Travelstar™ Z5K500

2.5-INCH HARD DRIVES

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Slim, high-capacity storage for notebook PCs and mobile applications

Highlights

> Second generation 7mm z-height design
> Up to 500GB[1] of capacity on a single disk
> Advanced Format, industry standard 4K sector size
> 512 byte emulation
> Low power consumption
> Halogen-free for eco-friendly design
> Self-encrypting models for data security
> Enhanced-availability (EA) models for applications needing around-the-clock access in lower-transaction environments

Applications / Environments

> Notebook and ultra-portable PCs
> Tablets
> Compact desktop PCs
> External storage
> Gaming consoles
> Compact video devices
> Blade servers (EA)
> Network routers (EA)
> Video surveillance (EA)



500, 320 and 250GB
5400 RPM | SATA 3Gb/s

Features and Benefits

	Feature / Function	Benefits
Capacity	Up to 500GB storage	Up to 125 hours of high-definition video, 500 hours of standard video, 178 movies, 125,000 4-min songs or 250 games *
Power	1.6W read/write power 0.5W low power idle	Low energy use and long battery life for more "unplugged" notebook time
Reliability	400G operating shock 1000G non-operating shock	Best protection against bumps and rough handling
	TrueTrack™ technology	Tracking accuracy in high shock or vibration environments
Acoustics	Quiet acoustics	Richer audio-listening experience for music, movies and games
Performance	Up to 1004Mb/s media transfer rate	Fast downloads and excellent application performance**
Interface	SATA 3Gb/s	Fast data throughput
Security Option	Bulk Data Encryption	Helps guard against data theft

* Actual storage may vary depending on the compression rate applied. Capacities may not be combined.
** In PCMark® Vantage testing

Rugged, 500GB single-disk HDD solution for slim mobile applications

Travelstar™ Z5K500 is the second generation 7mm, 5400 RPM 2.5-inch hard drive from Hitachi, with capacities ranging from 250GB to 500GB and the second generation Advanced Format drive. Advanced Format increases the physical sector size on HDDs from 512 bytes to 4,096 (4K) bytes, which improves drive capacities and error correction capabilities. The 500GB per platter, one-disk models are designed as a direct replacement for standard 9.5mm HDDs, for use in notebook PCs, external storage and gaming consoles, as well as new, thinner and more robust device designs. The Z5K500 carries the EcoTrac classification due to its low-power consumption and eco-friendly, halogen-free production. Travelstar Z5K500 delivers the right balance of capacity, power-management and design flexibility to meet the needs of mobile applications.

Data security option

Travelstar Z5K500 is the sixth generation self-encrypting drive (SED) to feature Hitachi's Bulk Data Encryption (BDE). The SED model encrypts data in real time using protected keys, providing users the highest level of data protection available. It also speeds and simplifies the drive re-purposing. By deleting the encryption key, the data on the drive is rendered unreadable, thereby eliminating the need for time-consuming data-overwrite. For information about the SED models designed to the Trusted Computing Group (TCG) Opal Storage Security specification, please contact your Hitachi representative.

Enhanced Availability (EA)—for 24x7 access to data

Hitachi provides enhanced availability models of the Travelstar Z5K500 that deliver 24x7 access to information for data-intensive applications requiring round-the-clock operation. The new thinner profile allows for additional cooling, especially important in dense blade server designs. The Z5K500 provides high capacity, durability and quiet acoustics on a proven platform for quality and reliability. EA models support the stringent demands of “always-on” applications in lower-transaction environments.

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Specifications

Model(s)	Standard models HTS545050A7E380 HTS545032A7E380 HTS545025A7E380	BDE Option Models HTS545050A7E381 HTS545032A7E381 HTS545025A7E381	EA Models HTE545050A7E380 HTE545032A7E380
Configuration			
Interface	SATA 3Gb/s	←	←
Capacity (GB)[1]	500 / 320 / 250	←	500 / 320
Sector size (bytes)[2]	512e	←	←
Recording zones	30	←	←
Areal density (max, Gbit/sq.in.)	630	←	←
Performance			
Data buffer (MB)[3]	8	←	←
Rotational speed (RPM)	5400	←	←
Latency average (ms)	5.5	←	←
Media transfer rate (max, Mbits/sec)	1004	←	←
Interface transfer rate (MB/sec)	300	←	←
Seek time Average (typical) ms (read)[4]	13	←	←
Track to track (typical) ms (read)	1	←	←
Full stroke (typical) ms (read)	25	←	←
Reliability			
Load / Unload cycle	600,000	←	←
Power on hours (POH) per month	N/A	←	730
Availability[5]	N/A	←	24x7
Power			
Requirement	+5VDC (+-5%)	←	←
Dissipation (typical) Startup (peak, max)	4.5W	←	←
Seek (average)	1.8W	←	←
Read / Write (average)	1.6W	←	←
Performance idle (average)	1.5W	←	← Idle (Avg.)
Active idle (average)	0.8W	←	N/A
Low power idle (average)	0.5W	←	N/A
Standby (average)	0.2W	←	←
Sleep	0.1W	←	←
Physical size			
Height (max, mm)	7	←	←
Dimensions (width x depth, mm)	70 x 100	←	←
Weight (max, g)	95	←	←
Environmental (Operating)			
Shock (half sine wave)	400G/2ms, 225G/1ms	←	←
Ambient temperature	0° - 60° C	←	←
Environmental (Non-Operating)			
Shock (half sine wave)	1000G/1 ms	←	←
Ambient temperature	-40° - 65° C	←	←
Acoustics (A-weighted sound power)			
Idle (typical, Bels)	1.9	←	←
Seek (typical, Bels)	2.1	←	←

1 One GB is equal to one billion bytes when referring to hard drive capacity. Accessible capacity will vary according to operating environment and formatting.
2 Advanced Format drive: 4K physical sectors with 512 byte emulation
3 Portion of buffer used for firmware
4 Excludes command overhead
5 Designed for low duty cycle, non mission-critical applications in PC, nearline and consumer electronics environments, which vary application to application

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

HTS545050A7E380 = 500GB, SATA 3Gb/s

H = Hitachi
T = Travelstar
S = Standard (vs E for Enhanced Availability)
54 = 5400 RPM
50 = Full capacity—500GB
50 = Capacity this model, 50 = 500GB
(32 = 320GB, 25 = 250GB)
A = Generation code
7 = 7mm z-height
E3 = Physical 4K block with 512 emulation
8 = 8MB cache
0 = No encryption
(1 = Bulk Data Encryption,
5 = TCG Opal Encryption)

Information and Technical Support

www.hitachigst.com (Main Web site)
www.hitachigst.com/partners (Partner Web site)

North America

support_usa@hitachigst.com
Toll free: 1 888 426-5214,
Direct: 1 507 322-2370

Asia Pacific

support_ap@hitachigst.com / 65 6840 9595

EMEA and UK

support_uk@hitachigst.com / 44 20 7133 0032

Germany

support_uk@hitachigst.com / 49 6929 993601

Program Support

Partners First Program
channelpartners@hitachigst.com

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3403 Yerba Buena Road
San Jose, CA 95135 USA

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The EcoTrac symbol identifies Hitachi hard drives that deliver on the principles of lower operating costs, safer product disposal and a more sustainable environment.

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