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## Power and elegance

Flat panels have come down in price over the past few months so we challenged 14 companies to put together a powerful system that included an LCD monitor for £1,200 or less

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If you want to replace your CRT with something... well... thinner, there is only one option – LCD. If a peripheral could ever be called 'sexy' the flat panel is it, and recently the price you'd expect to pay to get your hands on one has fallen dramatically – you can pick up a fairly decent unit for as little as £300. Even £300 can be difficult to justify, though, if you have a perfectly good CRT, so we decided to bite the bullet and see what the UK's top PC manufacturers would do if we asked for a flat panel as part of our original spec.

We limited them to a budget of £1,200 excluding VAT, but including delivery and any applicable credit card surcharge, and gave them a fairly free hand as far as the range of components was concerned. The panel, of course, was a given, but we didn't specify a size. As we had expected, most submitted 15in units, although we did receive two 17in panels which was quite impressive given the price point. These would usually retail somewhere in the £700 range – and that's before VAT.

With such a healthy budget we also expected to see a minimum of a 1GHz processor, 256MB of RAM and a graphics card sporting at least 32MB of memory, as well as hard drives of no less than 30GB. Did we get what we wanted? On the whole – yes. Read on to see which systems came out on top.

# GROUP TEST £1,200 FLAT-PANEL PCS

## Aries/Watford Hurricane 1400

**PRICE** £1,408.82 (£1,199 ex VAT) **CONTACT** Watford Electronics 0870 220 0700

**PROS** Solid features and performance **CONS** Average screen

**OVERALL** A commendable effort, with only minor comparative flaws

**FEATURES** ■■■■■ **PERFORMANCE** ■■■■■

**VALUE FOR MONEY** ■■■■■ **OVERALL** ■■■■■

This Hurricane 1400 TFT has an interesting selection of components, but nothing to set the world on fire. The Gigabyte GA-7DXR motherboard houses AMD's top processor, the 1.4GHz Athlon, and a 256MB stick of PC2100 DDR SDRAM, leaving two DIMM slots free for expansion.

Three of the five PCI slots are used. The first is by the Voyetra Turtle Beach Santa Cruz sound card. Only slightly inferior to Creative's SoundBlaster Live! 5.1, this card's six-channel sound is still of excellent quality, and perfectly adequate for games and DVDs when hooked up to the supplied Cambridge SoundWorks DTT2200 speakers.

The second PCI slot is occupied by an Elsa 56K modem, and the final one by a two-port USB expansion card, complementing the two ports already present on the motherboard.

A 60GB IBM Deskstar hard drive is a welcome inclusion, and expansion options are improved by the mother-

board's RAID controller. The inclusion of Ricoh's 20x 10x 40x CD-RW drive is impressive by today's standards. The 12-speed BTC DVD drive is by no means special, however the presence of both drives sets this above some machines on test.

The Leadtek GeForce3 impresses, too. Most manufacturers sacrificed graphics quality for a larger hard drive, or dual RAID 0 setup, but Aries has included both, for which we commend it. The Leadtek card's speciality is gaming, giving impressive Quake III frame rates. These results are shown on AOC's CM500 15in monitor. When compared to the rest of the monitors on test, its image quality is middle ranking. Its native resolution is 1,024 x 768.

A mixture of the disappointing and the excellent, Aries has supplied a well-performing, reasonably well-featured package, but it's not quite in the same league as the Poweroid.com or evesham.com systems.



## Atlas Hi-Grade Meridian A1400

**PRICE** £1,408.82 (£1,199 ex VAT) **CONTACT** Atlas 020 8532 6515

**PROS** Large hard drive: overall reasonable system **CONS** Poor flat panel

**OVERALL** This could have been a winner, but the flat panel makes it a poor choice

**FEATURES** ■■■■■ **PERFORMANCE** ■■■■■

**VALUE FOR MONEY** ■■■■■ **OVERALL** ■■■■■

The Meridian A1400 PW11 is one of only two systems in this test to feature a 17in flat panel. Sadly, the Hi-Grade-branded monitor is the worse of the two. It has a native resolution of 1,280 x 1,024, but the image quality is poor. There is a significant amount of ghosting and strange artifacts are evident all over the screen. This is particularly disappointing considering that the major benefit of a TFT display is a crystal clear image. It's good to see 17in flat panels, but a good-quality 15in unit would have been preferable.

The rest of the system comprises a 1.33GHz AMD Athlon processor, making this the slowest clocked processor on test, but only just. There's also a reasonable 256MB of PC2100 DDR SDRAM. It's a shame Atlas decided on two sticks of 128MB rather than a single stick of 256MB, but it's less of an issue with the motherboard it chose to use. The Asus A7V266 features VIA's KT266

chipset – the first we've seen – but sadly it has little to show for itself: it's pretty plain with few extras, apart from three memory slots.

The Gainward graphics card is based on the GeForce2 Pro chip, making it a reasonable contender, but it's no match for systems supplied with GeForce3 cards. A Creative SoundBlaster Live! 5.1 sound card and a set of Cambridge SoundWorks DTT2200 speakers make a decent games and movie setup.

Inside there is a 56K modem and an Atlas-branded TV and radio tuner card. Storage-wise there is a 60GB 7,200rpm hard drive from Western Digital, a 16-speed DVD drive from Hitachi and an 8x 8x 32x CD-RW from Teac. The package is rounded off by a copy of Lotus SmartSuite Millennium.

Overall this is not a bad system, with performance in the upper half of the field despite having the slowest CPU on test, but our main complaint is the poor flat panel.

## Compute IT Impulse A1400

**PRICE** £1,408.82 (£1,199 ex VAT) **CONTACT** Compute IT 08707 487 487

**PROS** Best performer; great features **CONS** Unightly

**OVERALL** Aside from aesthetics, this is one of the best systems on test

**FEATURES**  **PERFORMANCE**

**VALUE FOR MONEY**  **OVERALL**

From one extreme to the other, Compute IT's case is pretty much the worst here; its flimsy feel and 1980s styling make it a bit of an eyesore. Aesthetics aside, though, Compute IT only just missed out on an award.

The 1.4GHz Athlon, coupled with a single 256MB stick of PC2100 DDR SDRAM, gained the highest scores in the group, coming in at 152 overall on SYSmark 2001.

Many systems this month opted for RAID motherboards and a dual hard drive setup. Unfortunately, this is lacking in Compute IT's system, and is principally the only thing to let this machine down. That said, the 41GB UltraDMA100 IBM drive is an excellent choice, and as fast as current technology will allow.

It seems that most manufacturers have had to make a trade-off between large hard drives or the inclusion of a GeForce3 graphics card. The card in this system is Leadtek's version and is an admirable performer, again with

the highest scores on test. In 3DMark 2001 it achieved a score of 5,574, and in Quake III Team Arena it hit 90.9 frames per second.

NEC-Mitsubishi's MultiSync 1530V is popular this month, probably due to its recent price cut. This 15in LCD has a 1,024 x 768 native resolution, and is easy on the eye. It's not the best on the market by a long shot, and it's a shame Compute IT could not supply a flat panel with a DVI input, as the Leadtek is one of the few graphics cards in this test to have a DVI socket.

