

group test





Home sweet home

Putting together the **ultimate home system** can be difficult, so we threw down the gauntlet to 13 manufacturers to do it for us.

There's more to PCs than crunching numbers and writing letters – there's the really serious stuff like playing Quake and watching DVD movies. The home PC has to take on many roles – an office away from work, the kids' gaming centre or a lifeline to Auntie Maude in Australia. To put together the ultimate home and entertainment system is no easy task, so we invited 13 manufacturers to do the hard work for us.

As the system had to be a good all-rounder, suitable for office applications, playing games, watching DVDs, and so on, we were fairly flexible on the specification. We allowed for any processor with a minimum of 128MB of RAM. The hard drive had to be at least 8.4GB in size, while the display set had to consist of a minimum 16MB graphics card coupled with a monitor of no less than 17in. The following essential items also had to appear in the package: sound card and speakers, DVD-ROM, MPEG2 decoder (hardware or software) and a modem. The software bundle was up to the supplier, and the machine had to come in at under £1,200 excluding VAT.

So if you're after an all-encompassing home PC, check out what 13 of the top vendors have to offer.

Ratings

- ★★★★★ **Highly recommended**
- ★★★★ **Great buy**
- ★★★ **Good buy**
- ★★ **Shop around**
- ★ **Not recommended**

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• PCs tested and reviewed by Will Head and
Riyad Emeran

Big Red Computers REDi/R500

The first thing that strikes you about this system is the case, but when it comes down to it, it's really just a beige box in translucent red clothing. More importantly, inside is a Pentium III 550 coupled with 128MB of RAM. This configuration helped Big Red score the best SYSmark result for an Intel-based system, although it was still pipped at the post by the AMD Athlon-equipped machines.

Quantum manufactures the 13GB hard drive, but no provision has been made for removable storage.



Multimedia takes the form of a Pioneer slot-loading DVD-ROM drive, a Creative Labs Sound Blaster Live! Value and Big Red's own speaker system. Internet access is via a Diamond SupraExpress V90 internal modem. The graphics come from a 3dfx Voodoo3 3000 and a Viewsonic 17in monitor. This setup can easily handle DVD playback and all the latest games. If anything has been sacrificed to put this machine together for the money, it is the monitor – which performs adequately, but does not excel.

Build quality was good with easy access to the inside, where there is space left for one 3.5in and two 5.25in devices.

One downside of the REDi/R500's case is that the only available external 3.5in bay houses a non-standard floppy drive with a custom fascia. Addressing the lack of removable storage with an internal Zip or Jaz drive would involve mounting it inside a 5.25in bay, which looks untidy.

One note about the Big Red system: the first unit arrived with a faulty floppy drive and the CPU in the replacement machine was clocked at 366MHz. Only once these problems had been corrected could the REDi/R500 be seen performing at its best.

PCW DETAILS

Price £1,408.82 (£1,199 ex VAT)

Contact Big Red Computers
08700 711117

www.bigred.co.uk

Good points Fast processor, good graphics card

Bad points Poor monitor, no removable storage

Conclusion Decent Intel system marred by poor quality control

Build Quality	★★★★
Performance	★★★★
Value for Money	★★★★
Overall Rating	★★★★

Dan Technology Dantum CEL500/PS

Dan was the only contender to submit a Celeron processor, running at 500MHz, opting instead to spend the money on extra peripherals.

There really isn't much missing from this system, it just doesn't excel in any particular area. The 500MHz Celeron and 128MB of RAM, occupying one of the three available DIMM slots, provide enough power to play the most recent games and watch DVD movies. For storage, the

18GB Western Digital hard drive is a generous



provision, which should take some time to fill. Removable storage comes in the form of an LS-120 drive. The capacity may not be huge, but it's still good enough for safeguarding important files.

A Creative Labs six-speed DVD-ROM drive occupies the bottom 5.25in bay, leaving two empty bays above for future expansion, with a free 3.5in bay further down. The 16MB ATI All-In-Wonder provides a software MPEG2 decoder with hardware motion compensation. It also includes a TV control panel for the built-in tuner which provided good results when combined with the 17in CTX monitor.

Sound came from the popular Creative Labs Sound Blaster Live! Value and Creative PC Works 4.1 Surround speakers.

A Dan-badged V90 Rockwell modem provides Internet connection. Also included in the package is an Epson Stylus 740 printer and an HP ScanJet 4100 scanner, leaving you wanting for absolutely nothing.

In terms of build quality, Dan has chosen to supply cables that are just the right length to neatly fulfil their purpose. The Dan may not be the fastest machine on test, but if you're looking for a total solution for your home computing needs it should be top of your list.

PCW DETAILS

Price £1,410 (£1,200 ex VAT)

Contact Dan Technology
0181 830 1100

www.dan.co.uk

Good points Excellent package (printer, scanner, LS-120 drive)

Bad points Poor processor.

Conclusion A good all-round performer, but not the fastest machine on test

Build Quality	★★★★
Performance	★★
Value for Money	★★★★★
Overall Rating	★★★★

Dell Dimension XPS 75

Dell supplied a well-specified machine for this test. The core is a 500MHz Pentium III, coupled with 128MB of RAM. Storage takes the form of a large 20GB Maxtor hard drive, with an internal Iomega Zip 250 to cater for data backup and transport and a six-speed DVD-ROM drive from Toshiba.

The display set takes the form of a formidable 32MB Diamond Viper V770 AGP card that's connected to a 19in Philips Mago monitor.

An Aztech V90 modem provides

Internet connection, and also includes voice capabilities.

Dell has opted for the Creative Labs Sound Blaster Live! Value card (that appears quite prominently in this test with good reason), combined with a set of Altec Lansing ACS 340 speakers providing a good solid sound platform.

The Dell also has decent upgrade possibilities. The main hard drive is mounted vertically against the front of the case, leaving extra room above for one free 5.25in bay, along with two 3.5in bays, one internal and one external.

Slots on the motherboard consist of five PCI and one ISA (which is shared). Dell's configuration leaves four of the PCI and the one shared ISA slot free. The motherboard is equipped with three DIMM slots, of which two are empty.

Inside, the case is tidy, with pull handles attached to leads that are likely to be removed.

Thoughtfully, Dell has provided a hard drive cable with a second connector on it, although it may be a while before this is put to use, due to the overall high specification of the machine. Ultimately, Dell has provided a good all-round machine that's unlikely to disappoint.

PCW DETAILS

Price £1,408.82 (£1,199 ex VAT)

Contact Dell. 0870 152 4350

www.dell.co.uk

Good points Internal Zip 250, large hard drive

Bad points Would have liked to have seen slightly better performance for the money

Conclusion A good machine, which only just missed out on an award

Build Quality	★★★★
Performance	★★★★
Value for Money	★★★★
Overall Rating	★★★★

Elonex ProSentia 2000

Elonex has crammed a lot of stuff into a small case and, as a result, upgrade options are severely limited. We would have rather seen a larger case for a machine of this specification. A 128MB SDRAM module fills one of the two available DIMM sockets. There are three 3.5in bays and two 5.25in bays, but only one of each is free. The first 3.5in bay is taken up by a 13.7GB Fujitsu hard drive and the second by an LS-120 drive, which is a good choice given the limited space offered by the case. A Sony six-speed

DVD-ROM sits in the top 5.25in bay.

The Winfast 3D TNT II graphics card is based on the nVidia Riva TNT 2 chipset and is connected to a 17in Elonex-badged monitor, to good effect. Elonex has opted for an on-board Creative Labs sound chipset rather than a card. It is true that a separate card would have occupied one of the two spare PCI slots, but the result is a sub-standard sound solution.

The Pentium III 550 processor is fast and you are rarely left twiddling your thumbs, but

this speed fails to make up for the other deficiencies in the machine. We would rather have seen the money spent elsewhere.

Inside the case things are very cramped, mainly down to its size, with the cabling as neat as it can be given the close

confines. The Microstar motherboard offers three PCI slots and one shared ISA slot, with an internal V90 3Com Winmodem occupying one of the PCI slots.

The Elonex offers impressive speed and a decent specification, but the expensive processor leaves other areas lacking and the small case lets the package down.

PCW DETAILS

Price £1,404.13 (£1,195 ex VAT)

Contact Elonex 0800 542 2931

www.elonex.co.uk

Good points Fast processor, LS-120 drive

Bad points Tiny micro tower case

Conclusion Too much emphasis has been placed on the speed of this machine

Build Quality	★★
Performance	★★★★
Value for Money	★★★★
Overall Rating	★★★

Gateway Performance 450

Gateway has provided an excellent office machine, unfortunately we did ask for a system for entertainment as well as work, and subsequently the Performance 450 isn't really up to the job. The choice of a desktop case means that upgrade options are somewhat limited. Gateway also initially supplied only 64MB of RAM, not the 128MB we specified.

However, Gateway assured

us that the production model will ship with a single 128MB SDRAM module, leaving two DIMM sockets empty for memory expansion.

The 450MHz Pentium III isn't the fastest chip on the block and, as a result, the Gateway sits fairly low down in the SYSmark table. A 13GB Western Digital hard disk takes care of internal storage, but there's no removable storage option, excluding the standard floppy drive. The DVD-ROM is a six-speed Toshiba drive and the 32MB STB Riva TNT2 card provides solid performance in both 2D and 3D applications. The 17in monitor is a decent enough unit, but we would have been happier with a 19in model considering the rest of the spec. A Creative Labs Audio PCI 64V, coupled with Boston Media Digital Theatre speakers, provides a reasonably impressive sound platform.

Only one 5.25in bay and one 3.5in bay were available for expansion. The motherboard offers five PCI slots (of which two

were free) and one shared ISA slot. The V90 modem from GVC Telepath Pro occupies the shared slot, although we felt it would have been better positioned in a dedicated PCI slot, leaving improved upgrade options. Also included with the package was an Epson 440 printer which, while a good performer, can't compare with the Epson 740 supplied by Dan.

PCW DETAILS

Price £1,371.23 (£1,167 ex VAT)

Contact Gateway. 0800 552000

www.gateway.com/uk

Good points Includes printer

Bad points Poor performance, desktop case

Conclusion More suited to the office than to the home

Build Quality	★★
Performance	★
Value for Money	★★
Overall Rating	★★



Hi-Grade Computers Ultis PV111

Hi-Grade has packed a 550MHz Pentium III with 128MB of RAM into this system. The hard drive is a 13GB Maxtor, but unfortunately there is no removable storage option (discounting the floppy drive). The Asus motherboard sports four PCI slots, but only one is empty. However, three ISA slots are all free, while two of the three DIMM sockets are also dormant.

The six-speed DVD-ROM drive from Hitachi and the Asus video card, based on the nVidia RIVA TNT 2 chipset, form a capable DVD movie platform,

especially when combined with the impressive image supplied by the LG Flatron 17in monitor. This is a super-flat CRT screen with very little reflection to spoil your viewing pleasure. Hi-Grade has chosen the Creative Labs Sound Blaster Live! Value, which pumps high-quality digital and wavetable effects to the Samsung speakers. Sadly, the speakers don't do the card justice.

Connection to the outside world comes from an Accord V90 modem. Hi-Grade has also chosen to include a Teletext TV-tuner card, a welcome addition for a home entertainment machine.

The case offers good upgrade potential, with two free 5.25in bays, one free external 3.5in bay and two free internal 3.5in bays. However, gaining access to one side of the lower-most drive bay isn't possible without removing the motherboard's mounting plate. This is almost forgivable, since access to the inside of the case can be obtained via two sliding clips, without tools.

The rear ports on the Ultis PV111 system have also been colour-coded by Hi-Grade to provide simple assembly, but the peripherals that plug into them don't share this PC 99 compatibility.

PCW DETAILS

Price £1,408.82 (£1,199 ex VAT)

Contact Hi-Grade Computers
0181 532 6123

www.higrade.com

Good points TV tuner, Pentium III 550MHz processor

Bad points Speakers aren't up to the job

Conclusion A decent set of components coupled with a good monitor

Build Quality	★★★★
Performance	★★★★
Value for Money	★★★★
Overall Rating	★★★★



Inetdata Viking Ecstasy

The first thing we noticed about the Viking Ecstasy was the 3D glasses attached to the Elsa Erazor II Revelator graphics card. The glasses promise to deliver realistic 3D effects, but unfortunately the results are rather less exciting. We feel that the user would soon tire of wearing the glasses and the effect was only really noticeable if you moved your head around a lot.

The Logitech cordless keyboard and mouse work very well, but you have to really question the need for them and their battery life is a concern. After having the

system running for a week the range of the mouse had dropped considerably. The last thing you want in the middle of using a computer is to have to hunt around for some replacement batteries for the keyboard.

The Pentium III 450MHz processor and 128MB of RAM did not yield a particularly high SYSmark score. The Pioneer six-speed DVD-ROM and Creative Labs Sound Blaster Live! Value were aided by a RealMagic Hollywood hardware MPEG2 decoder, which produced excellent movie playback.

The 19in Hansol monitor was crisp and clear, except when used in conjunction with the 3D glasses – as this caused the effective refresh rate to be halved.

The V90 modem included in the package was an OEM model based on a Rockwell chipset.

A high-quality 14.4GB IBM hard disk is large enough to keep the majority of users happy, but there's no removable storage supplied.

Inside, the system was very untidy

– with wires interwoven to the extent that it was difficult to see where some of them went. The overall build quality of the machine was also poor. It's a disappointing debut from Inetdata.

PCW DETAILS

Price £1,408.82 (£1,199 ex VAT)

Contact Inetdata UK

01372 470 777

www.inetdata.co.uk

Good points Hardware DVD decoder

Bad points Not well put together, too many gimmicks (3D glasses, cordless keyboard and mouse)

Conclusion The machine never really delivers, and the money would have been better spent on more solid components

Build Quality	★
Performance	★
Value for Money	★★
Overall Rating	★



Mertec Computers Extreme K6-III 450

Mertec supplied an AMD K6-III 450 with 128MB of RAM. Storage takes the form of an IBM 16.8GB EIDE hard disk with no form of removable storage supplied. The case provides two free 5.25in bays and two free 3.5in bays. The FIC motherboard has two of the four PCI slots free, while both the ISA slots are empty. Two of the three DIMM sockets also lie dormant.

The five-speed DVD-ROM drive is supplied by Creative Labs, as are the Sound Blaster Live! Value sound card and the four-

point surround speakers.

Amazingly, half of the display set is also from Creative, with the nVidia Riva TNT 2 Ultra-based graphics card pumping its signal to an ADI 19in monitor.

To get you surfing the net there's a Rockwell 56K modem, while a Gravis Xterminator Game Pad will help make the most of your leisure time.

One annoying feature of this machine is the position of the Wake, Sleep and Power off buttons on the keyboard. Rather than place these buttons out of the way, as

they are unlikely to be used that often, they are located where you would expect to find Insert, Home and Delete, pushing these keys down a row. The result is that even after a short period of use you will, out of habit, accidentally put your machine to sleep quite frequently.

The system internals were very tidy, with cables of an appropriate length being used

for their relevant connections. Mertec would have saved a fair amount by choosing a K6-III processor, but this saving doesn't seem to have filtered down to the customer. On the whole, performance and specification could have been better.

PCW DETAILS

Price £1,398.25 (£1,190 ex VAT)

Contact Mertec Computers

01792 473 7000

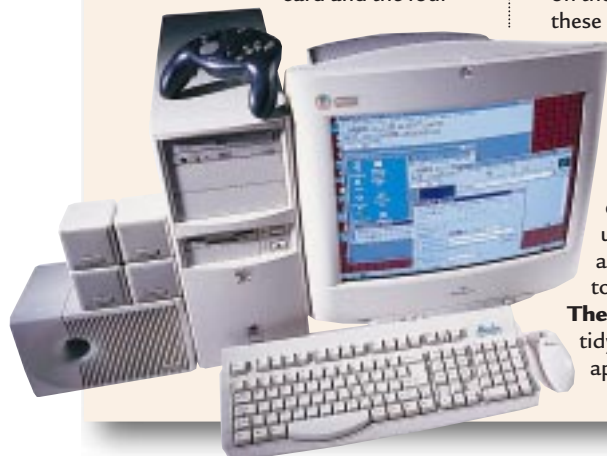
www.mertec.co.uk

Good points Good sound system, good build quality

Bad points Sleep key where you expect to find Home key

Conclusion Can't really see where the saving on the processor has gone

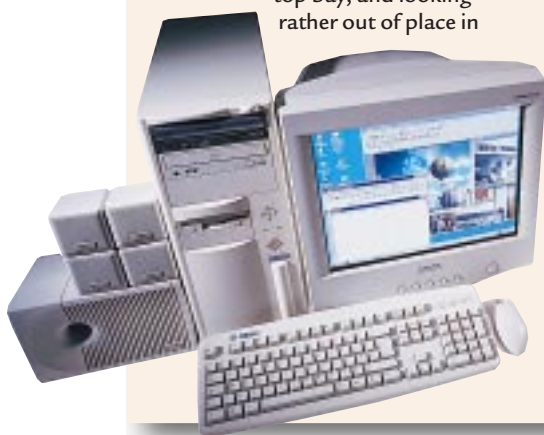
Build Quality	★★★★
Performance	★
Value for Money	★★★
Overall Rating	★★★



Mesh Computers Matrix 500CW

Mesh was one of the few contenders in this group test to stray from the Intel stable, supplying an AMD Athlon processor clocked at 500MHz, and this course of action has paid off. The Athlon is a formidable opponent to Intel's high-end processors, as the SYSmark results testify.

From the outside the case is uninspiring, but practical. One of the three 5.25in bays is free, while single internal and external 3.5in bays are also empty. Sitting in the top bay, and looking rather out of place in



this conservative case, is a metallic-silver Philips CD-RW – providing the removable storage and back-up – while below this is a six-speed Pioneer DVD-ROM drive.

The 13GB hard drive comes from Western Digital and the modem is a Diamond Supra Express V90. Mesh has opted for the 32MB Matrox Millennium G400 graphics card, as well as a 17in Mitsubishi monitor based on the Natural Flat technology. The result is very impressive image quality with almost no reflections. The captive monitor cable is a little disappointing though. Sound comes from the Creative Labs Sound Blaster Live! Value card, coupled with the Creative PC Works four-point surround speakers.

