bazaar

CHIP Top Ten

Top of the Charts

Your guide to the best gaming devices and hard disk drives
available in the market

At the CHIP Test Centre, products are tested in two categories individual tests and comparison tests. Software and hardware are tested using the latest benchmarks and test procedures developed by the International CHIP Test Centre in Munich, Germany, in conformance with industry standards. For a comparison test, the products are tested in comparison with other products of the same kind and then rated according to their performance.

But how do you know how a new product, which did not feature in the comparison test of its category, rates against others of its kind? For example, if CHIP had tested 18 motherboards in the comparison test in January and carried out an individual test of a motherboard a couple of months later, how would the reader know where that particular motherboard stands in comparison to those already tested?

To answer this, you have the CHIP Top Ten, featuring the ten best products in a category (rated according to the performance in the CHIP Tests).

The tables provide all details needed to make a purchase: technical data, test values and prices.

WHAT THE NUMBERS MEAN

CHIP Test lists the points for the product as well as total points. The results from the individual tests are analysed to give the Total

These two columns consist of qualitative information regarding the product

Under Technical Details, you will find important specifications

New entry to the table

Place	Mainboard and price	Contact	Phone	Processor Interface	Chipset	AGP Slot	Max Memory	Productivity	Creativity	Entertainment	Total score	Remarks (+)	Remarks (-)
1	Chaintech 6BTM Rs 9,600	Ideal Concepts	011-6216225	Slot-1	440BX	Yes	512	149.6	168	131	151	Optical sensor connectivity	NA
2	GVC SP-PII LXB Rs 3,600	Priya Int	022-2663611	Slot-1	440LX	Yes	768	152.8	168.6	124.4	150.9	Versatile performer	Less number of PCI slots
3	ASUS P2L97 Rs 4,500	Mnemonic	022-8010871	Slot-1	440LX	Yes	384	152	168.6	124.7	150.6	Comprehensive documentation	Single ISA slot
4	ASUS P2L97 Rs 4,500	Mnemonic	022-8010871	Slot-1	440LX	Yes	384	152	168.6	124.7	150.6	Comprehensive documentation	Single ISA slot
5	Mercury KOB7LX-AT Rs 3,700	Mnemonic	022-8010871	Slot-1	440LX	Yes	256	151.8	168.1	125.4	150.5	Attractively priced	Low expandability
6	GVC SP-PII EXB Rs 3,400	Mnemonic	022-8010871	Slot-1	440EX	Yes	768	151.5	168	125.3	150.3	Economical price	Low expandability
7	ACORP 6BX86 Rs 4,200	ACE Micro Electronics	011-6201276	Slot-1	440BX	Yes	768	150.3	168.5	128.8	150.2	Protective static sheet	Only 2 DIMM slots
8	Gigabyte GA-6BXE R s5,500	Nebula Tech	022-6347158	Slot-1	440BX	YES	1024	149	167	130.3	150.2	Supports large amount of RAM	No drivers
9	ACORP 6LX Rs 3,300	ACE Micro Electronics	011-6201276	Slot-1	440LX	Yes	256	151.1	168.1	124.3	149.9	Easy to install	Only 2 DIMM slots
10	Transcend TS-ABX NA	Wales Tech	022-3828100	Slot-1	440BX	Yes	768	149.7	166.7	127.5	149.7	Quick performer in DOS	Skimpy documentation

TECHNICAL DETAILS · *CHIP TEST*

NEW

* This table is for explanation purpose only and consists of dummy data
*Rankings are based solely on the performance of the product. Price has not been taken into account
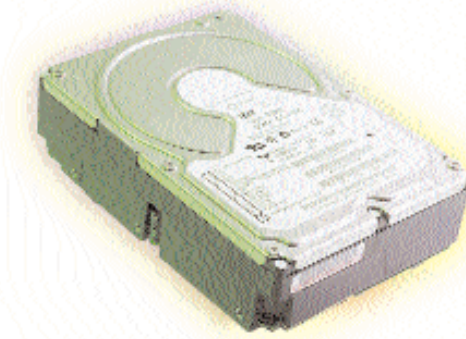
CHIP Top Ten

HARD DISK DRIVES

The disk drives were tested on a Pentium II 350 with 128 MB of 100 MHz SDRAM and a 6.3 GB Seagate ST36531A reference hard disk. During the test, the programs were launched from this reference disk. The reference hard disk did not interfere with the test results, which were based purely on the performance of the drive under examination. For the SCSI hard disk drives, an Adaptec 2940 Ultra Wide SCSI controller card was used.

