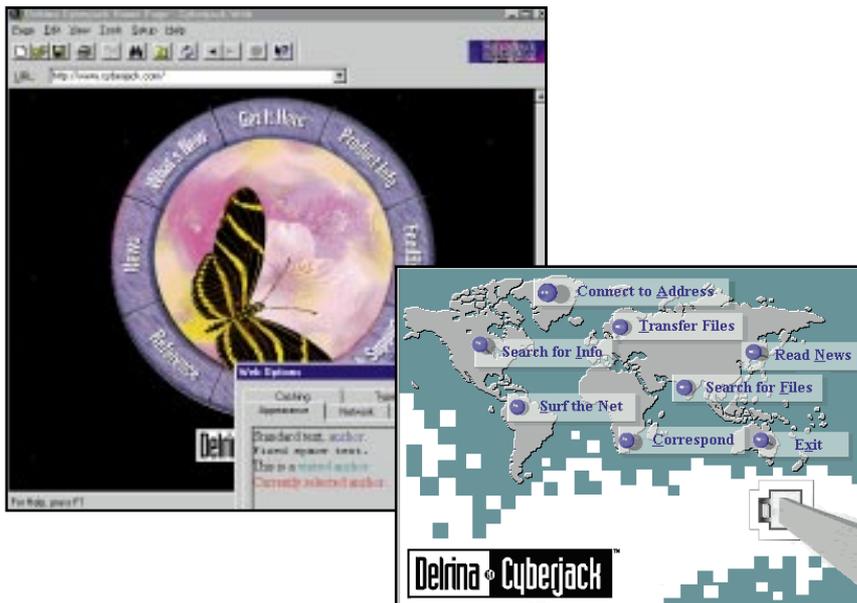


Among the new products under review are: two processor upgrade chips for 486 PCs, a Global Positioning System receiver for notebook travellers, software for digitising your photo album, a 17in monitor-cum-TV, Filemaker Pro 3.0, and a 200MHz Pentium PC



Delrina Cyberjack 7.0 for Windows 95

Terry Pinnell

A dozen Internet programs unified in one package, linked by a central address management application.

- Point-and-click access with Guidebook
- E-mail via MS Exchange
- File finding through Archie
- Gopher menu browsing
- Virus scanning included
- Internet Relay Chat
- Includes Wincomm Pro for bulletin board communication

Although Cyberjack represents good value and its Windows 95 appearance and Guidebook are attractive, the individual programs' features are disappointing. Beginners might be better off with one of the top browsers. Currently, these are downloadable, free of charge and capable of most of Cyberjack's functions.

- £49 (excl VAT)
- Delrina: 01734 814230

Cyberjack 7

Features	1	2	3	4	5
Performance	1	2	3	4	5
Ease of use	1	2	3	4	5
Value for money	1	2	3	4	5

Minimum requirements: 386, 8Mb of Ram, 25Mb of hard disk space (if installing Wincomm), Windows 95, mouse, TAPI-compatible modem.

Cyperjack is a low-cost Windows 95 package that goes most of the way to justifying its claim to be 'all you need to access the full power of the Internet'.

If you install everything from the CD-Rom you'll need at least 25Mb of hard disk space. The applications include Cyberjack Archie, a search tool to locate files around the world. Downloading files with Archie proved impossible and it was difficult to get technical help. But the program for sending and retrieving files, Cyberjack FTP (File Transfer Protocol), did work, as did all the other modules with a downloading capability.

Cyberjack Gopher is used to browse Net resources using a simple menu interface, and for real-time keyboard conversations with other users there's Cyberjack IRC (Internet Relay Chat). Minor utilities include Ping, to test the quality of a connection; Finger, for information about a site; Image Manager, for viewing or printing various formats of graphic files; Zip Manager, to compress and decompress files; and an Upgrade wizard to connect to Delrina's site to keep Cyberjack updated.

Also bundled is Delrina Wincomm Pro 7.0 for Windows 95,

which lets you connect easily to bulletin boards and on-line services. Without this installed, Cyberjack requires only around 12Mb of hard disk space.

The browser, Cyberjack Web, is disappointing: performance is sluggish, it lacks the features of Netscape's Navigator, and it doesn't have facilities like frames and Java.

Cyberjack News lets you read newsgroups and post messages to them. This is also weak in some key areas, such as the clumsy approach to selecting target newsgroups.

Cyberwizard is a useful feature for novices. It offers six choices representing activities you might want to start. For example, 'Correspond' leads to e-mail, while 'Transfer Files' gets you into the FTP application, although it offers a very lean choice of sites to start with. Wizards are also on hand for each of the applications, but they too are basic.

Central to Cyberjack, and one of its strongest features, is the Guidebook, a sort of enhanced equivalent of Netscape's bookmarks and Internet Explorer's favourites folder. Initially, it comes preloaded with a set of Net addresses, including some for the Web, some FTP, some Archie etc. Click on one of these and the appropriate application is launched.

Processor upgrade shootout

Paul Wardley

The new Kingston Turbochip 133 and Intel's Pentium 83MHz Overdrive slug it out to determine which is the ultimate upgrade processor for 486 PCs.

Kingston Turbochip 133MHz:

- Replaces existing SX and DX Intel processors
- Uses AMD 5x86 chip
- 16Kb of built-in cache
- Incorporates 5V to 3V converter
- Maths co-processor
- Built-in fan
- Plugs in to existing CPU socket or Overdrive socket
- Works with 16MHz, 20MHz, 25MHz and 33MHz systems, quadrupling the existing speed
- Uses no software drivers

Intel Overdrive 83MHz:

- Replaces existing SX and DX Intel processors
 - 32Kb of built-in cache
 - Incorporates 5V to 3V converter
 - Maths co-processor
 - Built-in fan
 - Plugs in to existing CPU socket or Overdrive socket
 - Works with 33MHz systems (cheaper 25MHz version available separately)
 - Runs at two-and-half times existing system speed using Pentium instruction set
 - Uses no software drivers
- (continued)



If your 486 PC is more than a year old, you probably think it's too slow; and if it's over two years old, you know it is. An entry-level PC is now fitted with at least a 75MHz Pentium processor, with 90MHz and 100MHz machines costing very little extra. All of which is not just a question of fad or fashion; most new software titles require this level of performance to run well, so boosting processor power is essential if you're going to run the latest programs and games. Until the Kingston Turbochip came along there was no doubt that the most powerful upgrade option for 486 owners was the Intel Pentium 83MHz Overdrive chip. Kingston claims that its new Turbochip, which is built around an AMD 5x86 processor, outperforms Intel's Overdrive and costs less. We tested both the chips in the same 33MHz 486SX computer to decide which is the best buy.

Installation of both chips is simple, and if you own a cross-point screwdriver and a steady hand you can do it yourself as no technical expertise is required. The procedure is to take the top off your computer and locate the existing CPU. Then, if your computer has a second socket (originally designed for an Intel Overdrive processor), you can plug the new processor into this. If there is only one socket, you have to use an extractor tool to take out the original processor and replace it with the new one – which is where the steady hand is required. Extractor tools are included with both Intel and Kingston products.

On most computers, that's all you need to do, although some machines may also need jumper contacts to be changed to disable

the original processor or to set the system speed. You'll need your computer's instruction book to determine if yours is one of these. There is no software to install, even though a floppy disk is supplied with both products. The Kingston floppy disk contains the Landmark 2.0 speed test, which you can run before and after installation to check that everything is working smoothly.

The disk supplied with the Intel Overdrive has three purposes. There's an on-screen installation guide telling you how to fit the upgrade; a test program that checks everything is operating after installation and compares the new speed with that of the old processor; and a fan monitor program which displays a small icon in Windows to show the fan is working. Both processors generate a great deal of heat so the electric fans are essential, although in the case of the Kingston Turbochip a fan monitor is irrelevant because the fan itself is so noisy you can hear it all the time. Should the fan fail on the Intel Overdrive, it automatically cuts its operating speed to 8MHz to prevent overheating.

In standard system tests measuring how quickly each processor carries out calculations, transfers data and sends images to the screen, the Intel Overdrive comes out ahead. Both chips managed to triple the performance of the original 33MHz processor in terms of integer arithmetic instructions carried out per second, video speed and memory operations. Hard disk transfer speed was boosted by around 50 percent.