Inside, the build quality is good, and the machine exhibited commendable upgrade options. The motherboard offered three vacant PCI slots and two vacant ISA slots for any legacy cards. The 128MB of RAM fills one of the three DIMM sockets.



Mesh has included a good set of peripherals, which should appeal to the home entertainment sector, but it's still more than capable of handling any office tasks. A solid component set and build quality make it definitely worth a look.

PCW DETAILS

Price £1,408.82 (£1,199 ex VAT)

Contact Mesh Computers
0181 208 4707

www.meshplc.co.uk

Good points Athlon processor, high-quality supporting components

Bad points Silver/grey colour of CD-RW

Conclusion A well-specified machine that performed well

Build Quality	★★★★
Performance	★★★★★
Value for Money	★★★★
Overall Rating	★★★★★

Panrix Athlon 550

The Panrix Athlon 550 was the fastest machine on test. With a 550MHz AMD Athlon inside you'd be hard pushed to find any piece of software that won't run like a dream on it. However, this lightning-fast processor has been included at the expense of a well-rounded configuration, and the Athlon 550 is missing some of the high-quality supporting components seen in other systems.

Supporting the AMD CPU is 128MB of SDRAM that fills one of the three DIMM sockets. In the AGP slot you'll find a Matrox

Millennium G400 graphics card, but unfortunately it's the single-headed 16MB version, instead of the Max or even the standard 32MB model. That said, this card is still more than powerful enough to get the best out of the Viewsonic E771 monitor. This 17in shadow mask unit gives a clear picture, but the screen is noticeably rounded, especially when compared to the latest flat CRT screens.

Sound comes courtesy of the ubiquitous Sound Blaster Live! Value card. This is pretty much the standard in PC sound and has an impressive array of effects and features. Sadly, the CD audio cable hasn't been routed very thoughtfully and it obstructs the two ISA slots. Below the sound card is a Diamond SupraExpress 56i modem, so Internet connection is well taken care of.

A 13GB IBM hard disk takes care of storage, while a six-speed AOpen DVD-ROM drive is more than adequate for software installs and movie watching. Lotus

SmartSuite Millennium and a one-year on-site warranty – both decent inclusions – round off the package.

Ultimately though, regardless of the speed, Panrix has made a few too many compromises. But if raw speed is what you're after, it should be right up your street.

PCW DETAILS

Price £1,410 (£1,200 ex VAT)

Contact Panrix 01332 444 358
www.panrix.com

Good points Very fast

Bad points Sparse supporting configuration

Conclusion A powerhouse machine but the spec could have been more rounded

Build Quality	★★★
Performance	★★★★★
Value for Money	★★★★
Overall Rating	★★★★★



Quantex Microsystems Game 500 XE

Quantex has produced a solid contender, which comes in a good £100 under the specified price point. The machine is based on a 500MHz Pentium III with 128MB of RAM on a Biostar motherboard. Maxtor supplies the ample 17.2GB of hard disk space, and removable storage is well taken care of by a Sony CD-RW.

There's a six-speed Toshiba DVD-ROM drive for software installs and watching movies, while sound is handled by an Aureal Vortex 2 sound card coupled with a set of Altec Lansing speakers. The



overall result of this combination was impressive. A 16MB Voodoo3 3000 graphics card, used in combination with a Quantex 19in monitor, provided a very respectable display. Quantex has made an effort to simplify the on-screen display, but has actually succeeded in making it worse, by supplying a pseudo jog dial that is unintuitive to use. Connection to the Internet is via a 3Com/US Robotics internal V90 modem.

Two 64MB DIMM modules occupy two of the three available slots on the motherboard, but we would rather have seen one 128MB DIMM (although we have been told that one 128MB DIMM will be used on retail models). In terms of expansion, there are two PCI and three ISA slots free, as well as one shared slot.

The Quantex case is very roomy, and offers good upgrade potential, with two free 5.25in bays and three free internal 3.5in bays. The only fault is the lack of a free 3.5in external bay.



Inside, build quality was good, with the cables well positioned to allow upgrading. The DVD-ROM, CD-RW and modem are connected internally to the sound card, which shows attention to detail.

PCW DETAILS

Price £1,291.33 (£1,099 ex VAT)

Contact Quantex Microsystems
01438 224444

www.qtx.co.uk

Good points CD-RW, good attention to detail, £100 below the maximum price (ex VAT)

Bad points Hard to use OSD on monitor

Conclusion This machine covers most bases and comes in cheaper than the rest of the competition

Build Quality	★★★★★
Performance	★★★★
Value for Money	★★★★
Overall Rating	★★★★

Wired for sound and vision

DVD-ROMS, 3D graphics cards and modems have become standard items in today's home PC, but the PC of the future will be more integrated into your home entertainment system thanks to HAVi (Home Audio/Video interoperability).

The aim of HAVi is to create a standard by which all home entertainment devices can be connected and communicate. Typical devices that will implement HAVi are digital televisions, digital videos, set-top boxes, cable modems and digital cameras. HAVi will make it easy to create a home entertainment network that can be controlled from a central point and will ensure interoperability of all machines – regardless of the manufacturer or type of device. The home PC is not required for a HAVi network to operate, nor is it restricted from playing a part.

The backbone of the network is built around the IEEE 1394 (or FireWire) standard. This provides sufficient



bandwidth for real-time AV streams (such as MPEG2) and supports hot plugging, which allows devices to be added or removed from the network while it is still running. The software platform for HAVi is based around an open and standardised Java. As a result, the functionality of a HAVi device is down to what the manufacturer chooses to implement. Devices fall into

two categories: Full AV devices (FAVs), which support Java applications; and less expensive Intermediate AV devices (IAVs), which will only be able to execute native applications.

The possibilities

that the system can offer are quite staggering. You could, for example, program the VCR in the living room from the TV in the bedroom. Forgotten to set up *Eastenders* to record? – not a problem, email your computer and ask it to tape it for you.

▲ HAVi AIMS TO
CREATE A COMMON
STANDARD FOR HOME
ENTERTAINMENT KIT

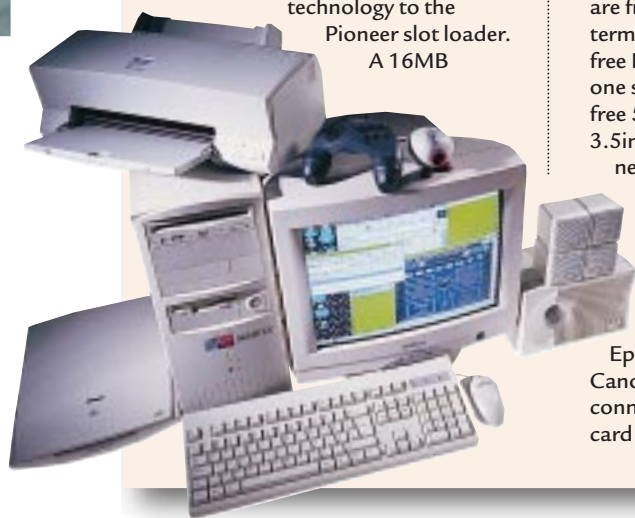
Simply Computers System AX 3500

Simply has put forward a 500MHz Pentium III with 128MB of RAM resident in a SuperMicro motherboard. The ample 17.3GB Fujitsu hard drive is more than adequate for the majority of users, but no provision has been made for removable storage. Creative Labs provides the speakers, along with a Sound Blaster Live! Value sound card. The six-speed AOpen DVD-ROM drive shares similar technology to the Pioneer slot loader. A 16MB

Voodoo3 3000 graphics card provides fast performance in both 3D games and 2D business applications. Unfortunately, the 17in Belinea monitor can't really show the Voodoo card off to its best effect. Internet connection is also catered for by a Diamond Supra Express V90 modem, so you'll be able to download all the latest drivers for your PC.

Two of the three DIMM sockets are free for future upgrades. In terms of expansion, there are three free PCI slots and three ISA with one slot shared. The case offers two free 5.25in bays and one external 3.5in. The power cables have been neatly tied but placed directly over the motherboard, which hinders access to the processor.

Simply has chosen to bundle a lot of peripherals with this machine. There's an Epson Stylus 640C printer, a Canon CanoScan FB320P scanner connected to the supplied SCSI card and a Philips USB camera.



This makes the Simply a very well-rounded system, although the similarly specified Dan shipped with superior peripherals. That said, it's another one-stop solution to consider if you don't want to waste time and money buying peripherals after you've purchased your PC.

PCW DETAILS

Price £1,410 (£1,200 ex VAT)

Contact Simply Computers

08707 297366

www.simply.co.uk

Good points Large bundle (printer, scanner, USB camera)

Bad points No removable storage

Conclusion A good selection of peripherals, but the Dan is more attractive

Build Quality	★★
Performance	★★★★
Value for Money	★★★★★
Overall Rating	★★★★

Time Computers 550-3t SV

Time has managed to fit a lot into this system for the price. The processor is a Pentium III 550MHz backed up by 128MB of RAM. There's a fast 10GB hard disk from IBM spinning at 7,200rpm. Connected to the secondary EIDE channel is an LG CD-RW and a Toshiba DVD-ROM. The former will let you back up, transport and archive data, while the latter will make short work of installs, as well as playing movies.

Time has opted for a Matrox Millennium G400 dual head, which

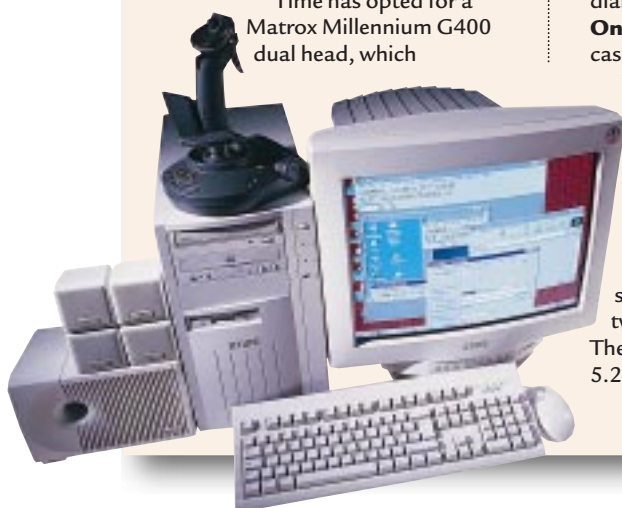
is a formidable card, allowing you to display one image on the 19in CTX monitor and a completely different image on a TV screen.

This detail firmly places this machine in the home entertainment sector, allowing for DVD movies to be shown on a conventional TV, which are then brought to life by the Aureal Vortex 2 sound card and PC-Works four-point surround speaker system. A PCI V90 modem from Etech has been chosen for the dial-up connection.

On the inside, the design of the case has been poorly thought out, with the power supply completely obscuring the main board. The only way to gain access to the processor or RAM slots is to remove the power supply completely, which is hardly ideal.

Two of the three DIMM sockets are empty, along with two PCI and three ISA slots. There is also one 3.5in and two 5.25in drive bays free.

Time has put together a system



that covers all of the areas that an ultimate home machine should. We were a bit disappointed with the power supply obscuring access to the motherboard, but this is a minor point when you consider the power and value delivered.

PCW DETAILS

Price £1,410 (£1,200 ex VAT)

Contact Time Computers

01282 777 555

www.timecomputers.com

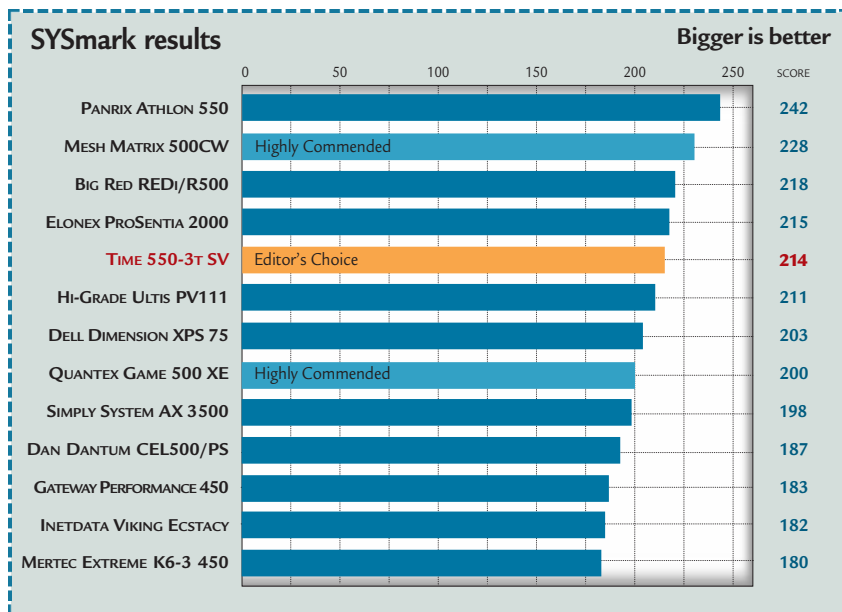
Good points Matrox Millennium Dual Head, Pentium III 550MHz, CD-RW

Bad points Poorly designed case

Conclusion A good machine clearly aimed at the home entertainment market

Build Quality	★★★★★
Performance	★★★★★
Value for Money	★★★★★
Overall Rating	★★★★★

PCW Labs Report



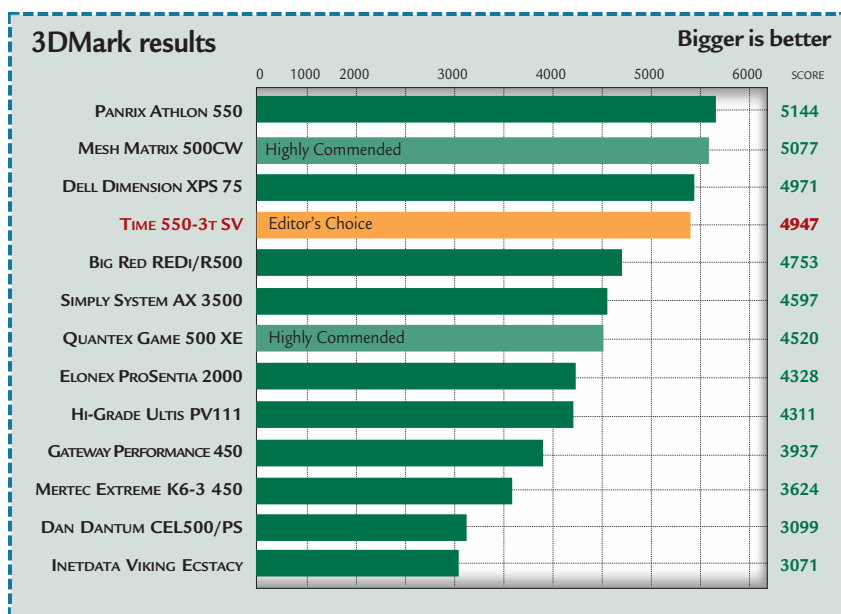
After last month's Athlon debut, AMD has proved once more that its seventh-generation chip is more than a match for Intel's products. The two Athlon-based machines rose to the top of the SYSmark chart, even though the chip in the Mesh actually ran 50MHz slower than some of the Pentium III processors on test. However, speed isn't the be all and

end all when buying a PC, and even though the Panrix was considerably faster than any of the other machines, it lacked some of the features seen elsewhere. That said, if you're looking for all-out speed, the Panrix won't disappoint. Ultimately, the Time gives a good balance of features and performance, helping it win the Editor's Choice and making it a desirable product.

All the machines in this test are supposed to cover every aspect of home computing. That means office applications, home entertainment and games. The PC is now a major games platform and anyone buying one will expect to be able to play all the latest titles. The 3DMark test evaluates the Direct 3D performance of each of the systems on test.

Unsurprisingly,

the two Athlon machines came out on top again. Having a heavy-duty CPU does wonders for 3D performance, as even the best graphics card can only work as fast as the CPU supporting it. The key is to marry a fast graphics solution and CPU together, so that the graphics card is never left waiting for information. Again, Time's machine performed well.



How we did the tests



■ **SYSmark measures** the time it takes a PC to perform tasks in 14 common office and content-creation apps. Each test is run three times to ensure consistency. Tests include:

➤ **Office productivity:** CorelDraw 8, Excel 97, NaturallySpeaking 2.02, Netscape Communicator 4.05, OmniPage Pro 8.0, Paradox 8, PowerPoint 97 and Word 97.

➤ **Content Creation:** MetaCreations Bryce 2, Avid Elastic Reality 3.1, Macromedia Extreme 3D 2, Photoshop 4.01, Adobe Premiere 4.2, and XingMPEG Encoder 2.1.







■ **3DMark99 Max** is an instruction-set optimised version of 3DMark99 from Futuremark Corporation, which tests the

3D capabilities of PCs. When applicable, the suite of tests will draw on AMD's 3DNow! or Intel's KNI instruction sets. It uses a Real World DirectX 6.1 3D game engine to produce one result from a balanced testing methodology that includes image quality, rendering speed, CPU capability and, depending on hardware support, a test for embossed bump-mapping. All tests are performed at 1,024 x 768 resolution in 16-bit colour depth with the test suites set to loop three times. The higher the score, the better the result. However, due to the implementation of instruction-set optimisation, the results from the original 3DMark99 and the Max version are not comparable. See www.3dmark.com.

