Travelstar™ 7K320
2.5-INCH HIGH-PERFORMANCE HARD DRIVES

HITACHI
Inspire the Next

High-performance storage for notebook PCs with optional data encryption technology

Highlights
> Proven fourth-generation technology
> Up to 320GB[1] of capacity
> Lowest power consumption—
  22% improvement over 7K200
> Capacity and power parity with
  5400 RPM models
> Serial ATA 3Gb/s
> Security option: Bulk Data Encryption
> Enhanced-availability (EA) models for
  applications needing around-the-clock
  access in lower-transaction environments

Applications / Environments
> Notebook PCs
> Gaming devices
> Compact desktop systems
> Small form factor video devices
> Blade servers (EA)
> Network routers (EA)
> Video surveillance (EA)
> Compact RAID systems (EA)

320, 250, 160, 120 and 80GB
7200 RPM
SATA 3Gb/s and 1.5Gb/s

Features and Benefits

	Feature / Function	Benefits
Capacity	Up to 320GB storage	Up to 80 hours of high-definition video, 320 hours of standard video, 114 movies, 80,000 4-min songs or 160 games *
Performance	Up to 1136Mb/s media transfer rate	Excellent application performance in PCMark Vantage testing
Reliability	400G operating shock 1000G non-operating shock	Industry-best protection against bumps and rough handling
	Thermal Fly-height Control (TFC)	Better soft error rate for improved reliability
	TrueTrack™ technology	Tracking accuracy in high shock or vibration environments
Power	1.8W read/write power 0.2W standby power	Long battery life for more "unplugged" notebook time
Acoustics	Quiet acoustics	Richer audio-listening experience for music, movies and games
Interface	SATA 3Gb/s	High data throughput
Security	Bulk Data Encryption (SATA 1.5Gb/s)	Helps guard against data theft

*Actual storage may vary depending on the compression rate applied. Capacities may not be combined.

High-performance mobile storage without sacrificing capacity or power
Travelstar™ 7K320 is the industry's only fourth-generation 7200 RPM 2.5-inch hard drive with capacities ranging from 80GB to 320GB, equivalent to Hitachi 5400 RPM products. The 160GB per platter one- and two-disk models deliver 60% higher capacity and 12% better application performance than its predecessor. Hitachi provides best-of-breed power and operating shock in Travelstar 7K320 by matching its 5400 RPM models. Designed to support the high-performance needs of multi-tasking commercial users and consumers on-the-go, Travelstar 7K320 offers speed without sacrificing battery life, capacity or audio quality. Hitachi offers optional hard-drive-level encryption for users looking for increased data security and models with enhanced availability to deliver high-capacity storage for non-stop environments.

Data security option
Travelstar 7K320 features optional Bulk Data Encryption (BDE) with a SATA 1.5Gb/s interface for hard-drive-level data security. The data is scrambled using a key as it is written to the disk then descrambled with the key as it's retrieved, giving users a higher level of data protection than traditional password-based security. Another benefit is that it speeds and simplifies the drive re-deployment process. By deleting the encryption key, the data on the drive is rendered unreadable, thereby eliminating the need for time-consuming data-overwrite.

Enhanced Availability (EA)—for 24x7 access to data
Hitachi offers enhanced-availability models that employ specific microcode to allow the Travelstar 7K320 to provide 24x7 access to data. These models broaden the product line to make it more suitable for data-intensive applications requiring around-the-clock operation. The 7K320 provides high performance, capacity, durability and power utilization on a proven platform for quality and reliability. EA models support the stringent demands of "always-on" applications in lower-transaction environments.

Specifications

Model(s)	Standard models	BDE Option Models	EA Models
	HTS723232L9A360	HTS723232L9SA61	HTE723232L9A300
	HTS723225L9A360	HTS723225L9SA61	HTE723225L9A300
	HTS723216L9A360	HTS723216L9SA61	HTE723216L9A300
	HTS723212L9A360	HTS723212L9SA61	HTE723212L9A300
	HTS723280L9A360	HTS723280L9SA61	
Configuration			
Interface	SATA 3Gb/s	SATA 1.5Gb/s	SATA 3Gb/s
Capacity (GB)[1]	320 / 250 / 160 / 120 / 80	←	320 / 250 / 160 / 120
Sector size (bytes)	512	←	←
Recording zone	24	←	←
Data heads	4 / 4 / 2 / 2 / 1	←	4 / 4 / 2 / 2
Disks	2 / 2 / 1 / 1 / 1	←	2 / 2 / 1 / 1
Areal density (max, Gbit/sq.in.)	252	←	←
Performance			
Data buffer (MB)[2]	16	←	←
Rotational speed (RPM)	7200	←	←
Latency average (ms)	4.2	←	←
Media transfer rate (max, Mbits/sec)	1136	←	←
Interface transfer rate (MB/sec)	300	150	300
Seek time		←	←
Average (typical) ms (read)[3]	12		
Track to track (typical) ms (read)	1	←	←
Full stroke (typical) ms (read)	20	←	←
Reliability			
Load / Unload cycle	600,000	←	←
Power on hours (POH) per month	N/A	←	730
Availability[4]	N/A	←	24x7
Power			
Requirement	+5VDC (+-5%)	←	←
Dissipation (typical)			
Startup (peak, max)	5.5W	←	←
Seek (average)	2.2W	←	←
Read / Write (average)	1.8W	←	←
Perfomance idle (average)	1.7W	←	← Idle (Avg.)
Active idle (average)	1.0W	←	N/A
Low power idle (average)	0.8W	←	N/A
Standby (average)	0.2W	←	←
Sleep	0.1W	←	←
Physical size			
Height (mm)	9.5	←	←
Dimensions (width x depth, mm)	70 x 100	←	←
Weight (max, g)	115 // 110	←	←
Environmental (Operating)			
Shock (half sine wave)	400 G/2ms, 200 G/1ms	←	←
Ambient temperature	5 - 55° C	←	←
Environmental (Non-Operating)			
Shock (half sine wave)	1000 G/1 ms	←	←
Ambient temperature	-40 - 65° C	←	←
Acoustics (A-weighted sound power)			
Idle (typical, Bels)	2.5	←	←
Seek (typical, Bels)	2.8	←	←

Hitachi quality and service

Hitachi mobile hard drives are designed to the highest quality standards and contain field-proven components. Hitachi provides worldwide technical support and integration services to enable global customers to bring their products to market quickly.

How to read the Travelstar model number
HTS723232L9A360 = 320GB, SATA 3Gb/s
H = Hitachi
T = Travelstar
S = Standard (vs E for Enhanced Availability)
72 = 7200 RPM
32 = Full capacity — 320GB
32 = Capacity this model, 32 = 320GB
   (25 = 250GB, 16 = 160GB,
   12 = 120GB, 80 = 80GB)
L = Generation code
9 = 9.5mm z-height
A3= Interface, SATA 3Gb/s (SA = 1.5Gb/s)
6 = Reserved, 0 = Reserved
0 = Feature code, 0 = None (1 = BDE)

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1 One GB is equal to one billion bytes when referring
   to hard drive capacity. Accessible capacity may be less.
2 Upper 830KB out of 16MB used for firmware
3 Excludes command overhead
4 Designed for low duty cycle, non mission-critical applications
   in PC, nearline and consumer electronics environments,
   which vary application to application

⊛ Hitachi Global Storage Technologies