

Speed is all very well but there are some applications, such as web design, where there are more important points to consider than how fast your computer is. We challenged 10 suppliers to come up with a package aimed at web developers – read on to see how they fared.

Although here at *PCW* we tend to get excited – possibly a little too excited – by the latest, largest and fastest hardware around, there's more to life and more to PCs than a mere numbers game. A computer isn't much good unless you do something with it, so this month the emphasis has come off absolute speed, and we've asked manufacturers to come up with machines to cope with a specific and increasingly popular task: website development.

Anyone who's tried developing HTML pages will know that while the basics are easy, things rapidly start to get complex and time-consuming as soon as any degree of sophistication is required. Consequently, the emphasis here is on software that makes the often-tedious task of designing and maintaining a site as trouble-free as possible.

Web design is a software and brain-dependent activity, not something that ordinarily requires massive amounts of hardware power. So we placed a limit of £1,500 on the price and stipulated only that machines have a sensible minimum basic spec, plus some form of backup, Internet connectivity and, of course, HTML and image-editing software. That said, however, where a vendor managed to provide a machine that was sensitive to the needs of the task at hand as well as featuring fast hardware, we rewarded them appropriately. As you'll see, most manufacturers rose to the challenge with considerable aplomb, but others were apparently unwilling or unable to provide any degree of customisation and sent us machines built to a standard specification. Draw your own conclusions. What we can say is that although the results were varied, the best of these machines show that, despite the hundreds of PCs that pass through *PCW*'s labs every year, manufacturers continue to surprise us with the quality and value for money that can be had if you're prepared to shop around.

PHOTOGRAPH DAVID WHYTE

Web

contents

- 168** Carrera Octan M800
- 169** Dell Dimension XPS T800
Elonex Prosentia 4000
- 172** evesham.com Webmaster
Gateway Performance 700
- 176** Mesh Matrix Web 750 Developer
Panrix Tekstation 750
- 178** Simply Systemax Athlon
750 R Pro
Viglen HomePro P3-700PWr
- 180** Dreamweaver versus FrontPage
- 181** Watford Aries Perfecta 7500
ISDN and the need for speed
- 184** Performance results
- 186** How we did the tests
- 190** Features table
- 193** Editor's Choice

• PCs tested and reviewed by David Fearon

in focus

Carrera Octan M800



THIS IS THE LATEST in Carrera's long-running Octan range. The most striking feature of this system is its 21in Iiyama Vision Master Pro 502 monitor, the only 21in unit in this test. The screen doesn't use the latest tube technology, but has a standard Diamondtron aperture-grille tube which is flat in the vertical direction rather than the newer Diamondtron NF variety with completely flat screens. That said, it's a very good quality unit, and the large viewable area lets you run at a resolution of 1,600 x 1,200 without

straining your eyes. The monitor is driven by a Matrox G400 DualHead graphics card. Its superior 2D image quality makes it the best choice for a PC that will be used for 2D applications.

Processor speed is in the upper range of this group, with an 800MHz Athlon processor providing power aplenty, complemented by 256MB of PC100

SDRAM on a single DIMM, leaving two sockets free for upgrades. Hard disk size isn't hugely impressive in this company: the 20GB Quantum Fireball is the minimum you should expect for a machine at this level, although in real terms you'll have a job filling it unless you start doing video capture. Backup is provided by a Matshita CD-RW drive.

Inside the tower case the cables are neatly routed, giving full access to RAM and CPU. The unused AMR (audio modem riser) backplane slot has been

occupied by two extra USB connectors.

The only really disappointing aspect is the software bundle – which is non-existent. The only web software you'll get is Microsoft's free FrontPage Express, which is woefully inadequate for any serious development work. Input devices aren't too inspiring either – the cheaper variety of Key Tronic keyboard with a dull, lifeless feel to the keys, and a bog-standard two-button Microsoft Intellimouse. There is, however, a PCI ISDN adaptor.

The Octan M800 is a good all-purpose PC, but to turn it into a serious web development tool you'll need to spend extra cash on software, and probably a more responsive keyboard.

DETAILS

PRICE £1,749 (1,489 ex VAT)

CONTACT Carrera 020 8307 2800

www.carrera.co.uk

PROS Great 21in monitor; good basic machine

CONS No decent software

OVERALL A good base platform, but not as well-tailored as the best of this group

FEATURES	★★★
PERFORMANCE	★★★★★
VALUE FOR MONEY	★★★★★
OVERALL RATING	★★★★★

Dell Dimension XPS T800



which should easily last 18 months to two years, especially if you regularly archive your projects via the Sony CRX140E CD-RW.

The all-important monitor is a Dell-rebadged Sony unit, with a 19in FD Trinitron flat-screen tube. It's a great display, with the characteristic sharpness and vibrancy of Trinitron screens making it

DELL'S ENTRANT comes in the familiar but professional looking tower case. As the name suggests, the XPS T800 sports an 800MHz processor, in this case an Intel Pentium III. It looks like 256MB has now supplanted 128MB as the standard quantity of RAM for a mid-range machine, since, like most of these systems, the Dell has 256MB of PC100 SDRAM on a single DIMM. Bolstering the fast processor and RAM is a Maxtor Diamond Plus hard drive, providing an exceedingly healthy 40GB of storage

easy to use during all-night JavaScript coding sessions. Running at a resolution of 1,280 x 1,024 at 85Hz is no problem.

Internal construction is disappointing with internal EIDE and power cables not routed neatly, although access to the CPU and two free DIMM sockets isn't restricted. The Dell-badged motherboard provides a shared PCI/ISA expansion slot, which could be a useful home for an old network interface card.

The Dell QuietKey keyboard is among the best, with a responsive,

tactile action. A Microsoft three-button Intellimouse provides good control.

The 800MHz PIII powers the machine to the highest SYSmark score, and the company's own 32MB GeForce 256 graphics card also gives it the third highest 3DMark result, although out-and-out speed isn't a particularly important factor for these machines. A DualHead Matrox card would be more appropriate here.

Although we asked for PCs geared toward web development, Dell provided only Microsoft Office 2000 Small Business Edition – a good package, but not relevant for the purpose since it doesn't include FrontPage 2000. As with the Carrera, this means a substantial extra outlay to get up and running.

DETAILS

PRICE £1,761 (£1,499 ex VAT)

CONTACT Dell 0870 152 4850

www.dell.co.uk

PROS Fine monitor; good keyboard

CONS No HTML or image-editing software

OVERALL A good machine, but it doesn't conform to what we asked for

FEATURES	★★★★
PERFORMANCE	★★★★★
VALUE FOR MONEY	★★★★
OVERALL RATING	★★★★

Elonex Prosentia 4000



The presence of Fireworks and Dreamweaver has led to compromises elsewhere though. The Prosentia comes with a 19in Elonex-badged monitor, but it's fitted with a shadow-mask tube, resulting in a curved screen and a less than pin-sharp image. And Elonex has eschewed the now near-standard CD-RW drive in favour of a cheaper

ELONEX APPRECIATES that as well as a standalone Internet connection, a web development machine is likely to be attached to a server on the local LAN to test pages in anger via a local server. Consequently the Prosentia has an Intel 10/100BaseTX NIC fitted as well as a BT Speedway ISDN adaptor. Elonex has also included Macromedia's Dreamweaver 3 HTML creation package and Fireworks web graphics app. These cost several hundred pounds separately, so they're an excellent inclusion.

internal EIDE Iomega Zip 250. This is a worthwhile device to have, but is neither as cheap to run (Zip media are far more expensive than blank CDRs), nor as portable, since other machines must also sport Zip 250 drives to be able to read the media. It is a much faster medium for quick on-the-fly running backups though.