Both optical drives are from AOpen. The CD-RW drive is the company's new model, the CRW1632, writing at up to 16-speed, and includes both JustLink buffer underrun protection, and JustSpeed, which selects appropriate writing speed for the disc. The 16-speed DVD drive is equally competent. VideoLogic's Sonic Fury is a superb example of a sound card, and Jazz's six-channel speakers are adequate.



## Elonex WebRider Pro

**PRICE** £1,408.82 (£1,199 ex VAT) **CONTACT** Elonex 020 8452 4444

**PROS** Excellent 17in flat panel **CONS** Under-performing and fairly low specifications

**OVERALL** The cost of the 17in flat panel means corners have been cut elsewhere

**FEATURES**  **PERFORMANCE**

**VALUE FOR MONEY**  **OVERALL**

Elonex is the second manufacturer to supply a 17in flat panel, although the quality of this one is superior to that supplied by Atlas. Our only complaint is the size of the bezel which makes the unit larger than it needs to be.

The native resolution is 1,280 x 1,024, the norm for 17in flat panels. A welcome touch is the two-port USB hub at the rear to attach a USB keyboard and mouse, however Elonex has supplied standard PS/2 peripherals. The display has built-in stereo speakers but they are not very powerful.

The WebRider Pro is based on a 1.4GHz AMD Athlon processor as well as 256MB of PC2100 DDR SDRAM. There's yet another similarity to the Atlas here, as both manufacturers have supplied two sticks of 128MB rather than a single 256MB module.

The MSI motherboard is similar to the one in the Panrix, but it lacks onboard EIDE RAID as well as the extra USB ports and USB networking. The cost of the 17in flat panel means

there are very few extras inside the Elonex, although the graphics card is a GeForce2 Ultra from Gainward which is a fair performer.

Storage is catered for by a 40GB, 7,200rpm hard drive from Fujitsu together with a Matsushita DVD drive and a 12x 8x 32x CD-RW from Acer. The use of the onboard AC97 sound is disappointing in this price range. The Cambridge SoundWorks CSW100 speakers also a fairly standard affair; a cut-down version of the FPS1000 with only two speakers and a subwoofer. There's also a 56K PCI modem, but we can't help feeling short changed despite the excellent display.

The Elonex system is not one of the top performers here and is the second slowest in SYSmark 2001, although it does perform much better in the 3D benchmarks. To sum it all up we have to give Elonex kudos for the excellent display, but at the end of the day, the overall package doesn't have enough to offer.



# GROUP TEST £1,200 FLAT-PANEL PCS

## evesham.com Axis 1400 DGF

**PRICE** £1,408.82 (£1,199 ex VAT) **CONTACT** evesham.com 08707 287 070

**PROS** Performance; construction; monitor **CONS** Smaller HDs than other RAID 0 PCs

**OVERALL** Excellent performer and one of the best-equipped systems in this group test

**FEATURES** ■■■■■ **PERFORMANCE** ■■■■■

**VALUE FOR MONEY** ■■■■■ **OVERALL** ■■■■■

This system from evesham.com was one of the highest performing and best featured in this test. Neatly laid out inside and equipped with an Athlon 1.4GHz processor, the Axis came with a 256MB stick of PC2100 DDR SDRAM, leaving two DIMM slots free for expansion on Gigabyte's GA-7DXR motherboard. As well as the two USB ports on the board, there are two extra at the front of the case, and the PCI FireWire card leaves two PCI slots free.

What sets this system apart is that it is the only one that arrived with the monitor digitally connected; others in this test have come with a DVI cable, but this has been converted to VGA for the graphics card. Leadtek's WinFast GeForce2 Ultra-chipped card has a DVI port that is connected directly to Philips' Brilliance 150P2 flat panel, which easily lives up to its name. Easy on the eye, this 15in screen is capable of a native resolution of 1,024 x 768. The 3D graphics performance is the best

we've seen from a card that does not have DirectX 8 hardware, as its performance is only marginally below that of the GeForce3s on test.

The two 30GB Maxtor hard drives give ample hoarding headroom and fast data access times. Were we to criticise this system we would have to point out that other manufacturers that adopted RAID 0 setups provided 40GB hard drives.

Data can be backed up using Teac's CD-W516EB CD-RW drive that writes at 12-speed and rewrites at eight-speed. It's not the fastest drive on test, but it does include Teac's own BurnProof system to prevent buffer underrun. Pioneer's DVD-116 makes another appearance, reading DVDs at up to 16-speed.

Creative's SoundBlaster Live! 5.1 sound card is coupled with some Cambridge SoundWorks DTT2200 speakers, providing a handsome Dolby Digital setup, ideal for use with the system's DVD drive.



## Ideal AMD Tempest G Series

**PRICE** £1,408.82 (£1,199 ex VAT) **CONTACT** Ideal 0870 748 1468

**PROS** Good performance; excellent graphics card **CONS** Poor build quality; poor value

**OVERALL** Although not a bad machine, it just doesn't compete with the rest of the group

**FEATURES** ■■■■■ **PERFORMANCE** ■■■■■

**VALUE FOR MONEY** ■■■■■ **OVERALL** ■■■■■



Here is another system with a 1.4GHz Athlon processor. Not a single system in this test has included an Intel CPU, which shows that, despite Intel's recent processor revamps, OEMs are sticking to their AMD guns, as the Athlons continue to provide the best value.

Asus' ATA motherboard has one 256MB PC2100 DDR SDRAM stick, as well as five PCI slots.

What really lets the system down is the limited expansion room. The power cables on the hard and optical drives are glued down to prevent them slipping out in transit, which is a wise move. However, this makes it difficult to remove the drives should you want to upgrade. Also, the extra fan used to cool down the graphics card has been bent to get it closer to the card, blocking two more PCI slots, so only one of the five is left free.

The Gainward GeForce3 is the best value on the market, with DVI and D-SUB connectors as well as video-in

and out capabilities and good performance. Whether you like the look of the Logix 15in monitor is a matter of personal taste, but it has great image quality and a native resolution of 1,024 x 768.

The IBM Deskstar UltraDMA100 drive's 40.1GB capacity is enough to satisfy most users. Optical storage comes in the form of TDK's Vortex 12x 10x 32x CD-RW drive, which has the added bonus of JustLink buffer underrun protection. The Shuttle DVD drive runs at 16-speed.

Provisions for sound are disappointing. The Creative SoundBlaster Live! 1024, although a great value card, is way below par for this test; most other manufacturers have supplied six-channel decoding cards. The Cambridge SoundWorks four-point speakers perform well but, again, let the system down.

Although a solid machine, in this company the Tempest finds itself eclipsed by its peers.