The most significant difference between the two chips is that the Intel Overdrive is around a third

How the chips compare

Chip	33MHz 486SX	Kingston Turbochip	Pentium Overdrive
Integer maths	22 MIPS	66 MIPS	67 MIPS
Floating point maths	0.38 MFLOPS	24 MFLOPS	31 MFLOPS
Video speed	1.7 MP/s	4.2 MP/s	4 MP/s
Hard disk transfer	4.2 Mb/s	6.5 Mb/s	6.5 Mb/s
Ram read average	25 Mb/s	107 Mb/s	136 Mb/s
Ram write average	23 Mb/s	42 Mb/s	41 Mb/s
Ram copy average	17 Mb/s	23 Mb/s	22 Mb/s

NOTES: MIPS: millions of instructions per second; MFLOPS: millions of floating-point operations per second; MP/s: millions of pixels per second; Mb/s: megabytes per second. Higher = better.

faster at floating-point operations (decimal arithmetic), probably due to its 32Kb internal cache holding twice as much quickly accessible data as the Turbochip's 16Kb.

We were far more interested in how well each processor performed when using ordinary programs and games, so we devised a series of tests using word processors, spreadsheets and a database to measure how long it took to search for and replace words, format and print documents, recalculate formulas, sort lists and draw charts. We then tested how long each chip took to calculate six possible routes for a zig-zag, 2,500 mile journey around the UK (using Autoroute), and finally set them to work compressing and converting graphics files.

We also ran three Dos-based games which were too slow to use at all on the original 33MHz processor. According to the results of the timed tests, the games played infinitely better than on the original processor, although there was nothing to choose between the two upgrade chips. However, the Intel has one advantage over the Kingston in that a small number of games have

specially written modes for Pentium processors.

With Windows programs, the Turbochip works marginally faster than the Overdrive, despite the Overdrive's superior test figures. However, the Overdrive is much quieter in operation and can run Pentium-specific code. This alone would make the Overdrive the outright winner if both chips cost the same, but the quite significant price difference leads us to choose the Kingston Turbochip as the best choice for most users. And we were not swayed by the rather tacky 'Powered by Kingston Turbochip' sticker we found in the bottom of the box.



How the chips work

With the exception of a few rare 50MHz 486 models, the fastest 486 computers work at 33MHz. This is a measure of how fast data can be piped around the system, from one component to another.

The popular 66MHz 486DX2 (long in the tooth but still sold by some manufacturers) is actually a 33MHz computer, with the processor chip running at double speed while communicating with the rest of the system at the slower rate. Kingston's Turbochip adopts the same principle, running internally at four times the system speed of 33MHz.

The internal operation of Intel's Overdrive is also multiplied, this time by two-and-a-half times the system speed, which works out at approximately 83MHz. However, you can't simply compare the speed in megahertz because Pentiums are made to a more advanced design than 486 chips and therefore work faster than 486 processors of the same speed.

Processor upgrade shootout

(continued)

If you're struggling to run Windows 95 on a 33MHz 486, either of these upgrades will give an amazing boost to your PC's performance. DX2/66 owners won't be quite as stunned with the improvement they see, but it's worth upgrading all the same.

- £112 (street price incl VAT)
- Datrontech: 01252 303333

Kingston Turbochip 133MHz

Features	1	2	3	4	5
Performance	1	2	3	4	5
Ease of use	1	2	3	4	5
Value for money	1	2	3	4	5

Requirements: 486 PC (16MHz to 33MHz) with or without an Overdrive processor socket. Must have at least 18mm clearance above the socket.

- £175 (street price incl VAT)
- Intel: 01793 431155

Intel Overdrive 83MHz

Features	1	2	3	4	5
Performance	1	2	3	4	5
Ease of use	1	2	3	4	5
Value for money	1	2	3	4	5

Requirements: 486 PC (33MHz), with or without an Overdrive processor socket. Must have at least 23mm clearance above the socket.

Canon BJC-210

Julian Prokaza

Compact inkjet printer that uses interchangeable cartridges to produce black-and-white or colour output.



- 720x360dpi mono printing
- 360x360dpi colour printing
- Integral 100-sheet feeder
- Five built-in fonts
- Parallel interface
- Black cartridge life of 500 pages at 5 percent coverage
- Colour cartridge life of 100 pages at 7.5 percent coverage
- Drivers supplied for MS-Dos, Windows 3.1, Windows 95
- Emulation – IBM Proprinter X34E, Epson LQ-510
- Measures: 347mmx207.6mmx176.3mm
- Weighs: 2.36kg

Anyone looking for a general-purpose printer for their home PC would do well to add the BJC-210 to their shortlist. It performs well in both black and white and colour, even on cheap paper, and is reasonably priced.

- £304.33; black cartridge: £23.49; colour cartridge: £29.36 (all prices incl VAT).
- Canon: 0121 666 8062

Canon BJC-210

Build quality	1	2	3	4	5
Performance	1	2	3	4	5
Features	1	2	3	4	5
Value for money	1	2	3	4	5

Every PC manufacturer has a model that it deems suitable for 'home' use – a machine that, although not necessarily top of the range in terms of price or performance, will nevertheless handle pretty much everything a home user is likely to throw at it.

When it comes to printers, the story is more or less the same. A typical 'home' printer should be inexpensive, yet capable of producing reasonably high-quality prints, with text and graphics, in both black and white and colour. Almost every inkjet manufacturer has one of these models in its range and Canon has just added a new one, the BJC-210.

The unit is compact, with a footprint of just under 14inx6in. There's no paper receiver tray, and a 100-sheet paper-feed juts out of the rear of the printer – but not far enough to prevent it being placed close to the wall. There's also a lever to adjust the paper thickness between that for standard paper and for envelopes.

The BJC-210 is very easy to set up. Once the external mains adaptor and printer cable have been plugged in, all that remains is to fit the ink cartridge into the holder and lock it in place with the flick of a lever. Switch the printer on and, with Windows 95, it's detected during start-up and the driver is installed from the supplied disks. Drivers for MS-Dos and Windows 3.1 are also included.

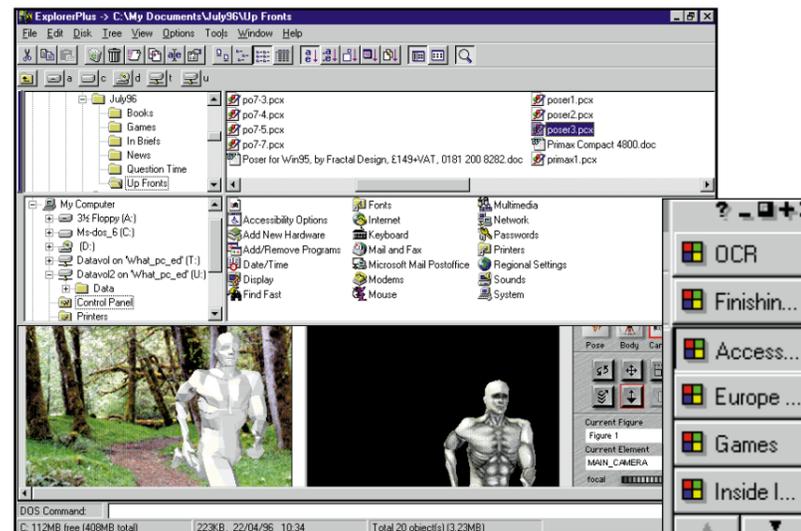
Although capable of colour and black-and-white printing, the BJC-210 can only have one ink cartridge installed at a time. Many lower priced inkjet printers use this system, but the BJC-210's implementation of it isn't particularly clever. As is the norm with two-cartridge printers, switching between

mono and colour prints means manually swapping black and colour cartridges, which takes a couple of seconds. Unlike other printers, however, the BJC-210 doesn't keep track of which cartridge is installed – it leaves that task to the user. This means that if a print is made in colour and the black cartridge is accidentally left in place, the multicolour masterpiece will print out in shades of grey. Not only is this highly irritating, it's also a waste of ink.

The other drawback with two-cartridge printers is the way in which they produce black on colour prints. Since the colour cartridge contains only three colours – cyan, magenta and yellow – they have to be mixed to produce other colours. With black, the mixing isn't always successful – at best the result is a close approximation and at worst, brown. In the BJC-210's case, the mixing isn't bad; although the mixed black isn't quite as dark as true black, the difference is barely noticeable on graphic prints. With text, however, it's prone to soaking into the paper too much, giving a spidery appearance to characters.