Testing procedure
Test programs were developed by the International CHIP Test Centre in Munich, Germany, and were used to measure parameters like seek time, access time and data transfer rate of the hard disk drives. The test involved simulating the sequential and random read and write operations on the various regions of the hard disk, ranging from the inner to the outer extremities of the disk surface. A 200 MB dummy access database file was used to access random entries during this test.

The test procedure is virtually identical for both the SCSI and IDE hard disk drives. In both cases, the test hard disk is initially configured to have a single partition to use all the available space and is formatted with a FAT32 file structure. For IDE hard disks, the drive under test is configured as the secondary master, while the reference hard disk is the primary master. In the CMOS setup, parameters that influence hard disk performance are enabled, depending on whether the hard disk can support it. No other drives exist in the system while the test is in progress. For SCSI hard disks, the disk under test is the only device in the SCSI chain (except for the controller) and the SCSI ID is set to 6. Parameters in the SCSI BIOS that influence performance such as the Write Buffer and Ultra Wide data transfer rates are enabled.

Interpretation of test results
Upon completion of the tests, a file is created that details the performance of the drive in the various test runs and a summary of all the runs. These parameters include the average and sequential read and write access time as well as the data transfer rates.

While running the tests, the first set of readings is discarded to stabilise the drive. This gives a truer picture of the drive performance and the readings are more consistent. These are the parame-

Ranking	Manufacturer	Model Number	Dealer Phone & Fax	Price	Capacity	Buffer	Interface	Form Factor	Average Access Time (Read)	Average Access Time (Write)	Manual	Overall	Remarks (+)	Remarks (−)
					TECHNICAL DETAILS				CHIP TEST					
1	IBM	Ultrastar 18XP DGHS	Wales Technologies 022-3828100 022-3877418	Rs 45,000	18.2 GB	512 KB	Ultra Wide SCSI	3.5-inch	8.9 ms	12.7 ms	No	34	High transfer rate	Very expensive
2	IBM	DDRS-39130	Wales Technologies 022-3828100 022-3877418	Rs 21,000	9.1 GB	512 KB	Ultra Wide SCSI	3.5-inch	8.7 ms	10.2 ms	No	32	High transfer rate	–
3	Seagate	ST39140W	ACI 022-8595682 022-8522454	Rs 17,500	9.1 GB	512KB	Ultra Wide SCSI	3.5-inch	14.9 ms	15.3 ms	Yes	32	Sustained data transfer speed	–
4	Quantum	Fireball KA	Exl Limited 080-3337010 080-3337010	Rs.8,900	13.6 GB	512 KB	Ultra ATA/66	3.5-inch	11.1 ms	6.06 ms	No	31.5	High transfer rate	Generates heat
5	Quantum	Fireball CR	Exl Limited 080-3337010 080-3337010	Rs 8,000	4.3 GB	512 KB	Ultra ATA/66	3.5-inch	15 ms	7.34 ms	Yes	31	Ultra ATA/66 Interface	–
6	Seagate	ST34520W	ACI 022-8595682 022-8522454	Rs 10,750	4.3 GB	512 KB	Ultra Wide SCSI	3.5-inch	14.7 ms	15.1 ms	Yes	31	Very high data transfer rate	–
7	IBM	DDRS-34560	Wales Technologies 022-3828100 022-3877418	Rs 12,000	4.5 GB	512 KB	Ultra Wide SCSI	3.5-inch	7.8 ms	10.2 ms	Yes	30	Easy configuration	–
8	Samsung	SV0644A	Compuage 022-3851573 022-3877836	Rs 6,550	6.4 GB	512 KB	IDE	3.5-inch	13.3 ms	8.98 ms	No	30	Attractive price	–
9	Samsung	SV0432A	Samsung (India) 011-6932517 011-6932607	Rs 6,500	4.3 GB	512 KB	IDE	3.5-inch	15.6 ms	7.56 ms	No	29	Good transfer rate	Slow read access rate
10	Samsung	SV0643A	Savex 022-2029864 022-2881616	Rs 6,500	6.4 GB	512 KB	IDE	3.5-inch	16.1 ms	9.3 ms	No	29	Good transfer rate	