## Mesh NexGen 1400 TFT

**PRICE** £1,408.82 (1,199 ex VAT) **CONTACT** Mesh 020 8208 4706

**PROS** A well-balanced machine **CONS** Nothing out of the ordinary; dull flat panel

**OVERALL** Lack of imagination makes the Mesh a more mediocre offering

**FEATURES** ■■■■■ **PERFORMANCE** ■■■■■

**VALUE FOR MONEY** ■■■■■ **OVERALL** ■■■■■

Mesh has a good reputation at *PCW* for supplying well-balanced systems that offer good value for money. The NexGen 1400 TFT doesn't quite live up to that reputation; although it is a respectable machine it is not as good as the competition.

We can't fault Mesh as far as performance is concerned as this is among the fastest machines, but compared to the other top performers you do get a bit less for your money.

There is a 1.4GHz AMD Athlon processor and 256MB of PC2100 DDR SDRAM inside the Mesh. This has been fitted to an Asus A7A266 motherboard, featuring the AliMagik 1 chipset. You also get a Leadtek GeForce3 graphics card and a Creative SoundBlaster Live! 5.1 sound card. This hooks up to a set of Cambridge SoundWorks DTT2200 speakers offering a reasonable setup for both games and DVD playback.

Also present is a standard 56K PCI modem and an expansion bracket

with two extra USB ports. The hard drive is a reasonable 40GB 7,200rpm drive from IBM and there's a 16-speed DVD drive from Pioneer, as well as a 16x 10x 40x CD-RW from Teac, which finishes off the story as far as storage goes.

The NEC MultiSync LCD 1530V flat panel is a unit that we've seen from several of the manufacturers this month. As far as monitors go it's not brilliant, but neither is it one of the worst we've seen. Unfortunately, image quality is a bit lacking when compared to the likes of Philips and CTX.

Performance is not bad, but the NexGen 1400 TFT does not perform as well in our 3D benchmarks as some of the other systems featuring the same graphics card, which could be down to the Ali chipset.

Overall the Mesh NexGen 1400 TFT is a respectable system, but it lacks that little extra something that could have made it a winner.



## Multivision Vision Ultima FW

**PRICE** £1,408.82 (£1,199 ex VAT) **CONTACT** Multivision 0870 066 0885

**PROS** Storage: sound options **CONS** Disappointing performance

**OVERALL** Relatively weak graphics and flat panel can't detract from a brilliant PC

**FEATURES** ■■■■■ **PERFORMANCE** ■■■■■

**VALUE FOR MONEY** ■■■■■ **OVERALL** ■■■■■

Although the cabling inside is comparatively messy, this system offers a wealth of goodies; yet another 1.4GHz Athlon, but this time with 512MB of PC2100 DDR SDRAM. Sadly, though, this comes as two sticks, filling both the DIMM slots, so that's your memory lot. Surprisingly, though, performance was near the bottom of the scale.

The EPoX 8K7A+ motherboard has AMD and VIA chipsets as well as an onboard RAID controller. Multivision has supplied two excellent 40GB hard drives from Seagate. Four of the six PCI slots are filled, one with a Tekram three-port FireWire card.

Filling one of four 5.25in bays is a Mirai 16x 10x 40x CD-RW drive, which is top of its class, with super-fast record times and BurnProofing. Another bay is filled by a 16-speed DVD drive from Pioneer.

The inclusion of the Game Theatre XP sound card, and the excellent VideoLogic DigiTheatre CC speakers, is good to see, as the Game Theatre

is one of the few audio products of note to have been released over the past year. Its advantage over competitors is the external rack unit, offering pretty much every connector you could want, especially separate MIDI inputs and outputs, and phono and mini jack for six-channel sound. The external box even acts as a powered USB hub, adding even more functionality.

Although the attraction of the silver/grey VideoLogic speakers is a matter of personal taste, the six-channel sound they produce is superb.

On the down side, the Hercules Kyro II may be one of the best value graphics cards on the market, at under £99, but this inevitably leads to weak 3D performance scores, and it comes home second from bottom. The ADi 15in flat panel monitor is an excellent model, winning our March 2001 flat panel group test with a maximum resolution of 1,024 x 768.

# GROUP TEST £1,200 FLAT-PANEL PCS

## NEC Powermate I-Select XL3

<b>PRICE</b> £1,367 (£1,164 ex VAT)	<b>CONTACT</b> NEC 0870 010 6328
<b>PROS</b> Slightly cheaper than the competition	<b>CONS</b> No DVD drive; poor sound system
<b>OVERALL</b> NEC has completely missed the target with this very basic system	
<b>FEATURES</b> ■■■■■	<b>PERFORMANCE</b> ■■■■■
<b>VALUE FOR MONEY</b> ■■■■■	<b>OVERALL</b> ■■■■■

NEC, being NEC, has naturally supplied an own-brand flat panel with this Powermate I-Select XL3 A1400. Sadly it is not one of its high-end models but rather the NEC LS15 that we've seen with quite a few other systems this month. This is not the best display ever, but it does offer reasonably good image quality. However, it lacks features such as a built-in USB hub and a pivot option.

The system itself is also fairly lacklustre, although the specifications are in line with other machines in this test.

The processor is the now familiar 1.4GHz AMD Athlon and it's bundled with 256MB of PC2100 DDR SDRAM on a single stick. This has been fitted to a Gigabyte GA-7DX motherboard.

Yet again, the graphics card is a Leadtek GeForce3 solution, but the model supplied by NEC lacks the DVI port and memory chips' heat sinks. The sound card is an aging SoundBlaster Live! 1024 which is coupled

with a set of Labtec LCS-2414 speakers that are fairly mediocre, consisting as they do of a pair of small satellites and a subwoofer. Finally there is the standard 56K PCI modem to finish it all off.

The hard drive is a fairly standard 40GB affair from Seagate spinning at 7,200rpm. We were amazed that NEC hadn't managed to supply a DVD drive at this price point and all that is included is a CD-RW from LG mounted in one of the 5.25in drive bays.

New to NEC's cases are the two front-mounted USB connectors. On our review system the ports were not quite lined up with the slots in the case, but both were still usable. Where NEC regains a bit of ground is in the software bundle, which includes something for every member of the family.

Performance-wise, the NEC is nothing special and this, together with the poor specifications, makes the NEC hard to recommend.



## Panrix Magnum 1400

<b>PRICE</b> £1,408.82 (£1,199 ex VAT)	<b>CONTACT</b> Panrix 0113 244 4958
<b>PROS</b> RAIDed hard drives; USB networking	<b>CONS</b> Poor speakers
<b>OVERALL</b> A respectable PC but the flat panel and performance disappoint	
<b>FEATURES</b> ■■■■■	<b>PERFORMANCE</b> ■■■■■
<b>VALUE FOR MONEY</b> ■■■■■	<b>OVERALL</b> ■■■■■

Panrix's machine looks nothing short of a workstation, but sadly the overall system performance did not impress us much. This could have something to do with the choice of motherboard, as the MSI K7T266 Pro is built around the VIA KT266 chipset and MSI is using the first revision, which tends to be slower than those more recently supplied by other manufacturers.

