reviews

Using a regular digital camera to put your mug on the net has become somewhat old hat. With faster net connections and new streaming technologies, what people want now is full colour digital motion, and this month we take a look at two products that make this easy – the **WebCam III** from Creative Labs *[pictured, right]* and Sharp's **Internet Viewcam**, which made a brief appearance in our Gadgets section a couple of months back but is now available to buy and so returns for a full review. We also feature what has to be one of the cheapest PC upgrades ever – a tenner will now buy you an IRDA port for the back of your desktop machine. Why should it be just your PDA, notebook and phone that can take advantage of wireless communications these days? We're also going wireless on the networking front. We take a look at two wireless-networking solutions that are ideal for use in the home or a small office. One of the most desirable looking products to enter the office this month was the **EasyMate** from Packard Bell *[left]*. See whether this, and a couple of dozen other products, lived up to our expectations.

NIK RAWLINSON, REVIEWS EDITOR
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VNU European Labs

VNU Labs tests all kinds of hardware and software, from PCs to modems to databases. All our tests simulate real-world use and for the most part are based on industry-standard applications such as Word, Excel, PageMaker and Paradox. Our current PC tests for both Windows 95 and NT are the SYSmark tests from BAPCo. In all our performance graphs, larger bars mean better scores.

Contents

Ratings

★★★★★ **Buy while stocks last**
★★★★ **Great buy**
★★★ **Good buy**
★★ **Shop around**
★ **Not recommended**

Dell Dimension XPX T600
Power for the professional

For those who remain stubbornly loyal to the Intel Inside sticker, this high-end PC is a gamer's dream.

Dell is the last of the major PC manufacturers to base its systems solely on Intel processors. So it is no surprise that the company has been quick to adopt Intel's latest chip, the 600MHz Pentium III. Dell has taken care to keep this processor cool by installing a very large fan directly behind it. There's also a cowling that flows the air directly over the processor.

The CPU resides in an ATX motherboard, based on the 440BX chipset. Two of the three DIMM sockets are filled with an impressive 256Mb of PC100 SDRAM. The board also sports five PCI slots, along with one ISA and the AGP slot.

Occupying the AGP slot is a Diamond Viper V770 graphics card, based on the nVIDIA Riva TNT2 chipset. With 32Mb of memory, no resolution or colour depth should be out of your reach, in 2D or 3D applications. With the exception of hardware bump-mapping, this card supports just about every 3D feature, so if 3D gaming

is what you're after, you won't be disappointed. Unfortunately, the monitor can't show the graphics card off to its full effect. Although there's nothing intrinsically wrong with the 19in Dell-badged display, we expected something a little better considering the high specification of the system. The image is well focused across the whole surface of the display, but the screen is noticeably rounded, especially when compared to the latest flat CRTs that have become popular of late. The OSD is fairly intuitive, using a rotating dial for adjustments.

A SoundBlaster Live! Value card fills one of the PCI slots. This is a good sound card, although the Value version lacks the daughter card with the digital in and out ports. This is a particular problem considering Dell has included a set of Altec Lansing ADA880 speakers, a top notch speaker package with a built-in Dolby Digital decoder. The massive subwoofer has an SP/DIF input to receive the digital signal carrying the Dolby Digital information. Unfortunately, Dell hasn't included an MPEG2 decoder card or a sound card with an SP/DIF output, so the speakers can't be used to their full effect. That said, if you ever decide to add a decoder card, you're set for a surround sound treat. The speakers come with an infra-red remote control to make movie watching even easier. The only other expansion card is a US Robotics V.90 PCI modem.

Mounted vertically at the front of the system case is a 20Gb Maxtor hard drive. You're not likely to run out of storage in a hurry, but if you do need to transport or safeguard data, there's a 250Mb Iomega Zip drive. The third EIDE device is a 6x Toshiba DVD-ROM drive that reads CD-ROMs at 32x.

The keyboard is a Dell-badged model with good travel and break, making it easy to achieve a decent rate of typing, while a Microsoft Intellimouse takes care of pointer manipulation.

Rounding off the package is a copy of Microsoft Office 2000 Small Business Edition. Since MS Office is the premium productivity suite, it's a commendable inclusion with any PC.

The Dell didn't perform quite as well as last month's Panrix Fusion 600, turning in a SYSmark score of 233 and a 3DMark result of 4277. That said, at £1,649 ex VAT, it's considerably cheaper than the Panrix.

The Dimension T600 is a pretty good package and fair value for money. With the exception of the mismatched sound card and speakers, the components gel. If AMD's Athlon can't sway you from Intel, this Dell should suit your needs.

RIYAD EMERAN

Microsoft Office 2000 Small Business Edition rounds off the package
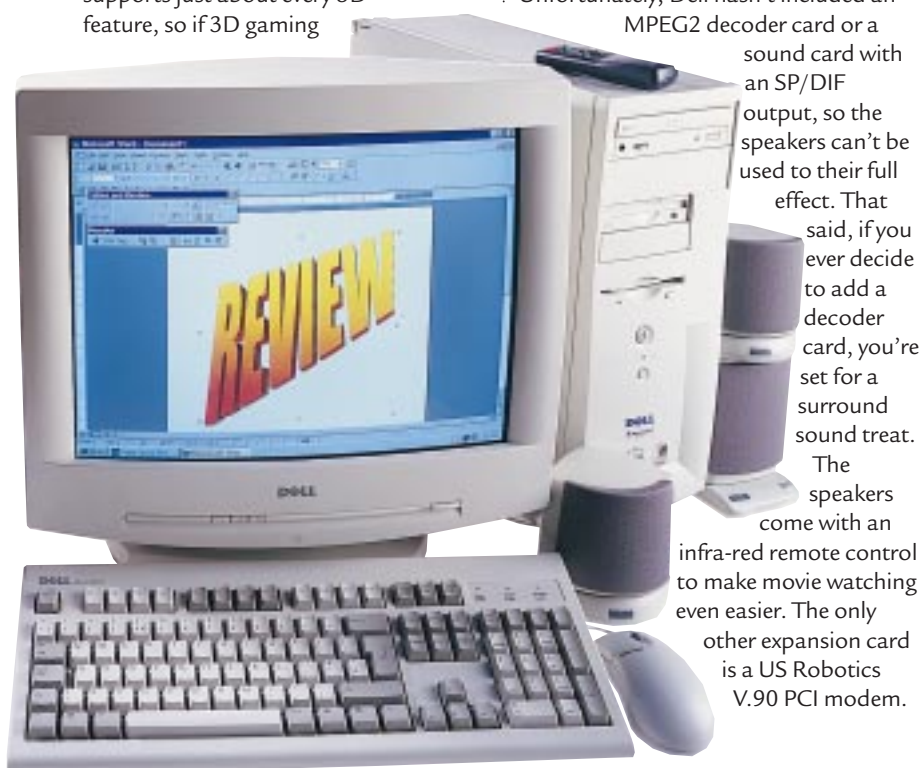
PCW DETAILS

★★★★★

Price £1,937.57 (£1,649 ex VAT)
Contact Dell 0870 152 4850
www.dell.co.uk
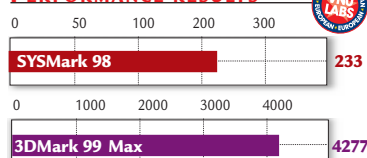**Good Points** Good specification and reasonable price
Bad Points Poor pairing of speakers and sound card
Conclusion An impressive 600MHz Pentium III machine at an attractive price

PERFORMANCE RESULTS

	0	50	100	200	300
SYSMark 98					233

	0	1000	2000	3000	4000
3DMark 99 Max					4277

IBM ThinkPad 570
Top-notch notebook

Versatile, functional and light, this notebook is the perfect weapon if you are an IBM road warrior.
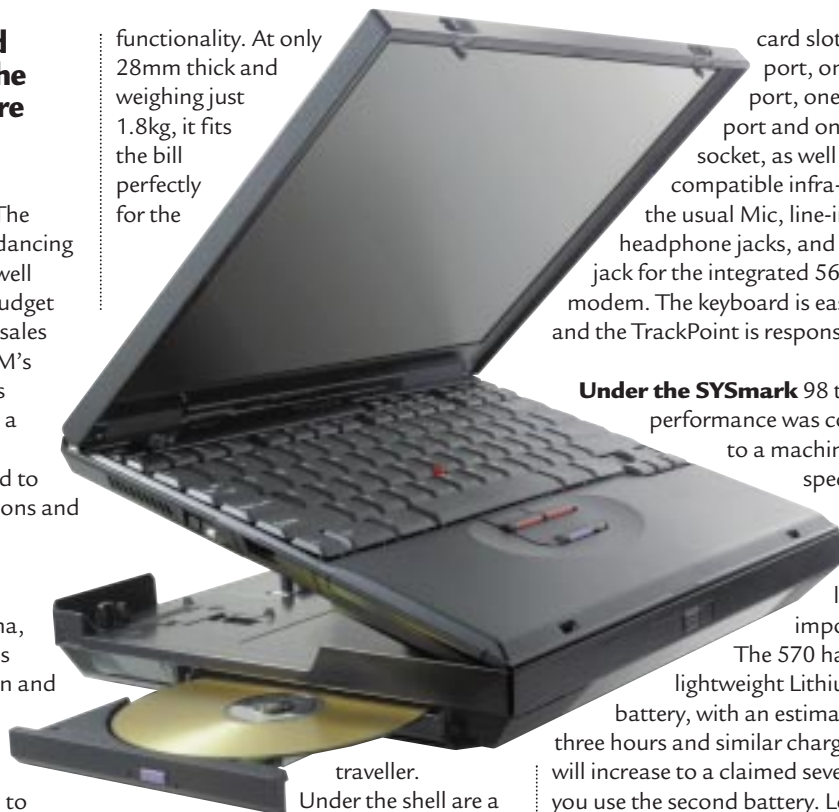
IBM is very clear about how it categorises notebook users. The company has all-singing, all-dancing desktop replacements aimed at well financed desk-bound workers, budget notebooks aimed at the humble sales force and finally – the jewel in IBM's crown – thin and light notebooks aimed at a user IBM describes as a road warrior. As these users are constantly travelling, all they need to do is check email, give presentations and do a little spreadsheet and word processing work.

IBM's first offering in this arena, three years ago, was the 560. This notebook was one of the first thin and lights, and had minimal drives. The 570 recognises that while road warriors do not want to carry much with them, they need to have access to other drives, such as a CD-ROM, Zip drive or DVD.

The original 560 had an external floppy and an optional external CD drive, and the new 570 is no different, with only the external floppy as standard. The most important improvement in the 570 is the UltraBase, IBM's name for its docking station. With this comes all the added functionality – two swappable UltraSlim bays capable of holding CD-ROM and DVD-ROM drives, LS-120 and Zip storage devices and an extra hard disk. If you need to increase the battery life, the UltraBase will hold a second battery. It even has a midi port attached for those corporate stress relievers – games. However this option is not cheap, costing a further £102 ex VAT before you even start putting in any drives. And there is no built-in network capacity, so you will have to use a PCMCIA Ethernet card to connect when you do hit base.

The ThinkPad 570 is certainly lightweight and packed full of functionality. At only 28mm thick and weighing just 1.8kg, it fits the bill perfectly for the traveller.

Under the shell are a number of good components. Powered by a 366MHz Intel Mobile Pentium II, it's as fast as you're likely to need in the workplace. With 64Mb of SDRAM, upgradable to a maximum 192Mb, plus a 6.4Gb IDE hard drive, the 570 sits comfortably at the top end of the notebook ladder.

