



Give your
customers
more

Hitachi GST

an overview of our
hard disk drive products

Deskstar

HITACHI
Inspire the Next



A drive solution whatever the demand



Embrace the future

No two jobs are the same. In your line of business, you have requirements that range from tried-and-tested computing environments to emerging applications. We're here to help you meet that requirement. And that's why we provide the broadest hard disk drive product line available today. A drive solution for every eventuality means you can choose from a full range of high-performance products – from our 2.5-inch Travelstar™ family to 3.5-inch server drives with up to one-terabyte capacity – all with reliability specs our competitors can only look up to.

What's next in hard drives?

More happy customers

Hitachi Global Storage Technologies is always looking to tomorrow. That's why we are busy researching every possible angle to improve the performance and capacity of our hard drives.



More future technology

The terabyte era

Several lines of investigation – including patterned magnetic media and thermal-assisted recording – are set to provide major breakthroughs over the next few years, but we are looking much further ahead to emerging technologies that could totally revolutionize the way we store our data.

We have already developed the world's smallest read-head technology for hard disk drives, which is expected to quadruple current storage capacity limits to 4TB on a desktop hard drive and 1TB on a notebook hard drive.

Our researchers have successfully reduced existing recording heads by more than a factor of two to achieve new heads in the 30-50 nanometer

range – up to 2,000 times smaller than the width of an average human hair. Called 'current perpendicular-to-the-plane giant magnetoresistive¹' heads, Hitachi's new technology is expected to be inside products by 2009 and hit full potential by 2011. Having started the 'Terabyte Era' of storage, we are now driving it, giving consumers virtually limitless ability to store their digital content.

Adaptable and compatible

Hitachi GST is also investing in future form factors and interfaces, to make our drives more compatible with and adaptable to emerging technologies. All our drives already incorporate proven, award-winning technologies, including self-testing and analysis tools to signal any

potential drive problems. Key components are manufactured to the highest standards, so users can always be sure of reliable, powerful performance.



Find out what more Hitachi is doing:
www.hitachigstwhatsnext.com

Going greener

Hard drives which are kinder to the environment



More environmentally friendly

Increasingly, we are looking for ways to create environmentally-friendly drives – that use less power, create less heat and noise and have more parts that can be recycled.

Less power, no compromises

There is widespread concern for the environment and a growing interest in sustainable living. As a result, consumers are demanding greener, less power-hungry products. Which is why Hitachi GST has developed a range of hard drive models which find new ways to use less power but still don't make any compromises when it comes to performance.

For example, the CinemaStar P7K500 came about as a result of greener thinking. It uses high-efficiency voltage regulators to help minimize power consumption in line with Hitachi's aim to reduce power consumption in all its devices.

Low power idle

To save energy, many of our drives are designed to switch to a low wattage idle power mode if activity pauses for longer periods. Because of this they require smaller power supplies and less cooling which, as well as being friendlier to the planet, may help extend the life of the hard drive, the host product, and any other linked devices.

Thermal monitoring

The core temperature of the hard disk drive can be monitored intelligently. If a fan or air-conditioning has failed, the system will raise the alarm and the fault can be fixed. The system can also alternatively control the device fan to speed up (to make the disk cooler) or slow down (to make the device quieter).

HiVERT™

Hitachi Voltage Efficiency Regulator (HiVERT), a technology developed by Hitachi GST, brings new levels of power efficiency for 2.5-inch (and some 3.5-inch) hard disk drives. Working together with other power management tools, HiVERT reduces the power draw of key hard drive electrical components by 30-percent over the previous generation, and dissipates heat more quickly too.

Find out what more Hitachi is doing:

www.hitachigstwhatsnext.com/en/environment

Hitachi Partners First Program

Together, we have the building blocks to success



Our Partners First™ program gives Hitachi GST's partners access to a wide range of invaluable tools and resources which will save you time, and help you make the most of Hitachi hard drives. This invaluable technical and business support is available just when you need it.