Black text quality, even on photocopy paper, is good with well-defined letters and no noticeable jaggedness. Black-and-white graphics are less successful. The 360dpi resolution makes them sufficiently detailed, but pronounced banding detracts from the overall quality. There are no such problems with colour prints though.

Colours print a little pale on photocopy paper, but if you move up to Canon's slightly more expensive Bubble Jet paper things are significantly improved. Colours are clearer and deeper and the overall definition is sharper.



PowerDesk 1.0 – a replacement for the Windows 95 Explorer, with customisable toolbars – performed well when we reviewed it in the April 1996 issue of *What PC?*. This latest release includes many enhancements and several new features; it is also cheaper than the original.

ExplorerPlus, the main component of version 1.0, remains at the forefront and now allows you to explore Windows 95 with a true, dual-pane view.

The drive bar, familiar to users of Windows 3.1's File Manager but sadly missing from the Windows 95 Explorer, hasn't altered significantly. The main difference is that it now offers you a choice of which drive buttons it should display.

Another new ExplorerPlus feature is the ability to drag and drop to and from compressed .ZIP files. ExplorerPlus treats .ZIP files in a similar fashion to sub-directories and allows you to view contained files without decompressing them first. This is a valuable feature and makes working with .ZIP files almost transparent. ExplorerPlus also offers you the opportunity to attach comments of up to 2,048 characters long to your .ZIP files.

To look at the contents of a file, you can either open it using the traditional Explorer double-click or choose to have a viewer pane. This pane occupies the lower part of the ExplorerPlus window and, in conjunction with the Windows 95 QuickView program (or QuickView Plus, if you have it), will automatically interpret the format of the selected file and display its contents.

ExplorerPlus also allows you to apply filters to restrict the view to certain file types; this is quicker than having to carry out an equivalent Find operation and can prove quite useful.

ExplorerPlus also now features drag-and-drop integration with Web browsers, such as Microsoft's Internet Explorer or Netscape's Navigator. If you find a link to a site you particularly like, you can point to the link and drag and drop it onto your desktop, a toolbar, or into a folder on your hard disk. Wherever you decide to drop the link, ExplorerPlus will create the appropriate shortcut or icon which will take you directly back to the Web site.

Drag-and-drop operation has also been improved by the introduction of automatically expanding folders. If you pause for two seconds over a collapsed folder during a drag-and-drop operation, it will expand. This simple idea saves a lot of time by removing the need for you to think ahead and expand the destination folder before you start.

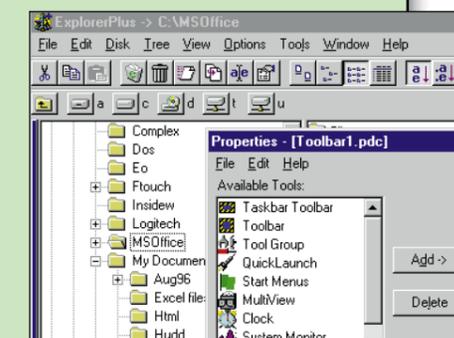
A further noteworthy aspect of version 1.1 is its highly customisable toolbars. After installation, PowerDesk prepares a basic toolbar for you, which includes your Start button menu and desktop icons. However, you are not limited to only the one toolbar – you can opt for any number, and each can be either floating or anchored to a screen edge, much like the Windows 95 taskbar.

On each toolbar you can pick your own selection of menus from the Start button and shortcut program icons. There are numerous other tools you can add to your toolbars, including world clocks, system resource monitors and a surprisingly useful Dos command line.

PowerDesk version 1.1

Scott Colvey

Collection of useful Windows 95 tools, which includes a replacement for Explorer.



- Dual-pane Explorer views
- Drag-and-drop .ZIP file archiving
- Multiple customisable toolbars
- System resource monitors
- World clocks
- Shortcut Dos command line
- Drag-and-drop Internet links

If you already have version 1.0, PowerDesk 1.1 probably doesn't offer enough new features to justify buying it. As a first purchase, however, it is a great complement to Windows 95.

- £39.95 (incl VAT)
- Roderick Manhattan: 0181 875 4444

PowerDesk 1.1

Features	1	2	3	4	5
Ease of use	1	2	3	4	5
Performance	1	2	3	4	5
Value for money	1	2	3	4	5

Requirements: Windows 95.

Carrera Explorer P100

Dominic Bucknall

Pentium 100-based notebook with integrated stereo speakers, a high-resolution active-matrix screen, and a modular design which allows you to use an internally-mounted CD-Rom drive or a second battery.

- 100MHz Pentium processor
- 8Mb of Ram (16Mb as reviewed)
- 256Kb of secondary cache
- 810Mb removable hard disk
- Quad-speed CD-Rom drive module
- One Type III and one Type II PC Card expansion slot
- 1Mb Chips & Technologies graphics controller
- 10.4in active-matrix SuperVGA colour screen
- Integrated stereo speakers and microphone
- 16-bit audio processor
- Infra-red serial port
- Mousepad
- NiMH battery
- Weighs 7.4lb
- Software supplied includes Windows 95, Lotus Smartsuite 96, Corel 4, Quicken 3

On the whole this is a reasonably well-executed notebook offering a good range of features for its price, notably the CD-Rom drive and the high-resolution active-matrix screen. However, the power management is fiddly to set up and battery life is nothing special.

- £2,395
- Carrera: 0171 830 0586

Carrera Explorer P100

Build quality	1	2	3	4	5
Performance	1	2	3	4	5
Features	1	2	3	4	5
Value for money	1	2	3	4	5



Notebooks in the Carrera Explorer series are available with Pentium processors ranging from 75MHz to 133MHz. All models include integrated audio and a CD-Rom module that can replace the floppy disk drive. The range's other notable feature is the active-matrix screen operating at 800x600 resolution.

You usually pay a premium for such features, but Carrera is selling the 100MHz version we reviewed for only £2,395 excluding VAT (including £215 for an extra 8Mb of Ram). This isn't amazingly cheap, but it's not bad for a product with all the bells and whistles, right down to 256Kb of secondary cache to boost performance.

Like most multimedia notebooks, the Explorer is no featherweight, but at 7.4lb it remains just about manageable over moderate distances. The case is sound and doesn't flex or creak under pressure, and there's no give in the keyboard baseplate or the palmrest.

Carrera supplies a port replicator for £149 which plugs into an expansion bus at the back of the machine, or you can use the mini-DIN and 9-pin serial sockets for individual connection to an external mouse and keyboard. There's also an infra-red serial interface, but these devices are slow, fussy about angle and distance, and rely on the target PC, notebook or printer also having an IR port.

PC Card slots are usually stacked, so if you fit a thick Type III removable hard disk you lose the use of the second slot. In the Explorer's case, however, the slots are mounted side by side so you can use the larger slot for a secondary drive

You can fit another standard 2.5in hard disk into the slot which normally houses the floppy disk drive or the quad-speed Teac CD-Rom module. Alternatively, you could use the space for a second NiMH (Nickel

Metal Hydride) battery or either of the two drives. If you don't want any more drives, but do want to share or secure data, the existing Toshiba 810Mb unit can be removed simply by releasing a catch in the base.

The machine has an integrated 16-bit Soundblaster-compatible ESS Audiodrive sound processor and a rather average pair of speakers set into the palmrest. These produce a harsh sound which lacks treble clarity and tends to buzz with overload if turned up too loud – making them no worse than the majority of notebook speakers.

The palmrest also plays host to a mousepad, which is pleasantly reliable. The keyboard is average and has a slightly rattly medium-weight action which is sufficiently positive to pass muster. It has the extra Windows 95-specific keys, but the root (\) key has been moved to the right of the spacebar and will catch you out every time you go to use it.

The active-matrix screen is clear, even and boldly coloured, and the extra workspace afforded by the increased resolution is always well worth having. The only drawback is that the backlighting isn't very bright and it is sometimes difficult to see images on the screen in natural light.

You can turn the power management system on and off from the keyboard, and also suspend your context to disk with another key combination, but you can't adjust the settings for timers unless you interrupt the boot process.