Table of features



MANUFACTURER	BIG RED	DAN TECHNOLOGY	DELL	ELONEX	GATEWAY	HI-GRADE	
MODEL NAME	REDI/R500	DANTUM CEL500/PS	DIMENSION XPS 75	PROSENTIA 2000	PERFORMANCE 450	ULTIS PVIII	
Price (ex VAT)	£1,199	£1,200	£1,199	£1,195	£1,167	£1,199	
Price (Inc VAT)	£1,408.82	£1,410	£1,408.82	£1,404.13	£1,412.07	£1,408.82	
Telephone	08700 711 117	0181 830 1100	0870 152 4350	0800 542 2931	0800 552 000	0181 532 6123	
Fax	08700 733 337	0181 830 1122	N/A	0181 452 7444	3531 802 3000	0181 532 6110	
Web address	www.bigred.co.uk	www.dan.co.uk	www.dell.co.uk	www.elonex.co.uk	www.gateway.com/uk	www.higrade.com	
HARDWARE SPECS							
Processor	Intel Pentium III	Intel Celeron	Intel Pentium III	Intel Pentium III	Intel Pentium III	Intel Pentium III	
	550MHz	500MHz	500MHz	550MHz	450MHz	550MHz	
RAM/Type	128MB/SDRAM	128MB/SDRAM	128MB/SDRAM	128MB/SDRAM	128MB/SDRAM	128MB/SDRAM	
Occupied/Spare RAM Slots	1/3	1/2	1/2	1/1	2/1	1/2	
Max memory in this configuration	896MB	640MB	640MB	384MB	384MB	640MB	
Max supported by motherboard	1GB	768MB	768MB	512MB	768MB	768MB	
Hard Disk (manufacturer + model)	Quantum Fireball CR	Western Digital Expert 418000	Maxtor 4209808	Fujitsu MPD3113AH	Western Digital Caviar	Maxtor 91303D6	
HD Size/Interface	13GB/EIDE	18GB/EIDE	20GB/EIDE	13.7GB/EIDE	13GB/EIDE	13GB/EIDE	
Storage drive model + manufacturer	N/A	Matshita LS-120	Iomega Zip	Panasonic LS-120	N/A	N/A	
Size of storage drive media	N/A	120MB	250MB	120MB	N/A	N/A	
Storage drive interface	N/A	EIDE	EIDE	EIDE	N/A	N/A	
MOTHERBOARD COMPONENTS							
Motherboard Manufacturer	Asus	Supernmicro	Intel	MSI	Intel	Asus	
L2 Cache	512KB	128KB	512KB	512KB	512KB	512KB	
No of 3.5/5.25in bays	3/3	2/3	3/2	2/2	2/2	2/3	
No of free 3.5/5.25in bays	1/2	1/2	2/2	1/1	1/1	1/2	
No of PCI/ISA/shared slots	6/1/1	4/3/1	4/1/1	3/1/1	5/1/1	4/3/1	
No of free PCI/ISA/shared slots	4/1/1	3/2/1	2/1/1	2/1/1	2/1/0	1/3/1	
No of USB/Serial/Parallel/PS2	2/2/1/2	2/2/1/2	2/1/1/2	2/2/1/2	2/2/1/2	2/2/1/2	
MULTIMEDIA							
CD-ROM manufacturer/model	Pioneer DVD-103S	Creative DVD 6240E	Toshiba SD-M1212	Sony DDU220E	Panasonic SR-8584-B	Hitachi GD2500	
CD-ROM speed/interface	6x DVD; 32x CD/EIDE	6x DVD; 24x CD/EIDE	6x DVD; 32x CD/EIDE	6x DVD; 32x CD/EIDE	6x DVD; 32x CD/EIDE	6x DVD; 32x CD/EIDE	
Sound card manufacturer	Creative Labs	Creative Labs	Creative Labs	Creative Labs	Creative Labs	Creative Labs	
Sound card model	SB Live! Value	SB Live! Value	SB Live! Value	ES1373 64 Voice PCI	Audio PCI 64V	SB Live! Value	
Speakers (manufacturer + model)	Big Red Computers	Creative 4 Point Surround	Altec Lansing ACS 340	Altec Lansing ACS 48	Boston Media Digital Media Theatre	Samsung SMS-5100	
Graphics card	3dfx Voodoo3 3000	ATI All-In-Wonder 128	Diamond Viper V770D	Winfast 3D S320 II	STB Riva TNT-2	Asus V3800	
Chipset	Voodoo 3	Rage 128	Riva TNT-2	Riva TNT-2	Riva TNT-2	Riva TNT-2	
RAM/Max RAM and type	16MB/16MB/SDRAM	16MB/32MB/SDRAM	32MB/32MB/SDRAM	32MB/32MB/SDRAM	32MB/32MB/SDRAM	32MB/32MB/SDRAM	
Graphics card interface	AGP	AGP	AGP	AGP	AGP	AGP	
Monitor manufacturer/model	Viewsonic E771	CTX PR700	Phillips Mago	Elonex MN044	Gateway EV700	LG Flatron 795ft plus	
Monitor size/max viewable diagonal	17in/16in	17in/15.7in	19in/18in	17in/15.7in	17in/15.9in	17in/16in	
Max resolution and refresh	1,280 x 1,024@66Hz	1,280 x 1,024@66Hz	1,600 x 1,200@75Hz	1,600 x 1,200@60Hz	1,280 x 1,024@60Hz	1,600 x 1,200@75Hz	
OTHER INFORMATION							
Modem manufacturer and model	Diamond SupraExpress	Rockwell ACF II	Aztech 56K	3Com Winmodem	GVC Telepath 56K	Accord 56K	
Highest supported modem standard	V90	V90	V90	V90	V90	V90	
Misc hardware	N/A	MS Sidewinder Gamepad HP4100 Scanner Epson Stylus 740 printer	N/A	MS Sidewinder Joystick	Epson Stylus Color 440 printer	Dexxa f22x TV Tuner card with Teletext	
Bundled software	Lotus SmartSuite Millennium	Lotus SmartSuite Millennium Five 3D Games	MS Works Suite Gamer Elite II	MS Works Suite 99 Age of Empires CART Precision Racing Flight Simulator 99	MS Works Suite Ultra Games	Norton Antivirus/Ghost Lotus SmartSuite Millennium Games Pack	
Standard warranty	1yr on-site	1yr on-site	1yr on-site, 2yr CR	1yr RTB	1yr on-site, 2yr RTB	1yr on-site	
Warranty options	3yr on-site	3yr on site	1yr on-site, 2yr CR	1-3yr on-site or RTB	3yr on-site, 2yr on-site	3yr on-site	
Technical support tel no	08700 722 227	0181 830 1100	0870 908 0800	0181 452 6666	0800 802 000	0181 532 6199	
Sales hours	Mon-Fri 9am-6pm	Mon-Fri 8.30am-7pm	Mon-Fri 8am-8pm Sat 10am-4pm, Sun 2pm-6pm	Mon-Fri 8.30am-6.30pm Sat 9am-1.30pm	Mon-Fri 8am-10pm Sat 8am-6pm	Mon-Fri 9am-5.30pm	
Technical support hours	Mon-Fri 9am-6pm	Mon-Fri 9.30am-6pm	Mon-Fri 8am-8pm	Mon-Fri 8am-8pm Sat 9am-1.30pm	Mon-Fri 8am-10pm Sat 8am-10pm	Mon-Fri 9am-5.30pm	

						
INETDATA	MERTEC COMPUTERS	MESH	PANRIX	QUANTEX	SIMPLY	TIME
VIKING ECSTASY	EXTREME K6-III 450	MATRIX 500CW	ATHLON 550	GAME 500 XE	SYSTEM AX 3500	TIME 550-3T SV
£1,199	£1,190	£1,199	£1,200	£1,099	£1,200	£1,200
£1,408.82	£1,399	£1,408.83	£1,410	£1,291.33	£1,410	£1,410
01372 470 777	01792 473 7000	0181 208 4707	01332 444 358	01438 224 444	08707 297 366	01282 777 555
01372 470 444	01792 473 888	0181 208 4493	01332 444 962	01438 224 224	08707 274 002	01282 770 844
www.inetdata.co.uk	www.mertec.co.uk	www.meshplc.co.uk	www.panrix.com	www.qbx.co.uk	www.simply.co.uk	www.timecomputers.com
Intel Pentium III	AMD K6-III	AMD Athlon	AMD Athlon	Intel Pentium III	Intel Pentium III	Intel Pentium III
450MHz	450MHz	500MHz	550MHz	500MHz	500MHz	550MHz
128MB/SDRAM	128MB/SDRAM	128MB/SDRAM	128MB/SDRAM	128MB/SDRAM	128MB/SDRAM	128MB/SDRAM
1/3	1/2	1/2	1/2	2/1	1/2	1/2
896MB	640MB	640MB	640MB	384MB	640MB	640MB
1GB	768MB	768MB	768MB	768MB	768MB	768MB
IBM	IBM	Western Digital	IBM	Maxtor	Fujitsu	IBM
DTTA-371440	DTTA-351680	WDAC31300	DJNA-371350	91728D8	MPD3173AT-UD	DTTA-371010
14.4GB/EIDE	16.8GB/EIDE	13GB/EIDE	13GB/EIDE	17.2GB/EIDE	17.3GB/EIDE	10GB/EIDE
N/A	N/A	Philips CDRW200	N/A	Sony CRX100E	N/A	LG CED-4081B CD-RW
N/A	N/A	650Mb	N/A	650Mb	N/A	650Mb
N/A	N/A	EIDE	N/A	IDE	N/A	EIDE
Abit	FIC	MSI	MSI	Biostar	Supermicro	Supermicro
512KB	512KB	512KB	512KB	512KB	512KB	512KB
3/3	4/3	2/3	3/2	3/4	2/3	3/3
1/2	2/2	1/1	1/1	2/2	1/2	1/1
5/2/1	4/2/1	5/2/1	5/2/1	4/3/1	4/3/0	4/3/1
3/1/1	2/2/1	3/2/1	3/2/1	2/3	1/2/0	2/3/1
2/2/1/2	2/2/1/2	2/2/1/2	2/2/1/2	2/2/1/2	2/2/1/2	2/2/1/2
Pioneer DVD-113	Creative DVD-5240E	Pioneer DVD-113	AOpen DVD-9632	Toshiba SD-M1212	AOpen DVD-9632	Toshiba SD-M1212
6x DVD; 32x CD/EIDE	5x DVD; 32x CD/EIDE	6x DVD; 32x CD/EIDE	6x DVD; 32x CD/EIDE	6x DVD; 32x CD/EIDE	6x DVD; 32x CD/EIDE	6x DVD; 32x CD/EIDE
Creative Labs	Creative Labs	Creative Labs	Creative Labs	Aureal Semiconductor	Creative Labs	Aureal
SB Live! Value	SB Live! Value	SB Live! Value	SB Live! Value	Vortex 2 PCI	SB Live! Value	Vortex2 Superquad
Yamaha	Creative	Creative	Yamaha	Altec Lansing	Creative	Creative
YST100 and YST28	4 Point Surround	4 Point Surround	YST-M20	ACSA 45.1	FPS1000	4 Point Surround
Elsa Erazor II Revelator	Creative 3D Blaster	Matrox Millennium G400	Matrox Millennium G400	3dfx Voodoo3 3000	3dfx Voodoo3 3000	Matrox Millennium G400
Riva TNT-2	Riva TNT-2 Ultra	MGA400	MGA400	Voodoo 3	Voodoo 3	MGA400
16MB/32MB/SDRAM	32MB/32MB/SGRAM	32MB/32MB/SDRAM	16MB/32MB/SDRAM	16MB/16MB/SDRAM	16MB/16MB/SDRAM	32MB/32MB/SGRAM
AGP	AGP	AGP	AGP	AGP	AGP	AGP
Hansol 900P	ADI G66	Mitsubishi Diamond 710NF	Viewsonic E771	Quantex XP190N	Belinea 103040	CTX VL950T
19in/18in	19in/18in	17in/16in	17in/16in	19in/18in	17in/15.8in	19in/18in
1,600 x 1,200@60Hz	1,600 x 1,200@75Hz	1,600 x 1,200@75Hz	1,280 x 1,024@66Hz	1,600 x 1,200@75Hz	1,600 x 1,200@65Hz	1,600 x 1,200@75Hz
Rockwell 56K Internal	Rockwell 56K Internal	Diamond SupraExpress	Diamond SupraExpress	3Com US Robotics	Diamond SupraExpress	Etech 56k PCI 56RVP
V90	V90	V90	V90	V90	V90	V90
Elsa LCD 3D Specs RealMagic Hollywood Hware DVD AC-3 Card	Gravis Xterminator Gamepad	Mesh Webcruiser Mouse (scroll wheel)		MS Sidewinder Joystick	Canon CanoScan FB320P scanner, Epson Stylus 640 printer, Philips camera	Saitek joystick
Need for Speed III Recoil 3D Games	MS Works Suite 99 Star Wars: Phantom Menace	Corel Word Perfect Office 2000	Lotus SmartSuite	Corel Office Suite 8 Cinemaster DVD Multimedia Bundle Activision Games Bundle	Lotus SmartSuite 97	Lotus SmartSuite Millen GSP Suite, Norton AntiVirus, IBM ViaVoice Exec, 14 multimedia titles
3yr RTB	2yr RTB	1yr on-site	1yr on-site	1yr RTB	1yr on-site	1yr RTB
3yr on-site	1yr on-site	3yr on-site	3yr on-site	3yr on-site	3yr on-site	3yr and 5yr RTB
01372 470 999	01792 772 111	0181 208 4795	0113 244 4948	0845 359 9559	0181 498 2170	01282 770 033
Mon-Sat 8.30am-10pm	Mon-Fri 9am-5.30pm	Mon-Fri 9am-6pm Sat 10am-4pm Sun 10am-2pm	Mon-Fri 9.30am-5.30pm Sat 10am-4pm	Mon-Fri 9am-6pm	Mon-Fri 8am-8pm Sat 9am-5pm Sun 10am-4pm	Mon-Fri 8.30am-7.30pm, Sat 8.30am-5.30pm Sun 10am-4pm
Mon-Sat 8.30am-10pm	Mon-Fri 9am-5pm	Mon-Fri 9am-6pm	Mon-Fri 9.30am-5.30pm	Mon-Sun 24 Hours	Mon-Fri 9am-7pm Sat 9am-4pm	Mon-Fri 8.30am-8pm Sat-Sun 9am-5pm

Editor's Choice

The specification of the machines that we received for this group test varied wildly – from some manufacturers submitting good machines with well chosen peripherals, to others just throwing a system together without really considering what it had to do.

We were more impressed by machines that covered all the areas that an ultimate home PC would be used for rather than just a fast machine, as all of those on test were up to the job of running the latest games and playing DVD movies. But where a manufacturer had opted for a slower processor, we wanted to see where this saving had gone.

We were happy to see that some manufacturers were taking the need for removable storage seriously, with Zip, CD-RW and LS-120 drives featuring prominently. We also viewed upgradeability as a key issue, as these machines will no doubt want the most recent bits of kit added to them later in their lifetime. The availability of free expansion slots and spare drive bays showed that this issue had been considered. Ease of access was another

▼ **THE MESH MATRIX 500CW CAME WITH AN IMPRESSIVE MITSUBISHI DIAMOND PRO 710 NF DISPLAY**



◀ **TIME'S WELL ROUNDED 550-3T SV SYSTEM: A GOOD MACHINE WITHOUT SKIMPING ON POWER**

kept from the top spot by the Time. The Mitsubishi Diamond Pro 710 NF was a formidable display, which should win a few admirers. We were very impressed by the performance of AMD's Athlon processor, and Mesh has made a wise choice in this department.

The Philips CD-RW had an unusual colour scheme, but you could get used to it, and the Matrox Millennium G400 backed up Mesh's solid system.

priority (nobody enjoys trying to find the six screws at the back and then wrestling with the cover until it gives) and we also liked to see cases that were neat and tidy inside.

◀ **The Editor's Choice goes to Time for its well rounded 550-3t SV system.** Time showed that you can supply a good machine without skimping on processor power. This 550MHz Pentium III-based system performed well and we were very

impressed by the thought that had gone into the other aspects of the system. The Matrox Millennium Dual-head card performed well in the 3D tests, and the addition of a second output allows the machine to be put to a variety of uses. The 19in monitor and the CD-RW put the icing on the cake.

◀ **The Mesh Matrix 500CW is Highly Commended** and it was a strong contender for Editor's Choice, but just



▲ **QUANTEX'S GAME 500 XE WAS A GOOD SYSTEM WHICH CAME IN £100 UNDER BUDGET (EX VAT)**

◀ **Quantex also deserves a Highly Commended award for its Game 500 XE**

system. The 500MHz Pentium III-based machine included a Sony CD-RW, 19in monitor, 17GB hard drive and very good attention to detail in build quality. The machine offered good upgradeability and came in at £1,200 (ex VAT).

A final word has to go to Dan. Although Dan didn't quite grab an award, it did produce a superb home solution that's well worth investigating.







Illustration by Kevin O'Keefe

It's what counts

Gone are the days of **entering row after row** of figures into a ledger. Today's accounting software caters for both personal records and small businesses, and here we round up the best.

If you are using a paper-based system or starting a new business, opting for a dedicated accounting package might seem daunting. However, the days when software was more complicated than a paper ledger are largely gone, and the advantages are huge. Computerised accounting software can save you an enormous amount of time. Instead of an afternoon adding up columns (and miscounting), everything is automatically totalled up on the fly. Even better, software can provide information very quickly – you can ask it how much you spent at a particular shop in January.

The main advantage of using an accounting package over, say, Microsoft Office, is that it integrates a spreadsheet, database and word processor into a single program. It has spreadsheet-style facilities for tracking purchases and sales, a database for keeping details of suppliers and customers, and the features of a word processor for producing invoices. Whereas producing invoices in Microsoft Word results in typing the same data separately into a spreadsheet, by using an accounts package you only have to type the information once.

In this group test we have examined

six small business packages, and also taken a look at Money and Quicken, which help with personal finances.

Contents

- 174** **Company accounting software:** DO\$H CashBook, BestWare MYOB, Pegasus Capital Lite, Intuit QuickBooks 6, Sage Instant Accounting, TAS Books Accounting
- 174** Creating a company; nominal ledger accounts
- 175** Purchase ledger accounts
- 176** Sales ledger accounts
- 176** VAT handling
- 181** Help and Drill down
- 182** **Personal accounting software:** Intuit Quicken 2000, Microsoft Money
- 183** Choosing the right package and Year 2000 compliance
- 184** Table of features
- 187** **Editor's Choice**

• Written by Alex Singleton

Ratings

- ★★★★★ **Highly recommended**
- ★★★★ **Great buy**
- ★★★ **Good buy**
- ★★ **Shop around**
- ★ **Not recommended**

Small business software

Smaller organisations may prefer a simple package, but they'll still need a raft of features.