Processor speed is middle of the range, although the 700MHz Pentium III is still quick enough. A full 256MB of RAM ensures that you can run several

apps at once without the system paging to the hard drive excessively.

If you need some relief from your work, the Hercules 3D Prophet DDR DVI card will provide the goods for 3D games, but the extra cost could have gone towards a CD-RW.

The Prosentia's keyboard is a flimsy-feeling affair that, with its dull key action, won't make long coding sessions very rewarding. A three-button Intellimouse partially compensates for the keyboard.

Overall the Prosentia is pretty well geared to web development, and so despite its flaws it's worth a look.

DETAILS

PRICE £1,761 (£1,499 ex VAT)

CONTACT 020 8452 4444

www.elonex.co.uk

PROS Very good software; ISDN adaptor and NIC

CONS Monitor less than ideal; no CD-RW capability

OVERALL Elonex is on the right lines with this machine, but it doesn't quite measure up to the best of the rest

FEATURES	★★★★
PERFORMANCE	★★★★★
VALUE FOR MONEY	★★★★
OVERALL RATING	★★★★

evesham.com Webmaster



acceptable but not super-sharp image quality and relatively poor power regulation, leading to irritating screen wobble when opening and closing windows. For a superior dual-monitor solution, look to the Mesh.

HoTMetaL Pro version 6 is the software supplied here. Also included is MGI's PhotoSuite III Platinum, but this

THIS IS THE FIRST of our machines this month to make use of the dual monitor facility offered by the Matrox G400 DualHead graphics card. It's supplied with both a main 19in monitor and a secondary 17in unit. For a web development platform this is an excellent idea: you're bound to be running more than one app simultaneously most of the time.

Less inspiring is the quality of the two displays, both Evesham-badged shadow-mask units. They give

isn't exactly Fireworks and is aimed more at the home computer hobbyist than web design professionals.

DVDs, CD-ROMs, CDRs and CD-RWs are all handled by the Samsung combo drive. This saves expansion space and leaves two 5.25in bays free, but makes it less convenient to directly copy a CD. A neat feature of the system's case is a screwless expansion backplane – cards are held in place by a slider mechanism. There's a shared PCI/ISA slot free as well as three dedicated PCIs.

The lefties among you will appreciate the three-button symmetrical Logitech mouse, which is as good as Microsoft's equivalent model, although the Ceratech keyboard has spongy, dull keys with no life in them.

Core components of the Webmaster consist of a 750MHz AMD Athlon processor, supported by 256MB of SDRAM on two 128MB DIMMs, and Maxtor Diamond Max hard drive offering 30GB of storage capacity – a good all-round base.

All credit to evesham.com for a good attempt, but there are other machines here that are more impressive.

DETAILS

PRICE £1,763 (£1,500 ex VAT)

CONTACT evesham.com 0800 038 0800
www.evesham.com

PROS Well thought out, with a good display solution and reasonable software

CONS Slightly higher quality monitors wouldn't have gone amiss; others have better software packages

OVERALL Once again evesham.com is on the ball, but this PC is outshone by the winners

FEATURES	★★★★
PERFORMANCE	★★★★
VALUE FOR MONEY	★★★★
OVERALL RATING	★★★★

Gateway Performance 700



integrated into the motherboard. The internal cabling is untidy, hindering access, and the six spare drive bays are wasted since there are only two power connectors free. The power supply itself is a mere 200w – most other systems here have 250w supplies, even though they have fewer spare bays. The single shared expansion slot is occupied by

GATEWAY HASN'T BEEN impressing us with its machines lately, an example being the 1GHz Select 1000 system in the July issue. Unfortunately, the Performance 700 continues the trend.

Outwardly impressive, coming as it does wrapped in an imposing full-tower case, the spell is broken as soon as you remove the side panel and look inside.

First, the 20GB Western Digital hard drive is attached to a Promise ATA66 PCI card, thus wasting a PCI slot on a feature other manufacturers have

the PCI modem, so to install an ISA device you'll have to mess about.

The 19in monitor, while large, is a shadow-mask unit that exhibits similar quality to that supplied with the Elonex system: adequate but leaving plenty of room for improvement. Instead of a CD-RW drive Gateway supplied an internal Zip 250 drive, an inferior solution for archiving or data distribution.

The news isn't all bad, but it's not earth-shatteringly good, either. The system's 700MHz Pentium III, while not

at the top of this group's speed range, is a capable enough processor, and the single 256MB PC100 SDRAM DIMM is a welcome inclusion. A GeForce 256 graphics card with 32MB of DDR (double data-rate) RAM, Boston Acoustics satellite/subwoofer speakers and Microsoft Works Suite 2000 are good features but fairly superfluous to the purpose. Given that others in this group manage 256MB, a faster processor, CD-RW drive, better display, construction and more relevant software for only marginally more cash, there's no way we can recommend this system.

DETAILS

PRICE £1,676 (£1,427 ex VAT)

CONTACT Gateway 0800 552 000
www.gateway.com/uk

PROS Reasonable basic specification

CONS The tower case is wasted by an inadequate power supply; construction is poorly thought out; the ATA66 card was a stop-gap solution that other vendors ceased to use months ago

OVERALL It's hard to believe that a company as large as Gateway can get it so wrong

FEATURES	★★★
PERFORMANCE	★★★★
VALUE FOR MONEY	★★★
OVERALL RATING	★★★

Mesh Matrix Web 750 Developer



IN STARK CONTRAST to the Gateway system, Mesh's machine is tailored to the task at hand. Mesh, like evesham.com, has included two monitors to take advantage of both outputs of the Matrox G400 DualHead graphics card. Mesh has gone one up on evesham.com, though, by supplying two of Mitsubishi's newest 17in flat-screen Diamond Pro 720s. Despite the fact that you get less screen area overall than the Evesham's 19in/17in setup, we much prefer this arrangement because of the

far superior image sharpness and vibrancy afforded by the Diamond Pro's Diamondtron NF flat-screen tube.

Mesh has gone for the most sensible optical drive solution – a Pioneer 10-speed DVD-ROM drive and a separate Matshita CD-RW drive, making disc-to-disc copies easy.

The Mesh has its down sides,

primarily the 128MB memory capacity rather than 256MB. Also slightly below par capacity-wise is the 20GB Western Digital Caviar hard drive. Neither of these are major drawbacks, however.

A look inside reveals excellent construction, with all cables neatly routed and clipped to the case, giving unimpeded access to the two free DIMM sockets and 750MHz Athlon CPU.

Software consists of full versions of Macromedia Dreamweaver 3 and Fireworks 3, plus a 30-day trial version

of Flash 4. The two monitors make learning the packages far easier, since you can have the online HTML tutorials maximised on one screen and the apps themselves on the other.