The Explorer uses a fully-charged battery in as little as an hour, with some use of the CD-Rom and speakers. This can be stretched to between one-and-a-half and two hours, depending on usage, but it can't really be called impressive.

Performance was fine for a general-purpose portable, although no doubt the extra 8Mb of Ram helped things along.

Garmin GPS30PC with GPSS

Scott Colvey

Global Positioning System receiver intended for frequent travellers who use a notebook PC.



- Cigar lighter power adaptor
- Embedded aerial
- 9-pin serial lead connector
- Compact design
- Two-minute time-to-first-fix
- Conforms to NMEA standard

The GPS30PC is an ideal accompaniment for anyone who travels regularly and has a notebook PC. But the deciding factor may well be the cost of suitable software, which at the moment is very expensive.

- £271 (incl VAT)
- Garmin: 01794 519944;
Sunninghill Systems: 01344 20775

Garmin GPS30PC with GPSS

Build quality	1	2	3	4	5
Performance	1	2	3	4	5
Ease of use	1	2	3	4	5
Value for money	1	2	3	4	5

Requirements: 9-pin serial port, 12/24V cigar lighter socket.

At first glance you might think the Garmin GPS30PC is a mouse with a rather fat connecting cord. It is, in fact, a receiver of data supplied by the US Global Positioning System (GPS).

The GPS consists of 24 satellites which have been placed in criss-crossing orbits around the earth. By triangulating the data from a number of GPS satellites, a GPS receiver can calculate its exact position on earth in three dimensions (latitude, longitude and altitude). Unlike the growing band of subscription-based road information systems, GPS data is free to anyone with a suitably-equipped receiver, although it does not yet offer details on congested roads and the data is meaningless without the appropriate software.

To attach the GPS30PC, you simply plug it into the serial port of your notebook PC; power comes from a second connector which fits into a standard 12/24V cigar lighter socket. The device itself is designed to fit snugly on your car's dashboard.

When it is turned on for the first time, the GPS30PC needs a 30-minute 'time-to-first-fix' period, during which it communicates with the first GPS satellite that crosses its path and downloads location and tracking information relating to the other 23 satellites. Once the device has this information, Garmin suggests subsequent fixes require up to two minutes, although we found it rarely took more than a few seconds.

Unlike its hand-held counterparts, the GPS30PC has no display or controls of its own; without a PC running suitable software it is unusable. The device will work with any software that conforms to the NMEA (National Marine Electronic

Association) standard, communicating at 4,800baud.

We tested the GPS30PC with the Global Positioning System Software (GPSS) from Sunninghill Systems. A demo version of this software was included on the cover CD of our May issue, and the full version is available for around £1,000. Sunninghill's GPSS will work on almost any PC, but is designed for use on a notebook with sound facilities as it utilises both voice directions and recognition.

To make an accurate triangulation of its location, the GPS30PC needs to be able to 'see' at least three GPS satellites; the more it can see the more accurate the calculation.

Of course, there are times when the device simply cannot see enough satellites to make a reasonable calculation, at which point it simply stops supplying the PC with data. Ordinarily, though, this only happens when you pass through a tunnel or are surrounded by tall buildings. When the GPS30PC did lose the signal, it was generally restored within a few seconds.

As far as accuracy is concerned, we can't fault the GPS30PC. Using the demonstration maps included with the software, we took a tour around motorways and minor roads and at all times the GPS30PC reported our position correctly.

At present, the US has included a deliberate error in the free data supplied by the GPS and this restricts the GPS30PC (and other commercial receivers) to an accuracy of around 100 metres. The US is expected to remove the error soon, so GPS receivers should be able to supply data accurate to within 15 metres; the receivers won't need modifying to take advantage of this improved accuracy. ▶

Apple Laserwriter 4/600 PS

Julian Prokaza

Compact 600dpi
Postscript laser printer for
use with Apple Macintosh
computers.



- True 600dpi resolution
- 2Mb of Ram, expandable to 6Mb
- Supports Adobe Postscript Level 2
- Connects via Localtalk port or Ethernalk and Tokentalk with Laserwriter Bridge 2.0 software
- 100-sheet paper tray
- 35 Postscript fonts in Rom, 29 on disk
- Maximum speed of 4ppm
- Measures: 161mmx385mmx379mm
- Weighs 7kg

The Laserwriter 4/600 PS is a highly capable printer, and if you're a Macintosh user who needs Postscript compatibility, then it's certainly an attractive option. Its price, when compared with non-Postscript laser printers, however, is less appealing.

- £737.62 (incl VAT)
- Apple: 0990 127753

Apple Laserwriter 4/600 PS

Build quality	1	2	3	4	5
Performance	1	2	3	4	5
Features	1	2	3	4	5
Value for money	1	2	3	4	5

System requirements: Apple Macintosh computer, system software version 7.1.1 or later, at least 4Mb of Ram.

A few years ago, if you bought a laser printer it was a good idea to stop off on the way home to buy something to stand it on as it would be too large to fit on the same desk as your computer

These days, thanks to the marvels of miniaturisation, even highly sophisticated models will sit easily on the puniest of tabletops. The 600dpi Apple Laserwriter 4/600 PS is a good example – despite its features, it comes in a case barely larger than a Macintosh system unit.

The Laserwriter's sole Localtalk port makes it suitable only for use with Macs, but it can be connected to a Mac directly or via an Ethernalk or Tokentalk network. Once the drivers are installed and the appropriate cables plugged in, you can waste several minutes trying to figure out how to switch the printer on. If you give up and read the manual, however, your suspicions will be confirmed – the 4/600 PS has no on/off switch. Instead, it spends its idle time in a power-saving mode and 'wakes up' whenever it is set to print. This not only saves power, but is also kinder on the ears as the printer is completely silent when it's sleeping.

Like other laser devices, printed pages emerge from the top of the 4/600 PS and are gathered in a paper tray. If you're happy for your prints to emerge face-down, then the printer is small enough to be safely tucked in a corner. Some clearance is required at the front of the unit so the 100-sheet paper cassette can be removed.

If you don't want your pages to be bent round the 180-degree paper path (when you're printing transparencies, for example), or

you want them face upwards, you can use a slot at the rear of the machine instead. This is activated by the flick of a lever, but means that the printer has to be kept well away from the wall because printed pages are deposited on the desktop directly behind it.

The 4/600 PS can produce very impressive prints. Its 600dpi resolution gives beautifully crisp text that fails to exhibit any jaggedness even under magnified examination. Graphics are just as sharp, with smooth, even greys and clearly resolved detail.

The 4/600 PS is expensive, particularly when compared with other laser printers, but it does support Postscript Level 2. Postscript is a page description language developed by Adobe that makes the printer, rather than the computer, responsible for processing the image being printed. This puts greater demands on the printer, but the device-independent nature of Postscript gives it a number of advantages.

First, Postscript produces the highest image quality at the available printer resolution. Second, it is used by professional printers. The fact that the same language is used to control a 600dpi laser printer as a 2,500dpi typesetter means that a laser printer can easily be used to produce accurate proofs of documents that are to be turned into photo-ready pages by a professional printer.

Compared with other Postscript printers, Apple's 4/600 PS is quite reasonably priced and, what's more, it's a high-quality printer. If you want Postscript, and are prepared to pay for it, then this may well be the printer for you.



The Nokia Valuegraph 417TV is a 17in computer monitor which doubles as a remote-controlled colour television with fast-text Teletext.

The front of the unit is quite plain with just a pair of small, unobtrusive speakers at the bottom, bordering a panel of raised-membrane buttons. These buttons are mainly used for controlling the monitor-related functions of the Valuegraph and allow you to perform the usual horizontal, vertical, trapezoidal and pincushion adjustments to obtain the best possible image.

Although the buttons worked correctly, they were unresponsive and felt rather cheap. This may seem a strange criticism of controls which are only used occasionally, but some of the functions have to be accessed by pressing buttons simultaneously and this proved extremely awkward.

In contrast, the remote-control handset for operating the television and Teletext functions has an ergonomic design which fits comfortably in the palm of the hand, and all controls are easy to reach.

When used as a monitor, the manual suggests the Valuegraph functions best at resolutions of 1,024x768 or below but we found the picture quality excellent even at 1,152x864 with a 75KHz refresh rate; above this, though, the monitor switches to an interlaced mode and the display suffers accordingly.