The six small business products reviewed here have been selected for their appropriateness to a business of up to around 10 people. TAS Books Accounting is the most powerful product, while Intuit QuickBooks and MYOB claim to take the jargon out of accounting. Pegasus Capital Lite and Sage Instant Accounting come from a very good pedigree, with Sage being the world's largest supplier of accounting programs. Both Capital Lite and Instant Accounting are essentially cut-down versions of their publishers' higher-end programs.

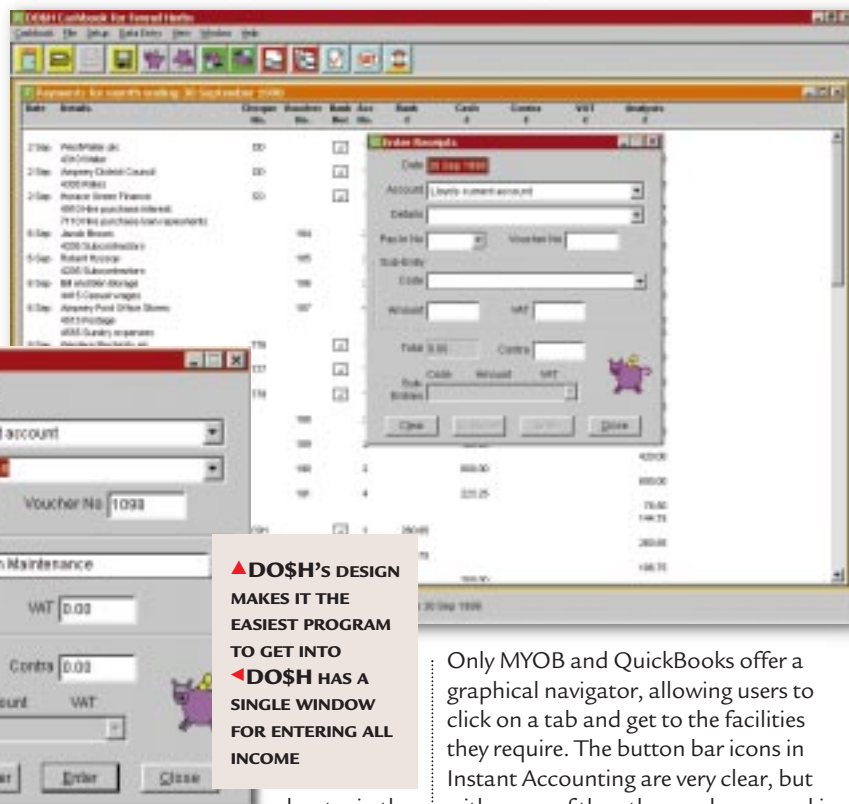
DO\$H CashBook is the odd-one-out, aimed at small businesses simply wanting an automated version of a paper ledger book. It is only suitable for businesses using the VAT cash accounting scheme, where VAT is due on the date of payment, rather than the usual accrual scheme, where VAT is due on the date of invoice. DO\$H is incredibly simple to learn, with two main windows – one for entering payments and one for income.

Here we are reviewing the single-user versions, but all the publishers (except in the case of DO\$H CashBook) produce either a multi-user version (TAS Books Accounting, MYOB and QuickBooks) or have a higher-end program to cater for this (Sage and Pegasus).

Creating a company

When creating a new company in the software, the packages all use some form of wizard to take basic information about the business. It is vital that proper advice is given either on paper or on screen explaining how to set it up, because it can be difficult or impossible to change these items once they have been entered.

Very impressively, TAS Books takes the trouble to explain the difference between the cash accounting scheme for VAT and the accrual system, including a



chapter in the manual for a more detailed explanation. It also recommends contacting an accountant if in any doubt.

Instant Accounting, along with QuickBooks and MYOB, has a very straightforward wizard for this. When creating a new customer through Instant Accounting's customer record wizard, we were delighted that it asks if there are any outstanding invoices or credit notes and whether the user would like to enter them as individual items or as a single value.

Capital Lite has an impressive amount of on-screen help while setting up the company (unfortunately, not found elsewhere in the program), but it does become quite tiresome not being able to tab into the next field.

Once this wizard has been completed, the user is placed in an 'opening balance mode' in which outstanding invoices and credit notes should be entered. This was a less intuitive process than offered by the other programs reviewed here.

Navigating the user interfaces in accounts software can be confusing.

Only MYOB and QuickBooks offer a graphical navigator, allowing users to click on a tab and get to the facilities they require. The button bar icons in Instant Accounting are very clear, but with some of the other packages working out what they do is guesswork. The menu structure in TAS Books was easily the best – it was very easy to track down the required window.

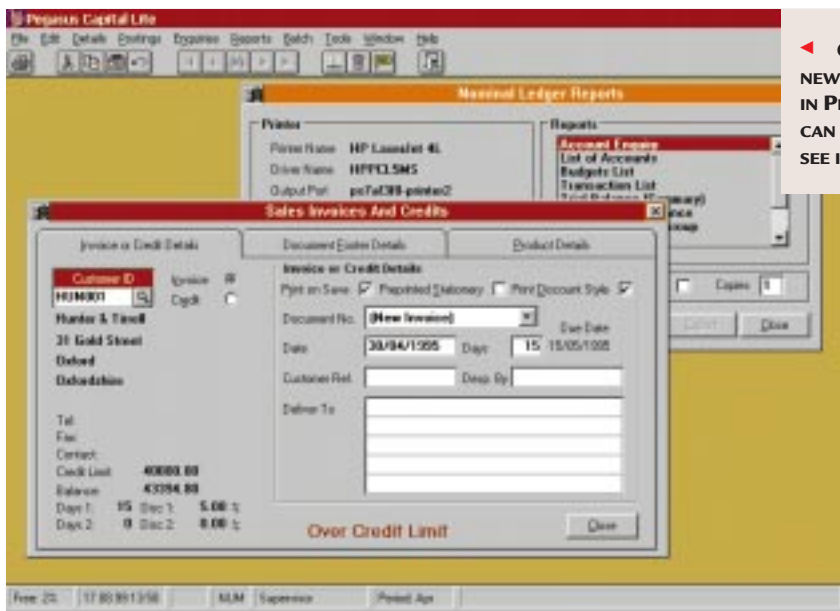
Nominal ledger

The layperson can think of nominal ledger accounts – a key part of double-entry jargon – simply as categories. All but one of the programs allow you to split each transaction (in the purchase and sales ledgers) into multiple categories. For example, a single invoice from a supplier might contain some stationery (which you might

categorise as 'stationery') and some machinery (which you might

categorise as 'plant'). However, Sage Instant Accounting only allows you to give each entry a single category. If you wanted to split the transaction between different categories, you would have to enter it as two or more separate invoices, which can cause some confusion later on.

The layperson can think of nominal ledger accounts simply as categories



◀ **CREATING A NEW SALES INVOICE IN PEGASUS, WHICH CAN BE TRACKED TO SEE IF IT IS OVERDUE**

purchased from. (Accounts packages have cashbooks to enter all the money-related transactions that do not belong in the sales or purchase ledgers. Usually

this means items which have been bought by petty cash, or for cash takings.)

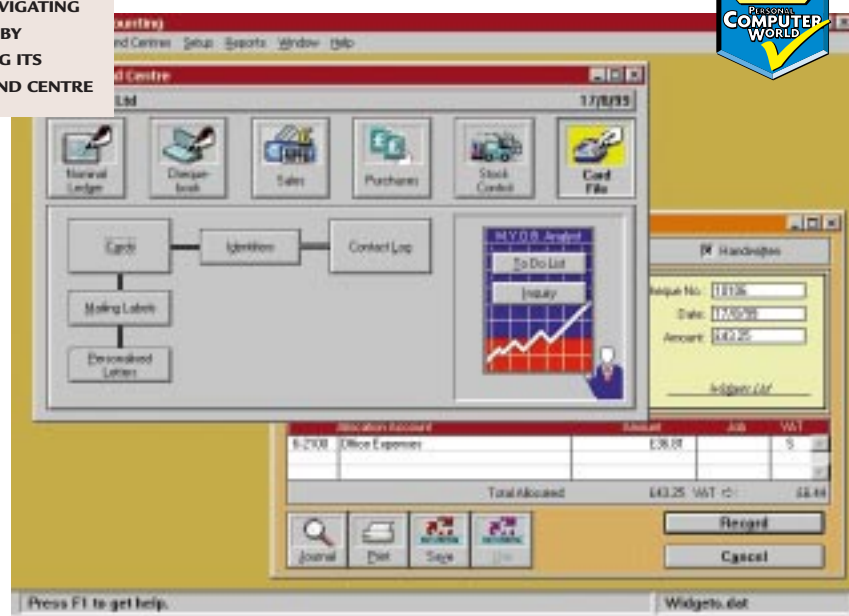
Being a cashbook-only program, DO\$H does not attempt to track purchase invoices. Its approach to the purchase ledger is to show the equivalent of a sheet of paper listing the transactions in any month. This metaphor makes the package similar to working with a paper system, helping to address the concern that computerising the books makes it more difficult to see what is happening. However, despite being incredibly easy to use, DO\$H is not as sophisticated as it could be. Whereas programs aimed at the home user – like Microsoft Money – let you type entries directly into this page, DO\$H makes you enter them into a dialog box. Also, this dialog box isn't as efficient as it could be – if you start typing in a supplier's name, DO\$H does not try to automatically complete the name. Data entry is therefore more long-winded than it should be, although there are no problems in tracking suppliers as it does not keep a supplier database in a significant way. DO\$H's main strength is that it is incredibly uncomplicated for the inexperienced user to alter a mistake: they just double click on the appropriate entry in the purchase ledger. It is undeniable that DO\$H is easier than any of the other

Most of the programs reviewed require the use of numeric codes in order to categorise entries. With Sage, Pegasus, MYOB, DO\$H and TAS, you have to type in a number or choose the category from a menu. Only with QuickBooks can you type a word into the category field, which saves time. QuickBooks also tries to automatically complete the category for you, so if you enter 'Conf', it will work out that you are typing 'Conference sales'. You can simply tab into the next field to accept the suggestion. That said, TAS and MYOB (along with QuickBooks) automatically enter the category selected the last time the customer or supplier was used. Sage, conversely, lets you select a default category for each supplier and customer. QuickBooks again goes one step further and not only remembers the category, but also the amount from the previous time. However, this means users may accidentally copy previous amounts rather than enter the correct ones (luckily, this feature can be turned off).

month or quarter and enter them in one go, it is important that purchases can be entered and paid in one go. MYOB and QuickBooks have the best facility for this – the user simply enters the purchase as an on-screen cheque. Pegasus also handles this well – by including a dialog box for entering purchases in which you simply tick 'Pay Now' and enter a cheque number.

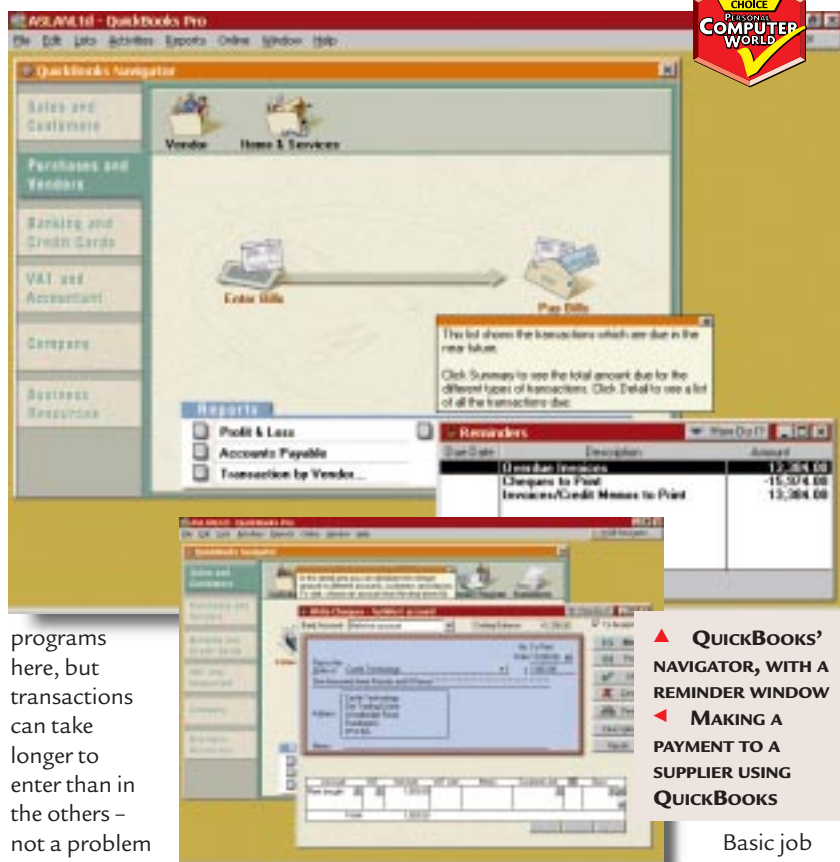
With TAS, the proper way to enter an invoice that is payable immediately is to type in the purchase invoice and then open up a separate window and pay it. TAS Books Accounting is therefore more suitable for businesses paying most of their purchases on account. While the entry could be typed into TAS' cashbook as a single item, this would not keep track of the company it was

▼ **NAVIGATING MYOB BY UTILISING ITS COMMAND CENTRE**



Purchase ledger

Accounts software should be flexible enough to cope properly both with purchases that are paid by account and those which are paid at the time of purchase. With all the programs (bar DO\$H) you can enter an invoice and the software will track it. MYOB and QuickBooks can remind you when they first load up which invoices need paying. However, for businesses that leave invoices in a file until the end of the



programs here, but transactions can take longer to enter than in the others – not a problem if you are only entering a small number at a time.

What DO\$H stops short of doing, QuickBooks promises. Its help system enthuses about the way in which transactions can be entered directly into its 'register' making data entry as simple as using Money or Quicken. Entering into the register is more reassuring because users can see what they have entered previously. This works perfectly for businesses that are not VAT registered. The only slight criticism is that Intuit has left a VAT column out of QuickBooks, so other businesses have to 'split' the category.

Businesses writing a large number of cheques will find computer-printed cheques a godsend. Instead of entering a payment into the computer and then filling out a cheque by pen, you simply enter the figures on your PC, load the blank cheques into your printer, and they get printed, with an attached remittance advice slip. MYOB, QuickBooks and TAS Books all support this feature.

Sage was not as integrated as we would have liked. For example, when adding a new product to the stock database, the drop-down list of suppliers would not let us create a new supplier. With any of the program's wizards open, access is locked off to the rest of the program, so you have to close the wizard before being able to enter the supplier.

provided in all of the programs save Capital Lite, Instant Accounting and DO\$H. While Capital Lite and Instant Accounting are suitable for a service or distribution business, they are therefore not appropriate for those wishing to track costs by customer or project.

Sales ledger

All of the products here can produce invoices both on pre-printed stationery as well as on ordinary paper (except DO\$H, which does not have invoicing facilities). Reasonable layout facilities are provided with most of the programs. The exception is Pegasus, which can only produce pre-defined layouts. TAS goes one step further, letting users design invoices with Microsoft Word, which makes it the most flexible program.

TAS, Pegasus, MYOB and the Pro version of QuickBooks are the only ones that can issue proforma invoices, so they are the only ones suitable for companies with stock – which need to invoice and receive payment before delivery. Likewise they are the only programs capable of producing estimates.

TAS Books effectively keeps only one

database, and therefore lets you have customers who are also suppliers. This makes contra entries a dream. A contra entry is a transaction where you pay off a purchase invoice by subtracting what a supplier owes separately in a sales invoice. Of course, you can do this with the other programs, but in a slightly more convoluted way.

Chasing up overdue invoices is a reason in itself for using a computerised accounts package. MYOB and QuickBooks did this in the best way by (optionally) publishing a list of reminders when the program loads. They, along with Instant Accounting, TAS and Pegasus, have facilities to track overdue items and keep a log of calls. MYOB was arguably the best at this by automatically dialling the customer through a modem and keeping an accurate log of the call.

VAT handling

Most products sensibly assume by default that any amount you enter is inclusive of VAT. After all, many VAT-registered shops issue receipts without printing the VAT amount. No suppliers, however, issue receipts stating only the net amount. Of course, you may be quoting net amounts to your customers, or producing a purchase order when you have agreed a price excluding VAT. Ideally, therefore, the software should allow you to enter net amounts in addition to gross. TAS led the group by having fields for both net and gross amounts (it automatically calculates and displays the other as you type it in). In what Sage calls 'batch invoices' – where you enter invoices when you are not printing them in Sage – it assumes the amount in net, but does provide a button to take the VAT from a gross figure. However, if you are issuing a more detailed invoice (which Sage is to print), you have to go into a separate window

to do this conversion. Pegasus, uniquely, leaves it up to the user to

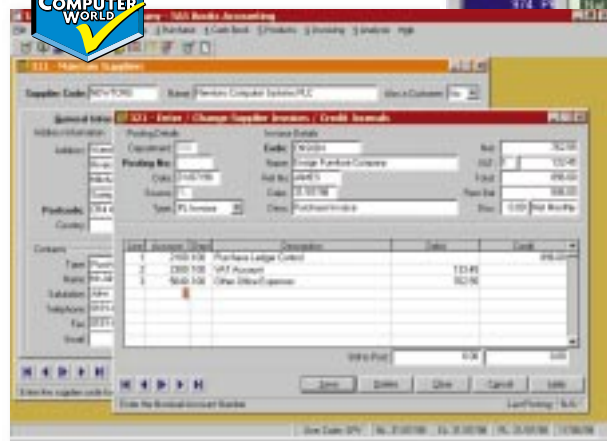
Chasing up overdue invoices is reason enough to use these packages

work out the excluding VAT price.

Rather surprisingly, TAS Books is the only program that asks for both a posting date and an invoice date. This means you can ensure VAT is calculated for the correct VAT quarter, while still being able to track an invoice by its date and accurately produce overdue bills. From an auditing perspective, it makes it

ideal to look back and find out what has been going on. Pegasus automatically forwards entries if they are dated after the end of the set accounting period. QuickBooks and MYOB have a feature to prevent entry before a certain date, but this makes it harder to track invoices.