The Mesh is supplied with the current Rolls-Royce of rodents, Microsoft's silver Intellimouse Explorer, with optical movement sensing for cursor control unimpeded by rogue fluff. The Microsoft Internet keyboard provides better responsiveness than most, plus shortcut buttons for your email client, calculator and so on.

Mesh has put together an excellent system that is only just tipped to the post for the Editor's Choice award.

DETAILS

PRICE £1,761 (1,499 ex VAT)

CONTACT Mesh 020 8208 4706

www.meshcomputers.com

PROS An intelligently put together machine, ideally suited to web development

CONS Less memory than most; slightly smaller hard drive too

OVERALL An excellent system that deserves your attention

FEATURES	★★★★★
PERFORMANCE	★★★★★
VALUE FOR MONEY	★★★★★
OVERALL RATING	★★★★★



Panrix Tekstation 750



PANRIX'S ENTRANT this month is basically well-specified, although there are a couple of quirks. The 750MHz AMD Athlon provides the processing grunt, while a 30GB Maxtor Diamond Max Plus hard drive delivers plenty of storage speed and capacity.

The system only has 128MB of PC100 SDRAM, in contrast to the majority in this test, which sport 256MB. And while the system's Ricoh CD-RW drive is welcome, there's a glaring omission – it won't read DVDs,

and there's no standalone DVD-ROM drive. This is an unforgivable slip given that this machine is intended for developers who are likely to need access to up-to-date forms of media.

Like Carrera, the extra USB connector on the motherboard has been used to good effect, with two extra ports occupying the backplane position of the

redundant AMR slot. Audio is from the chipset integrated onto the motherboard.

Graphics are handled by a Diamond Viper II graphics card with S3 Savage 2000 chipset. This provides neither the dual-monitor features and 2D image quality of Matrox solutions, nor the 3D performance of nVidia-based cards, so it's not the choice we would have made. The Viper drives a 19in Hansol 900P shadow-mask monitor: although Hansol monitors are inexpensive, we were impressed by the quality of the unit,

which gives the sharpest display of the 19in shadow-mask monitors in this group, although it can't compete with aperture-grille units. Instead of a modem, Panrix has installed a BT Speedway ISDN adaptor, a good choice given the reduced cost of ISDN at the moment, but soon to be superseded by ADSL.

The important question of bundled software is neatly answered by Dreamweaver 3 and Fireworks 3, so no complaints whatsoever on that front.

The Tekstation is £100 cheaper than the best of this month's bunch, but the lack of a DVD drive, average graphics card and low complement of RAM puts it out of the running for an award.

DETAILS

PRICE £1,644 (£1,399 ex VAT)

CONTACT Panrix 01132 444 958

www.panrix.com

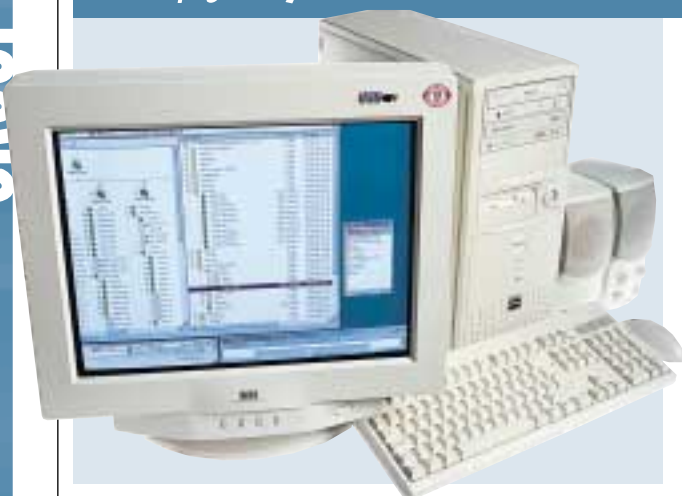
PROS Ideal software; reasonable monitor; the cheapest machine here

CONS No DVD drive; less than sparkling graphics card and minimum acceptable RAM

OVERALL The Tekstation doesn't quite hit the sweet spot this month

FEATURES	★★★★
PERFORMANCE	★★★★
VALUE FOR MONEY	★★★★
OVERALL RATING	★★★★

Simply Systemax Athlon 750 R Pro



SIMPLY COMPUTERS' own-brand PCs have managed to establish themselves quite firmly in a fairly short time frame, and the 750 R Pro does nothing to disgrace the name.

Helping the 750MHz Athlon CPU is a full 256MB of PC133 SDRAM, the only machine this month to sport this faster variety. It's also got an ISDN TA for Internet connection.

Occupying the fascia of the system are a Ricoh Combo DVD/CD-RW drive and a Creative CD-ROM drive for disc-

to-disc copies. The Creative drive is a CD5220 52-speed unit. Fast CD-ROM drives can be awfully noisy, but a cunning Turbo button means it'll only try to go at full pelt when you request it.

The system's most obvious feature is its monitor: a CTX PR960F with 19in FD Trinitron tube. This is a superb display, which won a

Recommended award in the April issue. Simply has installed the USB control software, allowing you to set up the display via Windows, much more convenient than hunting through the on-screen menu system, good though it is. The presence of the display's USB hub means you get eight USB ports to play with – four on the monitor and four on the machine, since the Systemax, like the Carrera and Panrix, has two extra ports installed on the backplane.

The most impressive aspect of the

Simply is its software bundle. Not only do you get Dreamweaver 3 and Fireworks 3, but also Microsoft Office 2000 Professional, which costs over £400 ex VAT as a separate package, or over £200 if you buy the upgrade. We rarely see Office 2000 Professional bundled even with business systems, so its inclusion here is a bit of a coup.

The machine's not perfect: internal cables could be a lot neater, the two USB ports block a PCI blanking plate, and the dull Ceratech keyboard is a bit of a let-down. But overall, taking that superb software bundle, monitor and hardware into account, these are minor quibbles.

DETAILS

PRICE £1,763 (£1,500 ex VAT)

CONTACT Simply 08707 297 366

www.simply.co.uk

PROS Unbelievable software bundle; superb monitor; 133MHz RAM

CONS Untidy internals

OVERALL A machine that'll deliver maximum productivity from the word go, and a worthy Editor's Choice winner

FEATURES	★★★★★
PERFORMANCE	★★★★★
VALUE FOR MONEY	★★★★★
OVERALL RATING	★★★★★



Viglen HomePro P3-700PW



graphics card, a Matrox G400 DualHead, makes the most of the image quality the monitors have to offer.

All-round specification is among the best of this group. As well as the 256MB of RAM there's a 27GB IBM Deskstar hard drive, Pioneer's latest DVD-ROM drive giving 16-speed DVD-ROM read capability, and

AS THE NAME SUGGESTS, the HomePro P3-700PW sports a 700MHz Pentium III, with 256MB of PC100 SDRAM sitting in the Intel 440BX chipset-equipped motherboard.

In terms of screen area, the Viglen beats all-comers this month with not one but two 19in ADI E66 monitors. Their quality is adequate for running at a resolution of 1,280 x 1,024 if you can live with a slightly soft image, which will give you over 2.6 million pixels of Windows desktop real estate to play with. The

Sony's popular and capable CRX140E CD-RW drive for backup and archiving. There's a full house on the external connectivity front as well: a Realtek network interface card, Eicon ISDN terminal adaptor and Diamond 56K PCI modem. The drawback of all this communications hardware, however, is a lack of free PCI slots. There are two spare ISA slots, but there can't be many people with two ISA devices they'd need to plug into the machine. If you do want to open the system up and add devices

or plug in more RAM, however, you'll find the internal cables neatly routed, giving unfettered access to all the relevant parts of the system.