The Valuegraph connects to your PC via a standard 15-pin connector and is Energy Star-compliant, which means the power consumption is automatically reduced when the monitor is left unattended for an extended period.

Pressing any television-related button on the remote control (such as a channel number) instantly switches the Valuegraph into its television mode. In this mode the unit is almost indistinguishable from a normal television set, although the picture doesn't quite fill the screen.

Another annoying aspect of the Valuegraph's controls becomes apparent at this point: you can only switch between the two modes by using the remote-control handset. This can be frustrating if you are working at your PC and want to switch modes quickly.

To use the Valuegraph as a television you must supply it with an input from an UHF (ultra-high frequency) aerial source. Most homes have a UHF aerial socket for their current television, so you should be able to fit an appropriate socket splitter and take a feed from it.

While being used as a TV, the Valuegraph has three 'ideal' viewing modes which are preset with the best picture attributes – brightness, contrast and colour – for certain viewing conditions (such as daytime). The already good picture quality is further aided by the non-glare screen.

Pressing the Text button on the Valuegraph's handset makes the selected channel's Teletext pages pop up. The unit has a fast-text system which means a coloured shortcut button can be used to access different Teletext sections quickly.

Despite having a mere 0.5W of power each, the output from the built-in stereo speakers is reasonable and not too tinny, as is often the case with such small-coned devices. Nokia has included a 3.5mm jack output so you can transfer sound to a more powerful set of speakers.

Nokia Valuegraph 417TV

Scott Colvey

Remote-controlled 17in
monitor that doubles as a
Teletext colour television.

- Non-interlaced resolutions to 1,152x864
- Stereo speakers
- 15.7in diagonal
- Fast-text Teletext
- 59 programmable television channels
- Three 'ideal' viewing settings
- Energy Star-compliant

Tacky control buttons aside, the Valuegraph 417TV certainly lives up to its name, representing superb value for money. Highly recommended.

- £821.33 (incl VAT)
- Imago Micro: 01635 861122

Nokia Valuegraph 417TV

Ease of use	1	2	3	4	5
Performance	1	2	3	4	5
Build quality	1	2	3	4	5
Value for money	1	2	3	4	5

Requirements: PC with a 15-pin VGA socket and a UHF aerial input.

Digital Hinote Ultra II

Dominic Bucknall

Updated version of Digital's modular sub-A4 portable which now offers Pentium power, a larger hard disk and a high-resolution screen in an even more compact package.

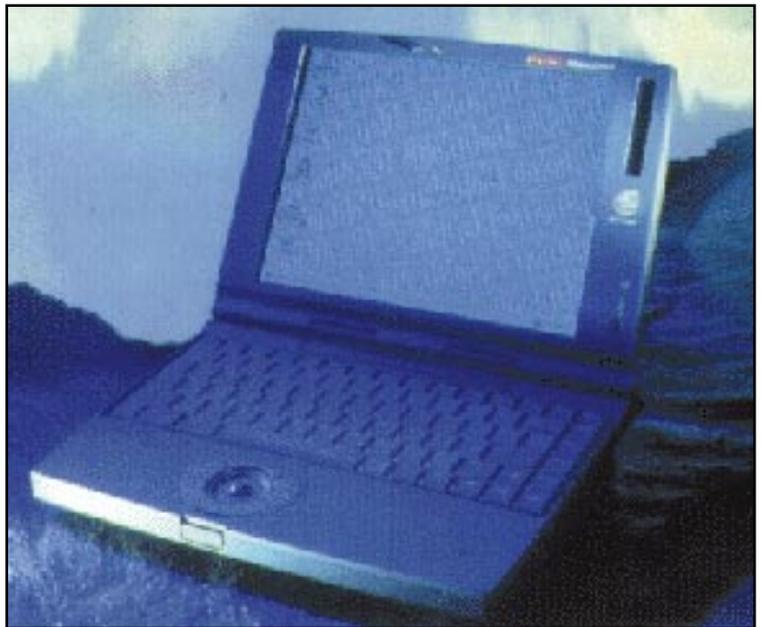
- 120MHz Pentium processor
- 8Mb of Ram (16Mb as reviewed)
- 256Kb of secondary cache
- 1Gb removable EIDE hard disk
- Type III PC Card slot (takes two Type II cards)
- 1Mb Chips & Technologies graphics controller
- 10.4in SuperVGA dual-scan screen
- Removable floppy disk drive module
- Lithium Ion battery
- Infra-red serial port
- Software includes: Windows 95, Accent Express v2, Laplink 95, Sidekick 95, WinCim
- On-line tutorials and Getting Started shell

Digital has improved what was already one of the lightest and most elegant sub-A4 notebooks around. The Ultra II is a powerful, fully-featured and thoughtfully-designed machine that is worth the premium price it commands.

- £3,351 (excl VAT); £3,679 as reviewed (incl 8Mb of extra Ram)
- Digital: 0800 227228

Digital Hinote Ultra II

Features	1	2	3	4	5
Performance	1	2	3	4	5
Build quality	1	2	3	4	5
Value for money	1	2	3	4	5



When we last reviewed the Digital Hinote Ultra back in November '95, it was a 486DX4/75 with a 335Mb hard disk and a VGA-resolution screen. But now, for a suggested retail price of £3,351 (excl VAT), you get a 120MHz Pentium system with 8Mb of Ram, 256Kb of secondary cache, a 1Gb hard disk and an 800x600 resolution dual-scan screen. This sort of configuration wouldn't be out of place in a typical A4 power notebook, but the already diminutive Hinote is even smaller and lighter in its new incarnation.

The basic unit, without the removable floppy disk drive module, weighs a remarkable 1.8kg (4lb) and only rises to 2.15kg (4.75lb) with the drive fitted. The design has remained the same, but the already thin case has shrunk a further 10 percent and now measures a mere 28mm (1.1in) thick. When the wedge-shaped floppy disk drive module is clipped underneath at the rear, the case is tipped towards the user for a more comfortable typing angle.

The Hinote has a reasonably solid build. There is a bit of flex in the main body, but the palmrest and lid are acceptably pressure-resistant.

Because of the way the battery connects at the back there isn't much space for the ports, so the designers have opted for a proprietary parallel interface which can be used either as normal with the supplied adaptor, or to connect to an optional port replicator. The usual 9-pin serial port is present, and a mini-DIN mouse/keyboard connector and an infra-red serial interface are mounted on the right side of the case.

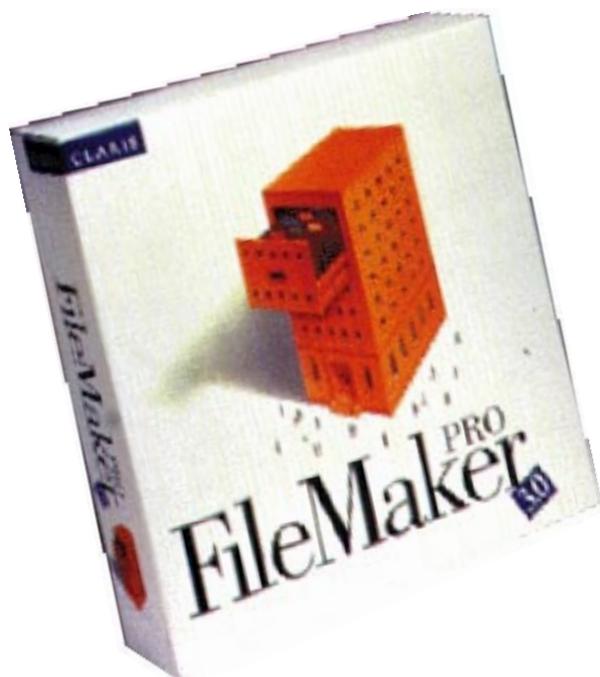
Despite its size, the Hinote manages to pack in most of the features you'd expect on a larger machine. There's a fully-recessed Type III PC Card slot which takes a pair of thin-

ner Type II cards in place of a Type III hard disk, and a microphone is built into the lower edge of the screen surround. The system has an integrated 16-bit audio processor, but there isn't room for a pair of stereo speakers. If you want to use the full sound facilities you need to connect the audio output to an external set of active speakers. Finally, the removable IBM hard disk is secured in a recess in the base by a sliding catch.