The 13.3in TFT screen is impressive, with a resolution of 1024x768, and is capable of driving an external display at the same resolution. The ultra-slim nature of the 570 is evident here – the casing behind the screen is quite thin and any pressure is evident on the active-matrix display.

The 570 uses the NeoMagic MagicMedia 256AV graphics chipset, as favoured by many notebooks, and the 16-bit SoundBlaster compatible Crystal CS4280 audio chipset.

Any notebook worth its salt has a variety of ports for adding peripherals. The usual suspects are included on the 570 – two Type II (or one Type III) PC card slots, one USB port, one COM port, one parallel port and one PS/2 socket, as well as an IrDA compatible infra-red port, the usual Mic, line-in and headphone jacks, and a telephone jack for the integrated 56Kbit/sec modem. The keyboard is easy to use and the TrackPoint is responsive.

Under the SYSmark 98 tests, performance was comparable to a machine of similar specifications. Out of the office, battery life has new importance. The 570 has a lightweight Lithium Ion battery, with an estimated life of three hours and similar charge time. This will increase to a claimed seven hours if you use the second battery. Lotus SmartSuite Millennium and Norton Mobile Essentials are included.

IBM seems to have sat on its laurels with this machine. It has recognised that users need the flexibility offered by the UltraBase, but compared to other notebooks available, the base model 570 is under-specified and over-priced.

JIM HARYOTT

Once out of the office battery life takes on a new importance

PCW DETAILS

★★★★

Price £3,084.37 (£2,625 ex VAT), £118.67 (£101 ex VAT) for UltraBase, £119.85 (£102 ex VAT) for 24x CD-ROM drive
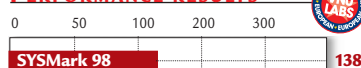**Contact** IBM 0870 601 0136
www.ibm.com
Good Points Size, weight and functionality
Bad Points Price, basic package would need additions
Conclusion A lovely notebook – slim, portable and powerful, but adding the extras that other manufacturers may include as standard makes it very expensive

PERFORMANCE RESULTS

	0	50	100	200	300	
SYSMark 98						138

Sharp PC-A250 UltraLite
Sub-notebook

Great looks and a screen to die for make the Sharp A250 a highly desirable travelling companion.

Tiny, sleek and extremely attractive, the Sharp PC-A250 certainly turns heads. Measuring just 262x210x 22mm, it fits into that category of sub-notebooks that run a full version of Windows 98, but are only marginally bigger than the larger Windows CE devices. Sub-notebooks have the advantage of being very small and light, but can also run any application you need, although the downside is that the battery life is usually only a couple of hours. However, despite its size it is well specified, with a Pentium II 300, 64Mb of RAM and a 6.4Gb hard drive.

The most impressive component in the UltraLite is the screen. Sharp has managed to squeeze an 11.3in display, with a resolution of 800x600, into this small form factor notebook, but this TFT is much better than that seen on most other mobiles in its class.

The screen is Sharp's own, making use of the company's anti-glare and anti-reflective technology. Sharp claims this makes the screen 50 per cent brighter, while consuming 38 per cent less power, although it does not state what it is comparing this screen against. However, the net result is a display that is very black before it is turned on and gives an extremely bright, sharp image.

Most TFT screens suffer from poor colour representation and low brightness, which makes them less than perfect for any graphical work. It also produces problems for viewing the display in certain lighting conditions, such as bright sunlight – a problem when you are likely to use this notebook in any number of different locations. The screen on this PC-A250, however, is bright enough to get over most of these problems and has the added advantage of having a very wide viewing angle, so it can still be seen well from the side.

All the objects on the screen were pin-sharp, with no obvious fading or unevenness in brightness.

Aside from the hard drive, there are no drives in the chassis. The optional CD-ROM drive connects via the single PC Card slot. The lack of an internal modem means you will have to remove your external modem to connect the CD-ROM drive, but unless you intend to listen to music while on the move, you can probably leave the CD drive at home. The external floppy drive connects via a proprietary port on the side of the unit.

This drive is as thick as the notebook itself and almost as deep, so it is quite bulky, but it does have the advantage of containing three ports on the back – PS/2, serial and parallel. There is a single Type II PC Card slot, so you can't plug in Type III cards.

These extra ports on the drive are appreciated because none of them are present on the notebook. You do, however, get two USB ports, a VGA connector and an Ethernet port. Still, if you are using older printers or drives, such as a Zip drive, you will need to daisy-chain these off the floppy drive – a cludgy solution.

The net result is a display which gives an extremely bright, sharp image

The PC-A250 has two batteries, one internal and an optional external one, which clips on to the back of the notebook, as seen on the Compaq 5100 a few years ago. This time, however, it is not a carry handle. In fact, you would be foolhardy to pick up the notebook by the battery because it is only connected by the flimsiest of connectors. The battery is only connected by two plastic clips, which look pretty insubstantial and look as though they might break easily. There is also a chance that the battery will move and become disconnected.

Welcome additions are the built-in 56K modem and the little bit of suede on the bottom of the notebook to stop it from slipping around – a real bonus when using the notebook on a train.

ADELE DYER

Metacreations Poser 4
3D design and animation

A 3D package that is so easy to use it is guaranteed to bring a smile to your faces, and a nod, and a wink...

It says on the box: 'The premier 3D character animation and figure design tool' and you'd be hard pushed to argue. Poser 4 is to figure drawing what CAD is to technical drawing – it provides all the parts you need and the tools to put them together to create realistic looking 3D people. Humans are only part of the story. Poser 4 introduces a library of animal figures and even robots.

Version 4 is a marked improvement on 3, offering a vast increase in control over models and their environment as well as more of everything that version 3 already had to offer. The models themselves offer far greater scope for manipulation, including facial expressions and manual dexterity, morphable facial features and musculature. Lighting and camera controls have been brought up to the standard found in other 3D applications, while you can position lights wherever you want, and control their angle and intensity. You can also view figures from preset and user-placed camera positions, all fully adjustable along three axes.

Additions include a much wider range of poseable figures, a bigger wardrobe, a wider choice of realistic hairstyles and a new library of props. Animation features have been beefed up with an automatic walk designer and a timeline-based animation controller.

Users of other Metacreations products will feel at home with the interface that makes light work of complex tasks. A resizeable floating view window displays the figure viewed from the current camera position and is surrounded by control palettes that look like physical objects rather than products of a software developer's toolbox.

Lighting controls are manipulated by positioning lights around a sphere, while camera positions are selected by clicking on body part icons, pan, tilt, rotate and zoom by means of a four-point compass.

Library palettes containing complete figures (male, female, children, animals, robots), action poses, faces, hairstyles, preset hand poses, props, lighting and camera positions are accessed through a tiny ribbed tab on the right of the screen.
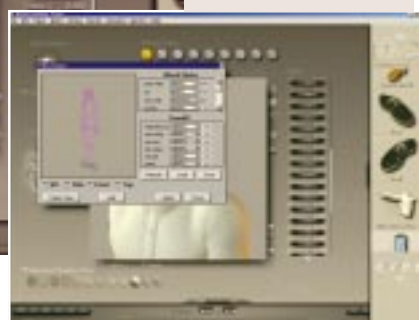
The edit palette comprises nine tool buttons that you can use to rotate, twist, scale, group, colour and adjust elements. All the editing tools work in two ways. Dragging on a body part with a selected tool applies the transformation to the part, dragging on the tool button applies the transformation to the entire figure.

Greater control is provided by parameter dials – adjusted using a thumbwheel or numerical input. These let you alter an element's attributes. Parameter dials for the head include open lips, smile, brow position, blink and mouth positions for certain vowels and consonants.

Using the parameter dials, it's possible to raise eyebrows to a quizzical point, close an eye to form a wink and change expression from a deep frown to a broad grin. Parameter dials for hands let you alter the position of fingers and thumbs from widely spread to a tight grasp, scale, taper, make rotational and side-to side movements. The Superhero morph parameter can pump up a figure to Schwarzenegger-like proportions.

Poser 4's animation features include an automatic walk designer and a sophisticated timeline-based animation palette that automatically interpolates and inserts intermediate frames based on user-defined keyframes. The walk designer lets you create a blend of walking styles including run, shuffle, sneak and strut, and to tweak secondary parameters such as head bounce.

The additional content on the second CD turned out to be a disappointment – it was mostly reworked Poser 3 figures and other existing material. Some new figures or wardrobes would have been welcome. The few sample animations, however, particularly Sumo Baby, superbly demonstrate the range of posture and movement, facial expression and camera movement achievable.

KEN McMAHON

PCW DETAILS

★★★★

Price *£199.99 (£170.20 ex VAT), upgrade £84.99 inc VAT*

Contact *Metacreations 0181 358 5858 (Computers Unlimited)*
www.metacreations.com

Good Points *Much improved control and animation, better hair and clothes*

Bad Points *Additional content disappointing*

Conclusion *If you're into figure-based illustration and animation, you can't do without it*

System requirements *PC: Pentium, Win95 or later, 32Mb RAM (64Mb recommended), 240Mb disk space Mac: System 8 or later, memory and disk requirements as above*

Sony Vaio PCG-F290
Cutting edge notebook

If your perfect partner has to be fast and well-equipped, then this addition to the Sony stable is for you.

The PCG-F290 is the latest power notebook in the Sony Vaio range, sporting a powerful 400MHz Pentium II processor and 128Mb of RAM. That's quite a lot of power for a mobile solution, but this is no ordinary mobile computer. The F290 is being aimed at the mobile video editor and as such, it has to be fast and well equipped.

The F290 isn't a lithe beast like its 505 cousins, although it's not particularly bulky either considering the components that Sony has squeezed into it. Weighing in at 3.5kg including the floppy drive and battery, it's also not particularly heavy.

As is usually the case with a Sony product, the design is stunning. The casing is a two-tone affair, comprising the usual Sony purple coupled with an attractive dark grey. The dimensions are slightly larger than the F190 reviewed in the May 1999 issue, but this is due to the increased screen size. The TFT display now measures 15in, although it can still only handle a resolution of 1024x768. No dead pixels are evident, but the lighting is a little uneven, with the top appearing slightly darker than the bottom of the display. The 2.5Mb NeoMagic graphics chipset is more than capable of getting the best out of the internal display, although it could prove limiting if the notebook is connected to an external monitor.

Storage comes courtesy of a 6.4Gb IBM hard disk. This isn't a huge amount of space by desktop standards, but it's fairly impressive in the notebook world and large enough to serve the needs of a mobile video editor. To the right of the chassis is a 4x DVD-ROM drive and a floppy disk drive. Although the floppy drive can be removed, it's good to see that all the peripherals can be accommodated in the chassis, rather than having to carry around extra bits and pieces.

On the left hand side are two PC Card slots, headphone and microphone jacks and the power switch. There's also an IEEE1394 or FireWire port. It's this inclusion that puts Sony's notebooks in a market of their own. Since Sony's DV (Digital Video) camcorders have FireWire outputs, this port will allow you to import video digitally for editing on the notebook. To capitalise on this feature, Sony has bundled its own video editing software, DVgate Motion, as well as Adobe's Premiere LE. Even though a serious video editor is likely to have software of this type already, it's a commendable inclusion.