We operate a three-tier, colour-coded partner system depending on your needs and the kind of business you operate. Stage one partners are Red; mid-tier partners Silver, and premier partners Black. Each is offered a package of tailored support and services.

- **Technical support** – this includes 24x7 email and telephone support; an up-to-date, online product library of technical documents, presentations, product specifications and agency approval letters for all Hitachi hard drives; online diagnostic tools for analysing, monitoring and restoring Hitachi GST drives; and integration and developer support to help market new applications
- **Value-added support** – relationship management resources, so we can better

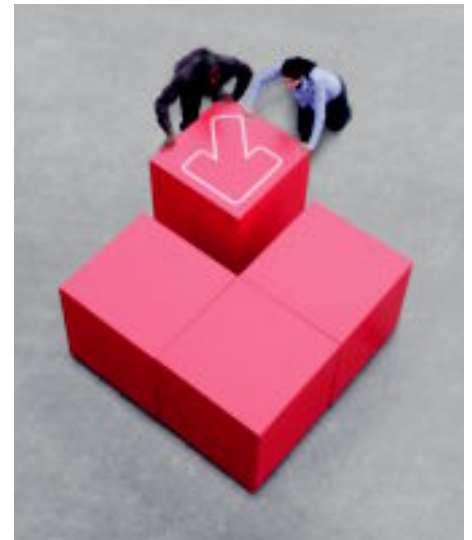
understand each other's businesses; help with the returns process via our secure website; the HDD Info Hub, a unique online interactive resource we've set up for comparing the specifications of the industry's hard disk drives; Hitachi Partners Privilege (HPP)* program to reward partners for their loyalty and continuous efforts

- **Marketing support** – help with printed marketing materials, dealing with the Press, and profile-raising at industry events. In addition, Partners receive a quarterly e-newsletter, available in six languages, and training opportunities

*HPP reward program applies to Asia Pacific region only.

For more information, or to register for Partners First, visit www.hitachigst.com/partners

Partners First Program has been carefully designed to provide all the information and tools you need for selling and designing in Hitachi hard drives. Our reasoning is simple – your success is our success. By giving you access to essential tools and resources, we can build a positive, practical working relationship – one that benefits us both, and keeps us one step ahead of the competition.



Technical Support

Local technical support through the Hitachi Design Studios



The Hitachi Global Design Studios provides access to product qualification and integration ensuring smooth and fast launch to market. Global locations include UK, Japan, China and Taiwan.



Hitachi GST Partners First extranet provides 24x7 information and support.

The support you need, when and where you need it. And, unlike other HDD manufacturers, not in another continent or time zone, but right here on your doorstep.

Supporting smooth integration

Technical support is not just about resolving problems. It's about specifying the correct product in the first place and ensuring that it is integrated correctly. It is also about providing hands-on training and advice on future technical trends and products to ensure that your business stays ahead of the game.

Technical support is something that we take very seriously at Hitachi. That's why we have a team of highly-skilled engineers on hand at all times. Engineers who have a deep understanding of hard drive technology and broad experience of a wide range of operating systems and environments. And that's why we have invested so much in our professionally-equipped **worldwide Hitachi Design Studios**.

They will ensure your peace-of-mind by testing our drive in your product under the most stringent of conditions – providing you with valuable information on chassis affects and environment before you go to market – ensuring the satisfaction of you and your customers.

Current global locations include the UK, Japan, China and Taiwan.

We also have teams dedicated to working in direct contact with you, our channel partners, so there is always someone on hand to answer any questions that you may have.