Web development is catered for by Microsoft's FrontPage 2000, a package that many web designers dislike due to its near-unreadable HTML code production, but it's a fully-featured and powerful app. Microsoft's Works Suite 2000 provides a raft of workaday applications, including Word 2000. The silver optical Intellimouse Explorer and Internet keyboard complete a well-rounded picture, and overall the Viglen walks away with a well-earned Highly Commended award for its troubles.

DETAILS

PRICE £1,761 (1,499 ex VAT)

CONTACT Viglen 020 8758 7108

www.viglen.co.uk

PROS Two 19in monitors, fully decked out with comms devices; a great all-round system

CONS No free PCI slots; Microsoft FrontPage isn't the first choice of most designers

OVERALL Another fine entry from Viglen, worthy of anyone's shortlist

FEATURES	★★★★★
PERFORMANCE	★★★★★
VALUE FOR MONEY	★★★★★
OVERALL RATING	★★★★★



Dreamweaver versus FrontPage

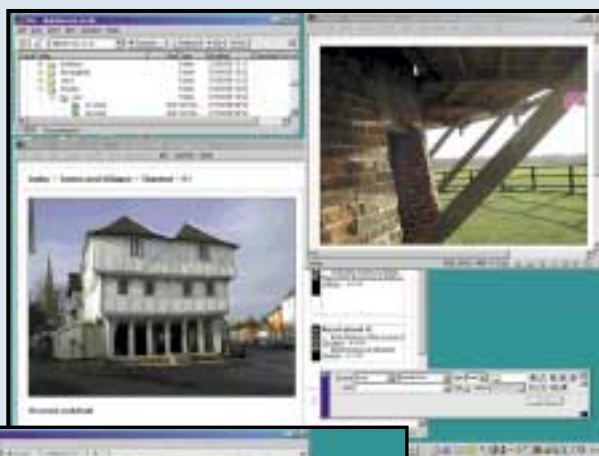
Like office suites and PDAs your choice of web-editing software is a very personal thing. There's a good chance the one that came with your PC or office suite is the one you have stuck with and you'll defend it to the hilt should anyone suggest their alternative does the job better. Many die-hards claim that Windows Notepad is the best web editor ever designed, but plainly these spanner heads are just too clever for us mere mortals. While Notepad allows you more flexibility and control than any WYSIWYG editor could ever provide, you'll not see it being used to create sites such as www.vnunet.com, www.nationalgeographic.com or the BBC's homepages.

The two packages you're most likely to see in use are Dreamweaver from Macromedia and Microsoft's FrontPage. Essentially they both do the same thing – design and upload websites – and both do it well, but they go about their business in fundamentally different ways.

By first making FrontPage affordable and then bundling it with certain versions of its office suite, Microsoft ensured it would be widely accepted, particularly in the home market. Its popularity was enhanced through the extra functionality afforded it through a set of proprietary extensions. Allowing users to create threaded discussion forums,

integrate databases and generate impressive rollovers, ensured that its fan base quickly grew. The downside, though, is that the extensions must be installed on the server and many hosting companies charge you extra if you want to take advantage of this facility.

Dreamweaver, on the other hand, keeps things simple. It generates pages that can be hosted on any server. That doesn't mean its use is limited, though. The interface is totally customisable, allowing you to add and remove components. In a corporate environment this is welcome, allowing systems departments to tailor each installation to offer a unified working environment company-wide. Users worldwide have welcomed this with open arms and various sites are springing up, whether official (<http://exchange.macromedia.com/>) or unofficial (<http://people.netscape.com/andreww/dreamweaver/>) providing whole libraries of templates, behaviours and actions.



Dreamweaver users would benefit from a larger screen, with its interface split into various windows



Dreamweaver and FrontPage also have very different interfaces. While FrontPage sits quite happily on a 15in monitor and, since the site and page designing modules were combined, will run everything within a single window, Dreamweaver benefits from 17in and above and splits the interface across several windows. These differences reflect the most likely users of each package, for while the corporate user might have the budget to snap up a second monitor or 21in display, a

home user's budget might not be able to stretch to such lengths.

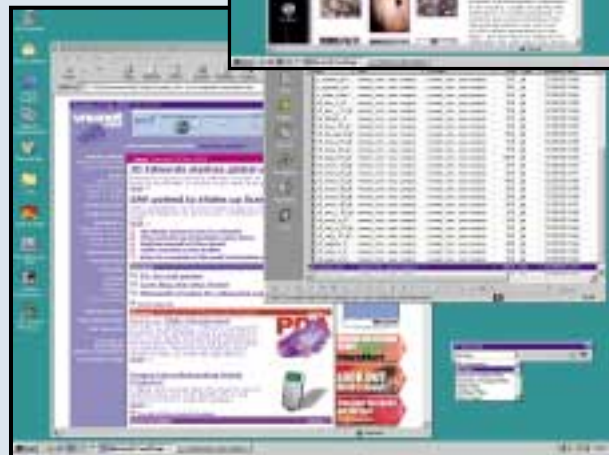
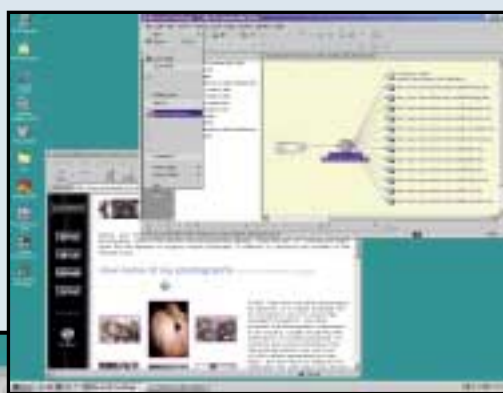
This isn't to say that Dreamweaver is unsuited to home use. Although Dreamweaver will set you back £263 and FrontPage a mere £100

Frontpage's affordability and extra functionality has ensured its popularity, but there are drawbacks to Microsoft's kit

usability features ironically make it perhaps more suited to the first-time user. All element tweaking takes place through a single object properties inspector, unlike FrontPage that employs myriad commands and input boxes. This same inspector allows you to literally point at files in the site map that will then be dragged into the page as the pointer snaps back to the inspector. It also benefits from a history palette, allowing you to roll back changes, even past the point at which you last saved, or even export all your actions up to the current point so that they may be reloaded and used in future projects.

If you are not using bundled web-design software, therefore, your choice will most likely be decided in terms of budget, which seems a shame when Dreamweaver repays so generously the extra money you'll spend on acquiring it. In this group test, though, where the focus is squarely on professional and semi-professional web designers, we can't help but acknowledge that Macromedia has the upper hand.

NIK RAWLINSON



Watford Aries Perfecta 7500



THIS IS A GOOD STAB at a decent machine. As far as core components go, however, the Perfecta is under-specified in this company, with a 600MHz Pentium III and 128MB of PC100 SDRAM, although raw speed isn't so much of a concern here as it normally is.

