

# Travelstar™ 5K1000

2.5-INCH HARD DISK DRIVES

**HITACHI**  
Inspire the Next

One terabyte of mobile storage for notebook PCs and other applications

## Highlights

- > Up to 1TB<sup>1</sup> of capacity
- > Advanced Format, 512 byte emulation
- > 6Gb/s SATA interface
- > 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

- > Notebook PCs
- > External storage
- > Gaming consoles
- > Small-form-factor video devices
- > Blade servers (EA)
- > Network routers (EA)
- > Video surveillance (EA)



1TB, 750GB and 640GB  
5400 RPM | SATA 6Gb/s

## Features and Benefits

	Feature / Function	Benefits
<b>Capacity</b>	Up to 1TB of storage	Up to 250 hours of high-definition video, 1000 hrs of standard video, 350 movies, 250,000 4-min songs or 500 games*
<b>Power</b>	1.6W read/write power 0.5W low power idle	Low energy use and long battery life for more “unplugged” notebook time
<b>Reliability</b>	400G operating shock 1000G non-operating shock	Rugged design for the 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
<b>Performance</b>	Up to 998Mb/s media transfer rate 6Gb/s SATA interface	Best-of-breed 5400 RPM application performance in PCMark 7 and PCMark Vantage testing
<b>Acoustics</b>	Quiet acoustics	Richer audio-listening for music, movies and games
<b>Interface</b>	SATA 6Gb/s	Higher data throughput
<b>Security Option</b>	Bulk Data Encryption	Helps guard against data theft

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

## 1TB of storage capacity for mobile platforms

Travelstar™ 5K1000 is a 5400 RPM, 500GB/platter, 2.5-inch hard drive available in 640GB, 750GB and 1TB models. This standard 9.5mm, two-disk design, intended for use in notebook PCs, external storage, gaming consoles and other mobile applications, leverages Advanced Format, which increases the physical sector size on hard drives from 512 bytes to 4096 (4K) bytes to increase drive capacities and improve error correction capabilities. Consult the Hitachi Advanced Format Technology Brief for more information on using these hard drives. The Travelstar 5K1000 is the first 1TB 2.5-inch HDD with a 6Gb/s SATA interface and delivers best-of-breed 5400 RPM performance in PCMark 7 and PCMark Vantage testing. The 5K1000 continues to demonstrate Hitachi's ecological leadership with its halogen-free design and power-efficient operation, and carries the EcoTrac classification. Travelstar 5K1000 delivers the highest mobile capacity with excellent performance to meet the needs of consumers and commercial users in an eco-friendly, rugged design.

## Encryption option

Travelstar 5K1000 is the seventh generation self-encrypting drive (SED) to feature Hitachi's Bulk Data Encryption. The SED encrypts data using protected keys in real time, providing users the highest level of data protection available. It also speeds and simplifies 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 5K1000 that allow 24x7 access to data to support applications that require round-the-clock operation. The 5K1000 provides high capacity, durability and low 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
	HTS541010A9E680 HTS541075A9E680 HTS541064A9E680	HTS541010A9E681 HTS541075A9E681 HTS541064A9E681	HTE541010A9E680 HTE541075A9E680 HTE541064A9E680
<b>Configuration</b>			
Interface	SATA 6Gb/s	←	←
Capacity (GB) <sup>1</sup>	1TB / 750 / 640	←	←
Sector size (bytes) <sup>2</sup>	512e	←	←
Recording zones	30	←	←
Areal density (Gbit/sq.in., max.)	694	←	←
<b>Performance</b>			
Data buffer (MB) <sup>3</sup>	8	←	←
Rotational speed (RPM)	5400	←	←
Latency average (ms)	5.5	←	←
Media transfer rate (Mbits/sec, max)	998	←	←
Interface Transfer Rate (MB/sec, max)	600	←	←
Seek time			
Average (ms, typical), (read) <sup>4</sup>	12	←	←
Track to track (ms, typical), (read)	1	←	←
Full stroke (ms, typical), (read)	20	←	←
<b>Reliability</b>			
Load / unload cycle	600,000	←	←
Power on hours (POH) per month	N/A	←	730
Availability <sup>5</sup>	N/A	←	24x7
<b>Power</b>			
Requirement	+5 VDC (+ -5%)	←	←
<b>Dissipation</b>			
Startup (W, peak, max.)	4.5	←	←
Seek (W, avg.)	1.8	←	←
Read / Write (W, avg.)	1.6	←	←
Performance idle (W, avg.)	1.5	←	← Idle (avg.)
Active idle (W, avg.)	0.8	←	N/A
Low power idle (W, avg.)	0.5	←	N/A
Standby (W, avg.)	0.2	←	←
Sleep (W)	0.1	←	←
<b>Physical size</b>			
z-height (mm)	9.5	←	←
Dimensions (width x depth, mm)	70 x 100	←	←
Weight (g, max)	102	←	←
<b>Environmental (Operating)</b>			
Shock (half-sine wave)	400G/2ms, 225G/1ms	←	←
Ambient temperature	0 to 60° C	←	←
<b>Environmental (Non-operating)</b>			
Shock (half-sine wave)	1000G/1ms	←	←
Ambient temperature	-40 to 65° C	←	←
<b>Acoustics (A-weighted sound power)</b>			
Idle (Bels, typical)	2.4	←	←
Seek (Bels, typical)	2.6	←	←

## Hitachi quality and service

Hitachi Travelstar hard disk 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

HTS541010A9E680 = 1TB, SATA 6Gb/s  
 H = Hitachi  
 T = Travelstar  
 S = Standard (vs E for Enhanced availability)  
 54 = 5400 RPM  
 10 = Full capacity — 1TB  
 10 = Capacity this model, 10 = 1TB  
 (75 = 750GB, 64 = 640GB)  
 A = Generation code  
 9 = 9.5mm z-height  
 E6 = SATA 6Gb/s with 512 emulation  
 8 = Cache = 8MB  
 0 = No encryption  
 (1 = BDE, 5 = TCG Opal Encryption)

### Information and Technical Support

[www.hitachigst.com](http://www.hitachigst.com) (Main Web site)  
[www.hitachigst.com/partners](http://www.hitachigst.com/partners) (Partner Web site)

### North America

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 Toll free: 1 888 426-5214, Direct: 408 717-8087

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### EMEA and UK

[support\\_uk@hitachigst.com](mailto:support_uk@hitachigst.com) / 44 20 7133 0032

### Germany

[support\\_uk@hitachigst.com](mailto:support_uk@hitachigst.com) / 49 6929 993601

### Program Support

Partners First Program  
[channelpartners@hitachigst.com](mailto:channelpartners@hitachigst.com)

<sup>1</sup> One GB is equal to one billion bytes and one TB equals 1,000GB (one trillion bytes) when referring to hard drive capacity. Accessible capacity may be less. Lower capacity models may not be available in all markets.

<sup>2</sup> Advanced Format drive: 4K physical sectors with 512 byte emulation

<sup>3</sup> A portion of buffer capacity used for firmware

<sup>4</sup> Excludes command overhead

<sup>5</sup> Designed for low duty cycle, non mission-critical applications in PC, nearline and consumer electronics environments, which vary from application to application

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