Visit www.hitachigst.com/support for online support resources and contact centers worldwide

The Hitachi Design Studios provide expert advice to manufacturers and systems integrators in these areas:

- **Recording** – digital video recorder, personal video recorder, set-top box, digital audio recorder, iVDR, closed circuit TV
- **Security and Surveillance** – CCTV systems, video streaming, audiovisual devices
- **Photo** – digital still and video cameras
- **Entertainment** – personal video player, video viewer, personal media player, MP3, flat panel TV, STB
- **Industrial** – external storage, USB applications, industrial applications (printer, copier, switch, router, PBX, robotics, test and measurement)
- **Handhelds** – smart phone, PDA, wearable PC, GPS, converged devices
- **Automotive** – automotive systems, navigation systems, telematics
- **Gaming** – game consoles (information appliances)
- **Reference designs** – provide help for developing prototype designs with hard drives

www.hitachigst.com/partners

Hard Drive by Hitachi

Making sure it's always Hitachi



At Hitachi, we understand the value of joint branding, and are keen to explore ways the strength of one brand can enhance and benefit another.

The Hard Drive by Hitachi icon is a means of harnessing Hitachi's reputation for quality and reliability. It's a strong endorsement, which will reassure consumers that they are buying a quality product. Which gives you an immediate competitive edge in an uncompromising marketplace.

Hard drive by Hitachi

Hard Drive by Hitachi is an ingredient brand program enabling suppliers of Consumer Electronics (CE) devices to leverage the power of the Hitachi brand.

The icon signifies that the hard drive integrated as a key component in your product is manufactured and backed by Hitachi, a premier supplier of high quality hard disk drives. Using the Hard Drive by Hitachi icon, you can harness Hitachi's reputation for quality and reliability - as well as technology leadership - to strongly differentiate your products in today's competitive marketplace.



Participation benefits

Hitachi's reputation for excellence extends beyond the products and services we deliver. It resonates in the way we do business. Consumers know that Hitachi stands for quality in everything we do, whether it's music, video or top computer performance applications. Seeing the Hard Drive by Hitachi icon on the outside, means dependable data storage on the inside.

Technical qualification is required before access to Hitachi ingredient branding. To learn more about the Hard Drive by Hitachi ingredient brand program, email your local geo support. See back cover for contact details.

Leverage the power of the Hitachi brand

The Hard Drive by Hitachi program allows for the Hitachi icon to be used in a wide variety of ways:

- Sticker on product
- Packaging
- Power-on graphics
- Advertising/posters
- Promotional items
- Trade shows
- Web

Hitachi Technologies

Unique technologies delivering stress-free storage

Technical Highlights



First to Market Advantage

Hitachi began manufacturing products based on Perpendicular Magnetic Recording technology in May 2006 when the company introduced the Travelstar™ 5K160 which was hailed as the most reliable and technically-advanced 2.5-inch hard drive on the market at the time. Hitachi built on this success by introducing the first 1TB drives in the first quarter of 2007 and followed through with the Travelstar 5K500, the first 500GB 2.5-inch mobile drive, in the first quarter of 2008. With the Travelstar 5K500, Hitachi has effectively eliminated the “capacity compromise” by offering consumers all the storage capacity of a desktop with the portability and convenience of a notebook.

Hitachi Load/Unload Technology

Load/unload technology ensures that the read/write heads never come into contact with the media - even when the drive is not rotating. Some of the many benefits include increased robustness, reliability, and reduced power consumption. Hitachi is the only company to use load/unload technology right across the full product range.

Rotational Vibration Safeguard (RVS)

Several Hitachi hard drives now have advanced Rotational Vibration Safeguard (RVS) that actually anticipates disturbances and counteracts them – maximising performance in the most arduous conditions. Vibration sensors at the edges of the disk feed forward to the actuator, warning it of oncoming disruption. In tests, this technology improves performance in business and high-end systems by as much as 300%.

IrMnCr Read Sensor

To address the demand for increased capacity and highly reliable operation of the read sensor, Hitachi scientists developed a material and process for the manufacture of ultra-small read sensors. Use of a new read-head alloy – iridium-manganese-chromium (IrMnCr), incorporating an extremely thin layer of ruthenium in the structure to create a very high “pinning field”, resulted in the storage industry’s most stable and reliable read-sensor technology.