Compensating for the less than cutting-edge processor are some good ancillary components. You get the excellent CTX PR960F 19in flat-screen monitor, driven by a Matrox G400 MAX DualHead graphics card. This is one of

the few MAX G400s in this test, and its higher RAMDAC speed allows better quality at the very highest resolutions, as well as a higher absolute maximum res. A stonking great 40GB Maxtor Diamond Max hard drive purrs away inside the machine.

The Perfecta sports the new and popular Ricoh DVD/CD-RW combo drive but,

unlike the Systemax system, it isn't partnered by a standard CD-ROM drive for easy disc-to-disc copying.

Inside the system the cabling is very neat enabling full access to the three free DIMM sockets and four free PCI slots in the Gigabyte 440BX-based motherboard, although the power supply is mounted on its side in front of the power supply, making it hard to get to the CPU. Incidentally, the CPU itself is a Socket 370 Flip Chip device mounted on a Slot 1 converter card. With two

front-panel 5.25in bays free it won't be difficult to make up for the lack of a standalone CD-ROM drive.

Like the Viglen, Watford has gone for Microsoft FrontPage 2000 as its HTML creation application, partnered in this case by PhotoDraw 2000, not a bad combination. Input is catered for by the fine combination of Microsoft IntelliMouse Explorer and Internet keyboard.

Watford has produced a competent machine, but with only the single optical drive, lowish basic spec and the conspicuous lack of any on-site warranty it's prevented from gaining a Highly Commended award.

DETAILS

PRICE £1,763 (£1,500 ex VAT)

CONTACT Watford Electronics
0800 035 5555

www.watford.co.uk

PROS MAX graphics card; very neat build; big hard disk

CONS A little low-powered; no on-site warranty; no standalone CD-ROM

OVERALL A worthy machine that misses out on an award by a hair's breadth

FEATURES

PERFORMANCE

VALUE FOR MONEY

OVERALL RATING

★★★★

★★★★

★★★★

★★★★

Meeting the need for speed with ISDN

Many of the forward-thinking manufacturers in this group test have recognised the need for fast Internet connections and have included ISDN adaptors as well as a standard modem.

ISDN, or Integrated Services Digital Network to give it its full name, has been around for over a decade and, in a nutshell, allows digital data to be transferred via the telephone system through an ISDN card or terminal adaptor.

A conventional modem works by modulating the output signal into a form that can travel through the telephone line. At the other end, the receiving modem demodulates the signal back into digital form.

In contrast, ISDN removes the translation necessity and uses a digital signal throughout from

originating station to destination.

There are many benefits to using an ISDN line rather than a conventional modem. First, and probably most relevant to the majority of users, is the speed of connection. An ISDN link on a

accounts for the lower connection speed of modems.

The ISDN link is also capable of connections over

card at around £50, or a terminal adaptor at around £100, but you also need a junction box fitted to your existing phone line. BT

currently has an offer where it will cost you £50 to fit a box that allows you to keep your current phone number, while gaining a second analog line



With less signal degradation than modems ISDN transmits data faster

single channel is capable of connection at 64K, compared to 56K with conventional modems. However, with ISDN the figure of 64K is the actual connection speed. The reason for this is the digital signal is not affected by noise or signal degradation in the same way as an analog signal, which

two channels, giving a combined speed of 128Kbits/sec

(although this uses a second line and incurs the cost of a second call). The benefits of this speed include Internet pages appearing faster, as well as enabling download times to be reduced from hours to a matter of minutes.

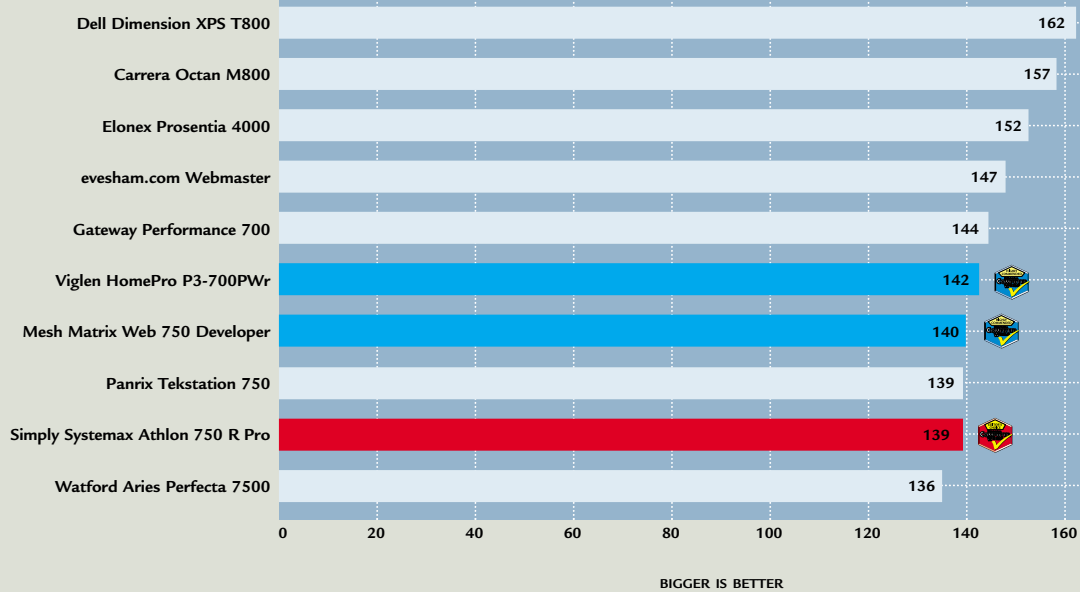
One of the main problems with ISDN is the overall cost. Not only do you need an ISDN

and a further two digital lines. But then there is the monthly charge to consider, which is currently £25 from BT, although this usually includes some bundled calls.

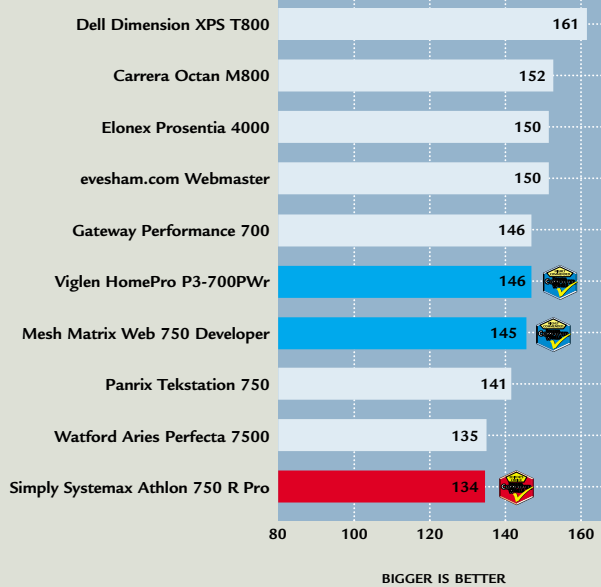
However, ISDN is already under threat from the looming spectre of ADSL, the 'always on' 512K high-speed digital access system. The jury is still out on the issue, but the consensus is that ISDN's days are numbered.