NEW

GAMING DEVICES

The gaming devices were graded on the basis of ease of installation, documentation, usability and price. Ease of installation was determined by the ease with which the device was installed using the accompanying documentation and drivers. The configuration of the peripheral was also considered and extra points were awarded if the setup was exceptionally simple and effortless. For the documentation grading, the clarity in explanation was noted. Other aspects of documentation such as an installation guide, explanation of features, troubleshooting and specifications of the hardware were also taken into consideration.

Features and overall ease of use of the hardware were noted for the usability test. Ergonomic and sturdy designs were allotted more points. Special features on the hardware that simplify its use got extra points. The price was

compared to that of other products, to decide whether the product was a good buy.

The test system consisted of a Pentium II 350 on a 440BX motherboard with 64 MB of SDRAM, Seagate 6.4 GB IDE hard disk configured as the primary master, 60X Creative Infra CD drive with

an SBLive! Value soundcard and a Samsung Samtron 50E monitor. An Intel i740 with 8 MB of SDRAM served as the graphics accelerator. The driver for this card was OpenGL-compliant and for games that supported this standard, Open GL was used; DirectX was used for the rest. The operating system chosen was Windows 95 OSR 2.1 with DirectX version 6.1 installed.

After evaluating each device and before testing the next one, all the software and drivers were uninstalled. This was done to ensure that the software and drivers of one device do not clash with another.

For evaluating joysticks and others, F-22 Raptor and Microsoft Combat Flight Simulator were used. In testing motor racing simulations, we ran Need For Speed III Hot Pursuit and Microsoft Precision Racing. The joysticks and the game

					TECHNICAL DETAILS					REMARKS	
Ranking	Product	Contact	Phone & Fax	Price	Type of device	Axes	Buttons	Other controls	Drivers	Remarks (+)	Remarks (−)
1	Microsoft FF Pro	FutureWorld	022-4921460 022-4961483	Rs 9,750	Joystick	2	9	1 PoV hat	W in 95/98	Highly configurable and realistic	Rather expensive
2	Microsoft FF Steering	FutureWorld	022-4921460 022-4961483	Rs 8,900	Steering wheel and pedals	2	9	−	W in 95/98	Very powerful response	Rather expensive
3	F-16 Fighter Stick	CH Products	022-6048531 022-6048538	Rs 8,000	Joystick	2	4	4 PoV hats	W in 95	Sturdy construction	Expensive
4	Jane s Combat Stick	CH Products	022-6048531 022-6048538	Rs 6,300	Joystick	2	7	1 PoV hats	W in 95	Very realistic, feature-packed	Expensive
5	Halberd Knight	JS Equipment	022-4922384 022-4940685	Rs 3,600	Joystick	2	4	2 PoV hats	−	Feature-packed, gaming software	Could not configure PoV hats
6	Avant Garde	JS Equipment	022-4922384 022-4940685	Rs 2,200	Joystick	2	6	−	−	Easy to install	No drivers included
7	Virtual Pilot Pro	CH Products	022-6048531 022-6048538	Rs 6,300	Flight yoke	3	6	2 PoV hats	W in 95	Sturdy construction	−
8	Racing Wheel	CH Products	022-6048531 022-6048538	Rs 6,300	Steering wheel	2	2	−	W in 95	Easy configuration	Rather expensive
9	Pro Throttle requires	CH Products	022-6048531 022-6048538	Rs 8,000	Flight throttle	2	4	−	W in 95	Anchors firmly to base	Too expensive, additional joystick
10	Microsoft SideWinder Standard	FutureWorld	022-4921460 022-4961483	Rs 3,500	Joystick	2	2	−	−	Feature-packed, informative manual	Low on features