Hitachi GST high-performance drives come loaded with leading-edge functionality, so you know that the right tools are always at hand.

Enhanced Adaptive Battery Life Extender

Hitachi understands the challenges its customers face in maximizing battery life in their products, and engineered the ABLE power management technology in response. ABLE enables the host system to realize the optimum power utilization from the drive, and customize power consumption at drive level to suit the specific application.

Bulk Data Encryption

Several Hitachi hard drives now offer optional Bulk Data Encryption – a hard-drive level data security mechanism that puts users’ data effectively ‘under lock and key’, offering virtually impenetrable protection. As an alternative to protecting data through software-based encryption or system-level passwords, hard-drive level encryption guarantees better performance and a much higher level of security.

HiVERT™

With the introduction of the Deskstar™ P7K500 drive, Hitachi GST has taken power efficiency very seriously while maintaining 7200 RPM performance. The Deskstar P7K500 provides customers with industry-leading power consumption by reducing power in both idle and active modes. This results in power savings of up to 40-percent over previous-generation products. This reduction was achieved by using the same system-on-chip (SOC) that is used in Hitachi’s Travelstar 2.5-inch mobile product line, where low power has long been a key design attribute to maximize battery life in notebook PCs.

This SOC incorporates Hitachi Voltage Efficiency Regulator Technology (HiVERT) in which switching regulators are used in place of the less power-efficient linear regulators in the voltage reduction processes.



Good for business Good for the environment.

Hitachi Deskstar, the world's most energy-efficient hard drive.

www.hitachigst.com

Hitachi produces the world's most energy-efficient hard drives. Our Deskstar P7K500 uses various patented power-saving techniques to deliver unrivalled active power consumption and best-of-breed

idle power utilisation. Machines powered by our hard drives cost less to run and help organisations become more environmentally and socially responsible.

HITACHI
Inspire the Next

Deskstar

Unrelenting high performance whatever the job in hand

Application Highlights

The first word in superior drives for home, work and industry



A massive capacity of up to 1TB and Seamless Streaming make the Deskstar ideal for HDTV edit and delivery applications



Favoured in systems such as closed circuit TV where data security, capacity and suitability for ATA arrays is a requirement



Whisper-quiet and super fast – ideal for audio visual applications such as home entertainment and set-top boxes



Choice of ATA for traditional applications and Serial ATA for even faster data access such as CAD

Deskstar top-of-the-range drives combine blistering speeds, storage capacities up to a massive 1TB, and they're quiet as a whisper too. In short, they can always handle whatever they're asked to do.

At home, at work, or in the wider industrial world, Deskstar has become the first word in superior drive technology. Whether it's creating music or designing and manufacturing the cars of tomorrow, Deskstar is the power behind the progress.

Application highlights:

- **Power efficiency:** The Deskstar P7K500 provides customers with industry-leading power consumption by reducing power in both idle and active modes. This results in power savings of up to 40-percent over previous-generation products
- **ATA server arrays:** Massive capacity (up to 1TB) and unique Hitachi technologies, such as Rotational Vibration Safeguard, make Deskstar the drive of choice for the world's most reliable and cost-efficient ATA server arrays and the most powerful supercomputers
- **Super quiet applications:** Super quiet operation – critical in audio and video playing and editing applications and where a drive is located close to a user
- **Audio/Visual:** Unlike other drives, Deskstar is designed with technologies on-board to manage the specific demands of audio and visual PC applications
- **Nearline storage:** Multiple power modes mean it can be configured for specific application demands – such as nearline storage where the drive may remain idle for extended periods
- **Easy integration:** Serial ATA simplifies system integration
- **Proven reliability** with a low cost-per-megabyte
- **Wide range of popular capacity sizes** and simple, safe connections benefit high volume consumer products
- **Security and Surveillance:** Deskstar's spindle motor is designed for extended operation and at 1TB the Deskstar 7K1000

offers the highest capacity available in the market – good to know when 24-hour continuous operation and storage requirements of hundreds of terabytes require capacity and performance

The drive of choice

From supercomputers...

