speed	5,400 ± 0.1% rpm
Data Transfer Rate	
Media to / From Buffer	164 Mbits/s
Buffer to / From Host	33.3 Mbytes/s
Start Time	
Typical	15 sec
Stop Time	
Typical	7 sec
Buffer Size	512 Kbytes

Reliability Specifications

Recoverable Read Error	1 in 10 ¹⁰ bits
Correctable Read Error	1 in 10 ¹² bits
Non-recoverable Read Error	1 in 10 ¹⁴ bits
MTBF (POH)	500,000 hours
MTTR (typical)	5 minutes
Start / Stop Cycles	50,000
Component Design Life	5 years

Environmental Specifications

Temperature	
Operating	5 ~ 55°C
Non-operating	-40 ~ 65°C
Thermal Gradient (max.)	20°C/15%/hr
Humidity (non-condensing)	
Operating	8 ~ 80%
Non-operating	8 ~ 95%
Maximum Wet Bulb (OP, NOP)	29/40°C
Altitude (relative to sea level)	
Operating	-200 to 10,000 feet
Non-operating	-1,000 to 40,000 feet



Shock and Vibration

Shock (1/2 sine pulse, 11 ms duration)	
Operating	10 G
Non-operating	75 G
Vibration (swept sine, 1 octave per minute)	
Operating	0.034" (double amplitude)
5 ~ 21 Hz	1.5 Gp-p
22 ~ 400 Hz	
Non-operating	0.195" (double amplitude)
5 ~ 21 Hz	8 Gp-p
22 ~ 500 Hz	

Power Consumption

Voltage	+5	+12
Power Up (max.)		15.8 watts
Read/Write (typical)		5.3 watts
Seek 30% (typical)		6.8 watts
Idle (typical)		6.0 watts
Standby (typical)		1.5 watts
Sleep (typical)		1.2 watts

Acoustic Noise

Maximum value at 1 meter	
Idle	33 dBA
Random Read / Write	37 dBA

Physical Dimension

Height	1 inch
Width	4 inches
Depth	5.75 inches
Weight	1.2 pounds

* Design and specifications are subject to change without notice.



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