Although the keyboard is a tad on the small side and doesn't have the extra Windows 95-specific keys, it is sensibly laid out with no unorthodox function doubling. The action is lightly sprung and positive. The trackball in the centre of the palmrest, also rather small, performed acceptably. The screen gets full marks for clarity, evenness and range of contrast, but it isn't very brightly lit. However, it is very nice to have the extra workspace afforded by the 800x600 resolution display panel.

Power management can be switched from maximum to minimum using a couple of key combinations, and you can also call up the main control screen from within Windows and alter the event timers individually. Changes come into effect immediately, without a reboot, and you get the option of making different settings for each timer depending on whether the system is battery or mains powered.

During normal operation, the Lithium Ion battery lasts for around three hours with power management enabled – good going for a notebook based on a fast Pentium. Graphics handling isn't a bottleneck in 256-colour 800x600 mode, and the 120MHz processor, assisted by 256Kb of cache and 16Mb of Ram, turns in a solid performance.



Filemaker Pro 3.0

Julian Prokaza

32-bit version of the easy-to-use Filemaker Pro 2.0 that adds fully relational linking between database files.

Filemaker Pro 3.0 is a 32-bit upgrade of Claris's popular 16-bit database application, Filemaker Pro 2.0. This was an extremely versatile application that allowed polished databases to be set up with a minimum of fuss. Unfortunately, it was a little too simple and, despite its versatility, its application was limited by the fact that it was, in essence, a simple flat-file database.

Filemaker Pro 3.0, on the other hand, should have no such limitations—not only is it a fully 32-bit application for Windows 95, it is also fully relational. Yet, despite this increase in capability, Filemaker Pro 3.0 is not a monster application. It comes on three floppy disks and a full installation (complete with tutorials and example databases) takes up just under 8.5Mb of hard disk space.

Superficially, very little has changed. The screen layout is much the same as version 2.0, with a ring binder at the top left of the windows for stepping through records, and buttons at the bottom for changing the magnification and the view mode (browse, edit and so on).

In fact, it would almost be possible for version 2.0 users to be surreptitiously upgraded to version 3.0 without them noticing, since version 2.0 files can be opened (and irreversibly upgraded) with all their layouts and scripts preserved.

Dig a little deeper, though, and the changes become more apparent. Any database can be thought of as a card index. A database consists of one or more records – or cards in the index – with each record containing information about a particular topic. For example, a hardware supplier might maintain a database for its customers that has one entry (one record) for each sale.

Each record has two entries—one for the item name and one for the customer's address. When Mr Smith

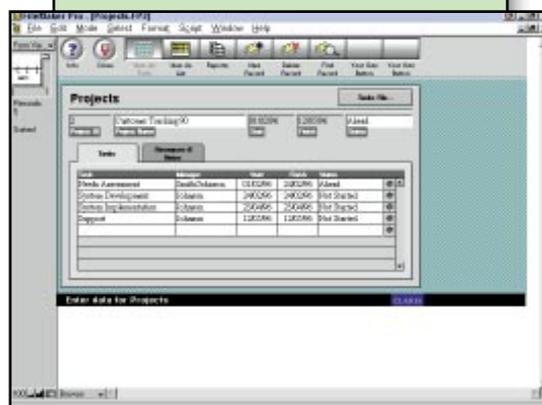
makes two purchases – 1,000 nails and 12 hammers – two records must be created, one for 'nails' with Mr Smith's address and one for 'hammers' with Mr Smith's address. If Mr Smith buys 100 items every month, his address appears in 100 records but, unfortunately, with a flatfile database like Filemaker Pro 2.0 there is no way around it.

With a relational database, this redundancy can be removed. Instead of one big database, two smaller databases can be created – one for sales and one for customers. Mr Smith's details appear as a record in the customer database, and when he buys something, a record is created in the sales database. The files are then linked together by cross-referencing them by, for example, putting Mr Smith's name in the sales record for 'nails'. Thus, although Mr Smith may buy 10,000 items over a year, he only has one address entry.

The advantages of this system are clear: not only are database structures greatly simplified but, with large databases, a great deal of storage space can be saved.

As with Filemaker Pro 2.0, new databases are created by first defining their fields (the entries in each record), their type (text, number, and so on), and any validation options (such as restricting numbers to those between certain values). Record layouts are easily manipulated using the wide range of formatting options, and it's possible to create on-screen layouts that are indistinguishable from those produced by high-end word processors.

Tasks can be automated using the built-in scripting tool and scripts can be attached to on-screen buttons. Creating links between databases is very straightforward: the Define Relationship option opens a window for the current database, in which a field from another database is chosen to link the two together.



- Relational linking between database files
- Supports OLE 2.0 for embedding objects within records
- Full scripting for automating tasks
- Transparent file sharing between Windows 95 and Macintosh versions
- Filemaker Pro 2.0 file compatible

Filemaker Pro 2.0 was a capable yet simple-to-use database, and this philosophy has been carried over to version 3.0. If you're frustrated by version 2.0's limitations or simply want a powerful database that won't give you nightmares, then Filemaker Pro 3.0 is well worth considering.

- £233.83; (upgrade from version 2.0: £116.33)
- Claris: 0800 422322

Filemaker Pro 3.0

Ease of use	1	2	3	4	5
Performance	1	2	3	4	5
Features	1	2	3	4	5
Value for money	1	2	3	4	5

ASAP WordPower 1.95

Terry Pinnell

Presentation graphics program with a novel automatic formatting approach that lets you produce impressive charts from simple text input.

- Uses most Windows 95 features
- Disks also included for Windows 3.1 version
- Drag and drop using OLE
- Long filename support
- 22 layouts, including Triad, Orbit and Pyramid
- 14 designs, including Notepad, Boardroom and Party
- 18 colour schemes, including four for 16-colour displays
- Transition effects on slide show
- Start-up template can be customised

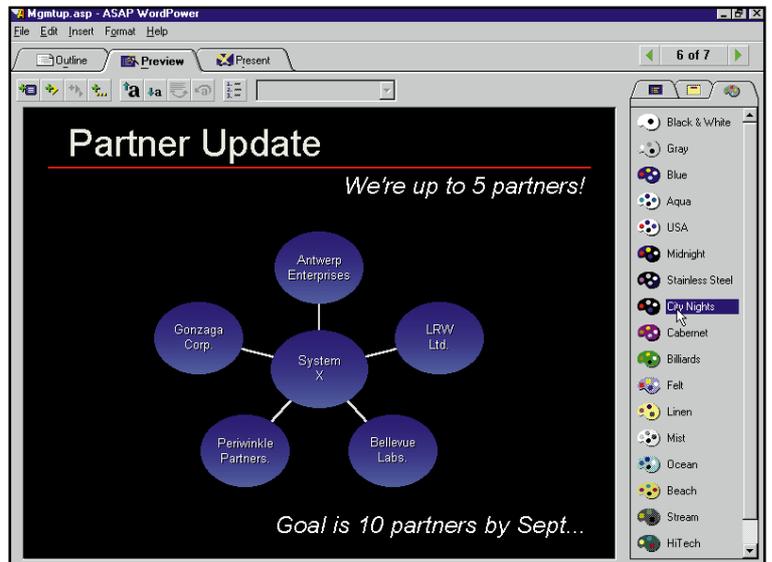
A well-designed program which is exceptionally easy to learn and use and allows you to create good-looking presentations extremely quickly.

- £79 (excl VAT)
- SPC: 01344 867100

ASAP WordPower 1.95

Features	1	2	3	4	5
Performance	1	2	3	4	5
Ease of use	1	2	3	4	5
Value for money	1	2	3	4	5

Requirements: 486, 8Mb of Ram, Windows 95, 3Mb of hard disk space.



ASAP WordPower is a program which allows you to produce professional-looking presentations quickly and with little effort. Its key feature is 'intelligent formatting', a built-in graphic-design facility that arranges and scales text and pictures on the page. Regardless of later changes, it then keeps each page looking balanced and in proportion.

Complementing this in-built expertise is ASAP's intuitive user interface and the predefined sets of professionally-prepared options. The options allow you to select 22 types of page layout, 14 designs, and 18 colour schemes – with a choice of more than 5,000 different combinations.