With the increased form factor due to the larger screen, there's no problem fitting in a full-size keyboard. The keyboard can often make or break a notebook, so we're happy to say that you won't be disappointed 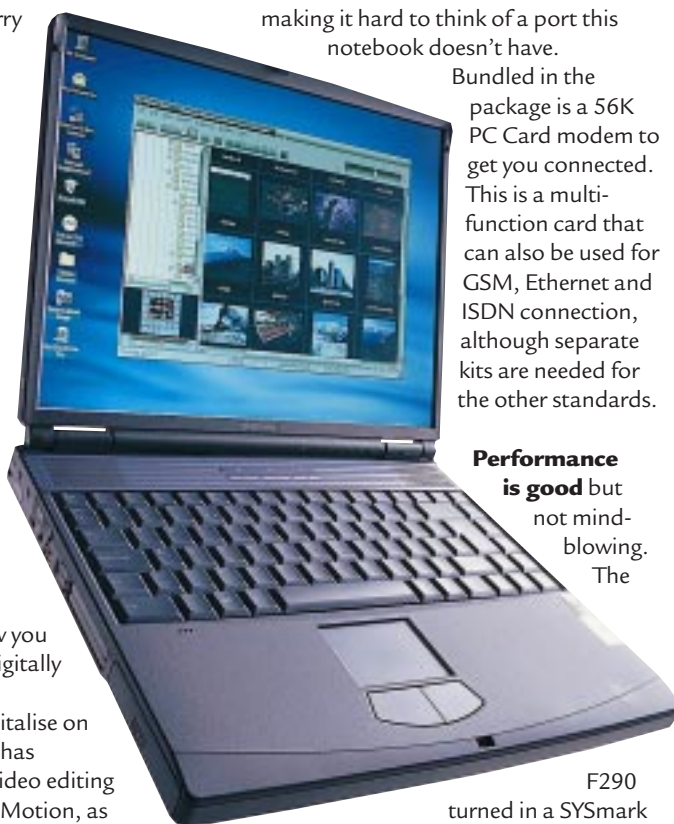with what's on offer on the F290. That said, it's not as impressive as the keyboard on the IBM ThinkPad 570 (reviewed page 74). The touch-pad is a fine example and pointer manipulation is the simplest of tasks. Unfortunately, the software for the touch-pad wasn't loaded, so we couldn't turn off the tapping option, although the touch-pad is far enough away from the space bar for this not to be a problem.

At the rear of the unit are serial, parallel, VGA, PS/2 and USB connectors, making it hard to think of a port this notebook doesn't have.

Bundled in the package is a 56K PC Card modem to get you connected. This is a multi-function card that can also be used for GSM, Ethernet and ISDN connection, although separate kits are needed for the other standards.

Performance is good but not mind-blowing. The F290 turned in a SYSmark score of 147, which is 15 higher than the 366MHz Pentium II equipped F190 scored in May. With a price of £2,559 ex VAT, the F290 is likely to make quite a dent in your wallet. However, it is a beautifully built mobile computer and if you want to do video editing on the move, it's your best option.

RIYAD EMERAN

The inclusion of a FireWire port puts Sony's notebooks into a market of their own

PCW DETAILS

★★★★

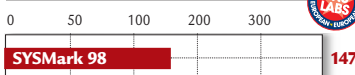**Price** £3,006.82 (£2,559 ex VAT)
Contact Sony 0990 424424
www.sony.co.uk
Good Points Very well specified, IEEE1394 port for DV editing
Bad Points Pricey, not as fast as we expected
Conclusion A well built, cutting edge notebook computer for the mobile DV enthusiast

PERFORMANCE RESULTS

	0	50	100	200	300	
SYSMark 98						147

CreativeLabs WebCam III

Now you can be seen wherever you want without leaving your desk.

Video cameras that plugged into a PC were always a solution looking for a problem, but then the Internet took off and *voila*, the webcam was born. Webcams let you send pictures across the Internet for such things as low-end video conferencing and video email, and they can also be used to post live images to websites. The diverse Creative Labs is already on its third webcam model, imaginatively titled WebCam III.

Each version of the Creative Labs WebCam has seen a different design, but the company still hasn't got it quite right. The large base adds some much-needed stability to the unit and the hinge affixed to the camera lets you position the lens vertically through 90 degrees. What you can't do, however, is position the lens horizontally, unless you turn the whole thing round.

Okay, that's no problem, but depending on the WebCam's distance from the PC, you may find that it gets tugged out of position by its cable. At least the cable is a decent six feet in length, and the USB plug on the end of it means there is no chunky parallel port adaptor to poke out of the back of your PC. Installation is as easy as you'd hope for with USB and there's even a green LED on the WebCam to tell you it's powered and working.

Despite a maximum still image resolution of 640x480 in 16.7 million colours, the WebCam's image quality isn't the best for these devices. The auto brightness and exposure settings leave everything a little dim and the banding filter is best left off.

JULIAN PROKAZA

PCW DETAILS

★★★

Price *£69 (£58.73 ex VAT)*
Contact *Creative Labs 0118 934 4322*
www.cle.creaf.com
Good Points *Neat design, simple connection*
Bad Points *Image quality bettered by the competition*
Conclusion *Though cheap and relatively cheerful, the WebCam III can't quite manage the crisp image quality of, say, the Philips USB PC video camera*

Easy CD Creator 4

RECOMMENDED
PERSONAL COMPUTER WORLD

It feels good, it looks great – CD writing software that really does have everything.

Without a doubt, Adaptec's Easy CD Creator software is the de-facto standard for anybody wanting to create their own CDs. With the price of CD recorders and the media they use at an all-time low, Adaptec has released a new version of the software to take advantage of the new market potential.

It's clear that a lot of work has been put into ironing out all the problems with the older versions of the software. While some of the changes may seem only cosmetic, they really improve the feel of the program. Both parts of the software – those for creating audio and data CDs – consist of a drag and drop method of adding the files you want to write to CD, sticking with the familiar explorer-style functions. Looking deeper reveals better functions, such as the ability for MP3 files to be written as audio tracks without user intervention. Perhaps the best improvement lies in the CD cover editor, which now works very well.

By no means does the package stop there: it includes additional software for creating picture discs and auto-running video discs. Should you still think this isn't enough, you won't be disappointed with the bundling of MGI's Photosuite and Videowave, which lets you edit pictures and video files before writing to CD.

Finally, there is an image-based backup program which will copy the entire contents of your hard drive to as many CDs as needed, allowing you to recover everything in the event of a disaster. If you have, or are thinking about getting a CD writer, then you simply can't be without this software.

DAVID LUDLOW

PCW DETAILS

★★★★★

Price *£57.58 (£49 ex VAT)*
Contact *Adaptec 01276 854500*
http://cdr.adaptec.com
Good Points *Easy to use interface and a large range of options*
Bad Points *The large number of programs may go mostly unused*
Conclusion *Everything you could ever want to use to create your own CDs, and all at an extremely good price. Superb for anyone with a CD writer*
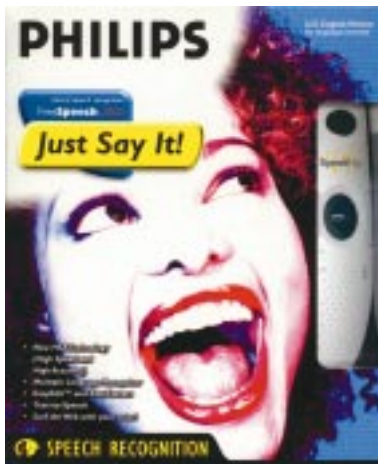**System requirements** *Pentium 166MHz, 90Mb recommended free hard disk space, 32Mb of RAM, Windows 95/98 or NT*

Philips FreeSpeech 2000

Here's what you need if you don't think you're getting the recognition you deserve from your PC.

Philips entered the PC speech recognition market last year with FreeSpeech 98, a cheap, no-frills package that originally came without a microphone. FreeSpeech 2000 is now available in two versions – with a normal headset mike or with the Philips SpeechMike, a combination handheld mike and trackball.

FreeSpeech 2000 is a general-purpose continuous speech package that lets you dictate text straight into most popular applications. It also functions as a command and control package, letting you navigate Windows 98 without touching the keyboard. Unlike its predecessor, it supports multiple users, has text to speech (courtesy of IBM), supports relatively complex macros and comes with a microphone. It supports 13 languages out of the box, which, given the price, makes FreeSpeech 2000 good value. The package remains 'modal', so to switch between dictation and command modes you need to click a button, but if you have the SpeechMike a dedicated button takes care of this.

As is the norm, FreeSpeech 2000 requires enrolment to deliver the highest recognition accuracies – we gave it 45 minutes of dulcet tones. The effort was well worth it: we were rewarded with some of the best initial recognition accuracies we've come across. Correction is a simple process too.

ROGER GANN

PCW DETAILS

★★★★

Price with headset £79.95 (£68.04 ex VAT), with SpeechMike £124.95 (£106.34 ex VAT)
Contact Philips Speech Processing 01206 755504 www.speech.philips.com
Good Points Impressive levels of accuracy, multi-language support, natural language support
Bad Points Still modal, number handling not as smart as rivals
Conclusion FreeSpeech 2000 is just made for the single European market: support for 13 languages makes it very good value. Delivers, fast, accurate text
System requirements Pentium MMX 166/48Mb RAM, 100Mb disk space – Pentium II recommended, SoundBlaster-compatible sound card, CD-ROM drive

Modular PCTV Tuner

RECOMMENDED
PERSONAL COMPUTER WORLD ✓

Slouch on the couch and tune in to the latest television channel with Modular Technology.

If you're getting fed up with using your computer for nothing more entertaining than Excel spreadsheets and a bit of word processing, why not transform it into a television with the help of the PCTV Tuner card from Modular Technology? Installation is just a case of plugging the card into a PCI slot and connecting a TV aerial, and the world of television is your oyster. All the usual channels are found automatically – weaker signals can be manually tuned. The PCTV Tuner Card doesn't detect the station name, so you have to enter this afterwards.

Using your mouse to change channels can become irritating, especially if you are sitting away from your computer. For an extra £25, couch potatoes can buy a remote control, which transmits to a 'magic eye' that sits on your monitor and plugs into the joystick port.

The TV images are displayed within a resizable window on the desktop, which offers full or wide-screen viewing, while the superb Nicam sound is fed through your existing sound card. Depending on the signal, the pictures can be remarkably clear. A really neat aspect of the PCTV card is the mosaic function, which allows nine thumbnail channels to be displayed on the screen at one time – channel surfing made even easier.

In addition to Fastext, the Teletext facility uses hyperlinks to jump to other pages, much like Internet browsing. Pages are stored for immediate retrieval and two or more pages from different channels can be viewed at once. Text can also be copied and manipulated much as in a word processor.

LUKE PETERS

PCW DETAILS

★★★★★

Price £60 (£51.06 ex VAT) with remote control £85 (£72.34 ex VAT)
Contact Modular Technology 01869 321323 www.modulartech.com
Good Points Good value for money, extended teletext features, NICAM stereo sound
Bad Points Adding the remote bumps up the price
Conclusion Not just an extra TV for the home, but one that includes Nicam stereo sound, excellent teletext features and video capture facilities
System requirements Windows 95/98, Pentium 200MMX processor, 16Mb of RAM, 5Mb of free hard disk space, sound card, DirectX 5 or later, high colour 16bit VGA monitor

Packard Bell EasyMate 800
Jupiter class notebook

For those who like their notebooks slim and stylish – and you know what they say about the size of your screen.