Producing a VAT return in all the programs is child's play. All cater for both accrual and cash accounting schemes, bar DO\$H – which caters only for the



▲ A VAT RETURN IN SAGE, READY TO BE COPIED ONTO THE REAL FORM
◀ ENTERING A PURCHASE INVOICE INTO TAS BOOKS ACCOUNTING

latter. All the packages will display an on-screen VAT return, ideal for copying straight on to the paper form.

Help

QuickBooks has the best computerised help of all the products. Near to each window is a context-sensitive cue card (which can be switched off). These cards explain in detail what should be entered into each field. Each window also has a 'How do I?' button on its title bar which gives a menu of help topics QuickBooks thinks are relevant to the task in hand. The clarity of the help was particularly impressive. It was also the only program to offer help in the form of video clips. Pegasus has a balloon help system but the advice is not provided in much detail, often just one or two words. Its manual assumes reasonable knowledge of accounting and only covered installation on machines using Windows 3.1. Its tutorial disk was also disappointing, basically consisting of on-screen text (Pegasus was the only program not to have a CD-ROM version).

We were impressed both by DO\$H's handbook, which was very easy to follow, and its CD-ROM tutorial. Sage gets full marks for providing a very clear and concise manual, but online help was often not available when we needed it. TAS provides two manuals – a quick start and tutorial, and a reference manual.

Much of the former merely details what the program can do rather than how to use it, and we felt that it did not offer enough help for the first-time user. However, the manual provides a wealth of information.

Drill down

What differentiates today's accounting software from packages of the 1980s is that users can find information on screen easily. The facility that makes this possible is called 'drill down', which lets users see an on-screen list of transactions they have altered and follow them until they get to the original entry. Because the software here is aimed at small businesses – which usually have a single person doing the accounts – it is important that mistakes can be corrected easily. Drill down lets users find the original entry and alter it easily. Pegasus is the least advanced of the programs here. A list of transactions relating to a particular supplier or customer can be viewed, but it is not possible to alter them. Users wishing to make corrections must enter extra transactions. Sage Instant Accounting allows corrections, but we could find no way to alter a transaction in the same window as it was originally entered.

Exporting information from accounts packages is important – after all, you would not want to enter the same details

about a customer both into an accounts package and a separate database. TAS and MYOB stand out here because they integrate with Microsoft Office.

PCW DETAILS

DO\$H CashBook

★★★★★

Price £59.99 (£51.06 ex VAT)

Contact Dosh Software 0800 026 4666

www.dosh.co.uk

BestWare MYOB

★★★★★

Price £229.13 (£195 ex VAT)

Contact BestWare 01752 201901

www.myob.co.uk

Pegasus Capital Lite

★★★★★

Price £99 (£84.26 ex VAT)

Contact Pegasus 01536 495000

www.pegasus.co.uk

Intuit QuickBooks 6

★★★★★

Price QuickBooks 6 £99 (£84.26 ex VAT); QuickBooks 6 Pro, £199 (£169.36 ex VAT)

Contact Intuit 0800 585058

www.intuit.co.uk

Sage Instant Accounting

★★★★★

Price £99 (£84.26 ex VAT)

Contact Sage 0191 255 3000

www.sage.co.uk

TAS Books Accounting

★★★★★

Price £149 (£126.81 ex VAT)

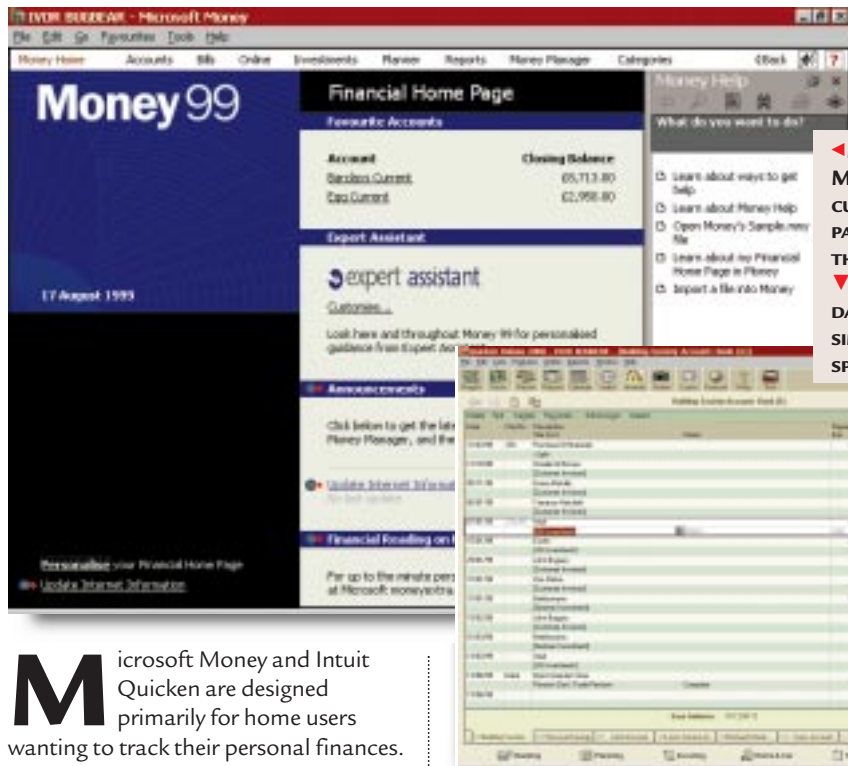
Contact TAS Software

01372 727274

www.tassoftware.co.uk

Personal accounting packages

Designed as personal finance packages, **Money** and **Quicken** both claim small business adaptability.



Both programs can produce customer invoices, but unfortunately neither offers any desktop publishing facilities in the way the professional business packages do. Actually, we would not be seen dead issuing the invoices Money produced; Quicken at least lets you decide what appears on them. Quicken Deluxe can also send customer statements of account. Both packages can also print cheques, which is more than some of the business offerings can do.

For the self-employed person, the Deluxe version of Quicken comes with QuickTax, a program for producing self-assessed tax returns.

Microsoft sells a competing product, but this is separate.

Despite all these features, we would be wary of recommending these programs to small-business users. They are outstanding personal accounting programs, but the business features are simply tagged on. What does the user do in Money when they want to become VAT registered? They have to learn a completely new program. Intuit, for its part, would doubtless recommend upgrading to QuickBooks. For a business requiring simply a cashbook, the less cumbersome DO\$H may still be a better option.

PCW DETAILS

Intuit Quicken 2000

★★★★★

Price £29.99 (£25.52 ex VAT), Deluxe version £49.99 (£42.54 ex VAT)

Contact Intuit 01932 578500

www.intuit.co.uk

Microsoft Money

★★★★★

Price £29.99 (£25.53 ex VAT), Financial Suite version £49.99 (£42.54 ex VAT)

Contact Microsoft 0345 002000

www.microsoft.com

Microsoft Money and Intuit Quicken are designed primarily for home users wanting to track their personal finances. In theory, they can also do the accounts of very small businesses. This can be particularly useful for the sole trader who uses their personal bank account for both personal and business expenditure. The sole trader is unlikely to be VAT registered, and simply needs a package to track income and expenditure.

Both packages have chosen a web-based interface for viewing information about accounts. Behind this façade, the key part of each program is still the 'register' – the place where income and expenditure are entered. Both Money and Quicken could teach some of the business packages a thing or two about data entry. They are each designed more like a spreadsheet than a database. In other words, the register looks like a sheet of paper and each transaction is typed one after another down the page. This means that the last few transactions can be seen instantly.

Oddly, Microsoft has switched this off by default on its program, and (compared with Quicken) you can't see as many transactions on the page at the same time without losing important fields. However, data entry in both programs is remarkably similar. All entries can be easily modified or deleted. Transactions can be given one or more

categories, so you can find out how much you spent on separate items.

PC banking is incorporated in both products, but Microsoft is way ahead of the game, supporting eight UK banks. Intuit currently only handles NatWest, and offers no facilities for paying bills or transferring money. Microsoft Money, on the other hand, offers direct bill payment through the modem.

Quicken is streets ahead of Money in business features. Unlike Money, Quicken can cope with VAT, but we found its handling slightly tiresome. Quicken works out the VAT on each transaction by making you split the transaction's category between the type of purchase (such as 'stationery') and a special VAT category. This means that you can never see the category properly when looking at the register and, moreover, it makes you look at the 'Split Transaction' dialog box for every entry. It would be more productive if there was a VAT field in the register. In fact, Intuit admits in the manual that Quicken's VAT handling is something of a hassle, saying: 'If you are working with VAT on a daily basis with invoices or purchase orders, you should consider getting QuickBooks.'

Choosing the right package

Having decided what **your requirements are**, will the package be able to grow with them?

Different users have different requirements for their accounts software. For the self-employed person who is not VAT registered, it may merely be a question of recording income and expenses so that they can fill in their tax form.

A spreadsheet could suffice for this, particularly as it may mean not having to learn an extra application. However, even packages like Money and Quicken both have advantages over the spreadsheet, automating the process and having ready-to-go reporting.

Additionally, they can link to software

to print onto self-assessment tax forms. Ultimately, it is a question of whether you want to be writing macros in Excel, or have the tools you need automatically to hand. Quicken may be a better option than Money because it can track VAT, a bonus to those who believe they may become VAT registered at a future

date. That said, DO\$H's handling of VAT cash accounting is more straightforward than Quicken's and may, therefore, be a more satisfactory program if you are self-employed but also VAT registered.

For businesses

employing more than one member of staff, the suitable

programs are Sage Instant Accounting, Pegasus Capital Lite, MYOB and QuickBooks. These allow a business to track unpaid invoices and bills by computer, which is a godsend. They can also cope with accrual VAT, in addition to cash accounting.

An important issue for expanding businesses is whether they will grow out of their software. While this review looks at businesses with up to 10 employees, some programs have greater upgrade paths than others.

Sage Instant Accounting users, for example, can upgrade to Sage Line 50, and know that the learning curve will not be too tricky. TAS Books Accounting, the most feature-rich of the programs reviewed, also has a good upgrade path, as does Pegasus.

QuickBooks and MYOB, despite being aimed at the small business, can nevertheless be updated to multi-user versions.



◀ SAGE INSTANT ACCOUNTING IS SUITABLE FOR BUSINESSES EMPLOYING MORE THAN ONE PERSON

Year 2000 compliance

If you are unsure whether your package is **Year 2000-compliant** contact your supplier now.

It is critical that an accounts package copes properly with the rollover to the Year 2000.

The key point is that any transaction you enter must be posted to the correct financial year and VAT quarter. The package must also deal competently with the entry of dates containing two-digit years, so that 98 is in the 20th century, while 01 is in the 21st century. Furthermore, any tracking (such as reminding the user about unpaid invoices) must correctly include ones from both the 21st and the 20th centuries. All of the programs reviewed here are Year 2000-compliant, and the companies can supply upgrades for non-compliant versions.

Users unsure of whether their package is Year 2000-compliant should contact their supplier immediately; most web sites give general Y2K information.

Publishers such as Pegasus are receiving hundreds of calls every month from users. Unless you have the latest version, make sure you are one of them.

Sage will replace any non-compliant

Sage program with the Y2K-compliant version free of charge, but only to those who have a SageCover support contract.

Intuit has now fully tested QuickBooks 5 and above and versions are either compliant, or a patch is being issued to users.

The company is offering users of QuickBooks 2 and 3 either a free patch or an upgrade to QuickBooks 6 at half the normal price.

TAS Software's Windows programs are compliant, but DOS users need to check that they have the latest versions.

If you are using an application no longer supported, such as a DOS package or something written for, say, a

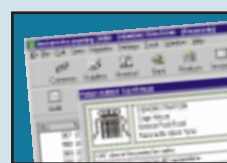
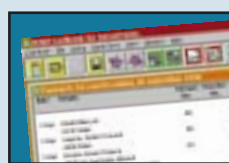
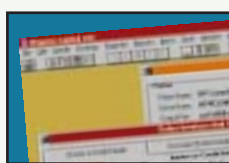


▲ INFORMATION ON Y2K CAN BE ACCESSED AT WWW.BUG2000.CO.UK

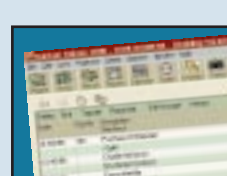
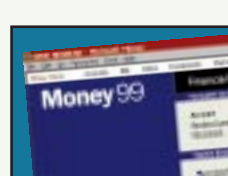
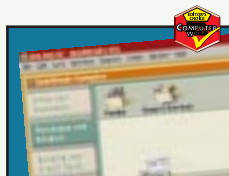
BBC Computer, it may be necessary to change to a new package.

While a chore, this may not be as daunting as it seems as it can offer an opportunity to take advantage of modern user interfaces and, for businesses that have expanded, is an ideal time to opt for something more powerful. An ideal time to have swapped would have been at the end of a business' financial year.

Table of features

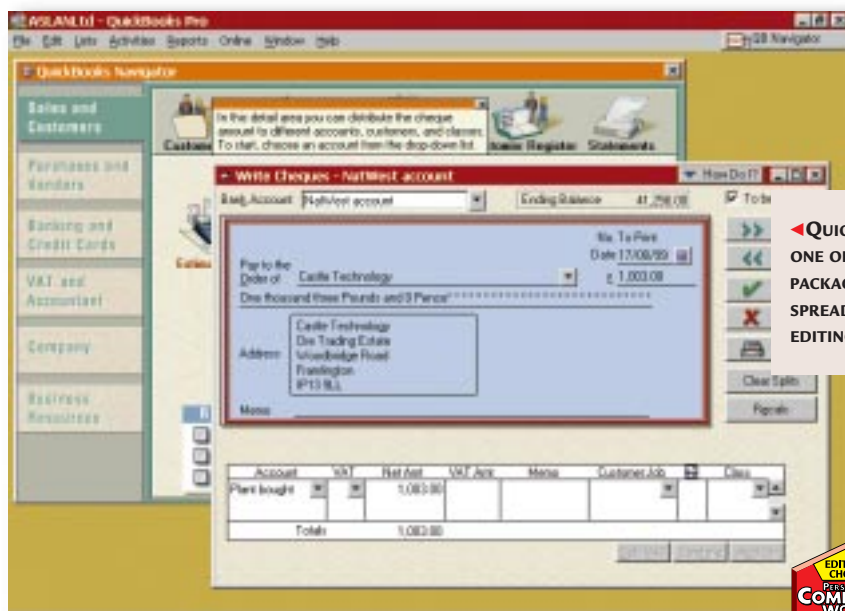


PRODUCT NAME	CAPITAL LITE	DO\$H CASHBOOK	MYOB	INSTANT ACCOUNTING
COMPANY NAME	PEGASUS	Do\$H SOFTWARE	BESTWARE	SAGE
Contact tel no	01536 495 000	0800 026 4666	01752 201 901	0800 447 777
Website address	www.pegasus.co.uk	www.dosh.co.uk	www.myob.co.uk	www.sage.com
Price inc VAT	£99	£59.99	£229.13	£99
Price ex VAT	£84.26	£51.06	£195	£84.26
Y2K compliance	✓	✓	✓	✓
Accrual VAT	✓	✗	✓	✓
VAT cash accounting	✓	✓	✓	✓
Report designer	✗	✗	✓	✓
Invoicing	✓	✗	✓	✓
Proformas/estimates	✓	✗	✓	✗
Cheque printing	✗	✗	✓	✗
Integration with MS Office	✗	✗	✓	✗
Job costing	✗	✗	✓	✗
Spreadsheet-style editing	✗	✗	✗	✗
Euro compliant	✗	✗	✗	✗
EASE OF USE				
Transaction entry	Fair	Good	Good	Good
Access data once entered	Poor	Good	Good	Fair
Correct errors	Poor	Good	Good	Fair
Help	Poor	Good	Good	Fair



PRODUCT NAME	QUICKBOOKS 6	TAS BOOKS	MONEY 99	QUICKEN 2000
COMPANY NAME	INTUIT	TAS SOFTWARE	MICROSOFT	INTUIT
Contact tel no	0800 585 058	01372 727 274	0345 002 000	0800 585 058
Website address	www.intuit.co.uk	www.tassoftware.co.uk	www.microsoft.com	www.intuit.co.uk
Price inc VAT	£99 (Pro £199)	£149	£29.99 (Financial Suite £49.99)	£29.99 (Deluxe £49.99)
Price ex VAT	£84.26 (Pro £169.36)	£126.81	£25.52 (Financial Suite £42.54)	£25.52 (Deluxe £42.54)
Y2K compliance	✓	✓	✓	✓
Accrual VAT	✓	✓	✓	✓
VAT cash accounting	✓	✓	✗	✓
Report designer	✓	✓	✗	✓
Invoicing	✓	✓	✗	✗
Proformas/estimates	✓ (Pro only)	✓	✓	✓
Cheque printing	✓	✓	✗	✗
Integration with MS Office	✗	✓	✓	✓
Job costing	✓	✓	✗	✗
Spreadsheet-style editing	✓	✗	✗	✗
Euro compliant	✗	✓	✓	✓
EASE OF USE				
Transaction entry	Good	Fair	Good	Good
Access data once entered	Good	Good	Good	Good
Correct errors	Good	Good	Good	Good
Help	Good	Fair	Good	Good

Editor's Choice



QuickBooks is one of the few packages to allow spreadsheet-style editing

QuickBooks was the odd-one-out, allowing spreadsheet-style editing. DO\$H takes a refreshing approach to businesses at the smaller end of the scale. It is not, however, as polished as many of the other programs written here, and does not offer as much room for businesses to expand. Accounting packages, like word processors, have features that will be needed very infrequently, but it is reassuring to know that they are there. Nevertheless, if you are confident that DO\$H will fulfil your needs, you will find it has the shallowest learning curve of any of the programs in this group test.



The first of the products to be highly commended is TAS Books Accounting. Without doubt, it is the most powerful package reviewed here, presenting excellent value for money. Of particular note is the clear layout of the interface. Although a relatively recent entrant into the Windows accounting market and lacking the colour of the other programs, it was very easy to navigate. It was the only program to give two dates per transaction, eliminating problems of items being posted into the wrong year or quarter – exactly how accounts software should be written.