Residing on the motherboard is a 1.4GHz AMD Athlon and a single 256MB stick of PC2100 DDR SDRAM. The Panrix is also one of only two systems here to feature a GeForce2 Ultra, this one from Hercules. Other components include a Creative SoundBlaster Live! 5.1 sound card and a 56K PCI modem.

Strangely, Panrix has only supplied a set of Cambridge SoundWorks FPS1000 speakers, which are 4.1 rather than 5.1 channel units, when the sound card offers 5.1 sound. Taking up the lower two brackets

are three extra USB ports plus a connector for MSI's clever USB networking. To set up this simple home network you just install the supplied software on both PCs and attach the supplied cable.

Panrix has gone for the full monty when it comes to hard drive storage and supplied two 40GB Maxtor hard drives in a striped RAID configuration, leaving you with an ample 80GB to play with. Around the front are two Samsung drives, a 16-speed DVD drive and a 12x 8x 32x CD-RW.

The display is an NEC MultiSync LCD 1530V and this fairly basic unit has little extra to offer in either image quality or features. Sadly the Panrix is the slowest machine on test in SYSmark 2001, but not by much, and it offers reasonable 3D performance.

Overall, this is a fair system with ample storage space, but in light of the strong competition, the poor speakers and slow performance can't be ignored.

## Polar Platinum 1400

**PRICE** £1,408.82 (£1,199 ex VAT) **CONTACT** Polar 0800 138 1238

**PROS** USB expansion card **CONS** No EIDE RAID chip; poor audio setup

**OVERALL** This is a reasonable system but it can't compete with this month's winners

**FEATURES** ■■■■■ **PERFORMANCE** ■■■■■

**VALUE FOR MONEY** ■■■■■ **OVERALL** ■■■■■

Polar is in good company this month as it is one of five manufacturers to supply an NEC MultiSync LCD 1530V flat panel. It is a fairly standard unit without any bells or whistles. It's no worse or better than your average 15in flat panel but does have a hard time competing with some of the better models that we've seen from Philips and CTX this month.

Making up the core component list is a 1.4GHz AMD Athlon processor and 256MB of PC2100 DDR SDRAM fitted to an EPoX 8K7A motherboard. This is very similar to the board in the Multivision system, but it lacks one important feature, the Highpoint EIDE RAID controller.

The graphics card originates from Hercules, in the shape of a 3D Prophet II, which is built around the nVidia GeForce2 GTS chipset. There is also a 56K V.90 modem from Hayes and a Creative SoundBlaster Live! 1024 sound card inside. The latter connects to a set of Cambridge

SoundWorks FPS1500 speakers, which are an upgraded version of the FSP1000 set with a better subwoofer.

On the storage front is a 41GB 7,200rpm IBM hard drive and a 12x 8x 32x CD-RW from LG. The DVD drive is a 16-speed Pioneer unit, although this is the older UltraDMA33 model rather than the UltraDMA66 update. A welcome touch is that Polar has installed two extra USB ports around the back. This comes at the expense of one of the PCI slots but this is hardly an issue as the EPoX motherboard features six of them.

Although it's not up at the top of the table, Polar certainly didn't submit the slowest machine in the group. It managed fairly average scores in both SYSmark 2001 and our 3D benchmarks.

Overall Polar has managed to put together a reasonable machine but it has a tough time competing with the likes of Best Price, Compute IT and Multivision.



## Poweroid.com Poweroid 3012

**PRICE** £1,408.82 (£1,199 ex VAT) **CONTACT** Poweroid.com 0870 220 0444

**PROS** Good looking; well built **CONS** Comparatively weak graphics performance

**OVERALL** Well built, good looking and a great performer – what more could you ask?

**FEATURES** ■■■■■ **PERFORMANCE** ■■■■■

**VALUE FOR MONEY** ■■■■■ **OVERALL** ■■■■■

Runner-up in the looks department is the Poweroid, whose silver exterior sets it apart from the competition. Unfortunately, the lack of silver fascia on the optical and floppy drives leads to an odd silver and beige mixture that can't compete with the black and silver Systemax.

The sleek CoolerMaster case offers rear and top-mounted fans (hence its 'cool' moniker), an impressive six 3.5in bays, four 5.25in bays and two extra USB ports to the front.

The innards are incredibly well set up. Abit's KT7A-RAID motherboard sports a 1.4GHz Athlon, and is based on VIA's KT133A chipset. The board also caters well for storage, with two 40.1GB 7,200rpm IBM Deskstar drives in a RAID 0 setup. The inclusion of a FireWire card gives it one up on the other manufacturers.

System memory is a 256MB stick of PC133 SDRAM. Choosing PC133 over the equally priced and faster DDR memory may seem odd, but it

resulted in similar performance to the DDR systems on test.

The Poweroid is let down slightly on the graphics side. A 32MB ATI Radeon All-in-Wonder is a great card, but it cannot compete with the GeForce3, or even GeForce2 Ultra, cards present in other systems. Its features and versatility are unrivalled, however.

The Iiyama 15in flat panel is good-looking and reliable, but it is a real shame that Poweroid.com did not choose a monitor with a DVI cable, as the All-in-Wonder has a digital output.

VideoLogic's Sonic Fury sound card is an excellent choice, setting it apart from the SoundBlaster-rife crowd. This is coupled with Creative's DTT2200 speakers, giving an excellent quality, six-channel sound set.

Both optical drives are top-notch; the Plextor CD-RW writes at 16-speed and has buffer underrun protection. Pioneer's 16-speed DVD drive provides a good excuse to put on a film and test the six-channel speakers.



## Systemax A1400RV Premier

**PRICE** £1,408.82 (£1,199 ex VAT) **CONTACT** Systemax 0870 297 366

**PROS** Black look; excellent flat panel; games **CONS** Poor mouse; weaker performance

**OVERALL** A very good system, but sadly outperformed by the competition this month

**FEATURES** ■■■■■ **PERFORMANCE** ■■■■■

**VALUE FOR MONEY** ■■■■■ **OVERALL** ■■■■■

If you want something to impress your friends, take a closer look at the Systemax A1400RV Premier 1170 as this is the first completely black system we have received from this company. It may be more of a novelty than a practical feature, but it helps it stand out from the beige crowd.

The spec is not bad either, with a 1.4GHz AMD Athlon processor and 256MB of PC2100 DDR SDRAM on a single stick. This sits on a brand new board from Biostar featuring the VIA KT266 chipset. This is the first DDR board with VIA chipset we've seen that features four memory slots.

Unusually, the AMR slot is shared with the ACR rather than the PCI slot, which means you don't lose the use of a PCI slot. Systemax does sacrifice one slot to a standard 56K modem, though.

The graphics card originates from the factories of AOpen and is based on nVidia's GeForce2 Pro chipset. Sound is provided by a VideoLogic

Sonic Fury card and a set of Cambridge Soundworks DTT2200 speakers, all of which makes this a reasonable compromise for both games and DVD playback. If you're into the former you'll be impressed by the bundled freebies, including Project I.G.I and Deus Ex among others. There is also a Microsoft Sidewinder PnP game pad to boot.