When they first appeared, Windows CE handheld PCs (or H/PCs) didn't receive quite the rapturous reception many would have hoped for. The first version of the operating system wasn't without its problems but much of the criticism was levelled at the hardware itself. The murky monochrome screens just weren't up to handling this miniaturised version of Windows and the keyboards bore too close a resemblance to a pocket calculator for most people.
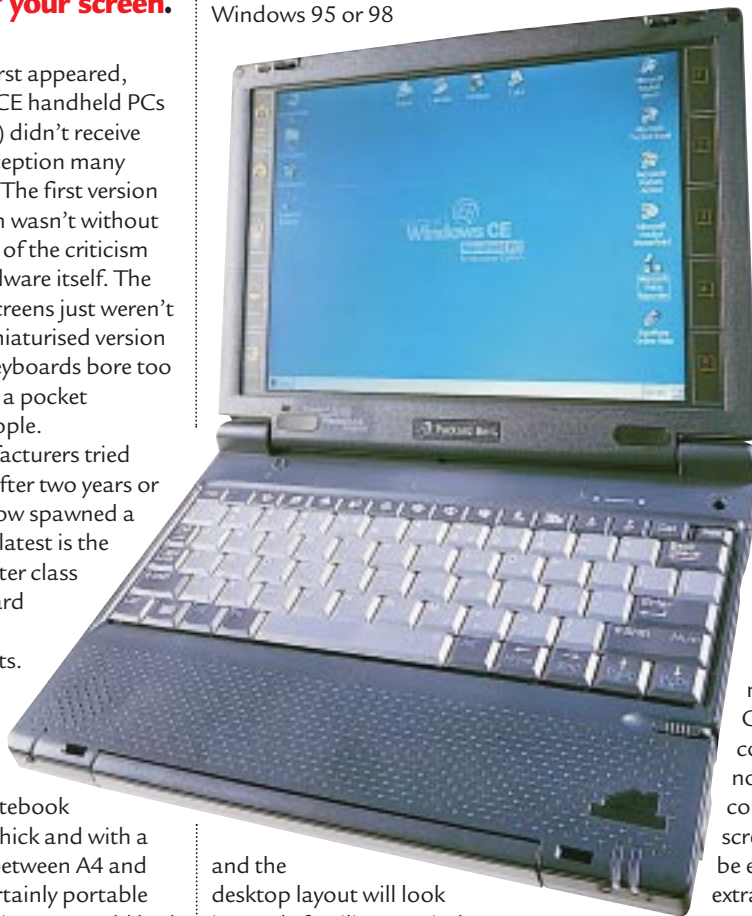
Undaunted, manufacturers tried again and again and, after two years or so, Windows CE has now spawned a myriad of devices. The latest is the sub-notebook size Jupiter class and this is where Packard Bell's first foray into Windows CE devices sits.

Superficially, the EasyMate 800 resembles one of the new breed of super-slim, ultra-portable notebook PCs. Just over an inch thick and with a footprint somewhere between A4 and A5, the EasyMate is certainly portable and the dull silver plastic case would look almost stylish if the plastic it was made from wasn't quite so flimsy.

Once inside, you'll be pleased to note the large keyboard and impressive 9.4in diagonal screen. There's no obvious pointing device, though, and Packard Bell has opted to stick with a touchscreen and stylus for the EasyMate rather than a touchpad.

It's only when you press the power button on the EasyMate that it becomes apparent that this is no ordinary notebook. Zero second boot time is known as instant-on and it's a breath of fresh air after all the hanging around

'Instant-on' is what zero second boot time is known as and it's a breath of fresh air

involved in loading other versions of Windows. The 800x600 screen – the largest on any H/PC so far – makes Windows CE difficult to tell apart from Windows 95 or 98 and the desktop layout will look instantly familiar to Windows users. This is the main selling point of H/PCs, as it lessens the steep learning curve associated with many handheld computers.

Windows CE is different from its bigger brethren, though, and although data can be shared between H/PC and desktop applications, the applications themselves cannot. Thankfully, Windows CE Professional – as used on the EasyMate – comes with pretty much everything a user would want right from the box. The 'Pocket' versions of Word, Excel, Access, Internet Explorer and the bunch of Outlook-like applications have a sufficiently rich feature set, although Pocket PowerPoint is still limited to displaying presentations and cannot create them. If you're interested in the EasyMate as a PDA, forget it, it's just too big. As a replacement for a notebook PC, however, it's an interesting proposition. Many notebook users lug around a few kilograms of hardware just to write documents on the train – something that can be achieved just as easily with the EasyMate. In fact, the EasyMate can just about replace a notebook for many tasks and the claimed eight-hour battery life means it can replace one for longer as well.

At the risk of ending on a bum note, the EasyMate isn't without its drawbacks but the biggest isn't its fault. No matter how versatile Windows CE is, it's still intended as a companion to a PC, whereas a notebook PC operates completely independently. The screen isn't as clear as it could be either, no doubt due to the extra layers needed to make it touch-sensitive, and there really should be a way to keep the stylus to hand when you're typing. Speaking of typing, the keys could be a touch bigger and further apart, since even medium-size fingers will find it a little cosy.

JULIAN PROKAZA

Borland JBuilder 3
Java application builder

If it's beans, tools, wizards and widgets you're after, then JBuilder 3 has everything you could ask for.

Borland's Java development tool, JBuilder, provides click-and-drag visual programming, targeting any Java 2 VM (virtual machine), although this is currently only fully available on Windows or Solaris. You can also configure JBuilder to compile for earlier versions of the JVM. JBuilder itself still runs only on Windows, although there are plans to move it to other platforms, and Borland demonstrated a 100% Java version of JBuilder, running on Sun's Solaris operating system at the last JavaOne conference.

JBuilder is useful for general-purpose Java work, but Borland would really like you to use it with Application Server, an expensive suite of components including VisiBroker and some clever Java applications for managing and tuning distributed applications. Parts of this come bundled with the Enterprise edition. The two other JBuilder versions are the Professional, for database work, and the Standard, which provides the basics.

A JBuilder application starts with a new project. Through project properties you can set the target JVM, the style of generated code and other global options. Next, you add other components such as an application, applet or servlet, custom classes or JavaBeans. The project workspace includes a browser for navigating project files and components, an editor with both source code and visual design views and an inspector for setting properties or generating event handlers. A key feature is two-way coding, which means that edits can be made either visually or in code without any problem.

Although there is a full set of JavaBean components, wizards and tools, there are several component sets with overlapping functionality. Swing is the standard Sun widget set used in JDK (Java Development Kit) 1.2. In the dbSwing set these are enhanced to have data-aware functionality. JBCL

(JavaBean Component Library) is the original JBuilder component library, but this is rendered more or less obsolete by Swing and dbSwing. You can also use AWT components for JDK 1.02 compatibility.
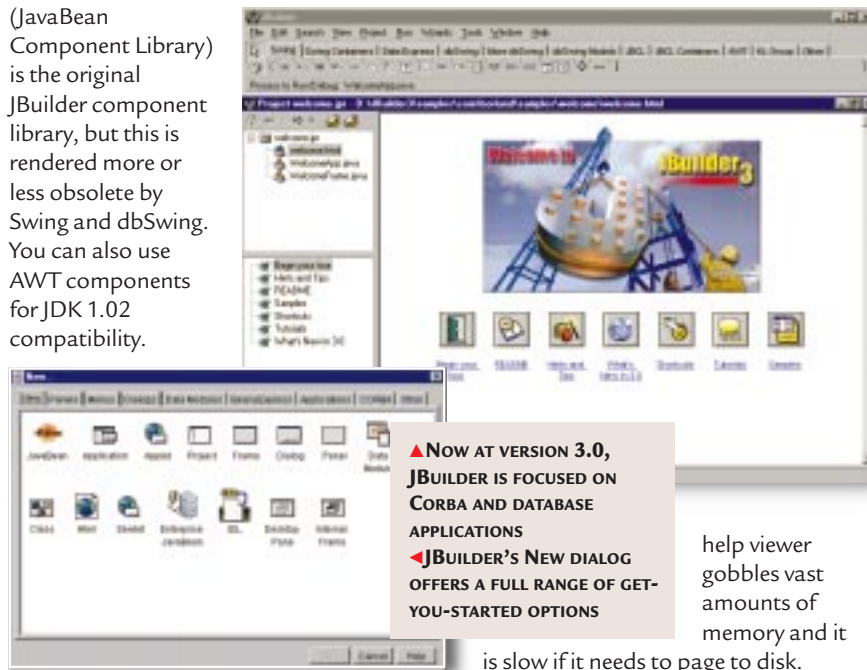
Much of the focus in JBuilder is on database connectivity. DataExpress is the brand name for JBuilder's database architecture, which separates user interface, datasets and database connections. A DataStore component is itself an embedded database, letting you cache data in a local file for good performance on a network or for disconnected use. Unfortunately, it only comes with the Enterprise version and you need additional licences to deploy it. The model is stateless, so connections are only made when data is being accessed or saved, ideal for network or Web applications. In JBuilder 3, DataExpress has been separated from JBCL, so you can use it with dbSwing.

Other new features in JBuilder include a help viewer, with a long overdue full text search, and an application generator for multi-tiered Corba projects. A package migration wizard helps with the tedium of updating class names in line with revisions in JDK 1.2 and the development environment is enhanced. In fact, the main reason for getting JBuilder 3 is its JDK 1.2 components and improved database features.

This is an excellent Java application builder and the best all-round choice if your system is up to it. However, the

▲ NOW AT VERSION **3.0**, JBUILDER IS FOCUSED ON CORBA AND DATABASE APPLICATIONS
◄ JBUILDER'S NEW DIALOG OFFERS A FULL RANGE OF GET-YOU-STARTED OPTIONS

help viewer gobbles vast amounts of memory and it is slow if it needs to page to disk.

Our hunch is that Java servlets doing XML generation and parsing will often prove more manageable and productive than JBuilder 3. If your Java interest is in general purpose applications, or you need to target JDK 1.1 or lower, JBuilder is not often relevant. Even so, at version 3.0, JBuilder has matured into a highly usable Java application builder

TIM ANDERSON

PCW DETAILS

★★★★

Price *JBuilder 3 Standard £98.99 (£84.26 ex VAT), 3 Pro £527.58 (£449 ex VAT), 3 Enterprise £1,996.33 (£1,699 ex VAT)*

Contact *Inprise/Borland 0800 454065 www.borland.com*

Good Points *An excellent range of components, Java 2 support, easy switching from code to visual editing, strong database architecture*

Bad Points *Performance remains a problem and online help is slow. Focus on high-end distributed database applications is irrelevant to many users*

Conclusion *An outstanding Java development tool but needs a big system to run it. Good value in its standard edition but expensive otherwise, particularly if you need deployment licences*

System requirements *Pentium 166, Windows 95/98 or NT, 96Mb RAM and 150Mb disk space*

Sharp VN-EZ1

Suddenly it's EZ-peezy to get video onto the Web.

How do you get a short video clip onto the Internet? Film your subject with a camcorder, digitise it, then compress and reformat it into a shape and size that befits the online medium – a bit of a pain really. Sharp's VN-EZ1, more charmingly known as the Internet ViewCam, makes this process a doddle.

You'd be forgiven for mistaking the EZ1 for a digital camera, and indeed it can fire off 640x480 pixel stills. At 81x90x42mm and 240g, it's lighter and smaller than you'd think too. However, by employing the heavily compressed MPEG-4 format, the EZ1 can capture between one and 20 minutes' worth of moving video (plus mono sound) onto the supplied 4Mb Smart Media card. There are five quality modes to choose from: four operating at 160x120 pixels and five to 15fps, and one at 320x240 pixels and two to five fps; there's even a time lapse function. Smart Media cards are available up to 32Mb in size, boasting between 10 minutes and almost 2.5 hours.

The EZ1 is designed to produce video for online distribution only, so there's no TV output or serial port. Instead, Sharp has supplied a floppy disk adaptor to quickly read inserted Smart Media cards. Video is stored in Microsoft's new Advanced Streaming Format, ASF, which allows updated media players to start playing the file without fully downloading it. Artifacts are present in the video, but it's recognisable and, crucially, small. A 20 second clip on the middle setting measured only 165Kb.

Existing camcorder owners may find better value fiddling with a video capture card, but the EZ1 really is the simplest and most fun way to get compact video files on the Web.