ASAP opens by default in the Outline view, where you can enter and organise the text and structure of your presentation. Alternatively, you might already have the basic information in another application. If it's Microsoft Word for Windows 6.0 or later, an additional icon will be placed automatically on your Word toolbar when you install ASAP. When you click on this, ASAP will start up and the chosen text from Word will become the first page of your presentation. If your text is in another application, you can simply copy and paste to ASAP.

From the Outline view you can switch to Preview, which shows you how the finished presentation will look. It also allows you to choose the layout, design and colour scheme for each page by clicking on predefined choices. In addition, you can add pictures, such as logos, charts and backgrounds, or special text like page numbers, headers, footers, picture captions and lead-ins.

You can simply drag a layout type from the list to create a new page and ASAP will add this after the current page, complete with helpful placeholder text. You can double-click on these placeholders

and replace them with your own. After you've typed at least one point in the body of the page, you can delete all remaining placeholders by clicking on the current layout; it reappears for further use if you click it again. Inserted text is easily changed by double-clicking on it and replacing or editing it in standard Windows 95 fashion. There's no need to worry where lines end, as ASAP adjusts line breaks automatically.

In Preview, you're really working on one of three layers. The Intelligent Formatting layer contains text and pictures, and you change the location and appearance of elements by clicking layouts, designs and colour schemes, or by selecting a region from the Placement drop-down list.

The Background layer contains a picture that appears beneath the Intelligent Formatting layer. The Foreground layer contains pictures that overlay all other objects. Apart from using the Placement drop-down list, you can drag and drop elements on the page, such as subtitle and bullet, to specified regions, and guide indicators for these appear as soon as you start dragging. In practice, all this is easier to do than it is to describe.

Spell-checking can be applied to the entire presentation from the Outline, or only to the current page from Preview. If you have the Microsoft Office custom dictionary file, ASAP will use it as its personal dictionary; if not, it creates a new file.

ASAP's Intelligent Formatting can also be used to refine a presentation started in Microsoft Powerpoint. ASAP chooses the design and colour scheme that best preserves the look of the original, and picks an appropriate layout for each original slide. Once in ASAP, you can change the presentation's design and colour scheme as well as using a different layout.

Adobe PhotoDeluxe 1.0 (beta)

Terry Pinnell

Principally aimed at home processing of digitised photographs, PhotoDeluxe offers a PC-based alternative to the traditional photo album, and is distinguished by its wide range of special effects.

- Runs on Windows 3.1 and 95
- Comes on CD-Rom and includes photo samples
- Simple undo facility
- Can make cards, labels, flyers
- After Dark screensaver comes bundled with it
- Internet-ready
- Supports Twain-compliant scanned input
- Direct input from digital cameras

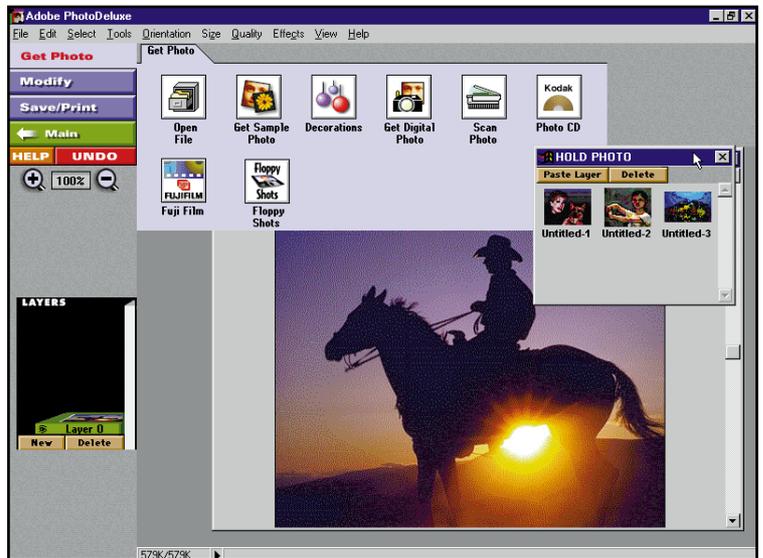
When the remaining problems in the beta test version are resolved, this powerful image-processing package with its impressive portfolio of effects will be an attractive choice for the user who wants to digitise the family photo album.

- £75 (excl VAT)
- Adobe: 0181 606 4000

Adobe PhotoDeluxe 1.0 (beta)

Features	1	2	3	4	5
Performance	1	2	3	4	5
Ease of use	1	2	3	4	5
Value for money	1	2	3	4	5

Minimum requirements: 486, 8Mb of Ram, CD-Rom drive, Windows 3.1 or 95, 256-colour monitor and card, 25Mb of hard disk space.



In essence, PhotoDeluxe is a photograph album-cum-processing lab. It is supplied on a CD-Rom, which in the final release will also include a special edition of Berkeley Systems' popular After Dark screensaver, so you can use your photos with its slideshow facility. You'll also get Adobe Acrobat Reader, which allows you to view documents in Portable Document Format (PDF) with the original graphics, font and layout intact.

Installation is simple and requires 25Mb of hard disk space. When you run the program you are asked to choose one of two modes of working: On your Own or Guided Activities. As the latter option is likely to be chosen by new users, it's surprising that it's not more intuitively designed.

Guided Activities displays only three categories: Touch up Photo, Transform Photo, and Cards and More. There's no button for the logical initial step of choosing and opening a target file and only by going through several further levels do you get to the stage where you can open an image. Until you actually know how to open an image, you can't make an accurate assessment of the changes you want to make, so this section seems to have been designed back to front.

Another limitation is that only one image can be viewed at a time, unlike some other inexpensive image-processing programs, such as Paintshop Pro. This makes it quite tricky to carry out tasks like building up composites, comparing pictures, and copying and pasting, which have to be done using PhotoDeluxe's layer facilities. Although these layers are versatile, they don't adequately compensate for not supporting multiple windows.

To digitise photos for PhotoDeluxe, you can have them converted by a high-street developer onto a Kodak PhotoCD; use a

Twain-compliant colour scanner; use a video source frame-capturing device; or connect your PC to a digital camera.

Once the images are on your hard disk (or on a CD-Rom disc, like the samples provided), you'll be able to open them in PhotoDeluxe and then edit and process them in many different ways.

The output phase lets you view the images individually, print them, copy them to floppy disk so they can be processed into 35mm slides by a bureau, or send them over the Internet. You'll also be able to use them with the slideshow facility or screensaver, but neither of these features were available in the beta version of the software.

PhotoDeluxe has a comprehensive range of selection, painting and editing facilities, and you can blend together photos on layers to create a variety of unique effects. Options control how the photo on one layer blends with the photo below it – you can even make an image semi-transparent.

But, undoubtedly, the greatest strength of this software is its extensive repertoire of special effects, some of which are very powerful. Altogether there are more than 20, and it's a lot of fun trying them out. However, don't expect high speed, even from a Pentium PC.

Effects include Smudge, which smears the colours and simulates the action of dragging a finger through wet paint; Pointillize, which breaks the colour in an image into randomly-placed dots like a pointillist painting; and Sphere, which wraps a selection around a spherical shape to give a three-dimensional effect to objects and text. There's even a special effect which distorts your selection radially, to simulate the circular ripples on a pond caused by a stone breaking the water's surface.

Apricot MS540

Scott Colvey

200MHz Pentium-based PC with multimedia facilities.



- Measures: 120mmx400mmx435mm
- 16Mb of Ram (upgradable to 128Mb)
- 1.6Gb hard disk
- Six-speed CD-Rom drive
- Dataflex 28,800bps internal modem
- 15in FST monitor
- Cirrus Logic 5436 PCI graphics card
- IrDA port

A good-looking and well-built machine that comes with some useful software and clear instructions. It's pricey – but the best fruits usually are.

- £2,916.15 (incl VAT)
- Apricot (Mitsubishi): 0800 212422

Apricot MS540

Ease of use	1	2	3	4	5
Performance	1	2	3	4	5
Build quality	1	2	3	4	5
Value for money	1	2	3	4	5

The minimum specifications for an entry-level PC are rising continually. Even so, the release of the MS540 heralds a surprising leap forward for Apricot's MS range. It is a machine destined for use in the home, but at its heart sits Intel's latest and most powerful processor, a 200MHz Pentium.