Storage comes in the form of a 41GB IBM hard drive spinning away at 7,200rpm as well as a Lite-On 16x 10x 40x CD-RW with buffer underrun protection. The DVD drive is a 16-speed slot-load unit from Pioneer.

Overall, this is a very respectable setup, but the icing on the cake comes in the form of the excellent CTX flat panel that has brilliant image quality and can also be used with pivot software if you feel the need. Our only complaint is the mouse, which is a cheap optical device that looks very similar to Microsoft's offerings but feels awkward to use.



## Time Machine 1400-7 VQ Flex

**PRICE** £1,408.82 (£1,199 ex VAT) **CONTACT** Time 0870 830 3116

**PROS** Fast; plenty of memory **CONS** Unightly and almost bare inside; audio setup

**OVERALL** Poor sound and a lack of features reduce this powerful system to average

**FEATURES** ■■■■■ **PERFORMANCE** ■■■■■

**VALUE FOR MONEY** ■■■■■ **OVERALL** ■■■■■



Time's rectangular box may not be a looker, but it is reasonably well equipped. As you've probably guessed by now, it contains a 1.4GHz Athlon, but Time is one of only two manufacturers to include 512MB of PC2100 DDR SDRAM, the other being Multivision. That said, there is no notable improvement in performance over those systems with 256MB. The same can be said for the Multivision entrant, proving the theory that you get diminishing returns in performance when purchasing over 256MB of memory.

There is plenty of room for expansion on the Gigabyte motherboard, with only one of five PCI slots used up, and two free USB ports to the rear. Unfortunately, though, there is an awful lot of fresh air inside.

Storage comes in the form of an ultra-fast 60GB Seagate Barracuda drive. The Gigabyte motherboard includes a RAID controller. LG provides both optical drives. The 8x 4x

32x CD-RW is pretty slow, and the 12-speed DVD drive nothing special.

MSI's GeForce3-chipped StarForce 822 graphics card was the weakest GeForce3 here, with only a D-SUB and video-out to its name. It still outperforms any non-DirectX 8-compliant cards on test, though.

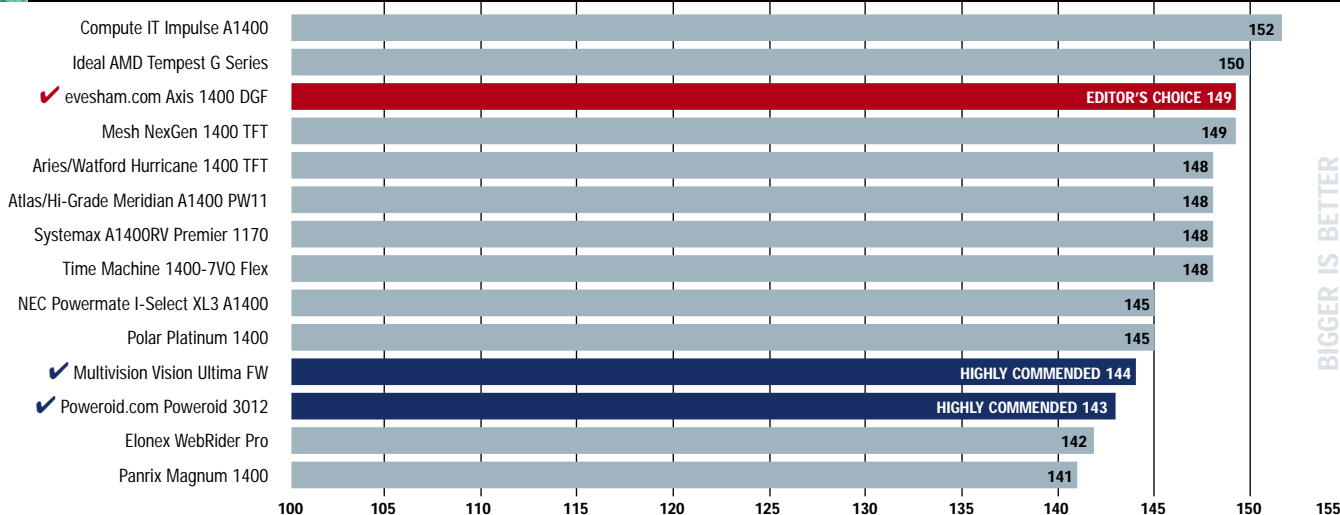
Samsung's SyncMaster 570V 15in panel has great image quality, and is a good-value monitor, capable of a 1,024 x 768 native resolution. However, it has no tilt function and our review model had an activation problem in that the monitor often remained on standby when the system was turned on.

Labtec's speakers are nearly flat but these, coupled with the almost inexcusable use of onboard SoundBlaster 128 sound, produced some of the worst effects on test.

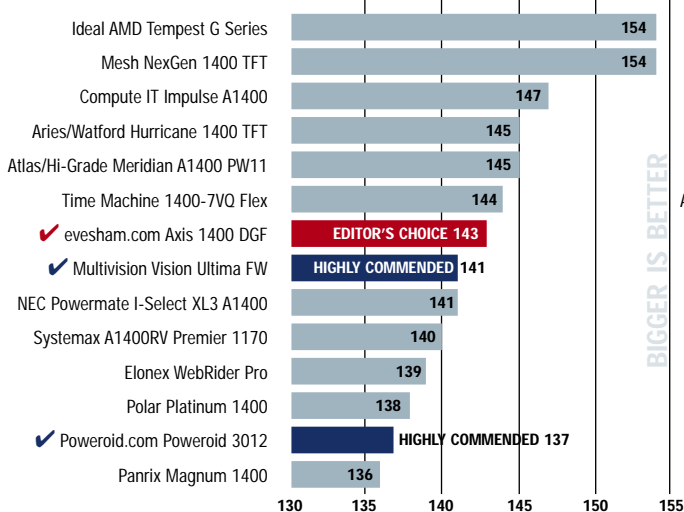
We were disappointed with this machine, as it lacks the necessary components to realise the potential of its processor and memory specs.