"When it comes to hard drives, we tolerate no compromise. Our first choice is the Deskstar range from Hitachi. These drives are proven to be extremely reliable and very fast - which is exactly what we need."

François Dallmann, Co-Founder, DALCO

Deskstar drive configured as part of the DALCO supercomputer, central to the SAUBER PETRONAS F1 aerodynamic centre and wind tunnel.

...to PC gaming

"Because of Hitachi's high reliability rate, our Talon customers enjoy a more transparent technology experience and are able to spend more time gaming and less time worrying about their hardware."

Bradd Berdelman, General Manager of Operations at Falcon Northwest

Deskstar

The ready-for-anything hard drives

Product Highlights

80GB to 1TB | 7200 RPM | 8.5ms average seek time | Serial and Parallel-ATA

What the experts say...

"We were gobsmacked by the performance of the Deskstar 7K1000. It's a seriously quick drive. The performance is no doubt thanks in part to the 32MB on board data buffer. In fact it's so good we recommend throwing away your Raptors for a couple of these babies. The massive amount of storage space and ultra quiet performance is the icing on the cake satisfying demands for high powered multimedia machines with ease, not to mention bragging rights down at the local. If you're in the market for some big storage, the Deskstar should be your first port of call."

Maxit Magazine, September 2007

Award winning:

The Deskstar range continues to impress magazine editors and reviewers worldwide:

Deskstar 7K1000:

- * **Top 100 Products of 2007**
HardwareZone, Singapore
- * **Best of 2007 Top Product in Storage**
Computer Power User, USA
- * **Our Choice 2007**
Zhelezo/Hardware Magazine, Russia
- * **Hardware Magazine - Gold Award**
Hardware Magazine, Thailand
- * **Maxitmag.com Editor's Choice**
Maxit Magazine, USA
- * **PC-Plus Editor's Choice Award**
PC-Plus Magazine, USA

The multi-talented, award-winning Deskstar range offers capacity, speed and reliability to perform under all kinds of conditions. From the desktop to media centre, PCs to enterprise storage, Deskstar users enjoy peace of mind and stress-free storage.

Deskstar 7K1000

- **Capacity:** 1TB and 750GB
- **Application:** World's first terabyte hard disk drive for consumer and commercial computing applications including internal and external storage for consumer computers, networked storage servers, extreme gaming machines and video editing arrays
- Perpendicular magnetic recording technology
- Serial ATA 3Gb/s and Parallel ATA 133 interfaces
- Ramp load design increases shock protection and power savings
- Thermal monitoring and fly height control enhance reliability
- Three low-power idle modes boost power efficiency
- Host/drive authentication for hardware security

Deskstar 7K160

- **Capacity:** 160, 120 and 80GB
- **Application:** Designed to meet personal computer design points and delivers sweet spot capacities for today's business applications
- High interface transfer rate for faster boot up and quicker screen refreshes
- IrMnCr Read Sensors for high reliability and stability
- Thermal Fly Height Control technology
- Head load/unload to reduce power during idle periods

Deskstar P7K500

NEW

- **Capacity:** up to 500GB
- **Application:** Meets the high-capacity and high-performance storage needs of consumer PCs and mid-range servers
- Industry-leading power consumption by reducing power in both idle and active modes. This results in power savings of up to 40-percent over previous-generation products

Deskstar

All the specs you expect from Hitachi

Specification Highlights

Hitachi ticks all the boxes across the Deskstar range, providing award-winning 7200 RPM performance, low-power design to cut system costs, and whisper-quiet operation.