MYOB is also highly commended. The whole design of the program is simplicity itself and is provided with decent manuals. Where we have watched new users start with MYOB, they have taken to it like ducks to water.



The Editor's Choice award goes to QuickBooks, which is the easiest of all the programs here bar DO\$H. Particularly exciting was the unrivalled help it offered. Accounting software can be a chore to learn, but QuickBooks does the most to help. At the same time, it has the most logical data entry and eliminates repetitive entry by remembering previous transactions.

TAS Books is powerful and represents value for money

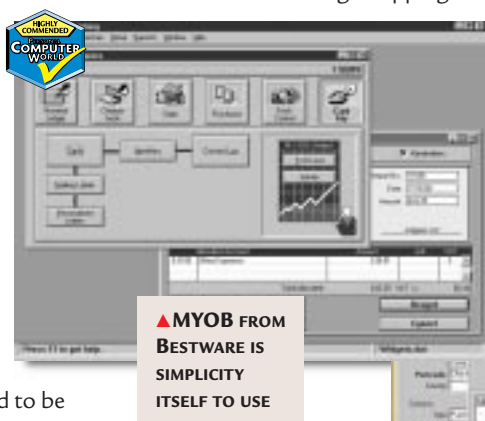
Accounting software has come a long way. With only one exception the programs in this group test let users find out information on screen, drill down to the original entry and correct mistakes. A common criticism of GUIs (graphical user interfaces) is that data entry is slower. This is not so important in the small business sector, where a key concern is working out how to use the package in the first place. This is something that GUIs are great at. In the main, these programs make a good compromise.

Small business users tend to be neither trained accountants nor willing to spend money on training courses. They buy mail order or on the high street, rather than through a specialist dealer or consultant. It is, therefore, essential that the software they use can be operated out of the box. PCW's view on Sage Instant Accounting and Pegasus Capital Lite remains that they have been designed as scaled-down versions of higher-end packages. The result is that they do not offer the same ease of use that the others exhibit. That

is not to say that they are poor products, but they do not cater for the inexperienced user to the same degree as the others in this group test. In particular, it was less easy to look at past transactions and trickier to make corrections.

A key concern for the small business considering swapping to a computer from a paper system is how accurately the software emulates the paper-based

system. Quicken and Microsoft Money, which are aimed at the home market, would be ideal if they also offered the power most small businesses require. Out of the business products, few go far enough. Most let users see transactions on the equivalent of a sheet of paper, but require editing in dialog boxes.



MYOB from Bestware is simplicity itself to use

School for scanners



Faced with such a bewildering array of the now popular **flatbed USB scanners**, *PCW* felt it was high time to put the best to a test.

A flatbed scanner could be one of the most valuable purchases you make. Digital imagery is becoming increasingly common, but for many of us the world of paper-based products is all too real.

A scanner can be used to bridge the gap between paper and digital images. From scanning photos and emailing them to your friends, to using OCR software to scan in text for editing on your word processor, the scanner is there to help. Until recently the most common methods of connecting a scanner to a PC

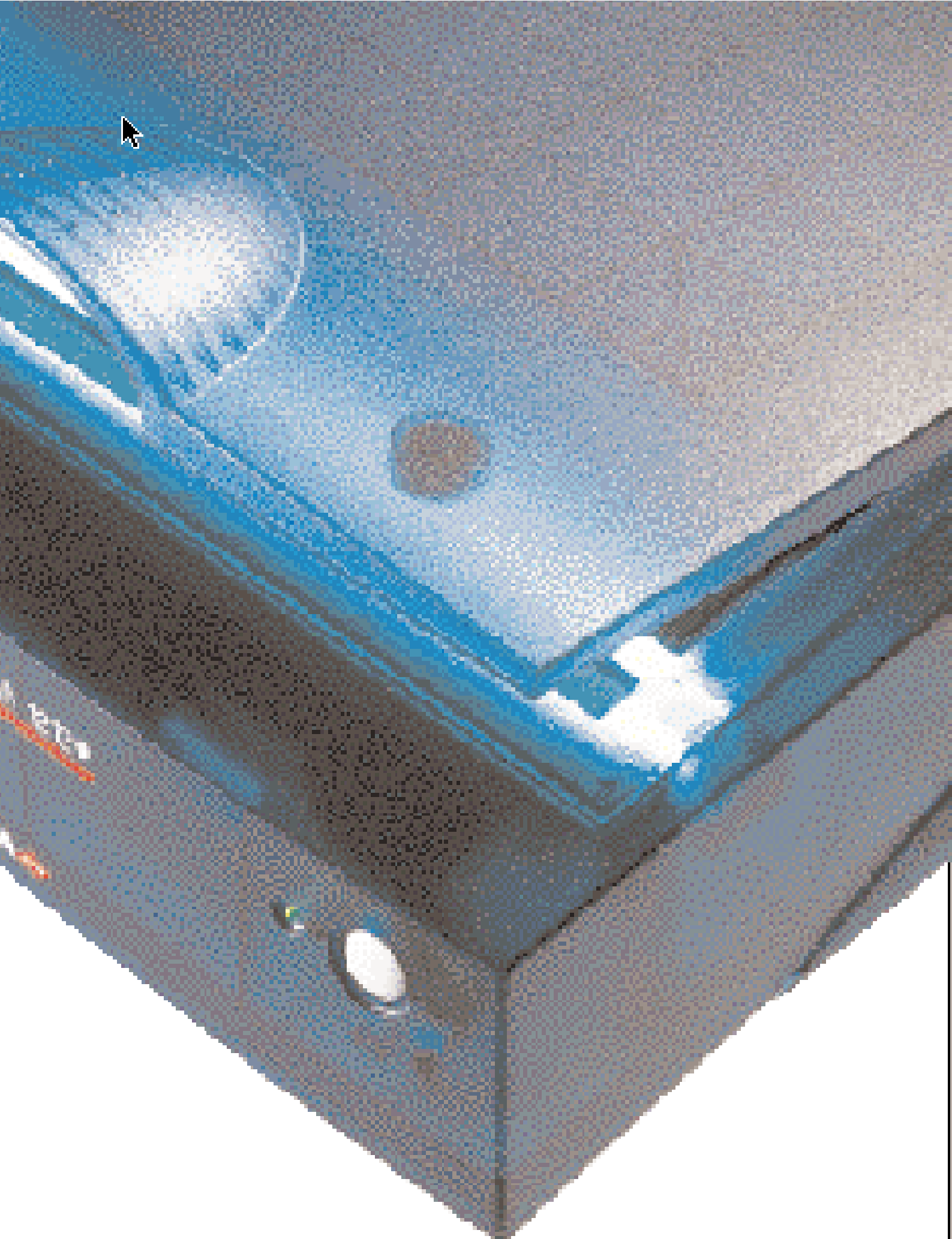
were either through the parallel port or by putting a SCSI card into your machine. The popularity of the USB port, however, means that there is an increasingly large number of USB scanners appearing on the market, making what used to be a tricky task far easier to set up and use than ever before.

But, faced with such a bewildering array, which one do you buy? *PCW* took a look at 12 flatbed USB scanners and put them through their paces. So, if you're looking for your first step into image capturing, read on....

Contents

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• Tested and reviewed by Jason Jenkins



Agfa Snapscan 1212U

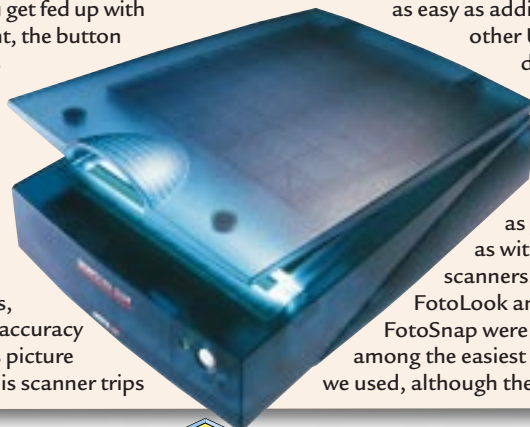
The most striking thing about the Agfa is its design. The transparent green plastic case means that you can see the light as it works its way over your target. If you get fed up with looking at the light, the button on the front turns it off until the software wakes it up again. The Agfa can handle thick media.

The scanner was not a consistent high scorer in our tests, however. Colour accuracy is very good, as is picture quality. Where this scanner trips

up, though, is in the time it takes to scan each target: it was one of the slowest here. Resolution of text is not all it could have been either. Set-up is as easy as adding any other USB

device. The software bundle is good, but not as generous as with other scanners.

FotoLook and FotoSnap were not among the easiest programs we used, although they do



possess all the functionality of the competing utilities.

Overall, the SnapScan provides style over content, it looks good but is eclipsed by better all-round performers.

PCW DETAILS

★★★★★

Price £120 (£102.13 ex VAT)

Contact 0181 231 4903

www.agfa.com

Good Points *Lovely design*

Bad Points *Software supplied could be better*

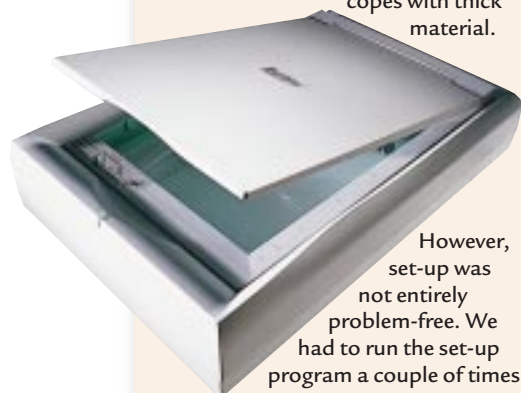
Conclusion *A good scanner but not as good as the Epson*

Black Widow 9636 USB



Scotland-based Black Widow has put a lot of effort into its build quality. The 9636 USB looks and feels substantial with a lid that easily

cope with thick material.



However, set-up was not entirely problem-free. We had to run the set-up program a couple of times

to install all the necessary drivers and bundled software, but this wasn't a major issue. The program installs all the necessary drivers for you, rather than forcing you to browse around the CD. The TWAIN driver is easy to use, with options readily available for changing advanced settings.

A batchscan feature allows you to scan several individual target areas in one operation, and the program also suggests the resolution it thinks is appropriate for the scan target.

Black Widow's 9636 did well in our tests, especially considering its lower price. Colour accuracy and fast scanning were its main strengths.

The software bundle is as generous as any of the other scanners

here, with the Presto! bundle including an image manipulation and OCR program. The only thing missing is a one-touch scan button, but it gives impressive performance at a great price.

PCW DETAILS

★★★★★

Price £89 (£75.74 ex VAT)

Contact 01324 825 999

www.blackwidow.co.uk

Good points *Good build quality at the price*

Bad points *No one-touch scan button*

Conclusion *Great value coupled with decent quality*

Canon Canoscan FB620U

This scanner has Canon's patented LED Indirect Exposure (LIDE) technology, using three-colour LEDs as the light source as opposed to a white fluorescent lamp. This makes the scanner very thin and light.

Unfortunately, the lid isn't double-hinged for thicker targets, it simply rests on the media at an angle.

A button on the front brings up a menu where you can select the program you want the scan to go to. Canon provides a program, the Scangear Toolbox, that enables you to send the target to an email program, a printer, a fax or a file.

Installation was painless, and the bundled software package is more than adequate.

LIDE technology is designed to improve performance, but this model did not perform well. Our scanner made a disconcerting high-pitched

whining noise when operating and

was one of the slower

models we tested. The

Charge-Coupled Device returns to its original position at the



same speed as it scans. Colour accuracy was not good overall; neither was picture quality. It did best on the reproduction of text. On the whole, the performance of the Canoscan was disappointing.

PCW DETAILS

★★

Price £139.83 (£119 ex VAT)

Contact 0121 680 8062

www.canon.com

Good points *Easy output direction.*

Bad points *Slow scan speed, lid could have been designed better*

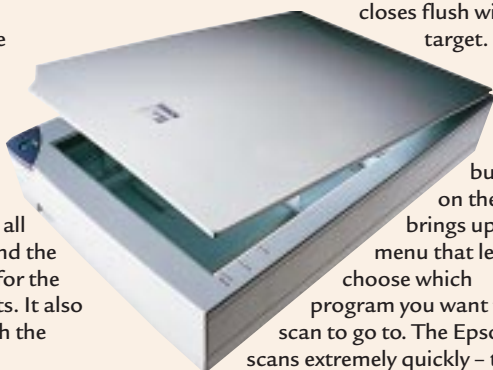
Conclusion *A disappointing offering from a well-respected company*

Epson GT-7000 USB



This scanner is truly a joy to use. Installation is simplicity itself. The add new hardware wizard installs the drivers, and a program on the CD-ROM installs the software suite effortlessly.

The bundled software provides all the image manipulation and OCR options that most users will need. The TWAIN software has been excellently designed and is very user-friendly, with all settings clearly flagged and the default settings suitable for the most popular scan targets. It also integrates seamlessly with the bundled applications.



Build quality is excellent: the GT-7000 USB looks and feels as though it is worth the entire purchase price.

The cover is hinged so that it can handle thicker media easily and closes flush with the target. A

button on the front brings up a menu that lets you choose which program you want the scan to go to. The Epson scans extremely quickly – the

fastest of all the scanners in the test. Although it does not occupy first position in our quality tests, it is consistently near the top, with very good reproduction of text as well as graphics. An excellent piece of machinery that's worth the money.

PCW DETAILS

★★★★★

Price £179 (£152.34 ex VAT)

Contact 0800 220 546

www.epson.co.uk

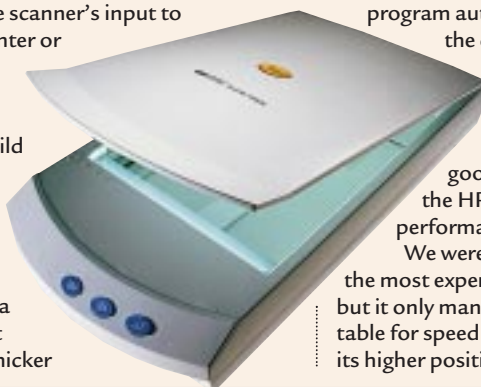
Good points Great performance and excellent build quality

Bad points None to speak of

Conclusion A fantastic all-rounder

Hewlett-Packard ScanJet 4200C

Despite its good looks and easy-to-use software, the HP was something of a disappointment overall. The front of the unit is equipped with three buttons that enable you to deliver the scanner's input to email, printer or imaging software with one touch. Build quality is good, with the chassis feeling solid and a cover that handles thicker



media. Annoyingly, however, the lid would not stay open unless held.

The HP software was extremely easy to use, with each scan split into three clear steps to follow. The program automatically selected

the correct area to scan on each of our tests, and suggested a setting for each target.

Despite all of these good points, however, the HP did not excel in our performance tests.

We were expecting more from the most expensive model on show, but it only managed a place mid-table for speed and colour accuracy – its higher position on picture quality

could not make up for coming last in text reproduction.

The ScanJet has commendable features, but we were disappointed with its overall performance.

PCW DETAILS

★★★

Price £159.80 (£136 ex VAT)

Contact 0990 47 47 47

www.hp.com

Good points One-touch button, easy-to-use software

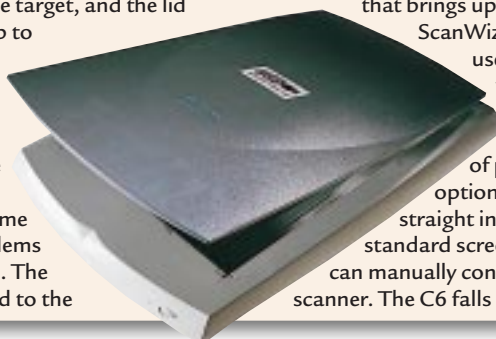
Bad points Didn't do well in speed or quality stakes

Conclusion A disappointing unit from a big name in the imaging business.

Microtek Phantom C6

The best thing about this scanner is its slim dimensions – only 43mm thick. Build quality could be better; our main niggle was that the target kept getting caught between the plastic surround and the glass.

There is no arrow to tell you where to place the target, and the lid does not hinge up to accommodate thicker media. The Microtek Phantom C6 is supplied with the same CD as the X6, and so the same installation problems were experienced. The black (as opposed to the



more common white) underside of the lid helps the TWAIN driver to correctly select the area to be scanned, meaning that you spend less time setting up the scan by manually selecting the image.

The case has a shortcut button that brings up Microtek's ScanWizard. This is a useful program where you can choose from a series of pre-defined options or go straight into the standard screen where you can manually configure your scanner. The C6 falls down badly

on speed – it was the slowest on test. It did manage to score some points with the remaining tests, however, particularly in the picture quality tests. But this wasn't enough to raise the C6 above mediocrity.

PCW DETAILS

★★

Price £92.83 (£79 excl VAT)

Contact 01908 317 797

www.microtek.com

Good points Very slim

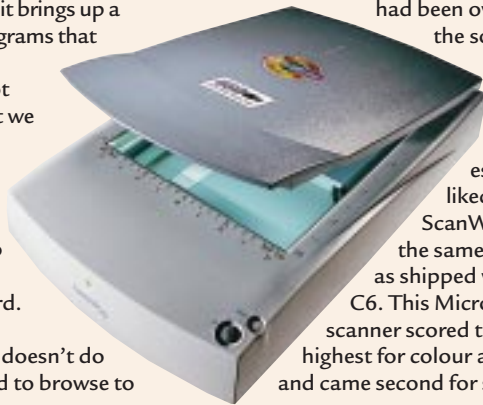
Bad points Build quality could be better

Conclusion Outclassed by the competition

Microtek ScanMaker X6

The ScanMaker X6 exhibited impressive build quality, with a cover that lifted easily to cope with our hefty magazine. When the one-touch button on the front is pressed, it brings up a menu of registered programs that you can scan to.