GORDON LAING

PCW DETAILS

★★★★

Price *under £600 TBC*
Contact *Sharp 0800 262958*
www.sharp-world.com
Good Points *Compact device for making compact movies*
Bad Points *Capture card cheaper for camcorder owners*
Conclusion *Easiest and quickest way to get video online*

Diamond Rio PMP300 SE

MP3 killed the radio star! Check out this stylish mobile assassin.

Diamond's notorious MP3 player is available in a teal-blue, 64Mb version from its US website <www.diamondmm.com>. A set of accessories is also available, so we decided to buy the lot.

The player can store about an hour of music, encoded at 128Kbit/sec, which is more than enough for a portable player. It also takes 3.3v SmartMedia cards for extra storage space. The bundled software handles encoding and transfer to the player, which takes a rather slow minute per track.

The player's buttons are difficult to use, being too flat to discern by touch alone. So we tried the remote control headset, which has a control dongle on its cord. Again, the buttons are too small and fiddly but at least you can clip the remote within eyesight. Another downside is that the player's display doesn't provide much info, such as the track name.

But it is a good player. Sound is excellent for MP3 and a portable device, the batteries last for about 10 hours and it doesn't skip while jogging, although this feature went untested.

You can – and we did – get a leather belt clip case that does little but protect the player and let you carry two SmartMedia cards and a spare AA.

The 32Mb PMP300 is available off the shelf and Diamond is soon to launch an upgrade, the PMP500, also with 64Mb but with a USB connector. Creative and Casio are also launching devices with features such as FM tuners.

MP3 players will catch on but they're still in the geeky domain. To encode – or steal from the Net – MP3 tracks and then upload to a player seems a hassle. Why not get an MD player for now?

PAUL SMITH

PCW DETAILS

★★★

Contact *Diamond 01189 444400*
www.diamondmm.com
Price *PMP300 SE £156.22, headphone £12.47, leather case £18.72, 2x16Mb flash £62.47, import duty £63.73, total £313.61*
Good Points *Light, long-lasting and cool. A bit like Wrigley's Spearmint, then*
Bad Points *Not the best design and not the cheapest way of listening to music*
Conclusion *Probably best to wait for next-gen MP3 players*

Proxim Symphony
and Diamond Homefree

Ever wished your PCs would talk to each other and share things – without getting their wires crossed?

I f you are one of the lucky few who has more than one PC at home, but always seem to want the file or to use the printer that is on the other machine, then you need to create your own network. The Symphony and Homefree offerings from Proxim and Diamond respectively do just this, without a wire connecting the two cards.

Aimed at the home and small business markets, these products allow you to share whatever files and devices are in the networked machines. The theory is that this removes the need for a separate CD-ROM, printer, modem or second phone line as they can all be shared across your network. And all this at an optimum claimed transfer speed of 1.6Mbit/sec for the Proxim and 1Mbit/sec for the Homefree.

The first thing that you have to do with Proxim's wireless ISA card is plug in the antenna. This allows you to move just the antenna rather than the whole computer. We felt that the installation program was more user-friendly than the Homefree, although we had to be careful to read the comprehensive instruction manual thoroughly to install everything successfully. Once set up, file and device sharing worked

successfully, as did Internet sharing. We found browsing to be slightly slower on the laptop that was sharing the modem in a desktop PC.

The speed at which you can access the Internet will be affected by a number of factors. The quality of the shared modem and phone line are two, but the data transfer speed between the shared devices is another. This in turn depends on factors such as the distance between the PCs and the thickness of any walls or other obstructions between them. However, provided only one computer is using the connection at one time, this should not prove too much of a problem. Where connection speed will really suffer, however, is when two users request a page at the same time, or if one is downloading a file while another is browsing. If your primary objective in networking two computers is that they can both use the Internet, you would be better advised to install a second phone line. That said, being able to wander around our building with a notebook browsing the Internet was an impressive achievement – the speed of the connection remained the same at a distance of 50 feet as it did at three feet.

> ### *Being able to wander around browsing the Internet was impressive*

We also tested the PC Card and ISA versions of Homefree. With the same claimed range as the Symphony kit (150 feet) and a similar set of features, there is little to choose between them on paper. The installation procedure is less user friendly than Symphony's – using Windows' Add New Hardware wizard, the configuration screen requires you to press both the share files and share Internet buttons to complete the process, even if pressing these buttons is not appropriate. Once beyond this minor quirk, however, the Homefree shares files and devices as well as the Symphony. We tried sharing Internet access using a notebook as the machine with the modem, but the combined efforts of the VNU Labs and Diamond's technical support could not make it function.

Overall, we found the Symphony to be the better product. The fact remains, though, that by buying either of them you would be setting up a network in a more expensive way and have a slower data transfer rate than traditional wire. There are so many wires coming out of the average PC anyway, you would need a very specific reason to remove a single network cable from the equation.

JASON JENKINS

PCW DETAILS

★★★★

Proxim Symphony
Price *Expected to be around £115 for the PCI/ISA card (£97.87 ex VAT) and £155 for the PC Card (£131.91 ex VAT) on release in August*
Contact *Proxim UK 01235 865001*
www.proxim.com
Good Points *The better installation procedure of the two systems tested here, adjustable antenna saves you having to shift your PC to optimise reception*
Bad Points *None to speak of*
Conclusion *Easy to install with a comprehensive manual*

★★

Diamond Homefree
Price *ISA/PCI £89 (£75.74 ex VAT), PC Card £109 (£92.77 ex VAT)*
Contact *Diamond 0118 944 4400*
www.diamondmm.com
Good Points *Slightly cheaper than the Proxim alternative*
Bad Points *We had difficulty getting the Internet sharing to work*
Conclusion *If you can make it share modems, then this is definitely worth consideration*

Sound System DMX vs
Montego II Quadzilla

There's plenty to make a noise about with these sound cards – and your CPU will thank you.

If you're keen to boost your PC's performance, a PCI sound card may not be that high on your shopping list. You're probably sorted for sound already, so why upgrade that part of your system? Well, hear this: compared with the ageing ISA, SoundBlaster compatibles, PCI boards operate with significantly less CPU involvement. This frees up overheads, while PCI's greater bandwidth delivers more sound channels, supports 3D positional audio, multiple sets of speakers, real-time effects – the list goes on. Interested?

Terratec Sound System DMX

The Sound System DMX is powered by the new ESS Canyon3D processor and is the first card to use Sensaura's 3D MultiDrive technology. In addition to Sensaura's proprietary 3D algorithms, the DMX is compatible with A3D and Creative's open EAX (Environmental Audio Xtensions).

The DMX is equipped for two or four speaker playback. Further I/O options include two internal CD audio connectors, one for voice modem and an auxiliary device of your choice. A WaveTable daughterboard can be added and there's an optional radio module. The second card, which connects internally, provides optical and coaxial digital inputs and outputs.

Plug and play handled the installation, so setting up was

▲ **Sorted for sound with the Terratec**

straightforward. Bundled applications include WaveLab Lite for audio editing, Mixman and 40 shareware titles.

The synthesiser comes with 2Mb and 4Mb sample sets. We were reasonably unimpressed with the quality of the instruments, although this is typical of cards in this price range. However, digital audio playback was crystal clear and virtually no noise could be heard.

▶ **You too can consider yourself a Montego driver**

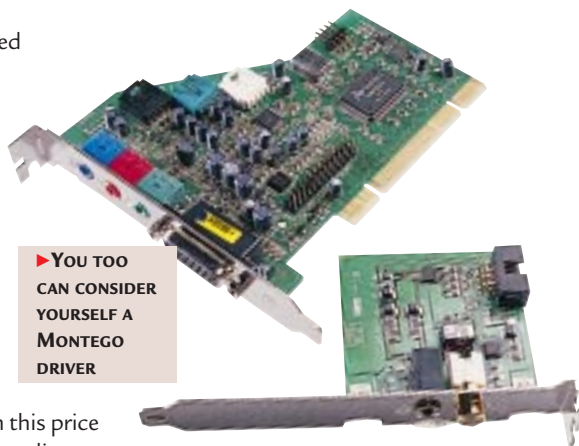## Turtle Beach Montego II Quadzilla

The Quadzilla is built around Aureal's Vortex 2 chipset. As well as providing your everyday meat-and-two-veg sounds, it handles the processing of A3D. Originally developed for NASA flight simulators, A3D creates a stunning 3D sound field using just two speakers. We often found ourselves looking over our shoulder in disbelief.

A3D has support for four speakers and, as expected, this improved the 3D positioning of sounds still further. Other new features include wavetracing (to calculate acoustic reflections, or echoes, from your 3D environment) and occlusion. This filters a sound when its source disappears behind, say, a wall.

The Quadzilla comes with two cards. The main board provides the usual mod cons (mic and line inputs, speaker output and joystick connector), while the second provides connectors for coaxial, digital output and rear speakers. Internally, there are connectors for CD audio, voice modem and an auxiliary device.

We reckon the days of complicated sound card installations are behind us now; plug and play took care of everything first time around. The package includes a suite of audio apps from Voyetra for recording, editing and playing back audio and MIDI files.

Sound quality is exceptional. The onboard synth is rather ordinary, but this shouldn't distract you if you're after a games card, as most sound tracks are on CD these days.

■ Which is best?

In our opinion, A3D has the edge over Sensaura with the release of version 2.0 hardware and software. However, the DMX package provides digital I/O. The choice, as they say, is yours.

STEVEN HELSTRIP

PCW DETAILS

★★★★
TERRATEC SOUND SYSTEM DMX
Price £129 (£110 ex VAT)
Contact Terratec ProMedia 01600 772111
www.terratec.co.uk
Good Points Optical and coaxial digital I/O as standard
Bad Points Mixer graphics don't display correctly at a screen resolution of 1280x1024
Conclusion A solid all-round performer. Worth the outlay for the digital I/O alone

★★★★
TURTLE BEACH MONTEGO II QUADZILLA
Price £99 (£84 ex VAT)
Contact Et Cetera Distribution 01706 228039
www.etcetera.co.uk
Good Points A3D 2.0 works superbly, healthy software bundle
Bad Points No digital input. Digital output is fixed to either 32 or 48KHz
**Conclusion** The better gaming card

Coda FinaleAllegro

Tune in, turn on and MIDI out to music software that will notate your wildest ramblings.

Score writing applications have never enjoyed widespread popularity. For conventional musicians, the term 'computer music' still has negative connotations and they're rejected by desktop musicians because of their use of standard notation. Indeed, one of the attractions of computer sequencing has been its way of shielding users from music theory and presenting information in a much more accessible form. Notation packages such as this are aimed at the group of people willing to embrace both the crotchet and the computer.

Allegro is score writing for those prepared to sacrifice the advanced features of more sophisticated packages such as its parent application, Finale, to achieve faster results. The designers have gone to some lengths to keep it accessible, stripping away Finale's more esoteric functions such as multiple font printing and its plug-in capability (a major advance for a score writing application). What hasn't been affected is the relationship with MIDI. Crucially, the company has recognised that for many users, a printed score is unlikely to be the final destination of their work.

MIDI is core to Allegro's operations, giving it a more expansive feel than its rivals. You'll find MIDI solutions to a variety of performance-related problems that couldn't be accommodated using scoring techniques alone. Needless to say, you can enter music via MIDI keyboard and standard MIDI files, as well as through the computer's own keyboard and mouse.