# LAB RESULTS

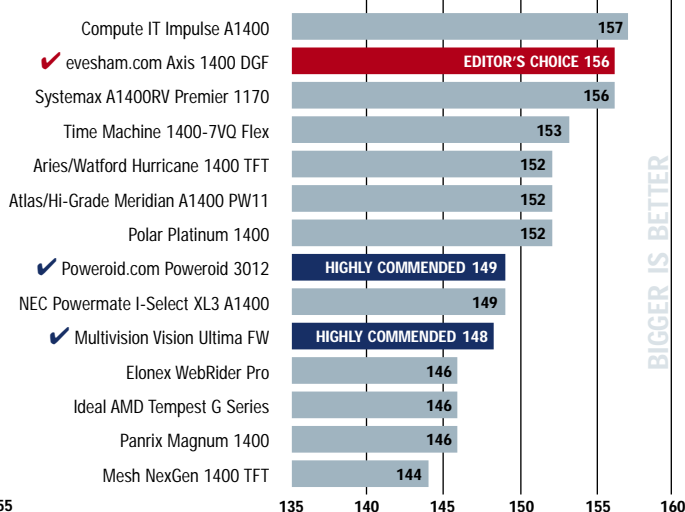
## SYSmark 2001 overall



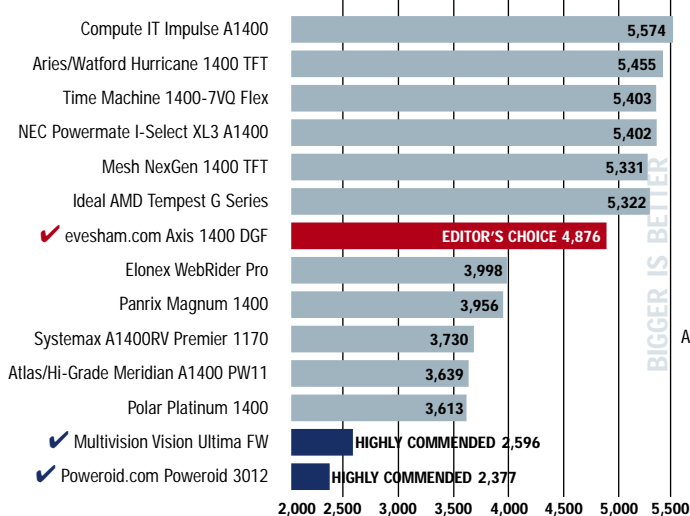
## SYSmark 2001 Internet content creation



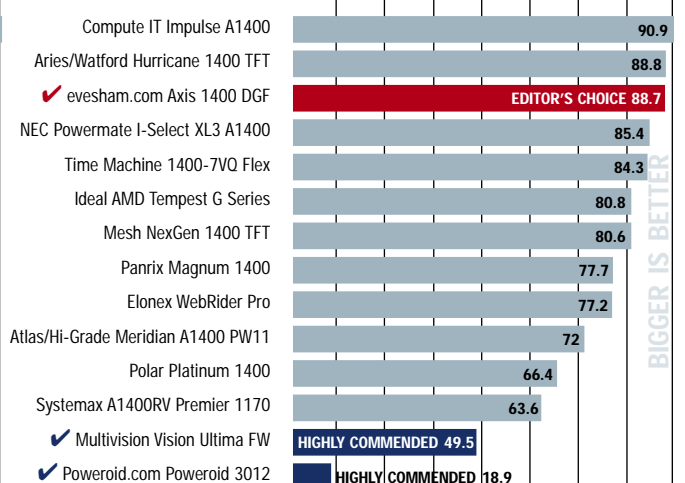
## SYSmark 2001 office productivity



## 3DMark 2001 (1,280 x 1,024 at 32bit)



## Quake III Team Arena (fps) (1,280 x 1,024 at 32bit)



Please see page 62 for an explanation of how we tested the PCs

# TABLE OF FEATURES



MANUFACTURER	ARIES/WATFORD	ATLAS HI-GRADE	COMPUTE IT	ELONEX	EVESHAM.COM	IDEAL COMPUTING	MESH
MODEL NAME	HURRICANE 1400 TFT	MERIDIAN A1400 PW11	IMPULSE A1400	WEBRIDER	AXIS 1400 PRO	AMD TEMPEST DGF	NEXGEN 1400 TFT G SERIES
Price inc VAT (ex VAT)	£1,199 (£1,408.82)	£1,408.82 (£1,199)	£1,408.82 (£1,199)	£1,408.82 (£1,199)	£1,408.82 (£1,199)	£1,408.82 (£1,199)	£1,408.82 (£1,199)
Telephone	0870 220 0700	020 8532 6515	08707 487 487	020 8452 4444	0800 038 0800	0870 748 1468	020 8208 4706
URL	<a href="http://www.watford.co.uk">www.watford.co.uk</a>	<a href="http://www.higrade.com/atlas">www.higrade.com/atlas</a>	<a href="http://www.it.pc.co.uk">www.it.pc.co.uk</a>	<a href="http://www.elonex.co.uk">www.elonex.co.uk</a>	<a href="http://www.evesham.com">www.evesham.com</a>	<a href="http://www.ideal-computing.co.uk">www.ideal-computing.co.uk</a>	<a href="http://www.meshcomputers.com">www.meshcomputers.com</a>
<b>HARDWARE SPECS</b>							
Processor	AMD Athlon 1.4GHz	AMD Athlon 1.33GHz	AMD Athlon 1.4GHz	AMD Athlon 1.4 GHz (266)	AMD Athlon 1.4 GHz (266)	1.4GHz AMD Athlon	Athlon 1.4GHz DDR
RAM/type	256MB PC2100 DDR SDRAM	256MB PC2100 DDR SDRAM	256MB PC2100 DDR SDRAM	256MB PC2100 DDR SDRAM	256MB PC2100 DDR SDRAM	256MB PC2100 DDR SDRAM	256MB PC 2100 DDR SDRAM
Occupied/spare RAM slots	1/2	2/1	1/1 0/2	2/1	1/2	1/1 0/3	1/1 0/3
Max memory in this configuration	1.25GB	768MB	768MB	768MB	1.2GB	768MB	768MB
Max mem supported by m'board	1.5GB	1.5GB	1GB	1.5GB	1.5GB	1GB	1GB
Hard disk (manufacturer & model) & spin speed	IBM Deskstar 7,200rpm	Western Digital WD600BB 7,200rpm	IBM Deskstar 7,200rpm	Fujitsu MPG3409AH 7,200rpm	2x Maxtor 7,200rpm	IBM Deskstar 7,200rpm	IBM Deskstar IC35L040AVER07-0 7,200rpm
Hard disk size/interface (UltraDMA66/100 or SCSI)	60GB UltraDMA100	60GB UltraDMA100	41GB UltraDMA100	40GB UltraDMA100	2x 30GB UltraDMA100	41GB UltraDMA100	40GB UltraDMA100
CD-RW drive manufacturer & model	Ricoh MP7200A	Teac CD-W58E	AOpen CRW1632	Acer 12x 8x 32x	Teac CD-W516EB	TDK Vortex 12x 10x 32x JustLink	Teac CD-W516E 16x 10x 40x CD-RW
<b>MOTHERBOARD COMPONENTS</b>							
Motherboard manufacturer	Gigabyte	Asus	ECS	MSI	Gigabyte	Asus	Asus
Model/chipset	GA-7DXR/AMD761 & VIA 686B	A7V266/ VIA KT266	K755A/SIS 735	MS-6380/ VIA KT266	GA-7DXR/AMD761 & VIA 686B	A7A266/ AllMagic 1	A7A266/ AllMagik1
<b>EXPANSION AND I/O</b>							
No of 3.5/5.25in bays	4/4	4/3	4/3	4/3	4/3	3/3	3 / 3
No of free 3.5/5.25in bays	1/2	2/1	2/1	2/1	2/0	1/1	1 / 1
No of PCI/ISA/shared/AMR slots	5/0/0/1	4/0/1/0	5/0/0/1	4/0/1/0	5/0/1/0	5/0/0/0	5/0/0/0
No of free PCI/ISA/shared/AMR slots	2/0/0/1	1/0/0/0	3/0/0/1	3/0/1/0	2/0/1/0	1/0/0/0	3/0/0/0
No of USB/serial/parallel/PS/2	4/2/1/2	4/2/1/2	2/2/1/2	2/2/1/2	4/2/1/2	2/2/1/2	4/2/1/2
<b>MULTIMEDIA</b>							
DVD manufacturer/model	BTC BDV-212B	Hitachi GD-8000	AOpen 16x DVD	Matsushita SR-8586	Pioneer DVD-116	Spacewalker SDVD122	Pioneer DVD 116
DVD speed/interface	12x/UltraDMA33	16x/UltraDMA33	16x/EIDE	16x/EIDE	16x/UltraDMA66	12x/EIDE	16x/UltraDMA66
Sound card manufacturer	Voyetra Turtle Beach	Creative	VideoLogic	VIA	Creative	Creative	Creative
Sound card model	Santa Cruz	SoundBlaster Live! 5.1	Sonic Fury	Onboard AC97	SoundBlaster Live! 5.1	SoundBlaster Live! 1024	SoundBlaster Live! 5.1
Speakers (manufacturer & model)	Cambridge SoundWorks DTT2200	Cambridge SoundWorks DTT2200	Jazz J9902 5.1	Cambridge SoundWorks CSW100	Cambridge SoundWorks DTT2200	Cambridge SoundWorks FPS1000	Cambridge SoundWorks DesktopTheater 5.1 DTT2200
Graphics card manufacturer & model	Leadtek GeForce3	Gainward GeForce2 Pro	Leadtek GeForce3	Gainward GeForce2 Ultra	Leadtek WinFast GeForce2 Ultra	Gainward GeForce3 Power Pack	Leadtek nVidia GeForce3 TV-out
Chipset	nVidia GeForce3	nVidia GeForce2 Pro	nVidia GeForce3	nVidia GeForce2 Ultra	nVidia GeForce2 Ultra	nVidia GeForce3	nVidia
Memory and type	64MB DDR SDRAM	64MB DDR SDRAM	64MB DDR SDRAM	64MB DDR SDRAM	64MB DDR SDRAM	64MB DDR SDRAM	64MB DDR SDRAM
Monitor manufacturer & model	AOC CM500	Hi-Grade PD-80A	NEC MultiSync 1530V	Elonex MN017FS	Philips Brilliance 150P2	Logix LGX154	NEC MultiSync 1530V
Max viewable diagonal	15in	17in	15in	17in	15in	15in	15in
Native resolution	1,024 x 768	1,280 x 1,024	1,024 x 768	1,280 x 1,024	1,024 x 768	1,024 x 768	1,024 x 768
<b>OTHER INFORMATION</b>							
Modem manufacturer and model	Elsa Microlink 56K V.90	56K Allied Data	Conexant 56K V.90 PCI	CNR 56K V.90	SmartLink 56K PCI	SmartLink 56K V.90	Etec 56K Voice
Misc hardware	N/A	Atlas/Hi-Grade TV/Radio Tuner & Logitech web camera	Onboard 10/100 network	N/A	FireWire card	Card fan/cooler	N/A
Bundled software	N/A	Lotus SmartSuite Millennium	MS Works Suite 2001	N/A	N/A	Sun Star Office	MS Works Suite 2001
Standard warranty*	1yr on site, 2yrs RTB	1yr on site, 2yrs RTB	1yr on site, 2yrs RTB	1yr on site 2yrs RTB	1yr on site 2yrs RTB	1yr on site, 2yrs RTB	1yr on-site, 2yrs RTB