Performance-enhancing technologies particular to Hitachi Deskstar drives include:

Audio/Visual – Seamless Streaming

Unlike most hard drives, Hitachi Deskstar drives are designed for the specific audio/video demands of devices such as PCs, set-top boxes and digital video recorders. The new Streaming Command Set included in the ATA/ATAPI-7 standard, optimizes the drives for storing and retrieving digital video content. The Streaming Feature Set includes five different components: streaming performance log, error recovery time limits, continuous read/write controls, streaming error logs and configure stream command to ensure a smooth data stream without jerks or dropped frames.

Power and Acoustic Management

Hitachi drives can be configured to reduce both audible noise and reduce power demands. Low noise levels are important in audio/video production environments and whenever a system is located near a user. Multiple power modes mean they can be configured for the specific demands of the application – such as nearline storage where the drive may remain idle for extended periods.

HiVERT

Hitachi Voltage Efficiency Regulator Technology (HiVERT) is a novel power-saving technology that works in conjunction with Enhanced ABLE to significantly reduce power consumption by the hard disk drive without sacrificing the performance characteristics of the base design.

	Benefits	Deskstar 7K1000	Deskstar P7K500	Deskstar 7K160
Capacity	Wide range of popular drive capacities up to a massive 1TB	1TB and 750GB	500, 400, 320 and 250GB	160, 120 and 80GB
Performance				
Speed (RPM)	Super fast operation	7200	7200	7200
Data buffer (MB)²	Super fast access to data	8MB: Parallel ATA 32MB: Serial ATA	8MB: Parallel ATA** 16MB: Serial ATA	8MB Parallel ATA 8MB: Serial ATA
Media transfer rate (max. Mbits/sec)	Faster system boot-up and quicker screen refreshes	1070	1138	966
Interface transfer rate (max. Mb/sec)	Faster system boot-up. 300Mb/s burst rate for faster data access	133: PATA 300: SATA	133: PATA 300: SATA	133: PATA 300: SATA
Configuration				
Interface	Serial ATA II has thinner and longer cabling for easier routing	SATA II 3Gb/s and Parallel Ultra ATA 133	SATA II 3Gb/s and Parallel Ultra ATA 133	SATA II 3Gb/s and Parallel Ultra ATA 133
Reliability				
Latching SATA connector	Prevents disconnects due to excessive shock or rotation	■	■	■
Load/unload ramp	Protects user data when power is removed	■	■	■
Fluid Dynamic Bearing spindle motor	Low acoustics and reliable operation in AV and nearline applications	■	■	■
Availability*** (hrs/days x days/week)			24x7	
Environmental				
Idle power (W)		8.1 (750GB) 9.0 (1TB)	3.6 (1 disk) 4.8 (2 disk)	5.9
RoHS compliant*	Future proof	■	■	■

One GB is equal to one billion bytes when referring to hard drive capacity. Accessible capacity may be less.

¹Portion of buffer capacity used for drive firmware.

*ROHS refers to the European Union Directive 2002/95/EC on the restriction of certain hazardous substances in electrical and electronic equipment. **250GB version available with 8MB. ***Intended for low duty cycle, non mission-critical applications in PC, nearline, and consumer electronics environments, which may vary from application to application.



Hitachi GST. Setting new standards in innovation.

Pushing back storage boundaries to bring you
the storage solutions you need.



www.hitachigst.com

Hitachi offers the widest range of hard drives available today. From 80GB to the world's first 1TB drive, we have a drive that can enhance your product. So why not work with the company that's driving storage innovation?

HITACHI
Inspire the Next

Hitachi's advanced disk drive technologies deliver performance, reliability and security across the range. Whether for desktops, video recorders, closed circuit TV applications, online transaction processing, PC gaming machines, ATA servers or disk-to-disk backup and recovery, our technology means that Hitachi drives both meet and exceed the highest expectations.

Hitachi Global Storage Technologies

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One GB is equal to one billion bytes and one TB equals 1,000 GB (one trillion bytes) when referring to hard drive capacity. Accessible capacity may be less.

www.hitachigst.com

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