

Designed for computing excellence: Industry-leading capacity and performance in a 2.5" hard drive.

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Hitachi Travelstar 7K60 2.5-inch hard disk drive

Highlights

- ▶ **Capacity of 60GB, 7200 RPM, ATA-6 hard disk drive**
- ▶ **Travelstar 7K60 provides areal densities of up to 50Gbits/sq. inch, yielding up to 30 GB of capacity per disk**
- ▶ **Leverages the latest laminated Antiferromagnetically-coupled (AFC) media, known as "pixie dust"**
- ▶ **Hitachi GST, first drive maker to implement the new Femto Slider: utilized for improved shock resistance, disk storage capacity, and reduced power consumption**
- ▶ **Provides an operational shock rating of up to 200Gs at (2ms)**

Leading-edge technology

The Hitachi Travelstar 7K60 is a 9.5mm high, 7200 RPM, 2.5-inch mobile hard disk drive. The Travelstar 7K60 is the 28th generation addition of a long heritage of Travelstar mobile drives.

Designed with combined technology including; Antiferromagnetically-coupled (AFC) technology, Fluid Dynamic Bearing (FDB) motor technology, Giant Magnetoresistive (GMR) heads, load/unload head technology, Enhanced Adaptive Battery Life Extender™ (ABLE) 3.0 and an ATA/100 interface provides for a cutting-edge design. The Travelstar 7K60 pushes performance, capacity, power management, and exceptional quietness to provide a quality, high-performance mobile hard disk drive for today's demanding notebook and beyond systems.

New Areal Density Technology Advancements

Antiferromagnetically-coupled (AFC) media technology is incorporated into the Travelstar 7K60 to achieve an areal density of up to 50Gbits/sq.inch to be written on each disk. This feat is achieved by adding another layer or "pixie dust" - or essentially an additional layer of ruthenium/magnetic layer to create a five-layer sandwich called laminated "pixie-dust". These additional layers bring even higher thermal stability to the media, allowing data recording at ultra-high densities while continuing to maintain data-integrity.

One of the key contributors to achieving demanding areal density requirements has been the reduction of the size of the slider by 3x, and the mass of the slider by over 30x (from 1980 - 2002). Introducing the industry-leading Femto Slider in the Travelstar 7K60, a reduced slider in both size and mass reduction. Hitachi GST is the first drive



maker to incorporate the new Femto slider product in its hard disk drives.

Implementing the new Femto Slider has resulted in; improved shock resistance, reduced power consumption and improved disk storage capacity. The reduced slider size improves the response of the slider to disk waviness, thus reducing the flying height variation of the slider in the disk drive. These advantages coupled with an integrated slider-suspension design, have been instrumental to achieving a 10x reduction in flying height over this same period.

Performance and reliability

The Hitachi Travelstar 7K60 series of hard disk drives utilizes proven storage technologies such as TrueTrack Servo, Drive Fitness Test™ (DFT), Self-Monitoring Analysis and Reporting Technology (S.M.A.R.T.) to help maintain high-performance and fast seek times at high environment temperatures.

Hitachi family of Travelstar 7K60 hard disk drives specifications

Product name Travelstar 7K60

Model name HTS726060M9AT00

Configuration

Interface	ATA-6
Capacity (GB)	60
Sector size (bytes)	512
Recording zones	16
Data heads	4
Disks	2
Max. areal density (Gbits/sq.inch)	50

Performance

Data buffer (MB) ¹	8
Rotational speed (rpm)	7,200
Latency (average ms)	4.2
Max. media transfer rate (Mbits/sec)	518
Max. interface transfer rate (MB/sec)	100MB/sec Ultra DMA mode-5 16.6MB/sec PIO mode-4
Seek time (ms)	
Average (typical)	10
Track to track (typical)	1.0
Full stroke (typical)	18

Reliability

Error rate (non-recoverable)	< 1 per 10 ¹³ bits transferred
Load/unload cycle	300,000

Power

Requirement	+5VDC(±5%)
Dissipation (typical)	
Startup (max. peak)	5.5 W
Seek (average)	2.6 W
Read (average)	2.5 W
Write (average)	2.5 W
Performance idle (average)	2.0 W
Active idle (average)	1.3 W
Low power idle (average)	0.85 W
Standby (average)	0.25 W
Sleep	0.1 W
Power consumption efficiency (watts/GB)	0.014

Physical size

Height (mm)	9.5
Width (mm)	70
Depth (mm)	100
Weight (g)	115

Environmental characteristics

Operating

Ambient temperature	5° to 55° C
Relative humidity (non-condensing)	8% - 90%
Maximum wet bulb (non-condensing)	29.4° C
Shock (half sine wave)	200G/2ms
Vibration	
Random (RMS)	0.67G (5 - 500Hz)
Sine wave	1.0G (5 - 500Hz)

Non-operating

Ambient temp	-40° to 65° C
Relative humidity (non-condensing)	5% - 95%
Maximum wet bulb (non-condensing)	40° C
Shock (half sine wave)	1,000G/1ms
Vibration (sine wave)	5.0G (22 - 500Hz)

Acoustics (A-Weighted Sound Power (Bels))

Idle (typical)	2.7
Op (typical)	3.3
Idle (maximum)	3.0
Op (maximum)	3.5

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5/03
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