\* (RTB = return to base, C&R = collect and return)

# £1,200 FLAT-PANEL PCS GROUP TEST



MULTIVISION	NEC COMPUTERS	PANRIX	POLAR	POWEROID.COM	SYSTEMAX	TIME
VISION	POWERMATE ULTIMA FW	MAGNUM 1400 I-SELECT XL3 A1400	PLATINUM 1400	POWEROID 3012	A1400RV PREMIER 1170	TIME MACHINE VQ 1400-7 FLEX
£1,408.82 (£1,199)	£1,367 (£1,164)	£1,408.82 (£1,199)	£1,408.82 (£1,199)	£1,408.82 (£1,199)	£1,408.82 (£1,199)	£1,408.83 (£1,199)
0870 066 0885	0870 010 6328	0113 244 4958	0800 138 1238	0870 220 0444	08707 297 366	0870 830 3116
<a href="http://www.multivision.co.uk">www.multivision.co.uk</a>	<a href="http://www.nec-online.co.uk">www.nec-online.co.uk</a>	<a href="http://www.panrix.com">www.panrix.com</a>	<a href="http://www.polarotechnology.com">www.polarotechnology.com</a>	<a href="http://www.poweroid.com">www.poweroid.com</a>	<a href="http://www.systemaxpc.co.uk">www.systemaxpc.co.uk</a>	<a href="http://www.timecomputers.com">www.timecomputers.com</a>
AMD Athlon 1.4GHz	AMD Athlon 1.4GHz	AMD Athlon 1.4GHz	AMD Athlon 1.4GHz	AMD Athlon 1.4 GHz	AMD Athlon 1.4GHz	AMD Athlon 1.4GHz
512MB PC2100 DDR SDRAM	256MB PC2100 SDRAM	256MB PC2100 DDR SDRAM	256MB PC2100 DDR SDRAM	256MB PC133 SDRAM	256MB PC2100 DDR SDRAM	512MB PC2100 DDR SDRAM
2/0	1/1	1/2	1/1	1/3	1/3	2/0
512MB	768MB	1.2GB	768MB	1.25GB	1GB	512MB
1GB	1GB	1.5GB	1GB	1.5GB	2GB	1GB
2x Seagate Barracuda ATAIII	Seagate Barracuda ATA III 7,200rpm	2x Maxtor 5T040H4 7,200rpm	IBM Deskstar 7,200rpm	2x IBM Deskstar 7,200rpm	IBM Deskstar 7,200rpm	Seagate Barracuda ATA IV 5T360021A 7,200rpm
2x 40GB UltraDMA100	40GB UltraDMA100	2x 40GB UltraDMA100	41GB UltraDMA100	2x 40.1GB UltraDMA100	41GB UltraDMA100	60GB UltraDMA100
Mirai CRD-BP1500P	LG CED-8120B	Samsung SW-212B	LG CED-8120B	Plextor PlexWriter 16/10/40A	Lite-On LTR-1610	LG CED-8081B
EPoX	Gigabyte	MSI	EPoX	Abit	Biostar	Gigabyte
8K7A+/AMD 761 & VIA 686B	GA-7DX/AMD 760 & VIA 686B	K7T266 Pro/ VIA KT266	8K7A/AMD 761 & VIA 686B	KT7A-RAID/ VIA KT133A	M7MB/ VIA KT266	GA-7DX/AMD761 & VIA 686B
4/4	5/2	4/3	5/1	6/4	4/3	4/3
1/2	3/1	2/1	3/0	3/2	2/1	2/1
6/0/0/0	5/0/0/1	4/0/1/0	6/0/0/0	5/0/1/0	5/0/1/0	5/0/0/1
2/0/0/0	3/0/0/1	2/0/0/0	3/0/0/0	2/0/0/0	3/0/1/0	4/0/0/1
4/2/1/2	4/2/1/2	5/2/1/2	4/2/1/2	4/2/1/2	2/2/1/2	2/2/1/2
Pioneer DVD-116	None	Samsung SD-616F	Pioneer DVD-1055	Pioneer DVD-116	Pioneer DVD-1065	LG DRD8120B
16x/UltraDMA66	None	16x/EIDE	16x/UltraDMA33	16x/UltraDMA66	16x/UltraDMA66	12x/UltraDMA33
Hercules	Creative	Creative	Creative	VideoLogic	VideoLogic	Creative
Game Theatre XP	SoundBlaster Live! 1024	SoundBlaster Live! 5.1	SoundBlaster Live! 1024	Sonic Fury	Sonic Fury	Onboard SoundBlaster PC128
VideoLogic DigiTheatre CC	Labtec LCS-2414	Cambridge SoundWorks FPS1000	Cambridge SoundWorks FPS1500	Cambridge SoundWorks DTT2200	Cambridge SoundWorks DTT2200	Labtec Edge-418
Hercules 3D Prophet 4500	Leadtek GeForce3	Hercules 3DProphet II Ultra	Hercules 3D Prophet II	ATI Radeon All-in-Wonder	AOpen PA256deluxell	MSI StarForce 822
ST Micro Kyro II	nVidia GeForce3	nVidia GeForce2 Ultra	nVidia GeForce2 GTS	Radeon	nVidia GeForce2 Pro	nVidia GeForce3
64MB DDR SDRAM	64MB DDR SDRAM	64MB DDR SDRAM	64MB DDR SDRAM	32MB DDR SDRAM	64MB DDR SDRAM	64MB DDR SDRAM
ADI Microscan 1610	NEC LS15	NEC MultiSync LCD 1530V	NEC MultiSync LCD 1530V	Iiyama TXA38133MT	CTX PV520	Samsung SyncMaster 570V
15in	15in	15in	15in	15in	15in	15in
1,024 x 768	1,024 x 768	1,024 x 768	1,024 x 768	1,024 x 768	1,024 x 768	1,024 x 768
Elsa Microlink 56K	Aztec MSP 3880-W 56K V.90	Diamond SupraExpress 56iPro VCC USB networking	Lucent WinModem 56K V.90	Conexant HFC 56K V.90	56K Smart HCF	HSP 56K V.90 PCI Modem
Tekram DC-1394W FireWire card	N/A	N/A	N/A	Adaptec AFW-4300 FireWire card	N/A	N/A
Lotus SmartSuite	Multimedia pack	MS Works Suite 2001	Lotus SmartSuite Millennium	10/100 Ethernet card	N/A	Executive & standard S/W bundle
1yr on site, 2yrs RTB	3yrs on site	1yr on site, 2yrs RTB	1yr on site, 2yrs RTB	3yrs on site	1yr on site, 2yrs RTB	1yr on site, 2yrs RTB