When you open the MS540's box, the first thing that strikes you is how neatly it is packaged. From the computer itself down to the connecting leads, there is a place for everything. Before you get a chance to start tearing through the packaging, though, you are faced with a large and colourfully-illustrated information-sheet-cum-poster. This contains all the instructions you need to get your computer connected and up and running within minutes, and is very useful for complete beginners.

The MS540 is surprisingly heavy and also extremely rugged. A pull-down flap hides the CD-Rom and floppy disk drive. When this flap is up, the only things visible at the front are the power and reset buttons on the right and an IrDA (Infra-red Device Association) port to the far left.

Opening the case reveals four Isa and two PCI expansion slots. One of the Isa slots is occupied by a Dataflex 28,800bps modem, which annoyingly blocks access to one PCI slot. You can put the modem in a lower slot to allow access to the PCI slot if required, but this is something that could, and should, have been done in the factory.

Taking pride of place on the motherboard is the 200MHz Pentium processor. Also built onto the motherboard is a Creative Labs 16-bit Soundblaster card which

provides the machine with its sound capabilities.

At the rear of the machine, nestling between the cover and the chassis, is a small loop through which you can thread a security cable. This is quite a clever feature because, as well as providing a way of securing the base unit, it also prevents the cover from being removed.

Typing with the keyboard is comfortable and the keys spring back at just the right speed, although they do seem to be spaced a little further apart than usual. A Microsoft mouse is included, and this has a superb ergonomic design that fits your hand like a glove.

A pair of large but light speakers is supplied. These give reasonable output at low levels, but as soon as you crank up the volume your soothing Mozart becomes a strained moan. Another criticism is aimed at the cable that connects the two speakers together; it is barely long enough to allow each speaker to sit either side of the monitor.

The monitor, a 15in Apricot FST EVGAe, is good at a resolution of 640x480, but at 800x600 it is below the standard of the many others we've tested. Images are none too sharp and text suffers from slight blurring, even at 75KHz refresh rate.

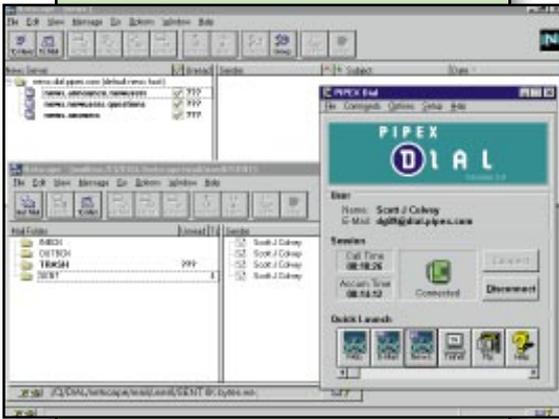
Apart from the excellent information sheet mentioned earlier, the printed instructions are poor. However, the machine is so easy to set up and use that you probably won't need to refer to them anyway.

There's a good bundle of software to get you started – including MS Works, Money, Magic Carpet 2 and Fifa Soccer 96 – all of which come pre-installed and ready to run.

Pipex Dial 3.0

Scott Colvey

Updated package of connectivity software for new and existing subscribers to Pipex's dial-up Internet service.



- Connection speeds of up to 33,600bps (V.34+)
- Registered copy of Netscape 2.0 included
- Simple and consistent interface
- 'Quick Launch' buttons for all utilities
- Up to five e-mail addresses per account

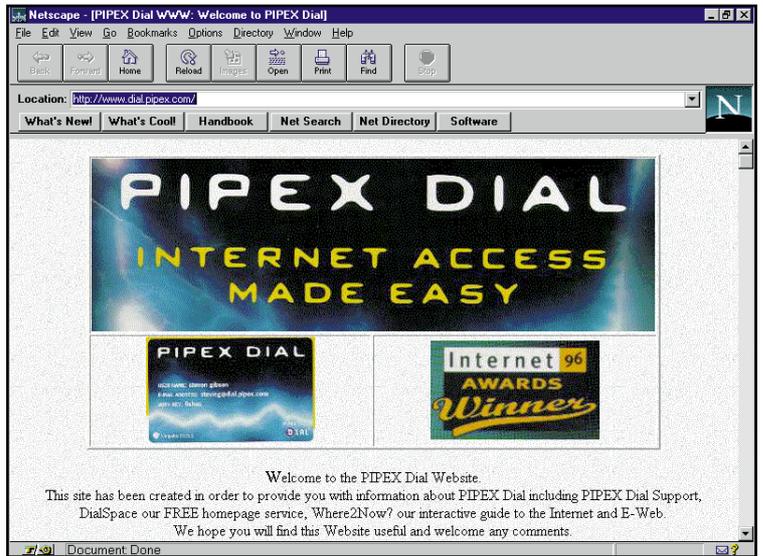
Pipex has done an excellent job in producing Dial 3.0. The software components are well integrated and, for once, connecting to the Internet is made easy. For these reasons, Dial 3.0 will hold particular appeal for beginners.

- Sign-up fee: £23.44; monthly subscription: £17.63; Dial 3.0 upgrade pack for existing users: £8.81 (all prices include VAT)
- Pipex: 0500 474739; US Robotics: 01734 228200

Pipex Dial 3.0

Ease of use	1	2	3	4	5
Performance	1	2	3	4	5
Features	1	2	3	4	5
Value for money	1	2	3	4	5

Requirements: 486 DX33, 4Mb of Ram, 11Mb of hard disk space, Windows 3.1, modem (US Robotics Sportster Vi/Courier recommended for 33,600bps connections).



For several years now, UUNet Pipex (previously Unipalm Pipex) has been one of the largest providers of Internet connectivity solutions to business and corporate users.

Its subsidiary, Pipex Dial, is a relative newcomer, and has offered dial-up services to domestic users since March 1995. Dial 3.0 is the latest version of the software suite Pipex supplies to newly-registered users. Current subscribers can obtain a free upgrade to Dial 3.0 by download, or pay a nominal fee for the boxed version.

Dial 3.0 is supplied on both CD-Rom and floppy disk, and the friendly and trouble-free installation procedure takes only a few minutes, culminating in an on-line registration process.

When you load Dial 3.0, you are presented with a window which occupies about a third of the screen. At the bottom of this window are a number of 'Quick Launch' buttons, while at the centre is an icon of a telephone next to a Connect button.

Connecting to the Internet with Dial 3.0 is deceptively simple: click on the Connect button and, lo and behold, the computer actually gets connected. After the usual strained moans of handshaking, Dial 3.0 colours the telephone icon green to indicate that a successful connection has been made. During our trials we managed to establish a connection first time on each attempt, even during peak weekend periods.

Dial 3.0 comes with a registered copy of Netscape 2.0, which is used for e-mail and news purposes, as well as the traditional Web browsing. This is a refreshing change from the mishmash of software supplied by many other Internet Service Providers (ISPs).

However, Netscape's news-reading facility is weak and it does rather tone down the pleasure of exploring the thousands of Usenet news groups. Netscape's handling of e-mail is better, and it also allows you to embed HTML (Hypertext Markup Language) codes, which means your messages can sport different fonts and styles. You can even incorporate World Wide Web-style hyperlinks into your messages, although the usefulness of these depends on the recipients also using Netscape's mail browser (or a compatible equivalent). Die-hard fans of Dial 2.0's quirky-but-popular Mail-it mail software will be happy to hear that Pipex includes it in the package as an alternative.

Telnet, Ping and FTP utilities are also supplied, but new users are unlikely to need to use these a great deal – Netscape now has an integrated FTP (downloading) facility, and Telnet and Ping are rarely required nowadays. What would have been useful is an IRC (Internet Relay Chat) client. IRC is an extremely popular part of the Internet and, for this reason, we're surprised Pipex hasn't included it with Dial 3.0.

Pipex is now offering dial-up connection speeds of up to 33,600bps (V34+). It is the first ISP in the country to support V.34+ but, naturally, you need a suitably-specified modem to be able to make use of it. For the purposes of our test we used a US Robotics Sportster Vi modem. All top-end US Robotics' Sportster and Courier modems now support the V.34+ standard, and existing Courier models can have their flash Roms updated accordingly with a software upgrade. This is available for download, free-of-charge, from US Robotics' home page at: <http://www.usr.com>.