

IBM Deskstar™
Hard Disk Drive Family



Extending Leadership in Storage Capacity and Performance

deskstar16GP deskstar14GXP deskstar16GP deskstar14GXP



Advanced Desktop Solutions for Performance

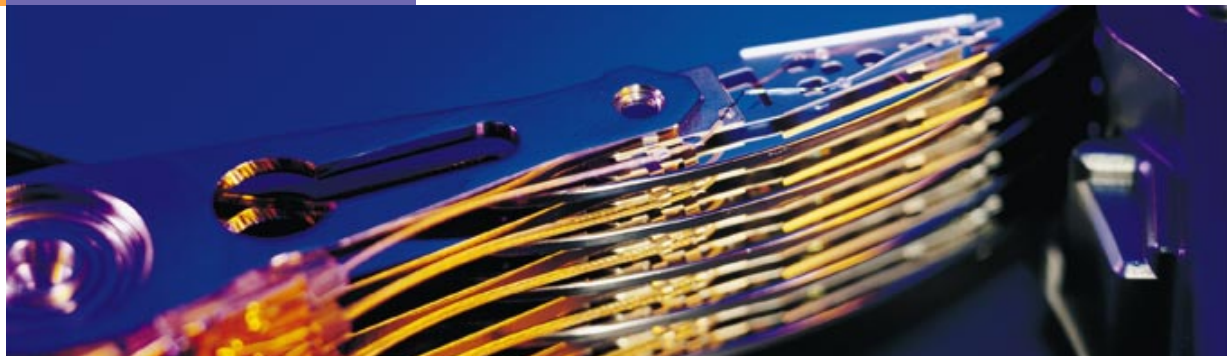
Desktop Needs

Whether you use your desktop computer for audio and video editing, computer-aided design and manufacturing (CAD/CAM), 3D graphics, animation and photo manipulation, web page design, or data mining and data warehousing—advanced desktop applications such as these demand an advanced data storage solution. And, whether you work at the office or at home, you need solutions and innovations for desktop storage that provide the power, flexibility, and capacity to perform a wide range of applications. Enter the IBM Deskstar 16GP and 14GXP family of high performance, high capacity Ultra ATA hard disk drives.



With our comprehensive Deskstar 16GP and 14GXP family of hard disk drives, you can take advantage of our powerful performance *and* massive capacity—ranging from 3.2 gigabytes (GB) of storage to more than 16 GB. With that kind of power and capacity, you can download a web movie, or even two, install full versions of storage-hungry application programs, save those high-resolution digital images, or store an entire data warehouse. If you've got power performance needs, the new IBM Deskstar 16GP or 14GXP hard disk drive is the drive for you.

The Deskstar 16GP family, which offers capacities of 3.2 GB to 16.8 GB, provides one of the industry's highest storage capacities for desktop systems. The Deskstar 14GXP family, with a capacity range from 10.1 GB to 14.4 GB, represents one of the industry's first implementations of desktop disk drive technology running at a rotational speed of 7200 RPM. The bottom line? These fast speeds and high capacities translate directly into higher quality video pictures, superior CAD/CAM performance, extensive data mining analysis, and significantly faster turnaround for the emerging wave of data-intensive multimedia applications that are quickly finding their way to the desktop.



The Capacity to *Really* Perform

The Deskstar 16GP and 14GXP family of hard disk drives from IBM gives you a reliable data storage solution with the capacity and performance that your most demanding desktop applications require. We can help you maximize your productivity and efficiency. We give you higher capacity, faster performance, and greater reliability than has ever been available before in one family of performance desktop disk drives.

As the company that pioneered disk drive technology, IBM has long been acknowledged as one of the world's leading technology providers of data storage solutions. The latest example of this leadership is the Deskstar 16GP and 14GXP family, which sets new standards for today's data storage

technology to help meet the evolving requirements of high-performance desktop users.

GMR Dramatically Increases Capacity

These Deskstar products leverage IBM's years of disk drive experience by building on our proven track record of providing the most reliable, highest performing, and highest quality in one family of performance hard disk drives on the market today. Setting new standards once again, the Deskstar 16GP and 14GXP family represents IBM's first implementation of Giant Magnetoresistive (GMR) head technology that lets IBM pack the most data into every square inch of the Deskstar's platters. GMR technology offers

increased areal density resulting in an unprecedented 3.38 GB per disk.

No-ID™ sector formatting increases capacity by helping to eliminate the overhead caused by the duplicate storage of data sector ID fields. For superior system performance, we provide an Ultra ATA interface. In addition, Partial Response Maximum Likelihood (PRML) digital data channel delivers increased media-to-buffer and buffer transfer rates. Perhaps, just as important with our advanced technology, these hard disk drives rank among the quietest available and have low power consumption—a key advantage for many of today's users.