◀**STARTING WORK ON A NEW SCORE USING THE SIMPLE ENTRY TOOLS**
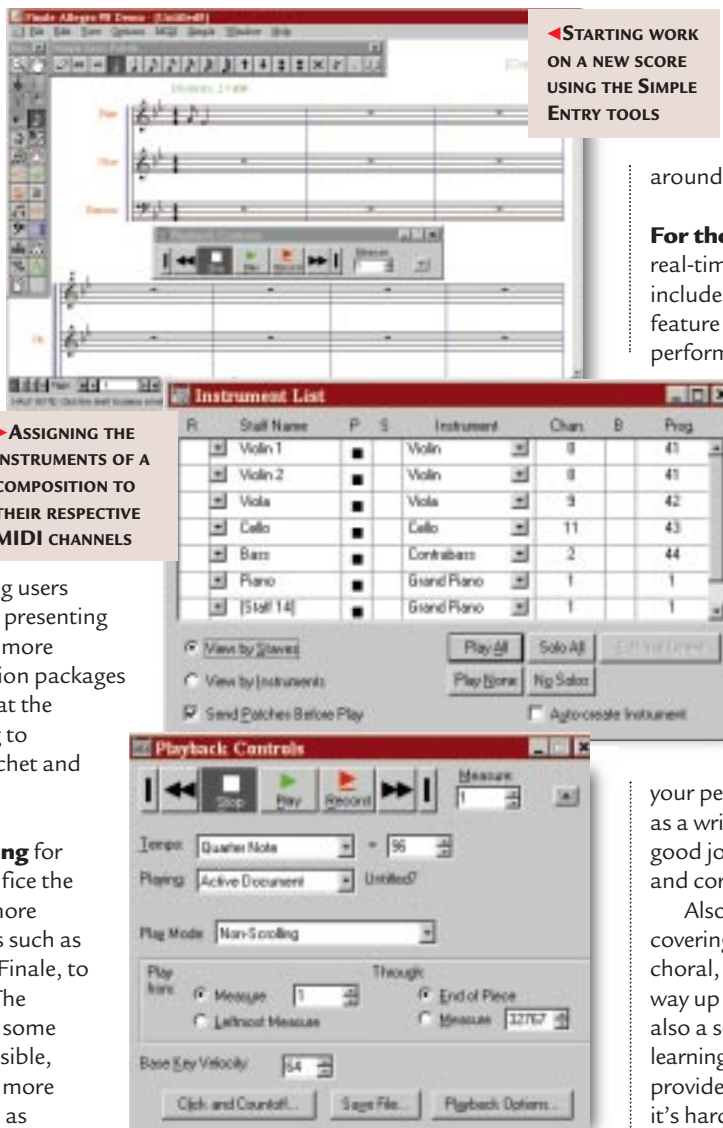
▶**ASSIGNING THE INSTRUMENTS OF A COMPOSITION TO THEIR RESPECTIVE MIDI CHANNELS**

▲**DEFINING THE PARAMETERS OF THE PLAYBACK CONTROLS**

There are two step-time note entry methods. Simple entry is designed for basic editing using an on-screen palette of tools, and offers a useful command for checking the notes you've inserted against the time signature to ensure you have only the requisite number.

By contrast, speedy entry is designed to be used in conjunction with a MIDI keyboard to provide a fast and efficient method of entering notes using the computer's own numeric keypad and various key commands. Without a manual for referral, it takes a bit of getting used to (one wonders why the more easily labelled F-keys couldn't have

been used), but it does offer a quicker way of working, particularly with the Mass Mover function, which makes it easy to copy and move around large chunks of music.

For those only satisfied with real-time note entry, Allegro also includes Hyperscribe, an impressive feature designed to translate 'live' performances instantly into written scores. Users provide their own metronome 'pulse' which the application will follow, irrespective of any fluctuations in tempo. You can input metronome tempo data by tapping a note on a footswitch, MIDI keyboard or other MIDI device, then leave it to Hyperscribe to place the notes and rests of your performance in relation to it. There's something quite fascinating about watching your performance appear in front of you as a written score, and Allegro does a good job of interpreting your intentions and correcting minor mistakes.

Also included are 38 score templates covering most types of composition: choral, guitar, piano/vocal duet – all the way up to full orchestral works. There's also a series of tutorial videos, although learning to use Allegro is straightforward, provided you're musically literate – and it's hard to imagine a program like this being of interest to anyone who's not.

NIGEL LORD

PCW DETAILS

★★★

Price *£179 (£152.50 ex VAT)*
Contact *Et Cetera 01706 228039*
www.codamusic.com
Good Points *Fast and easy to use, whether you're printing scores or playing them through a MIDI system*
Bad Points *A little expensive, particularly when compared to sequencers, many of which include their own score writing facilities*
Conclusion *A relatively pain-free introduction to computer music — if you know the score*

HP DeskJet 815C

Lie back and bask in glorious technicolour because it looks as though HP has done it again.

A top resolution of 600x600dpi is nothing to shout about in this age of megapixel printers, but two bits of HP technology – PhotoREt and ColorSmart – make this sort of statistic redundant. PhotoREt uses photo cartridges to provide more detailed pastel colours for photo quality images, while ColorSmart optimises colour output and enhances the colour clarity of low-resolution images, such as those from the Internet, by bringing them into focus. These paid off, and the 815C produced stunning photo quality output with vibrant colours and realistic skin tones, which are traditionally difficult to produce. There was no evidence of any banding.

Text output was also excellent, and the 815C churned out full pages of 12pt text in 'normal' quality at a rate of around three pages per minute. Standard business letters would have less coverage and so arrive more quickly. The 815C scored an impressive 81.41% in our quality performance tests. Areas of solid black had uniform coverage and regular photocopier paper did not suffer from excessive rippling or curling. The printer has a standard 2Mb of RAM installed, plus eight resident fonts, as well as input and output trays for 100 and 50 pages respectively. HP has supplemented the standard parallel connection with a USB port, while retaining basic compatibility with Windows 3.1 and even DOS, although you'll have to stick with the parallel option here.

In all, this is another impressive printer from Hewlett Packard, and one that proves that higher resolutions are not the be-all and end-all of photo quality printing.

NIK RAWLINSON

PCW DETAILS

★★★★

Price £179 (£152.50 ex VAT)
Contact Hewlett Packard 0990 474747
www.hp.com
Good Points USB, fast, excellent photo output
Bad Points Can reproduce small fonts, but there are others on the market that can go smaller
Conclusion An impressive addition to the HP stable

Infra-red for desktops

They say that the best things in life are free – wire-free.

Want a bargain PC upgrade? We've just transformed a PC by fitting it with 4Mb infra-red for just £10! Sure, forthcoming radio technologies like Bluetooth don't worry about line of sight and multiple devices, but what about today's products? Almost all notebooks and PDAs are fitted with IR, as are several digital cameras and mobile phones, but no desktop PCs. This is frustrating, because IR easily solves the eternal problem of transferring information between desktop PCs and notebooks.

You can buy external 115Kbit/sec serial-IR adaptors for around £100, but surprisingly, most desktop PC motherboards feature a neglected five-pin jumper labelled IrDA. After much trawling, we ordered an Asus Pent II 440LX/BX IrDA module on the Dabs Direct website. The next day we received a tiny board featuring a pair of LEDs and a cable, but no manual. We connected it to an Asus P2B motherboard, set 'UART2 to use IR' in the BIOS, started Windows 98 and leapt for joy when the OS recognised a plug and play infra-red port and self-installed the drivers; even Windows 2000 Beta 3 recognised it.

Now we no longer use a cable to connect notebooks, Psion 5 or Sony DSC-F1 digital cameras to this PC – they transfer data at up to 115Kbit/sec. No wires, no software – it just works.

Okay, the motherboard hails from Asus, which also makes the module, but many other boards, including older Socket-7 models, feature the same five-pin IR connector. Believe us, it's the best tenner you'll ever spend.

GORDON LAING

PCW DETAILS

★★★★★

Price £11.75 (£10 ex VAT)
Contact Dabs Direct 0870 129 3000
www.hp.com
Good Points Desktop IR for only a tenner
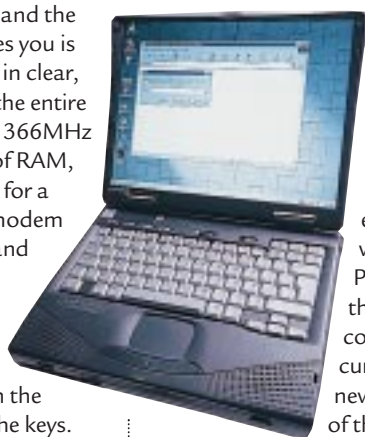**Bad Points** Your motherboard may not support it
Conclusion Best upgrade we've ever made

Compaq Armada 1750

An impressive-sounding notebook that doesn't live up to its specifications.

Open up the Armada and the first thing that strikes you is the screen. The 14.1in clear, crisp TFT display fills almost the entire inside of the lid. Add to this a 366MHz Pentium II processor, 64Mb of RAM, a 6.4Gb hard drive and room for a 24x CD-ROM, floppy drive, modem and battery in the main unit and you have, at least on paper, a very formidable notebook. The reality, sadly, does not quite deliver.

The first gripe we had with the Armada was the location of the keys. Windows NT was preloaded, but the unconventional placing of the Function and Delete keys meant that it was at least five minutes before we could find the Ctrl+Alt+Delete combination to log on. We also found the keyboard on the Armada slightly too springy resulting in a rather strange sensation after a short period of typing, although this is more a matter of personal preference.

Once into Windows, the integrated touch pad was at best erratic and at worst unreliable. Placing a finger on the touch pad could cause the cursor to jump to a new, unspecified part of the screen. Tapping it would result in a random selection from one of left click, click and hold, and double click.

The inclusion of a CD-ROM, floppy drive and battery made the unit quite heavy, and it definitely seemed too bulky for the flimsy extendable feet on the bottom of the case.

Plus points for the Armada were the addition of a USB port, a standard composite TV out socket, good speakers and an integrated mains power supply.

WILL HEAD

PCW DETAILS

★★

Price £2,149.08 (£1,829 ex VAT)
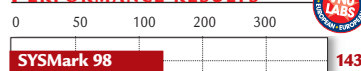**Contact** Compaq 0845 270 4000
www.compaq.co.uk
Good Points Large clear screen. Room for battery, CD-ROM and floppy drive in the main unit
Bad Points Inaccurate touch pad. Overly springy keyboard
Conclusion A well specified machine let down by poor build quality and a lack of attention to detail
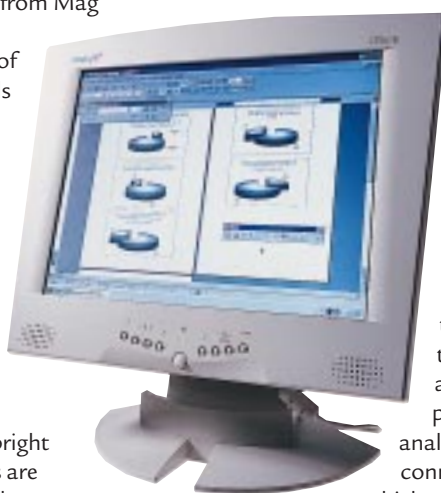
PERFORMANCE RESULTS

	0	50	100	200	300
SYSMark 98					143

BAPCo Sysmark Windows 95 test scores

Mag LT561E TFT

A multimedia monitor which looks stylish but at the expense of the display.

This new 15in TFT from Mag certainly looks stylish. The sides of the casing slope outwards slightly in a departure from the usual white box approach. However, this does play the unfortunate visual trick of making the sides of the panel appear crooked. The display is generally good, and apart from a couple of small dark patches in the right-hand corners, it is bright and crisp. No dead pixels are visible. The display coped impressively with Half-Life, keeping up with the complex textures. On the bad side, colours are not displayed uniformly, appearing brighter at the base and generally looking washed out.