SCOTT MONTGOMERY

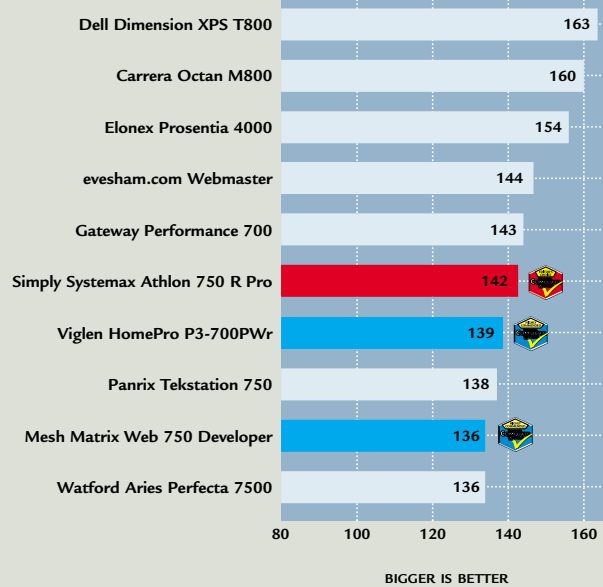
SYSmark 2000 overall



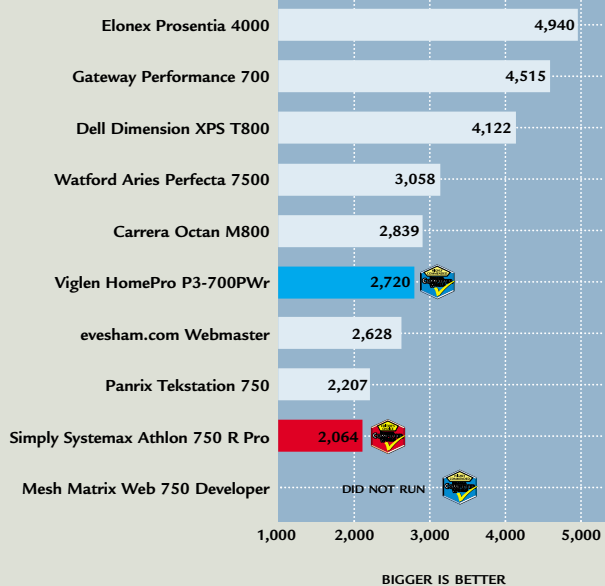
SYSmark 2000 Internet content creation



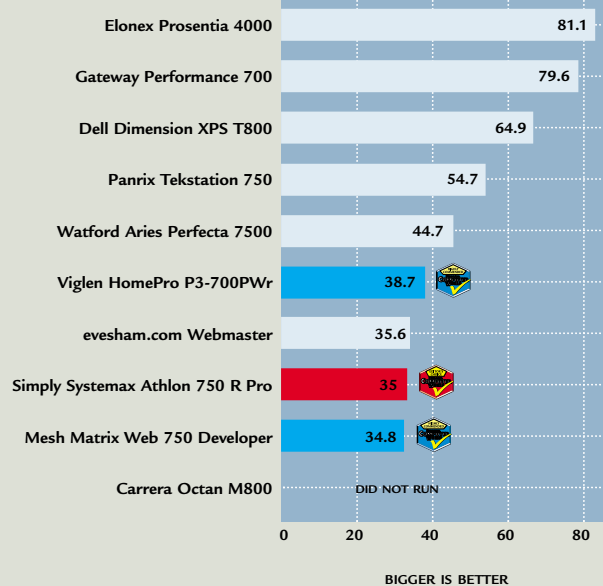
SYSmark 2000 office productivity



3DMark 2000



Quake III (fps)





How we did the tests

SYSmark 2000

This comprises 12 application workloads and a management program. The workloads are divided into two categories: office productivity and Internet content creation. We run the benchmark at a resolution of 1,024 x 768 in 16bit colour. It loops three times, rebooting between each workload.

It then assigns the system a performance rating for each application, based on a comparison of workload runtimes between the system being tested and a fixed calibration platform. A rating of 100 indicates the test system has performance equal to that of the calibration platform, 200 indicates twice the performance and so on. The calibration platform is based on a Pentium III 450MHz processor, an Intel 440BX chipset motherboard, 128MB of SDRAM, a 32MB Diamond Viper V770 Ultra graphics card, an IBM DJNA 371800 and Windows 98 SE.

Each category rating is a geometric mean of the workload ratings in that category. The overall rating is a weighted geometric mean of the category ratings.

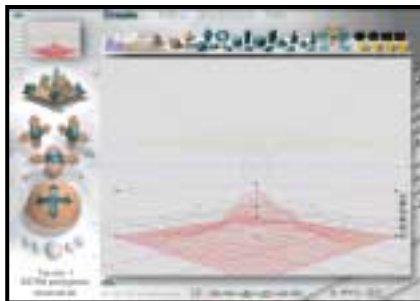
Office productivity

Corel CorelDraw 9.0

This script first takes an abstract design, applies an Art Stroke to it and runs various filter effects. It creates and manipulates a scene composed of vector graphics. Next, it takes a raster image and applies effects. It creates several 3D objects and performs 3D manipulations.

Corel Paradox 9.0

This performs SQL-style queries on a database table and runs a 'find duplicates' query. It imports other text files, formatting and exporting each to HTML. Then it opens up query forms, enters



Bryce 4 script manipulates a wire frame scene and renders it

charts, applying graphics and sound effects, and adding movie files.

additional data and produces reports based on queries.

Microsoft Word 2000

This workload invokes word processing functions, including editing, spell checking, search and replace, font change, copy and paste, print preview, mail merge fields, insert hyperlinks, background and table formatting plus opening and viewing HTML pages.

Microsoft Excel 2000

Operations include closing and opening spreadsheets, HTML pages and data in text files, spell checks, formula calculation, plotting data, formatting charts and cells, analysing data in pivot tables, naming a cell and inserting hyperlinks.

Microsoft PowerPoint 2000

Operations include spell checks, editing, formatting and moving pictures, applying templates, formatting tables in slides, inserting hyperlinks, applying header and footer data formatting

3DMark 2000 tests each system's DirectX performance (above) and OpenGL performance is tested via Quake III: Arena (below)

Dragon NaturallySpeaking Preferred 4.0

The script plays a pre-recorded WAV file into NaturallySpeaking, which then converts the WAV file to text.

Netscape

Communicator 4.61

This opens a website of plays by Shakespeare and selects and loads the texts several times. Then it loads a page consisting of large tables, thumbnails and images and cycles through viewing the images.

Internet content creation

Adobe Premiere 5.1

This creates an animation of about 16 BMP files and other AVI clips and puts transitions between them. It superimposes two audio tracks and runs the audio through filters.

Adobe Photoshop 5.5

The script loads, resizes, zooms out of images, applies filters to the images, changes mode and colour settings, adjusts image brightness and contrast and saves the image to a JPEG file.

Avid Elastic Reality 3.1

The workload sets up and renders a morph between two MPEG2-sized images (720 x 480 pixels, roughly 750KB).

MetaCreations Bryce 4

This script opens an assembled wire frame scene and renders it to the final image. Then a new image is opened and saved in Metastream format. Another image is opened and saved in an HTML-compatible format.

Microsoft Windows Media Encoder 4.0

The input file is an AVI clip that is encoded using the MPEG-4 Video Codec.