Continuing Our Technology Leadership in Data Storage

▶ **High Capacity**

Leadership in areal density is what gives our Deskstar family its superior performance and capacity. The Deskstar 16GP family offers capacities of 3.2, 4.3, 6.4, and 8.4 GB, and the industry's first offering of 16.8 GB running at 5400 RPM. With a maximum capacity of 3.38 GB per platter, the Deskstar 16GP family packs significant amounts of data into a one-inch high disk drive. The Deskstar 14GXP offers capacities of 10.1, 12.9, and 14.4 GB running at 7200 RPM—giving users access to information more quickly than ever before.

▶ **Superior Performance**

The Deskstar 16GP and Deskstar 14GXP family of disk drives offers average seek times of 9.5 milliseconds, while the 16GP family offers sustained data rates of up to 12 MB per second and the 14GXP offers sustained data rates of up to 13 MB per second. These high sustained data rates can easily handle the large and complex multimedia images used in today's video applications.

▶ **Data Protection**

To help ensure data availability and help alert the system to potential drive failures, we provide S.M.A.R.T. (Self-Monitoring Analysis and Reporting Technology) protocol support across the Deskstar family.

▶ **Advanced Interface**

The Deskstar 16GP and 14GXP family has an Ultra ATA interface and supports transfer rates of 33.3 MB/sec in Ultra DMA Mode, and 16.6 MB/sec in Multi-word DMA Mode-2 and in PIO Mode-4. The family also supports Logical Block Address (LBA) and extended Cylinder Head Sector (CHS) addressing modes.



IBM: A Partner You Can Count On

The Deskstar family of hard disk drives offers you the capacity, performance, and reliability you need to help satisfy your most advanced desktop computing needs. Our solutions provide you with a set of offerings with a proven track record *and* a migration path that can grow with you as your needs evolve. We also offer one of the industry's best customer service and support programs—all in keeping with our commitment to excellence and innovation in the world of advanced data storage solutions.

If you would like more information on what an advanced hard disk drive storage solution from IBM can do for you, call us today at 1 800 IBM-7777 (1 416 383-5161) or fax us at 1 905 316-4733 outside of North America and ask for Dept. Star 30. Or check out our Website at www.ibm.com/storage



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Model Name	Deskstar 14GXP	Deskstar 16GP
	DTTA-371440/ 371290/371010	DTTA-351680/351290/ 351010/350840/350640/ 350430/ 350320
Configuration		
Interface	ATA-4	ATA-4
Device Capacity ¹	14.4/12.9/10.1 GB	16.8/12.9/10.1/8.4/6.4/4.3/3.2 GB
Sector Size	512 Bytes	512 Bytes
Recording Zones	8	8
User Cylinders	13,085	13,085
Data Heads	10/8/7	10/8/6/5/4/3/2
Disks	5/5/4	5/4/3/2/2/1
Areal Density (Maximum)	2440 Mbits/sq.in	2687 Mbits/sq.in
Recording Density (Maximum)	178.1 KBPI	196.1 KBPI
Track Density	13,700 TPI	13,700 TPI
Performance		
Data Buffer ²	512 KB	512 KB
Rotational Speed	7200 RPM	5400 RPM
Latency (Average)	4.17 ms	5.56 ms
Media Transfer Rate (Maximum)	175.6 Mbits/sec	163.7 Mbits/sec
Interface Transfer Rate (Maximum AT)	33.3 MB/sec	33.3 MB/sec
	Ultra DMA Mode-2	Ultra DMA Mode-2
	16.6 MB/sec PIO Mode-4, MW DMA Mode-2	16.6 MB/sec PIO Mode-4, MW DMA Mode-2
Sustained Data Transfer Rate	13(Max)-8(Min) MB/sec	12(Max)-6(Min) MB/sec
Seek Time (Typical Read)		
Average	9.5 ms	9.5 ms
Track-to-Track	2.2 ms	2.2 ms
Full Track	15.5 ms	15.5 ms
Reliability		
Error Rates (Non-recoverable)	≤ 1 per 10E13 bits	≤ 1 per 10E13 bits
Contact Start Stop (below 40° C)	40,000	40,000
Power		
Requirements	+5 VDC(±-5%) +12VDC(±5%)	+5 VDC(±-5%) +12VDC(± 10%-8%)
Dissipation (Typical)	25.2 W	25.2/25.2/15/15/15/15/15 W
Idle (Average)	6.9 W	4.9/4.9/3.4/3.4/3.4/3.4 W
Physical size		
Height	25.4 mm	25.4 mm
Width	101.6 mm	101.6 mm
Depth	146 mm	146 mm
Weight (Maximum)	630 g	630 g

¹ 1MB = 1,000,000 Bytes 1 GB = 1,000,000,000 Bytes

² Up to 32 KB used for firmware

³ Idle Power Dissipation/Formatted Capacity

Information is also available 24 hours a day, seven days a week, via fax or the Internet. For faxed information, please contact IBM's TECHFAX system by dialing 1 415 855-4773 from a touchtone telephone (international callers must call from the phone connected to their fax machine). Follow the voice prompts to receive a TECHFAX directory.

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