Mag is hoping to sell this monitor on the back of its multimedia ability, although this is hardly unusual anymore. There's a handy USB hub located at the rear, together with an audio-in port and the analog D-SUB connection, all of which are easily accessible. The sound from the monitor is fairly tinny, as you might expect from speakers of such a small size, although it is possible to get quite a high volume from them without any audible distortion.

The OSD is user-friendly, with the buttons arranged to fit in with the general design. Two dedicated buttons allow you to turn the volume up and down with one touch. The menu system is easy to navigate, with all the usual options available. An auto adjustment program will set the various clock phase and colour settings for you, although to achieve the best results you would be advised to fiddle.

JASON JENKINS

PCW DETAILS

★★★

Price £904.75 (£770 ex VAT)
Contact Mag 0118 975 2445
www.magtechnology.co.uk
Good Points Multimedia capability, powered USB hub
Bad Points Display could be better
Conclusion A respectable all rounder but nothing particularly special

Mediator 5 Pro Edition

Get yourself noticed and turn a few heads with this neat little presentation package.

Presentation software has moved on somewhat since the birth of applications such as PowerPoint. This particular example allows you to combine the use of photography, film and video, music and sound, and of course, text. Mediator 5 is the latest version of this award-winning multimedia presentation package.

As applications go, this one is relatively easy to use, especially considering what you can do with it. However, despite this apparent ease, it may still require a fair bit of getting used to. For those who are unfamiliar with the previous Mediator, it would be worth using the video tutor to show you the three main steps you'll need to know for all documents. After this, it is recommended that you go through the supplied manual and follow all the examples therein. There is also a wizard option to help you create different types of template for your projects. These range from photo albums to video sequences.

The user interface is set out like your word processor, with the main menu at the top of the screen and the toolbar down the left-hand side, immediately accessible and clear as to what they are. You can also choose to keep certain dialogs open while you work, such as your Page List or Object List. This makes it easier to keep track of what you're doing and how much you have done.

This edition contains lots of new features which help you add a professional look to your finished projects, while making it all the more interesting to work with. You can experiment with PhotoShop-type effects, such as adding a glow or shadow effect to an object, or use the alpha channel to add transparency. There is also the opportunity to create 3D images by adding a 'Bumpmap' on top of an object to apply this effect.

You can either start from scratch or use the predefined templates/projects. Additionally, you aren't confined to the

▲YOU CAN APPLY PHOTOSHOP-TYPE EFFECTS AS WELL AS ANIMATE ANY OBJECT

supplied pictures, videos or sounds, as you can use your own files and add material.

By assigning hotspots and hypertext within your main pictures, you can also make your presentations interactive. For example, by giving the appropriate instructions, you can tell Mediator to display text, go to another page, or play a sound. This drag and drop process does take quite some time, however, and you have to repeat the whole procedure wherever you want to apply it, rather than simply copying it over. At times, the supplied manual, which is otherwise very helpful, gets a bit ahead of itself and leaves you struggling to see where it went. You may have to refer back to earlier examples just to keep up, which becomes quite irritating.

The potential level of interactivity that you can include may seem daunting and unattainable at first. Once you've got the hang of it, though, it shouldn't take too long to complete the lengthy procedures,

so any frustration may ease. Once you see your finished page or project in action, you will see how easy it is to create a good presentation.

Other bonuses make up for any shortfalls. Mediator 5 comes with an extra utility, MatchWare Screencorder, which lets you record whatever is happening on the screen. This is ideal for training purposes and demonstrating how to use other types of software, and is what the manufacturers have used in the Mediator 5 video tutorials.

The package would prove ideal for teachers as you can create educational presentations, which allow pupils to interact with the subject and see where they may be right or wrong. One of the exercises in the manual provides a good example of this. Additionally, you can distribute the presentation to a number of computers without having to install Mediator 5 on each of them. You can email it, burn it to CD-ROM or save it to a floppy disk.

HELEN FORTGANG
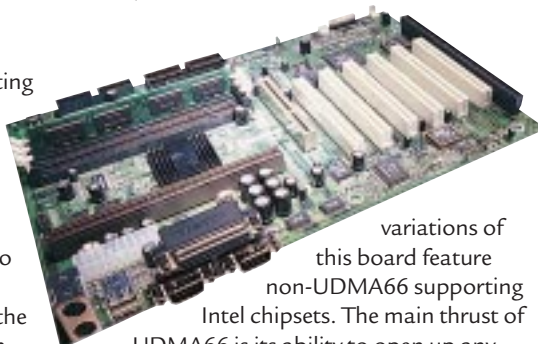
TMC T16VG4 motherboard

The mother of motherboards lets you avoid data rush-hours.

Long before the CPU manufacturers start touting host frequencies of 133MHz, we will be seeing both supporting motherboards and PC133 memory. So we took full advantage of the opportunity to test TMC's TI6NBFV+ motherboard while overriding the Slot 1 setting auto-detect. With the opening of one jumper, tentatively titled Host Frequency Force Selector, a Pentium II was running on a front side bus frequency of 133MHz.

VIA's Apollo Pro Plus provides the PC133 support. The final release of this board will also take advantage of the chipset's AGP4x support, although this was not available in this early build.

In addition there are six PCI slots, including one shared with an ISA for those legacy cards, and an option for up to 64Mb of on-board SDRAM in addition to three DIMM sockets.

Support for the new EIDE interface protocol UDMA66 is currently only available courtesy of VIA's chipset. Two variations of this board feature non-UDMA66 supporting Intel chipsets. The main thrust of UDMA66 is its ability to open up any potential bottlenecks on data transfers between devices such as hard disks and the PCI bus.

Specifically testing potential PC133 performance, we ran our performance benchmarks with 128Mb of PC133 memory and the more modest PC100 memory on a reduced host frequency.

The results returned showed unremarkable increases in performance, although our benchtests are designed to measure overall system performances rather than particularly memory hungry applications that would enjoy the increased data transfer rate of a higher host clock frequency.

IAN ROBSON

PERFORMANCE RESULTS

SYSMark 98 PC100 128Mb		151
SYSMark 98 PC133 128Mb		155
3DMark 99 Max PC100 128Mb		1929
3DMark 99 Max PC133 128Mb		2010
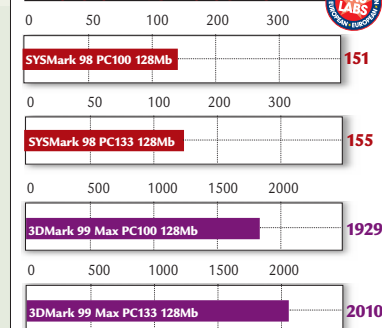
Elsa Microlink Office

The little white box that does just about everything – if you can get it to work.

The Microlink Office from Elsa claims to be a complete multimedia solution for individuals and small businesses. It is an external modem which also serves as a fax and answering machine.

The modem's firmware uses Rockwell's K56Flex standard, which can be flash upgraded to V.90. The Microlink has 2Mb of memory which can store up to 70 fax pages or 15 voice messages. Unfortunately, the memory cannot be upgraded. The speakerphone can be used to hold a hands-free conversation although you do need a conventional handset to dial out first.

The Microlink Office provides access to the messages from a remote location. Unauthorised access can be controlled using a personal identification number. You can even program the modem to send an automatic reply to incoming messages. However, the Microlink Office cannot be configured to transfer the messages to a remote PC. Like most external modems, this one has a set of LEDs at the front which display its status and can be helpful with troubleshooting.

Despite Elsa's claims of the product being plug and play compatible, we had trouble installing it. The tweaking involved in getting it up and running could be well beyond novice PC users.

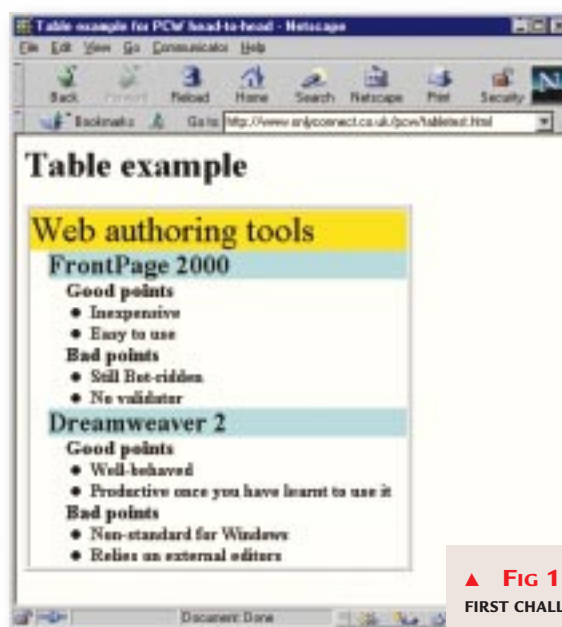**AJITH RAM**

Visual Web editing *vs*
hand-rolled HTML

What is the best way to write Web pages? Diehard hand-coders joke about using Visual Notepad, although in fact, they are more likely to use a programmer's tool such as CodeWright or a dedicated Web editor such as Homesite. At the other extreme are page designers who never want to see a line of HTML in the raw. This is where we go head-to-head with the two methods.

The contenders

CodeWright – an all-purpose programmers' editor
Hand-coders who want a great programmers' editor need look no further than Premia's CodeWright. This general-purpose tool can be used for Java, C++, Delphi, scripting, or anything else you care to name as long as it involves writing code. It still includes features such as colour-coding, smart indentation and the auto-completion of keywords.

There are also some useful extras such as multiple clipboards and a built-in clipboard viewer, global bookmarks that allow you to instantly recall any document, quick display of the differences between two versions of the same document, and macros in Perl or Basic. Through a selective display feature, you can make CodeWright a folding editor, hiding most of the document while you work on a small

Table example

Web authoring tools
FrontPage 2000
  Good points
    ● Inexpensive
    ● Easy to use
  Bad points
    ● Still Bug-ridden
    ● No validator
Dreamweaver 2
  Good points
    ● Well-behaved
    ● Productive once you have learnt to use it
  Bad points
    ● Non-standard for Windows
    ● Relies on external editors

▲ **FIG 1** THE FIRST CHALLENGE: CREATE THIS TABLE

part of it. The package is hugely flexible, copes easily with very large documents, understands UNIX line endings and is generally difficult to do without once you get to know it.

Although it is not specifically designed for HTML, CodeWright has some handy features for Web authoring. The HTML toolbar is a quick way to enter common elements, and there is a dialog for parameter completion. Many tags are also available from a right-click pop-up menu. You can also display a browser window that updates instantly whenever you save the code.

Dreamweaver – the totally visual approach
Macromedia's Dreamweaver is a visual page editor that has won friends by avoiding the evil habits of the species (see panel below). It creates efficient code and does not modify existing code or scripts. Dreamweaver is a Macintosh-style application with lots of floating windows. These include the editor, a library, a template and style manager, a site management window, an object palette or toolbox, a property inspector that allows you to modify the currently selected object, a behaviour inspector for attaching JavaScript to objects, and a timeline inspector for building animation sequences. Dreamweaver is well tuned to dynamic HTML and cascading style sheets. It's harder for newcomers to learn than the likes of FrontPage, because it does not have the look and feel of a word processor. One problem is that the built-in HTML and script editors are little better than Notepad, but to be fair, Homesite 4.0 is bundled as part of the package and an external editor button takes you straight to it.

Round 1: creating a table
The first task we tackled was creating a table. We wanted a bold, clear table with sub-headings and bullet points [Fig 1] but this was not quite as easy as it looked. In theory, you should use cascading style sheets, but not every browser supports them and it is hard to achieve consistent results.