3DMark 2000

Remedy Entertainment's MAX-FX is used to test the DirectX performance of a system. It runs two specially coded games at low, medium and high resolutions. We ran the benchmark at 1,024 x 768 in 16bit colour, with each game set to loop three times. The 3DMark is calculated by adding the frames per second for each game together and multiplying the result by 12.

Quake III

We tested each system's OpenGL performance with Quake III: Arena (1.11).

The settings were:

video mode – 1,024 x 768, colour depth – 16bit, full screen, highest texture detail, texture quality – 16bit, texture filter – bilinear, lighting and lightmap.

At command prompt we typed:

```
timedemo 1
demo demo001
```


This runs demo 1 and records the frames per second.



Table of features



MANUFACTURER	CARRERA	DELL COMPUTERS	ELONEX	EVESHAM.COM	
MODEL NAME	OCTAN M800	DELL DIMENSION	PROSENTIA 4000	WEBMASTER	
		XPS T800			
Price inc VAT (ex VAT)	£1,749 (£1,489)	£1,761 (£1,499)	£1,761 (£1,499)	£1,762.50 (£1,500)	
Telephone	020 8307 2800	0870 152 4850	020 8452 4444	0800 038 0800	
URL	www.carrera.co.uk	www.dell.co.uk	www.elonex.co.uk	www.evesham.com	
HARDWARE SPECS					
Processor	AMD Athlon 800MHz	Pentium III 800MHz	Pentium III 700MHz	AMD Athlon 750MHz	
RAM/type	256MB PC100	256MB PC100	256MB PC100	256MB PC100	
Occupied RAM slots/pare RAM lots	1/2	1/2	2/1	2/1	
Max memory in this configuration (without removing existing memory)	768MB	768MB	512MB	512MB	
Max memory supported by motherboard	1.5GB	768MB	768MB	768MB	
Hard disk (manufacturer & model)	Quantum Fireball	Maxtor DiamondMax Plus 40	Fujitsu Picobird MPE3204AH	DiamondMax 40	
HD size/interface	20GB/EIDE	40GB/EIDE	20.4GB/EIDE	30.7GB/EIDE	
Storage drive model and manufacturer	Matshita CD-RW CW 7585	Sony CRX140E CDRW	Iomega Zip 250	Samsung combo drive SM-304B	
Size of storage drive media/interface	650MB/EIDE	650MB CDR/CDRW/EIDE	250MB/EIDE	650MB/EIDE	
MOTHERBOARD COMPONENTS					
Motherboard maker/model/chipset	Asus/K7V/VIA KX-133	Dell/Intel/Intel 440BX	MSI/MS6163/Intel ZX	MSI/K7 Pro/AMD 756	
EXPANSION AND I/O					
No of 3.5/5.25in bays	3/4	5/2	4/3	2/3	
No of free 3.5/5.25in bays	1/2	3/0	2/1	0/2	
No of PCI/ISA/shared slots	5/0/0	4/0/1	4/1/1	5/0/1	
No of free PCI/ISA/shared slots	3/0/0	2/0/1	1/1/1	3/0/1	
No of USB/serial/parallel/PS2	4/2/1/2	2/1/1/2	2/2/1/2	2/2/1/2	
MULTIMEDIA					
DVD/CD manufacturer/model	Matshita DVD-ROM SR-8585	Samsung DVD-ROM SD-612	Acer	Samsung combo	
DVD/CD read-speed/interface	8x DVD/EIDE	12x DVD/EIDE	10x DVD/EIDE	4x DVD/24x CD/EIDE	
Sound card manufacturer	Creative	Creative	Creative	Creative	
Sound card model	SB Audio PCI 128	SB Live! Value	SB PCI128	SB128	
Speakers (manufacturer & model)	Altec Lansing ACS22	Harmon Kardon HK195	Creative SBS20	Creative CSW52	
Graphics card maker & model	Matrox G400 DualHead	nVidia GeForce 256	Hercules	Matrox G400 DualHead	
Chipset	G400	GeForce	GeForce 256 DDR DVI	G400	
RAM/max RAM and type	32MB SGRAM	32MB/32MB/SDRAM	32MB DDR RAM	32MB SGRAM	
Graphics card interface	AGP	AGP	AGP	AGP	
Monitor manufacturer/model	Iiyama Visionmaster Pro 502	Dell P991	Elonex 19in	1 x 19in Vale & 1 x 17in Vale	
Monitor size/max viewable diagonal	21in/19in	19in/17.95in	19in/18in	19in/18in 17in/16in	
Maximum resolution and refresh	1,920 x 1,440 @ 75Hz	1,600 x 1,200 @ 85Hz	1,024 x 768 @ 75Hz	1,600 x 1,200 @ 75Hz	
OTHER INFORMATION					
Modem manufacturer and model	BT Speedway ISDN PCI	Conexant MDP 3900V-W Modem	BT Speedway ISDN	Diamond Supra SST 56i Pro DFV	
Misc hardware			Intel Pro/100+ Management Adaptor		
Bundled software	Microsoft FrontPage Express	MS Office 2000 SBE	Dreamweaver 3 Fireworks 3	MGI Photosuite III Platinum HoTMetal Pro 6.0, F1 Free Internet	
Standard warranty	2 years on-site - parts & labour	1 year on-site, 2 years rtb	3 years, first on-site	2 years on-site	