## Editor's Choice

**A** price of £1,200 ex VAT is slightly more than you would expect to pay for a PC these days, but we had to allow for the flat panels, which are still more expensive than a common or garden CRT. Incidentally, as almost the flat panels tested could not reach a resolution higher than 1,024 x 768, tests such as Quake III were run at this resolution. As far as the system box is concerned, processor and memory prices are falling rapidly, which is keeping the market alive, so what currently determines a good system is now more to do with the quality of its peripherals. We hoped to see systems featuring both DVD and CD-RW drive, a graphics card near the top of the range, and hard drives of at least 40GB. A top-notch sound card and a good set of six-channel speakers are often underrated, but should still be included within the budget. Very few manufacturers disappointed.

Anyone with enough money to invest could do little better than the systems supplied this month. As we asked for flat panels, image quality was more of a consideration than 3D performance, and we focused more on this than gaming performance. Of course, these machines are more than adequate games platforms as all but one feature 1.4GHz AMD Athlon processors as well as very capable graphics cards. The winners were chosen on two merits more than anything else: the quality of the flat panel/graphics card combination, as well as the overall balance of the system components.

### The winners

Our **Editor's Choice**, goes to the **evesham.com Axis 1400 DGF**, a well-balanced machine with one of the best flat panels on test. **evesham.com** was also the only manufacturer to submit a flat panel with DVI connector as well as a suitably equipped graphics card. DVI is still a fairly new standard but as it is a digital interface it offers superior image quality for flat panels compared to the standard analog D-SUB connector. This makes the Philips Brilliance 150P2 flat panel stand out from the crowd and it produced the best image quality in the group.

A 64MB Leadtek GeForce2 Ultra is connected to the Philips flat panel and, even though nVidia-based cards are not known for the best 2D image

quality, we were still very impressed by this combination. The rest of the specifications are also equally high with the two 30GB Maxtor hard drives in a RAID 0 configuration, and a FireWire card thrown in as an extra bonus. Elsewhere the system was similar to many other machines submitted this month, with both a 1.4GHz AMD Athlon processor and 256MB of PC2100 DDR SDRAM.

**Poweroid.com's Poweroid 3012** receives our first **Highly Commended** award. Although this was the only system in this month's group test that featured SDR memory, it was still a respectable performer, but we were more impressed by the overall specifications of this system. The first thing that strikes you when you see it is the case; an aluminium CoolerMaster that looks very flash indeed. Apart from this you get an excellent bundle with an Iiyama flat panel, two 40GB hard drives in a RAID configuration, a FireWire card and 10/100 Ethernet. The icing on the cake is the ATI Radeon All-in-Wonder graphics card, which offers far more features than practically any other card on the market. This and the FireWire card makes the Poweroid 3012 an excellent system for home video editing with an impressive host of input and output options.

Our final **Highly Commended** award goes to **Multivision's Vision Ultima FW**. It might have supplied one of the slower graphics cards this month, but the rest of the system specifications more than make up for that. There is an enormous 512MB of RAM and two 40GB Seagate hard drives in a RAID 0 configuration, which should be more than enough for just about anyone.

The combination of the Hercules GameTheatre XP sound card and VideoLogic DigiTheatre LC speakers produces one of the best audio setups around. Finally there is yet another FireWire card, which makes the Multivision an excellent video-editing system for DV camcorder owners.

Two other entrants deserve a mention: first, **ComputelT** for supplying the fastest machine this month, and some great components to boot, but it just lost out on an award due to slightly lower specs. And **Systemax**, which submitted the best looking, colour co-ordinated system (even if the case is a little big), as well as one of the best flat panels.

## The Philips Brilliance 150P2 flat panel stands out from the crowd



**evesham.com** Axis 1400 DGF



**Poweroid.com** Poweroid 3012



**Multivision** Vision Ultima FW