The other option is to use a standard HTML table to obtain indented text. We wanted a border around the table but not around each individual cell. However, you cannot turn off the cell borders easily, so the best approach is to nest a borderless table within a single-cell

Three evil habits

Visual Web editors are prone to three evil habits. The first is proprietary tags. Users who export Powerpoint slides or create exotic effects in FrontPage, without realising that someone using Netscape on Linux will not receive anything resembling the intended results, have been caught by the proprietary tag trap. The best protection, aside from a good knowledge of HTML, is reliable validation.

Next comes auto-changing code. No one likes editors that helpfully reformat pre-existing HTML or script, breaking it

in the process. Early versions of FrontPage were notorious for this, although version 2000 is a great improvement.

The third evil is code-bloat. Some visual editors are seemingly incapable of creating a document without inserting reams of unnecessary tags, making them slow to download and hard to fix. Again, the main offenders are improving, although if you try to create Web pages from applications such as Microsoft Publisher, you will soon run into this one.

What you see is what you get – sometimes

Some people foam at the mouth and flail their arms at talk of WYSIWYG Web editors. The reason is that the concept strictly does not apply to Web pages. Part of the HTML concept is that the browser, as customised by the user, determines the look of a page. For instance, images might be on or off, the text size is variable and the size of the browser window is unpredictable. There are also tags such as <EM>, meaning emphasised, that do not specify an implementation. Most browsers render it as bold, but in theory it could be double-underlined, in red, or a louder voice in a speech reader. No Web editor is really WYSIWYG.

Less sensitive types appreciate that many of the features of WYSIWYG can be implemented in Web browsers. If your Web editor shows a fair impression of how a page might look when rendered in a browser, as opposed to showing lots of plain text and angle brackets, then it is in the spirit of WYSIWYG. It might be safer to talk about visual editors, though, in case you meet the guy with the foaming mouth. If you really want WYSIWYG on the Web, look at Adobe PDF (Portable Document Format) and the Acrobat viewer, a cross-platform solution that preserves the exact appearance of a page.
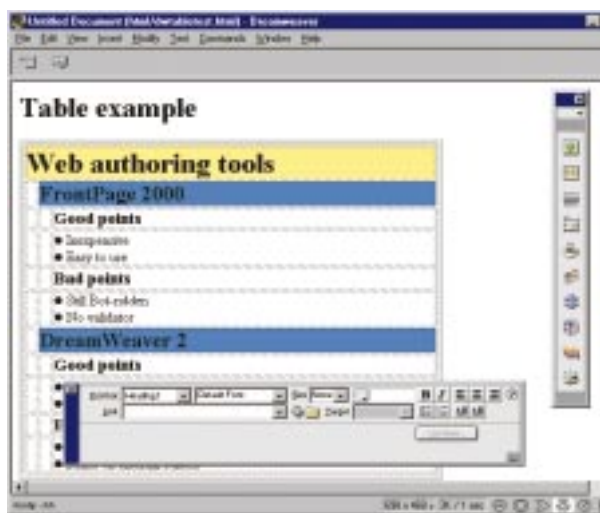
◄ CREATING A TABLE WITH DREAMWEAVER. THE FLOATING WINDOWS CAN MOVE ANYWHERE ON THE DESKTOP, IN TRUE MACINTOSH STYLE

bordered table. Another problem is that if you use standard HTML paragraph styles for a bulleted list, such as <ul> and <li>, it is impossible to control the line spacing satisfactorily. To resolve this, we used a .gif image for the bullet and avoided paragraph styles.

We did this first in CodeWright. It is surprisingly easy to lay out a table in code, even one with a few merged cells, since there are very few tags to worry about: just <table>, <tr> and <td>. It does help to sketch out what you want beforehand, even using old-fashioned pencil and paper. Once we had done this, it all worked exactly as expected. Nesting a table is a doddle – you just create the inner table and then surround it with the opening and closing tags for the outer table. Changing your mind about the width of the empty cells is tiresome, though, because each cell has to be edited individually. With a graphical editor, you can just drag the width of the column or select a column and edit a property.

CodeWright was good, but creating the same table in Dreamweaver was even easier. The generated code was virtually the same and the task was handled more quickly. We tried to avoid nesting the tables by giving the table a border and setting the border colour attribute of individual cells to an invisible white. Then we ran Dr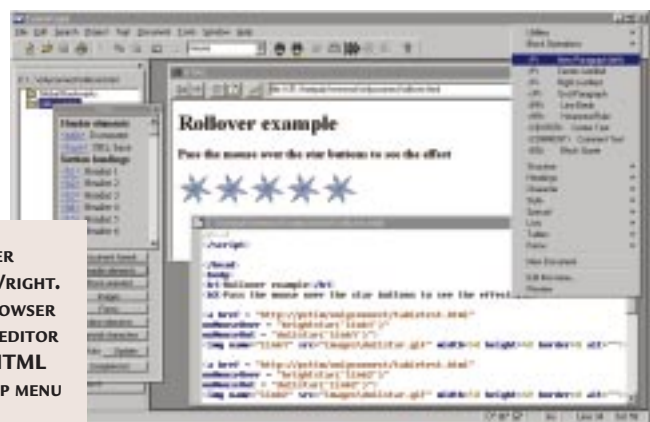eamweaver's Check Target Browsers, selecting Netscape 4.0. Rightly, it told us that the border colour attribute was not supported.

The real challenge is working out how to get the desired result. For this type of experimentation, we would rather use CodeWright. Using a visual editor such as Dreamweaver, you can have a table looking just right in the designer, but find the spacing is different when previewed in the browser. When you know what you want, though, the visual approach is quicker and easier for tables.

Round 2: a rollover effect
This task was simple enough. We wanted a button whose image changed as the mouse passed over it. To create this you need some JavaScript, but even users of visual editors are in luck because

► ADDING A ROLLOVER EFFECT WITH CODEWRIGHT. NOTE THE HANDY BROWSER PREVIEW ABOVE THE EDITOR WINDOW, AND THE HTML TOOLBAR AND POP-UP MENU
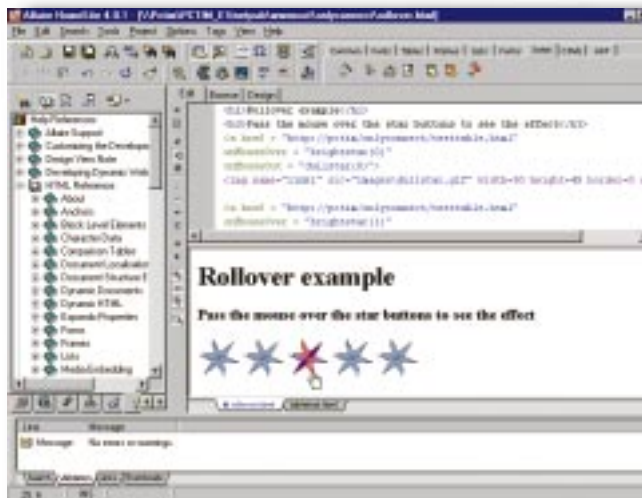
tools such as Dreamweaver and FrontPage 2000 have wizards that will do the job for you. In Dreamweaver, it's a simple matter of choosing Insert Rollover Image and selecting two image files in a dialog. A nice touch is the option to preload images, which inserts some extra code that loads the required images into an array when the page first opens.

Adding scripts in CodeWright is particularly easy since the package does not really distinguish between script and other HTML elements. One annoyance is that by default, CodeWright shows comments in HTML pages in green italics. Unfortunately, it is common practice to place JavaScript functions within comment tags, to help support down-level browsers. Green italics are horrible, so you have to remember to add the comments last, or otherwise tweak CodeWright's parsing to prevent this effect.

When you add an image to a Web page, the width and height should be specified to speed up the rendering of the page. Dedicated Web editors will tell you the size of the graphic, but using CodeWright, you have to look this up using a bitmap editor.

A key point is that in CodeWright, you have to find out how to write the script, whereas in this instance Dreamweaver does it for you. This is the

skills are involved, including creating content, visual design and programming. Few, if any, are good at every aspect and the same is true of the tools. Here, then, are a few tips:

There is no need to be snooty about using visual editors, which can save a lot of time. But you need to choose your editor carefully. Dreamweaver is excellent, but many visual editors create poor HTML that at worst may not even display properly in your target browsers. The worst case is applications that are really for word processing, DTP or presentation graphics. It is asking a lot to expect top-notch Web pages from such a tool.

Visual editors are useful, but you need to be able to drop easily into HTML to produce excellent Web pages. Using an editor such as Homesite or even

4.0 (see panel below), a programmers' editor designed specifically for HTML. Homesite has most of the advantages of CodeWright, plus a stack of additional features including an integrated validator and rich online HTML reference. Homesite

exception, though, because there are not many script wizards in Dreamweaver.

While both tools create the effect easily, there are some differences. Although the functionality is the same, Dreamweaver's page is twice the size of CodeWright's and the script is unnecessarily complex because it is dealing with a general case. That also makes it harder to tweak the code. The hand-coded approach forces you to understand what the script is doing.

CodeWright is better than Dreamweaver for scripting, but to be honest, a dedicated tool such as Microsoft's Visual Interdev which offers pop-up code completion, colour coding, and debugging tools such as a watch window and breakpoints. There is also a script outline window, including a view of the document object model and the ability to insert an instant event handler by double-clicking.

The joker in the pack

Dreamweaver finishes this contest a nose ahead. Its generated code is good, it is faster to work with and the rich HTML-specific features pull it ahead. What clinches it, though, is Homesite

Homesite – the dedicated HTML editor

Allaire's Homesite is still essentially a text editor with an array of features to speed up HTML coding. There is even a design view which is close to WYSIWYG, although Allaire insists it is only for prototyping. Most of the time you will be looking at raw HTML code, although there is a myriad of features to speed the editing process. For example, if you right-click and choose Insert Tag, a tag chooser dialog opens, with tags

organised in an easily managed tree view. Selecting a tag opens a custom dialog where you can add attributes and content, with guidance on browser-specific elements. The tabbed editor has a browse view for quick preview. Press Shift-F6 and the validator kicks in, listing any errors or warnings in an output window with hyperlinks to the source. This is a great combination of hands-on HTML, with well thought out extras.

vs Dreamweaver would be an agonising choice, except that the two are bundled together – almost a dream come true.
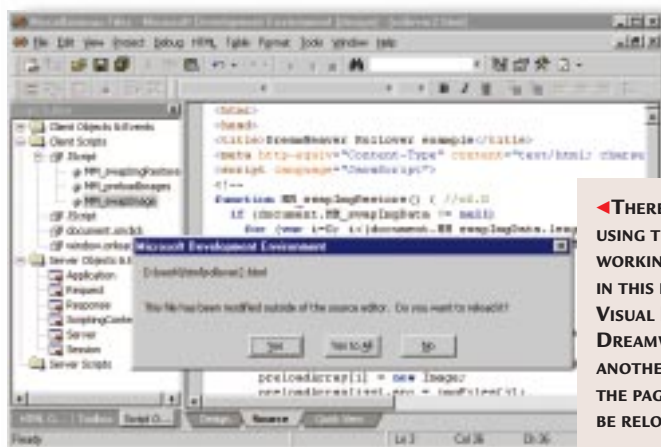
Whatever choice you make, the most important thing is to use tools that let you work with different editors on the same page without scrambling your code in the process. Dreamweaver, FrontPage 2000 and Visual Interdev are all good, while NetObjects Fusion or earlier versions of FrontPage are problematic.

CodeWright gives experts a comfortable and fast environment for working with the code and also offers beginners the best opportunities for learning.

If you are expecting to do serious amounts of scripting, use a tool designed for the job.

However you produce your Web pages, use a validator to check the code for errors and incompatibilities.

TIM ANDERSON

Final tips
One of the problems with Web design is that so many