Installation was not among the easiest that we experienced. After installing the driver through the Windows Wizard, the program asks you if you want to install the TWAIN-compatible ScanWizard. When you select 'yes', however, the program doesn't do this for you and we had to browse to



the correct folder and find the set-up program manually. This is likely to be even more confusing for less experienced users. Once this hurdle had been overcome, the software was very user-friendly. We especially liked the ScanWizard, the same program as shipped with the C6. This Microtek scanner scored the highest for colour accuracy and came second for speed.

Performance on our text and picture quality tests just stopped it from coming out top, although this was far from dreadful. Ultimately, the X6 is worth a look.

PCW DETAILS

★★★★★

Price £139.83 (£119 ex VAT)

Contact 01908 317 797

www.microtek.com

Good points Good build quality and test scores

Bad points Slightly problematic installation

Conclusion A good scanner that just misses out on an award

Mustek ScanExpress 600CU

The cheapest scanner on test is not one of the best. Build quality, as you might expect at this price, is not very impressive. The most striking



thing about it is that it has a captive USB

cable. This is a strange decision from Mustek as it means that should a fault develop with the cable, the entire unit has to go back to the factory. The lid also doesn't lift for thicker scan targets.

Installation was fairly problem-free; Mustek has written an installation program that bypasses the add-new-hardware wizard and installs everything for you. The TWAIN driver did not install on the first attempt but re-running the installation program solved this problem. Mustek has also written a program that sits in your system tray and detects when the cover has been lifted, bringing up a menu requesting which program you want the scan to

go to. This essentially performs the same function as the one-touch buttons on some of the other models. If you find this irritating, as we did, you can easily remove it from your start-up folder.

PCW DETAILS

★★★

Price £59.99 (£51.05 ex VAT)

Contact 0870 013 2017

www.mustek-europe.com

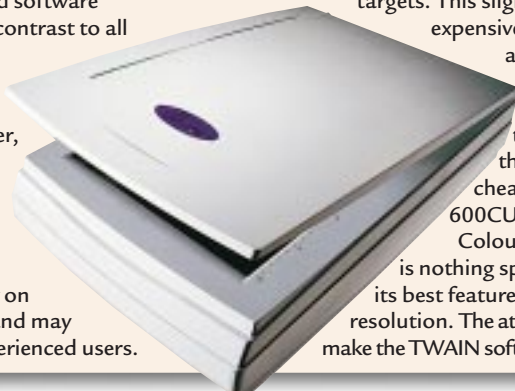
Good points The cheapest here

Bad points Captive USB cable, disappointing performance

Conclusion One to avoid despite its low price

Mustek ScanExpress 1200 USB

Mustek's higher-end scanner is unexciting, and was placed mid-table in most of our performance tests. Installation is easy – Mustek has written its own program to install the driver and bundled software automatically. In contrast to all of the other manufacturers' installation programs, however, this does not ask you if you want to install each of the individual applications. This cuts down slightly on installation time and may appeal to less experienced users.



However, more advanced users may be put off by having less choice of what gets put on their hard disk.

In common with the 600CU, the lid doesn't accommodate fatter targets. This slightly more expensive version actually takes more time to scan than the cheaper 600CU. Colour accuracy is nothing special and its best feature is text resolution. The attempt to make the TWAIN software more

user-friendly has proven counter-productive as it takes more time to change some of the advanced settings than in other programs. Overall, the Mustek is eclipsed by rivals.

PCW DETAILS

★★★★

Price £69.99 (£59.57 ex VAT)

Contact 0870 013 2017

www.mustek-europe.com

Good points Good text resolution

Bad points Slow scan speed and mediocre image quality

Conclusion An average scanner that can't compete in this company

Primax Colorado USB 9600

The cheaper of the two Primax scanners actually fared slightly better in our performance tests than its more expensive cousin. Despite this, however, it failed to impress us.

Build quality was good, with a lid that accommodated our magazine. Mounted on the chassis is a 'go' button, offering faster scanning straight to your email, fax, printer or image program. Installation went without a hitch, but problems did arise with the bundled software. An attempt had been made to make



it more user-friendly by using a highly graphical interface that broke the scan settings down into stages. This is fine for the novice, but more advanced users may find the increased time it takes to get the scan set up and running frustrating. One of the final stages involves choosing where the scan will go. We wanted to save it to our hard drive, but the program refused to save it in the

folder we selected, dumping it in the root instead. The Colorado 9600 was fairly fast, coming fourth in our speed tests. For the money, it looks attractive, but the superior Black Widow costs £10 less.

PCW DETAILS

★★★★

Price £99 (£84.26 ex VAT)

Contact 01235 546 020

www.primax.nl

Good points One-touch scan button

Bad points Let down by disappointing performance

Conclusion An average unit that's eclipsed by the better models on test

Primax Colorado USB 19200

The more expensive of the two Primax scanners has a higher optical resolution than its cheaper sibling, but this did not have a significant impact on our performance results.

Primax ships the same CD with

PCW DETAILS

★

Price £119 (£101.28 ex VAT)

Contact 01235 546 020

www.primax.nl

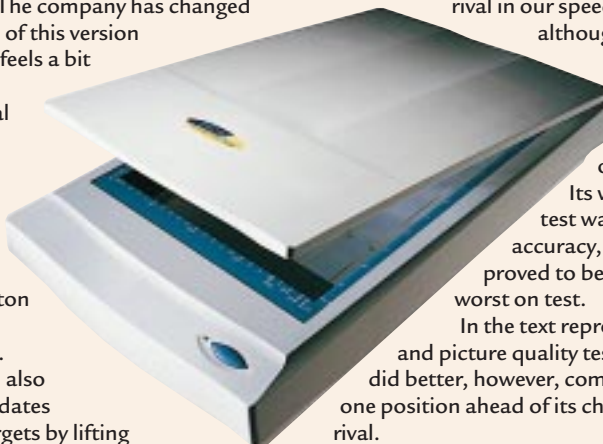
Good points A lid that adjusts to accommodate thicker media

Bad points Poor test results

Conclusion With cheaper and better alternatives, the 19200 is best avoided

both scanners, and we encountered similar problems with the software supplied. The company has changed the design of this version slightly: it feels a bit more substantial than the Primax Colorado USB 9600 and the one-touch button is more accessible.

The lid also accommodates thicker targets by lifting



to completely cover our magazine.

It was slower than its cheaper rival in our speed test, although it

was not one of the slowest overall.

Its worst test was colour accuracy, where it proved to be the worst on test.

In the text reproduction and picture quality tests it did better, however, coming one position ahead of its cheaper rival.

Umax 2000USB

Umax has a reputation for making good scanners, which is why we found this model to be something of a disappointment.

Set-up was easy – a program on the installation CD-ROM guides you through the various stages and



installs the appropriate drivers for you. The lid is fixed and rests on thicker media at an angle, rather than lying flush over the top. This does not make for the best image quality on this type of scan, and means that you physically have to press the target against the glass in order to get uniform exposure. This scanner excelled in one test, reproduction of text, but fell down on scan speed, being the second slowest scanner on test. The TWAIN software displays a time-consuming 'warming up' message after you click to scan the target, which accounts for approximately one-third of the scan time. Colour accuracy is reasonable

but not overly impressive, as is picture quality. The software bundle is good, with VistaScan! allowing you to choose where you want the output to go – to a file, an email program, a printer, a fax or an imaging program.

PCW DETAILS

★★★★

Price £104.58 (£89 ex VAT)

Contact 01344 871 329

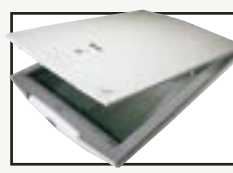
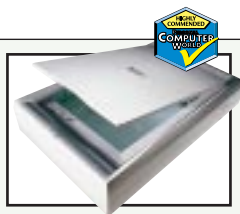
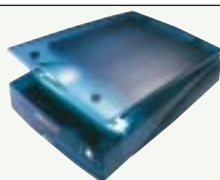
www.umax-europe.com

Good points Easy to set up

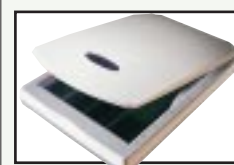
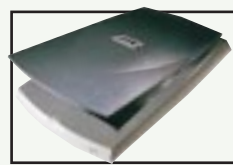
Bad points Slow scan speed

Conclusion A decent unit, but we expected more from Umax

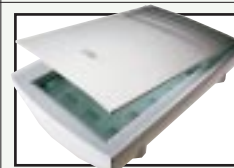
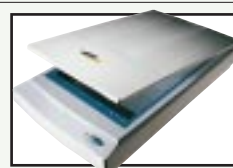
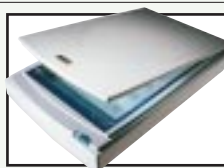
Table of features



MANUFACTURER	AGFA	BLACK WIDOW	CANON	EPSON
MODEL	SNAPSCAN 1212U	9636 USB	CANOSCAN FB620U	GT-7000 USB
Highest optical resolution	600dpi	600dpi	600dpi	600dpi
Highest interpolated resolution	9,600dpi	9,600dpi	2,400dpi	9600dpi
Colour depth	36bit	36bit	36bit	36bit
Max scanning area	A4	A4	A4	A4
Software	Page Keeper Caere Omnipage Scanwise	Presto! Suite	Ulead PhotoExpress 2.0 Caere's OmniPage LE 5.1 ScanGear Toolbox CS 2.0	Adobe Pagemill 3 Xerox Textbridge Classic Presto Page manager
Transparency option	X	X	X	✓
Dimensions (mm)	435 x 275 x 90	451 x 308 x 96	372 x 256 x 63	425 x 287 x 88
Price inc VAT (ex VAT)	£120 (£102.13)	£89 (75.74)	£139.83 (£119)	£179 (£152.34)
Contact	0181 231 4903	01324 825 999	0121 680 8062	0800 220 546
Web	www.agfa.co.uk	www.blackwidow.co.uk	www.canon.co.uk	www.epson.co.uk



MANUFACTURER	HEWLETT-PACKARD	MICROTEK	MICROTEK	MUSTEK
MODEL	SCANJET 4200C	SCANMAKER x6	PHANTOM C6	SCANEXPRESS 600CU
Highest optical resolution	600dpi	600dpi	600dpi	300dpi
Highest interpolated resolution	9,600dpi	9,600dpi	9,600dpi	9,600dpi
Colour depth	36bit	36bit	36bit	36bit
Max scanning area	A4	A4	A4	A4
Software	Adobe Photodeluxe 3 HP Precision Scan HP colour copy utility	Adobe Photodeluxe Ulead Photoimpact	Adobe Photodeluxe Ulead Photoimpact	Photoexpress 2 Textbridge Pro 8
Transparency option	X	✓	X	X
Dimensions (mm)	454 x 206 x 93	440 x 292 x 81	437 x 290 x 43	404 x 257 x 130
Price inc VAT (ex VAT)	£159.80 (£136)	£139.83 (£119)	£92.83 (£79)	£59.99 (£51.05)
Contact	0990 47 47 47	01908 317 797	01908 317 797	0870 013 2017
Web	www.hp.com/uk	www.microtek.com	www.microtek.com	www.mustek-europe.com



MANUFACTURER	MUSTEK	PRIMAX	PRIMAX	UMAX
MODEL	SCANEXPRESS 1200 USB	COLORADO USB 9600	COLORADO USB 19200	2000USB
Highest optical resolution	600dpi	300dpi	600dpi	600dpi
Highest interpolated resolution	19,200dpi	9,600dpi	19,200dpi	9,600dpi
Colour depth	36bit	36bit	36bit	36bit
Max. scanning area	A4	A4	A4	A4
Software	Photoexpress 2 Textbridge Pro 8	MGI Photouite 8.06 PrimaPAGE 98	MGI Photouite 8.06 PrimaPAGE 98	Adobe PhotoDeluxe PrestoPageManager OmniPage LE
Transparency option	✓	X	X	X
Dimensions (mm)	470 x 308 x 102	435 x 285 x 82	480 x 280 x 85	467 x 309 x 99
Price inc VAT (ex VAT)	£69.99 (£59.57)	£99 (£84.26)	£119 (£101.28)	£104.58 (£89)
Contact	0870 013 2017	01235 546 020	01235 546 020	01344 871 329
Web	www.mustek-europe.com	www.primax.nl	www.primax.nl	www.umax.co.uk

PCW Labs Report



COLOUR ACCURACY RANKING

1	MICROTEK SCANMAKER X6
2	AGFA SNAPSCAN 1212U
3	BLACK WIDOW 9636 USB
3	EPSON GT-7000 USB
5	MICROTEK PHANTOM C6
6	UMAX 2000USB
7	MUSTEK SCANEXPRESS 1200 USB
7	HP SCANJET 4200C
9	MUSTEK SCANEXPRESS 600CU
10	PRIMAX COLORADO USB 9600
11	CANON CANOSCAN FB620U
12	PRIMAX COLORADO USB 19200

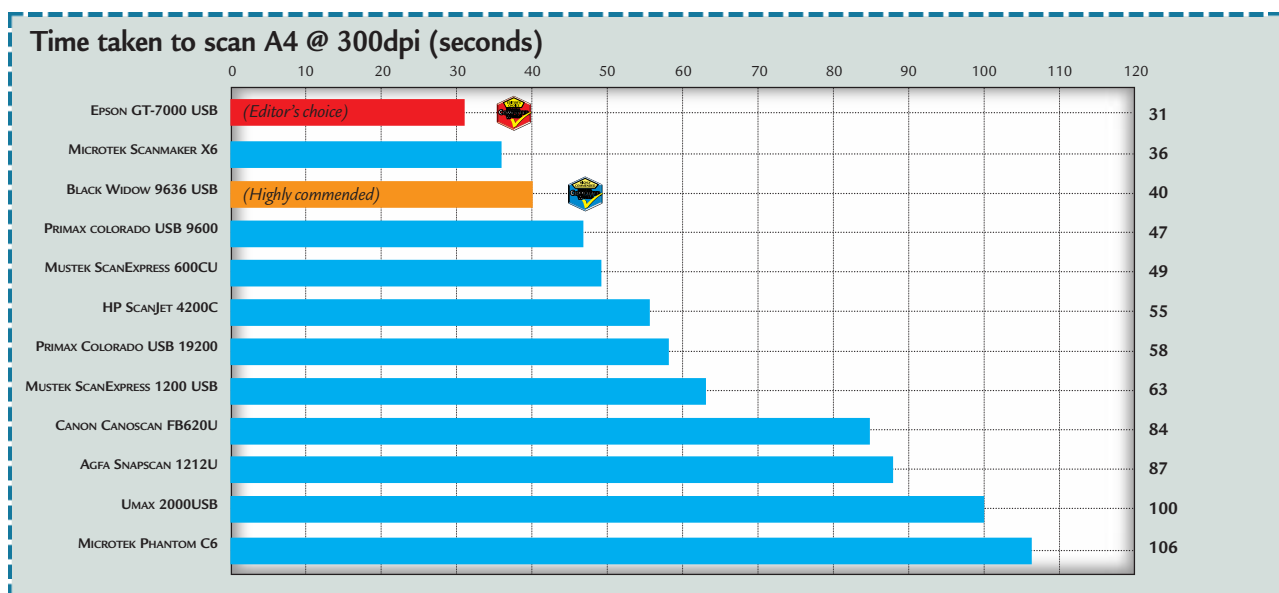
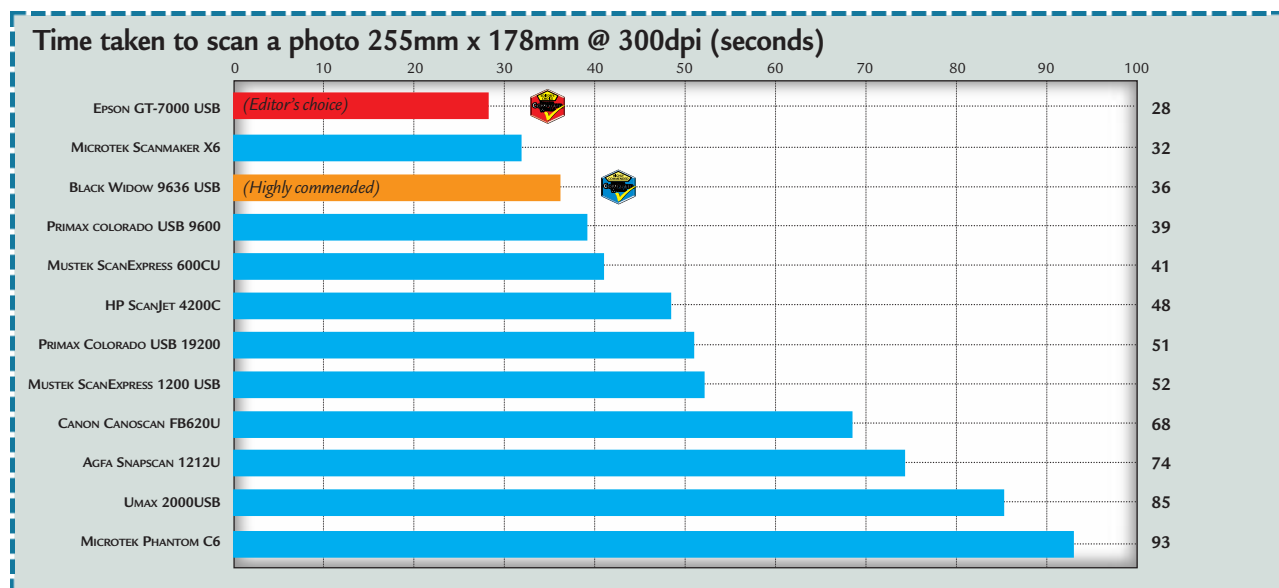
TEXT QUALITY RANKING

1	UMAX 2000USB
2	EPSON GT-7000 USB
3	CANON CANOSCAN FB620U
4	MUSTEK SCANEXPRESS 1200 USB
5	MICROTEK SCANMAKER X6
6	MICROTEK PHANTOM C6
7	BLACK WIDOW 9636 USB
8	AGFA SNAPSCAN 1212U
9	PRIMAX COLORADO USB 19200
10	PRIMAX COLORADO USB 9600
11	MUSTEK SCANEXPRESS 600CU
12	HP SCANJET 4200C

PICTURE QUALITY RANKING

1	AGFA SNAPSCAN 1212U
2	EPSON GT-7000 USB
3	HP SCANJET 4200C
4	BLACK WIDOW 9636 USB
5	MICROTEK PHANTOM C6
6	MICROTEK SCANMAKER X6
7	CANON CANOSCAN FB620U
8	UMAX 2000USB
9	PRIMAX COLORADO USB 19200
10	PRIMAX COLORADO USB 9600
11	MUSTEK SCANEXPRESS 1200 USB
12	MUSTEK SCANEXPRESS 600CU

For all results 1 = best performer in category



Editor's Choice

PC peripherals have generally fallen dramatically in price over the last few years, and scanners are no exception. Technological and production improvements have meant that you now get a much higher quality scan for your money, and USB connectivity makes installation easy, even for the PC novice. Given the

restarting the system. When evaluating these units we didn't just look at our test results, but considered them in addition to other factors such as ease of installation, how easy the TWAIN software was to use, the quality of the bundled software and, of course, the price. Most of the manufacturers appeared to have done their homework and have designed the

TWAIN software extremely well, making it very easy for the novice to use, while allowing the more advanced user to change the more detailed options.

offers superb build quality and a great software package, helping it rise above its peers to win the award.