					
GATEWAY	MESH	PANRIX	SIMPLY	VIGLEN	WATFORD
PERFORMANCE 700	MATRIX WEB 750 DEVELOPER	TEKSTATION 750	SYSTEMAX ATHLON 750 R PRO	HOMEPRO P3-700PWr	ARIES PERFECTA 7500
£1,676 (£1,427)	£1,761.33 (£1,499)	£1,643.83 (£1,399)	£1,762.50 (£1,500)	£1,761.33 (£1,499)	£1,762.50 (£1,500)
0800 552 000	020 8208 4706	01132 444958	08707 297366	020 8758 7000	0800 035 5555
www.gateway.com/uk	www.meshcomputers.com	www.panrix.com	www.simply.co.uk	www.viglen.co.uk	www.watford.co.uk
Pentium III 700MHz	AMD Athlon 750MHz	AMD Athlon 750MHz	AMD Athlon 750MHz	Pentium III 700MHz	Pentium III 600MHz
256MB PC100	128MB PC100	128MB PC100	256MB PC133	256MB PC100	128MB PC133
1/2	1/2	1/2	2/1	1/2	1/3
768MB	640MB	640MB	512MB	640MB	896MB
768MB	768MB	768MB	1.5GB	768MB	1GB
Western Digital	Western Digital Carvair 205BA	Maxtor DiamondMax 40	Maxtor DiamondMax VL20	IBM Deskstar DPTA-372730	Maxtor DiamondMax+
20GB/EIDE	20.5GB/EIDE	30.7GB/EIDE	20.4GB/EIDE	27.3 GB/EIDE	40.9GB/EIDE
Zip 250	Matshita CD-RW CW-7585	Ricoh MP 7080ADP	Ricoh DVD 6, CD 24, CDRW 4	Sony CD-RW CRX140E	Ricoh DVD/CD-RW MP9060
250MB/EIDE	650MB/EIDE	650MB/EIDE	650MB/EIDE	650MB/EIDE	650MB/EIDE
Gateway/Intel 440BX	MSI/K7 Pro/AMD 756	Asus/K7V/VIA KX-133	AOpen/AK72/KX133	Viglen OEM/Intel 440BX	Gigabyte/Intel BX
6/4	4/3	4/3	3/3	4/2	3/3
4/2	2/1	2/2	1/1	2/0	1/2
4/0/1	5/0/1	5/0/0	4/0/1	3/2/1	5/0/1
2/0/0	3/0/1	4/0/0	3/0/1	0/2/0	4/0/0
2/2/1/2	2/2/1/2	4/2/1/2	4/2/1/2	2/2/1/2	2/2/1/2
Toshiba DVD-ROM SD-M1402	Pioneer DVD-114	Ricoh MP 7080A	Creative CD5220	Pioneer DVD-ROM DVD-115	Ricoh DVD/CD-RW Combo MP9060
12x DVD/40x CD/EIDE	10x DVD/40x CD-ROM/EIDE	32x CD/EIDE	52x CD/EIDE	16x DVD/40x CD/EIDE	4x DVD/24x CD/EIDE
Creative	Creative	Onboard	Onboard	Creative	Videologic
SB Live! Value	SB PCI 128	N/A	N/A	SB Audio PCI 128	Sonic Vortex 2
Boston Acoustic BA735	Labtec LCS 1030	Labtek LCS-2414	Creative SB552	Labtec LCS-2632	Yamaha
nVidia GeForce DDR	Matrox G400 DualHead	Diamond Viper II Z200	Matrox G400	Matrox G400 DualHead	Matrox G400 DualHead
GeForce 256	G400	Savage	G400	G400	G400
32MB DDR	32MB SGRAM	32MB SDRAM	32MB SGRAM	32MB SGRAM	32MB SGRAM
AGP	AGP	AGP	AGP	AGP	AGP
Gateway EV910	Mitsubishi Diamond Pro 720	Hansol 900P B19BL	CTX PR960F	ADI MS-E90	CTX PR960F
19in/18in	17in/16in x 2	19in/18in	19in/18in	19in/18in	19in/18in
1,600 x 1,200 @ 75Hz	1,600 x 1,200 @ 75Hz	1,600 x 1,200 @ 75Hz	1,600 x 1,200 @ 85MHz	1,920 x 1,440 @ 75Hz	1,600 x 1,200 @ 85Hz
56K PCI Voice Modem SF-11561V	SupraExpress 56i V Pro	BT Speedway ISDN	ISDN NDISWAN Adaptor	Eicon Diva 2.01 S/T (PCI)	SupraExpress 56i Pro VCC
	Microsoft Internet Keyboard Microsoft IntelliMouse Explorer (Optical)			Diamond modem Supra Pro 56K PCI, Realtek RTL8139 Network Card	MS Internet Keyboard Pro MS Intellimouse Explorer
Microsoft Works Suite 2000	Dreamweaver 3, Fireworks 3 Flash 4 (trial version only)	Dreamweaver 3 Fireworks 3	Dreamweaver 3, Fireworks 3 MS Office 2000 Pro, Personal Web Server, Netscape	Microsoft Works Suite MS FrontPage 2000	MS FrontPage 2000 MS PhotoDraw 2000 Version 2
1 year on-site, 2 years rtb	1 year on-site, 2 years rtb – parts & labour	1 year on-site, 2 years rtb	1 year on-site, 3 years rtb	1 year onsite	1 year rtb –parts & labour 5 years rtb labour only

Editor's Choice

Although the systems we received this month were varied, the winning machines all hit upon a broadly similar formula, obviously based on a good knowledge of what a customer will want from a machine that's aimed at a specific task. We're heartened by the fact that there are still companies that can respond to a challenge rather than blindly churning out the same old boxes month in, month out.

It's worth repeating that in choosing this month's winning machine, we altered our normal judging criteria. Usually, our group test remit is fairly broad – budget PCs, power PCs or something in between. But in specifically asking for a system to do a particular job, and one that relies not so much on cutting-edge hardware as on software and intelligently chosen peripherals, we've reduced our normal emphasis on performance and the latest hardware.

A 700MHz processor is more than up to the job of running whatever HTML tools or web graphics applications you can throw at it, particularly when the emphasis in web design is on keeping image file sizes as small as possible for fast download: no need for dual processors to allow Photoshop to churn through effects operations on a 40MB TIFF here, although there's never any harm in having as fast a system as you can afford.

Similarly, a pair of speakers that'll blow your socks off and a graphics card capable of 100fps running Quake III at 1,280 x 1,024 is all well and good, but not really what we were after this month.

When you've been sitting up all night staring at your HTML code, or you need to get a particular design job done fast, what you'll really appreciate is a decent high-resolution display setup, plus software that can keep pace with your creativity and allow you to realise your designs as quickly as possible.

For the same reason, the software bundled with each machine on this occasion played an important part in deciding who should receive an award. It was perhaps not surprising that two of the three mentioned below shipped with both Dreamweaver 3 and Fireworks 3 from Macromedia. Those manufacturers that included little or no dedicated web software fared poorly, as might have been expected.

The winners

For these reasons, the **Editor's Choice** award this month goes to the Simply Systemax Athlon 750 R Pro. Basic hardware is taken care of by the 750MHz Athlon and 256MB of PC133 SDRAM, and the 20GB hard drive is perfectly adequate. But it was the combination of the excellent CTX PR960F and, more importantly, the inclusion of Dreamweaver 3, Fireworks 3 and Microsoft Office 2000 Professional Edition that really impressed us the most: these three packages really do give you a system that's ready to rumble as soon as you pull it out of the box.

Systemax didn't have it all its own way this month though: a couple of other systems were snapping at its heels. First to receive our **Highly Commended**

accolade is the Mesh Matrix Web 750 Developer system. The excellent-quality dual Mitsubishi monitors will give a genuine productivity boost when you're running multiple apps simultaneously and the smaller 128MB of RAM isn't too much of a disadvantage in this context, unless you're planning to upgrade to Windows 2000, with its memory-hungry NT codebase, in the near future. And again, when you're subjecting yourself to the prolonged sessions in front of your machine you'll appreciate decent input devices, so the Mesh scores here with a good-quality Microsoft Internet keyboard and the excellent optical Intellimouse Explorer.

The final **Highly Commended** goes to Viglen's HomePro P3-700 PWR. The software isn't quite up to the standard of the other two award winners, with Microsoft FrontPage 2000 doing the HTML business, but it's still a good application and is backed up by Microsoft's highly competent Works Suite 2000.

Hardware-wise, the system pretty much has it all, with two 19in monitors, 256MB of RAM, a big 27GB hard disk, 16-speed DVD-ROM, CD-RW drive and a hat-trick on the external connectivity front with network card, ISDN adaptor and 56K modem. In addition, you get one of those silver optical rodents and Internet keyboard. Finally, the good-quality three-speaker Labtec setup, while not strictly necessary, will do for those moments when you just can't resist a quick go on Unreal Tournament via your ISDN connection.



Simply's PC had a great monitor plus Dreamweaver3 and Fireworks 3



Mesh Matrix Web 750 Developer boosts productivity when running multiple apps



Viglen's HomePro P3-700 PWR included two 19in monitors in its winning package