➔ **The highly commended award** goes to the Black Widow 9636 USB. A strong performer in our tests overall (equalling the Epson on colour accuracy), this unit features very easy to use software, together with the added functionality of a batch scan feature to complement its high quality. Black Widow has put a lot of thought into the design; it certainly does not suffer from the flimsy feel that afflicted some of the other models, and the lid coped with our thick magazine easily, with the hinge lifting to close flush on top of it. But most impressive is the price, making it attractive in every respect.

▲ **EPSON'S GT-7000 USB** WAS THE MOST CONSISTENT PERFORMER IN THE TESTS

low price, we were generally impressed by most of the scanners here, with many producing results that would be more than acceptable to the average user. Although we did encounter a few installation problems, most of them were simply annoying quirks that could easily be overcome by most users. Once the drivers were loaded, all the scanners were true plug-and-play and could be connected and disconnected without

➔ The Editor's Choice award

this month goes to the Epson GT-7000 USB. As our results show, it was the most consistent performer in the tests, with fast scan times, good colour accuracy, excellent text reproduction and picture quality. This is one of the more expensive scanners, but we feel that compared to the others here, the performance and build quality justifies the extra cost. The Epson



▲ **THE BLACK WIDOW 9636 USB:** STRONG PERFORMER AT A VERY ATTRACTIVE PRICE

How we did the tests



To put the scanners through their paces

we scanned in three images at 300dpi – a special test target from HP with a mixture of different colours and text on it, a very high-quality photo and the September 1999 cover of PCW. We chose 300dpi as the test resolution since it was the highest optical resolution that all of the scanners could manage, thus guaranteeing a level playing field. None of the default settings were changed, bar the resolution, in order to maintain out-of-the-box testing. The time taken to scan each image was recorded. We then sent the HP target off to a

professional imaging bureau that provided us with a reference image using a high-quality drum scanner. To check the colour accuracy we employed Adobe PhotoShop to compare the cyan, magenta and yellow levels present in each of the relevant samples on the HP scan target with the drum scan and rated the scanners in order of one to 12.

Finally, we judged the quality of text and photo resolution from each of the 12 scanners, again rating them from one to 12. The same machine was used for all the scanners with all of the previous drivers removed before a new scanner was set up.



On display

Although the lifespan of most components is annoyingly short, a good monitor can outlast two or more PCs. But if you're now in need of a new **17in or 19in CRT display** then read on...

With so much attention given to the components that lurk inside a PC, one of the most important parts of the system is often overlooked.

The monitor is of paramount importance to the PC user, it's a window through which everything is viewed. Consequently, if a poor monitor is married up with a high-specification system, it is liable to ruin the overall effect.

In addition, even though the lifespan of most PC components is very short, the life expectancy of a monitor can be several years. A good monitor, therefore, can outlast two or even three PCs.

Even though monitor technology

doesn't move very fast, it does move, and all the units on test use the latest super-flat CRT technology to provide the best possible image quality.

To test each of the units we connected them to a Matrox Millennium G400 graphics card, running at a resolution of 1,024 x 768.

DisplayMate for Windows from Sonera Technologies was used to test the image quality of each monitor. DisplayMate includes over 100 test images that highlight display problems such as focus, geometry and colour registration.

So, if you're looking for a 17in or 19in display, cast your eye over six of the latest and greatest CRT monitors available.

Contents

- 204** Iiyama Vision Master Pro 410
- LG Flatron 795FT Plus
- 207** Mitsubishi DiamondPro 710
- Samsung Syncmaster 700IFT
- 208** Sony GDM-F400T9
- Taxan Ergovision 980
- 213** Editor's Choice

• Tested and reviewed by Riyad Emeran

Ratings

- ★★★★★ **Highly recommended**
- ★★★★ **Great buy**
- ★★★ **Good buy**
- ★★ **Shop around**
- ★ **Not recommended**

Iiyama Vision Master Pro 410

We were expecting Iiyama's top of the range 17in unit to continue the tradition of high-quality monitors. Unfortunately, this latest display showed severe power regulation problems. If a window with a lot of white space is opened, the entire screen contracts, it then expands again once the window is closed. Of course power regulation isn't the worst problem that a monitor can suffer from, and the Vision Master Pro 410 still has a lot going for it.

The tube is a Mitsubishi 17in Natural Flat model, so it is very flat



and shows little sign of reflection. Being an aperture grille tube, the two damping wires are evident at corresponding distances from the top and bottom of the display.

Horizontal colour registration was as near to perfect as you're likely to see, but vertical colour registration was slightly out.

Bizarrely, however, there was only a control to adjust horizontal colour convergence so this problem could not be rectified.

The look of the monitor is the same as all Iiyama designs. The lines are clean and the fascia is uncluttered, adorned by only three buttons. Unfortunately, this minimal effect leaves the user with a convoluted, nested menu system in the OSD. Even though many of the controls will not need to be accessed once the monitor is set up, a more friendly approach would have been better.

At the rear of the unit all the connectors are well recessed making it easy to place the monitor in any position. There are BNC and

D-SUB connectors, but you'll have to navigate the OSD to switch between them.

Image quality is sharp and well focused and the price is attractive, but you'll have to see past the power regulation problem and poor OSD to appreciate the good points.

PCW DETAILS

Price £316.07 (£269 ex VAT)

Contact Iiyama

www.iiyama.co.uk

Good points Very flat screen, good value.

Bad points Very bad power regulation.

Conclusion A good, but slightly flawed 17in monitor at a reasonable price.

Image Quality	★★★★
Features	★★★★
Value for Money	★★★★
Overall Rating	★★★★

LG Flatron 795FT Plus

There was a time when LG monitors were considered the budget alternative. Now, however, the Korea-based company produces some first-rate displays. This super flat tube design was actually developed by Zenith, but LG bought the idea and marketed it as the Flatron range. The Flatron is based on the aperture grille tube approach, but it doesn't need the two damping wires that put some potential buyers off the technology. The screen is very flat, almost to the point that it looks concave. This is because the



Flatron design uses completely flat glass for both of the CRT surfaces, whereas the FD and NF designs have a slight curve on the internal surface to offset the diffraction.

This is one of the best looking monitors we've seen. The bezel is thin enough not to detract from the screen and the fascia is uncluttered. The OSD is controlled by six touch-sensitive buttons that enhance, rather than ruin, the unit's appearance. There's also an impressive array of controls, including an adjustment for colour purity.

Surprisingly, there are no BNC connectors at the rear, but there is a USB hub. Image quality was good, but not outstanding. The Flatron had some problems with vertical colour registration that couldn't be corrected using the colour convergence adjustments. It also had trouble in the power regulation department, although this won't cause a major problem for most users. **You can push the Flatron up to 1,600 x 1,200 and still receive an**

acceptable 75Hz refresh rate.

Although 1,024 x 768 will probably be the resolution of choice, where it will easily manage 85Hz.

LG can't quite compete with the tubes that Sony and Mitsubishi have to offer, and at £290 ex VAT it's not the cheapest on test either.

PCW DETAILS

Price £340.75 (£290 ex VAT)

Contact LG 0870 6075544

www.lgelectronics.co.uk

Good points Excellent OSD controls.

Bad points No BNC connectors.

Conclusion Bright, vibrant colours and no damping wires, but a bit pricey.

Image Quality	★★★★
Features	★★★★
Value for Money	★★★★★
Overall Rating	★★★★

Mitsubishi Diamond Pro 710

Like the Iiyama Vision Master Pro 410, the Mitsubishi Diamond Pro 710 uses a 17in Natural Flat tube. Just like the Iiyama, the image is sharp and well focused, while the colours are bright and vibrant. Unfortunately though, the Diamond Pro 710 also suffers from power regulation problems, although nowhere near as bad as the Iiyama.

However, the Diamond Pro 710 has a few other problems. One of the major issues is the captive video cable. With the cable hard-wired



into the monitor, you'll have to send the whole unit back if the cable develops a problem. There's also a resultant lack of BNC connectors, so you can't connect two machines to the monitor and switch between them. Even though the LG also lacked BNC connectors, it still had a built-in USB hub, something that's also missing from this display.

The front fascia is adorned with a power button and five adjustment buttons. The OSD isn't what you'd call intuitive but it's adequate once you get used to it. One of the buttons is labelled FPM (Fine Picture Mode).

Turning FPM on allegedly improves camera-type image renderings, although all it seemed to do was decrease the image intensity when activated.

Horizontal colour registration was fairly good, but on the vertical scale it left a lot to be desired. This problem was amplified by a complete lack of colour convergence controls in the OSD.

However, the Diamond Pro excelled in colour purity and it showed no signs of any problems when deintensifying the CRT guns.

As 17in monitors go, this Mitsubishi has a lot going for it, but the captive cable and sparse OSD let it down.

PCW DETAILS

Price £327.82 (£279 ex VAT)

Contact Mitsubishi 01701 278 684
www.mitsubishi.co.uk

Good points Decent image quality and a quality tube.

Bad points Captive cable, sparse controls.

Conclusion A good tube is let down by the captive cable and disappointing OSD.

Image Quality	★★★★
Features	★★
Value for Money	★★★
Overall Rating	★★★

Samsung SyncMaster 700IFT

In the quest for a flatter CRT screen, Samsung has gone its own way, ignoring both Sony and Mitsubishi's aperture grille tubes. Samsung has developed the DynaFlat tube, based on shadow mask technology rather than aperture grille. Some users still prefer shadow mask units since they don't have the damping wires present in aperture grille monitors. That said, the colours aren't quite as vibrant on a shadow mask unit, so it's a give and take situation.

The screen does look flat on the



Samsung, but not quite as flat as the FD or NF tubes from Sony and Mitsubishi respectively. This 17in model is attractively styled, but the connectors at the rear are not recessed, making it impossible to place the monitor flush against a wall or office partition. There are both D-SUB and BNC connectors at the rear, although you have to navigate the OSD to switch between the two, limiting their usefulness.

All the OSD controls are hidden on an extendable panel in the fascia. Unfortunately, the controls are not very extensive, with the lack of colour convergence controls being the most alarming. That said, the colour registration was spot on. Contrast and brightness adjustment is handled by two analog wheels under the fascia, but there is no corresponding on-screen indicator for these controls.

Generally, image quality is good, but not as impressive as the offerings from Sony and Taxan. You can push the resolution up to 1,600

x 1,200 with a refresh rate of 70Hz. However, most users are likely to work at 1,024 x 768 or possibly 1,280 x 1,024, at which you'll receive a refresh rate of 85Hz.

This is a good 17in monitor, although at £316 ex VAT it doesn't offer exceptional value for money.

PCW DETAILS

Price £371.30 (316 ex VAT)

Contact Samsung
www.samsungelectronics.co.uk

Good points Good looks and great colour registration.

Bad points Limited adjustment controls.

Conclusion A competent 17in monitor, but relatively expensive.

Image Quality	★★★★
Features	★★★
Value for Money	★★★
Overall Rating	★★★

Sony GDM-F400T9

Sony invented the aperture grille CRT, naming its revolutionary design the Trinitron. Sony's latest 19in unit uses the new FD Trinitron tube, which has an almost completely flat screen surface.

Like most Sony products, the design of the unit itself is excellent. The lines are smooth and the bezel surrounding the screen doesn't dwarf the display.

On the front you'll find an ASC button to automatically resize the image to fill the screen, and next to



this is a button to switch between D-SUB and BNC connection.

The OSD is controlled via a small joystick. Pressing the joystick in the middle activates the OSD, then it can be manipulated in all four directions to make display adjustments. This is one of the simplest and most intuitive methods of adjustment that we've seen. Moving the joystick in any of the four directions without activating the OSD will adjust the contrast and brightness.

At the rear, the D-SUB and BNC connectors have been mounted vertically to allow the unit to be placed against a wall, while at the side is a USB hub.

Image quality is nothing short of amazing with this latest Sony screen. The demanding Display Mate tests were no match for the GDM-F400T9. Focus was perfect across the entire surface, while colour purity was superb. Colour registration was also no problem, helped by the fact that the OSD had adjustment controls for horizontal,



vertical, top and bottom colour convergence. Even the moiré patterns were no problem, which is surprising for a sharp aperture grille display.

Sony has produced the ultimate 19in CRT display. If you can afford the high price tag, you won't be disappointed.

PCW DETAILS

Price £821.32 (£699 ex VAT)

Contact Sony 0990 424424

www.sony.co.uk

Good points Unparalleled image quality.

Bad points Expensive.

Conclusion The best CRT we've ever seen, but you'll pay dearly for it.

Image Quality	★★★★★
Features	★★★★★
Value for Money	★★★
Overall Rating	★★★★★

Taxan Ergovision 980

Over the last couple of years Taxan has become a major force in the monitor market, producing high-quality products at a reasonable price.

The Ergovision 980 uses the Mitsubishi Natural Flat 19in aperture grille tube, which has already become popular in both the Mitsubishi Diamond Pro 900u and the Iiyama Vision Master Pro 450. However, to Taxan's credit, it's made better use of the tube than both its competitors.

One of the gripes with the Mitsubishi 900u is its confusing OSD, that makes it very difficult to

set up the monitor. Taxan, however, has incorporated a completely different OSD, making it far simpler to adjust the display, while retaining the comprehensive array of adjustment controls.

Taxan's improved design is also evident in the USB hub integration. Instead of mounting the USB connectors at the rear of the unit, Taxan has placed two on either side of the monitor base, making it easy to connect devices no matter where they are situated.

Image quality is superb and, with the exception of the Sony, the Taxan turned in the best performance. Horizontal and vertical line resolution proved exemplary, while colour purity and registration was also very impressive. The only area that the 980 had trouble with was moiré, but that's often a problem for very sharp displays.

At the rear are both BNC and D-SUB connectors, all of which are recessed enough to place the unit against a wall or partition.



There's also a button on the front fascia to switch between BNC and D-SUB, making it easy to connect two PCs at once.

Even though the Sony model is of a slightly higher quality, the Ergovision 980 is £200 cheaper, making it a very attractive prospect.

PCW DETAILS

Price £556.95 (£474 ex VAT)

Contact Taxan 01344 484646

www.taxan.co.uk

Good points Excellent image quality and design

Bad points Slight problem handling moiré.

Conclusion An excellent 19in unit at a great price.

Image Quality	★★★★★
Features	★★★★★
Value for Money	★★★★★
Overall Rating	★★★★★

Editor's Choice

The monitor market has never been so cut-throat as it is now. A few years ago a good 17in monitor could cost you as much as a whole PC; these days it's the minimum size you should settle for with a new purchase. One reason the price of decent CRT screens has dropped so significantly is the growing popularity for LCD flat panel displays. LCD screens have become more affordable of late and subsequently the pricing in the CRT market has become even more aggressive. The other knock-on effect of the increasing popularity of LCD screens is the desire for flatter CRT displays. This is why we only looked at the flattest CRT monitors available.

There were four different technologies on show in this group test: Sony's FD Trinitron, Mitsubishi's NF Diamondtron, LG's Flatron and Samsung's DynaFlat tube. Unsurprisingly, the well-established technologies from Sony and Mitsubishi proved to be the most impressive in the test. However, both the LG and Samsung screens didn't have the damping wires that are synonymous with Trinitron and Diamondtron screens, which could gain them



▲ **IN THE GDM-F400T9, SONY HAS PRODUCED A NEAR PERFECT 19IN CRT DISPLAY, BUT IT COMES AT A PRICE**

favour with some users. Even though we looked at both 17in and 19in units, it was the two larger displays that really shone through. Although the 17in models were good, they didn't quite sport the same quality or array of features as their larger siblings. That said, the Iiyama Vision Master Pro 410 offered impressive value at only £269 ex VAT, but it had a few problems in the image quality department.

➤ **The Editor's Choice** goes to the **Taxan Ergovision 980**. Based on the 19in Mitsubishi Natural Flat Diamondtron tube, Taxan's latest addition sports superb image quality in both the geometric and colour departments. The styling is smooth and the array of OSD controls is intuitive and comprehensive.

▲ **THE TAXAN ERGOVISION 980 ONLY FELL DOWN ON IMAGE QUALITY, BUT THE PRICE IS FAIR**

There's a USB hub built-in with two ports on the left and right side of the base, making it easy to connect peripherals. Even though the Taxan couldn't quite match the image quality of the Sony F400, it grabbed the Editor's Choice due to its reasonable street price of £474 ex VAT.

➤ **The highly commended award** goes to the other 19in display on test, the **Sony GDM-F400T9**. This Sony monitor came as close to being the perfect CRT as possible. The image quality was better than anything we have ever seen, and the only thing that held it back from the Editor's Choice award was its steep price. At £699 ex VAT, the GDM-F400T9 is anything but cheap. But if you're looking for the best image quality available you're going to have to pay for it.

Besides the image quality, the Sony sports the best OSD control method, in the shape of an easy to manipulate joystick. It also has the largest array of adjustment controls we've ever seen, including four controls for colour convergence. For most users the price of this monitor will appear prohibitive, but if quality is more important than money to you, take a close look at the GDM-F400T9.

