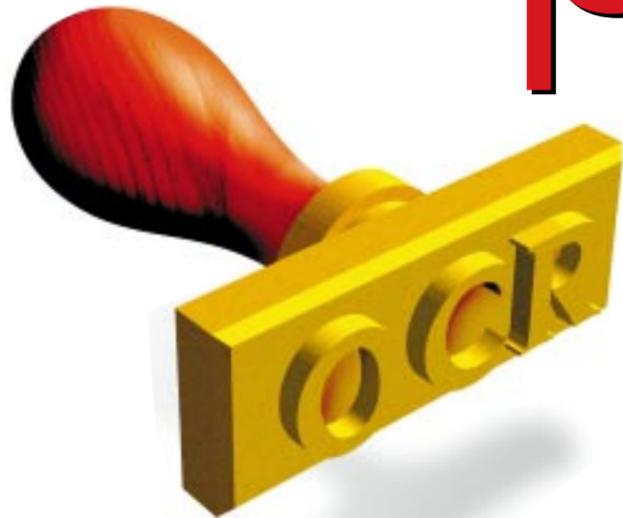


From paper to PC



A scanner allows you to capture paper-based images or text and transfer them to your PC. Of the various models available, document scanners are designed for scanning single loose-sheet pages. Here we report on the performance of seven devices of this type

Scanner technology is now at the stage where it's almost possible to buy one dedicated to every task you want. Flatbed scanners are perfect for high-quality scans of large images; hand-held scanners for quick scans of small ones. Both can also be used for scanning text but neither are perfect – without expensive add-ons, flatbed scanners are laborious to feed sheets of paper to and hand-held ones can't scan a whole page at a time.

So, when it comes to scanning single pages, it makes sense to go for a scanner designed to do just that. Document scanners are small, requiring little desk space, and their design makes it easy to scan several pages in rapid succession. Most also come with software to manage scanned documents, providing a relatively straightforward way to get those piles of paper off the desktop and onto the 'desktop'.

The small size of document scanners is due to the way they work. Rather than hold the paper steady and move the scanning element over it, document scanners hold the element steady and move the paper past it instead. The

reduction in mechanical complexity results in a smaller scanner but it can make an impact on the quality of the scan. Fortunately, this makes little difference to the type of scans they're designed for, but it does mean that document scanners can usually only scan loose sheets of paper, making them, on the whole, useless for scanning pages from a book or magazine, for example.

Hewlett-Packard ScanJet 4S

Hewlett-Packard makes both the ScanJet 4S and the Visioneer PaperPort Vx. Visioneer writes the software supplied with both. Since both products are therefore essentially the same, it seems only fair to describe the hardware here and the software in the PaperPort review.

The ScanJet 4S is designed in a way that makes it ideal for standing behind the PC's keyboard. Both paper entry and exit slots are at the front of the unit and although this gives a tight 180-degree paper path, it at least means that the scanner can be stood with its back against the wall. If anything stiffer than paper needs to be scanned, then a sleeve at the back of the unit

can be slid away to give a straight-through path.

Setting up the ScanJet 4S is very simple. Only two cables are needed – one for the external mains adaptor and one to connect the scanner to the PC's serial port. Once the software is installed, a couple of restarts get the scanner up and running. Well, not quite. Before any scans can be made, the ScanJet 4S must be calibrated by feeding an 8.5x9in piece of paper into its paper feed slot.

As befits its purpose, the ScanJet 4S is very easy to use. There's no power switch on the 4S, so instead, it waits powered up in an idle state until it detects a page being inserted into its feed slot. After a brief (configurable) delay, it springs into life, scans the page and displays it on the PaperPort desktop. Since it is limited to monochrome, the ScanJet isn't ideal for scanning photographs but at its highest resolution, it at least gives you a detailed reproduction.

The ScanJet 4S is a compact and capable scanner but it's the PaperPort software that really puts this document scanner ahead of the pack.

Hewlett-Packard ScanJet 4S



£211.50
Hewlett-Packard: 0990 474747

Hewlett-Packard ScanJet 4S

Ease of use	★★★★★
Performance	★★★★★
Software	★★★★★
Value for money	★★★★★
Overall	★★★★★

Logitech PageScan Colour

The Logitech PageScan Colour looks a little different to the other document scanners in this group test, and in fact, it is a little different. The most obvious departure from the norm is its ability to scan in 24-bit colour, making it suitable for scanning images as well as text. Although it has a straight-through paper path, the PageScan Colour can also be used to scan bound pages, but more on that later.

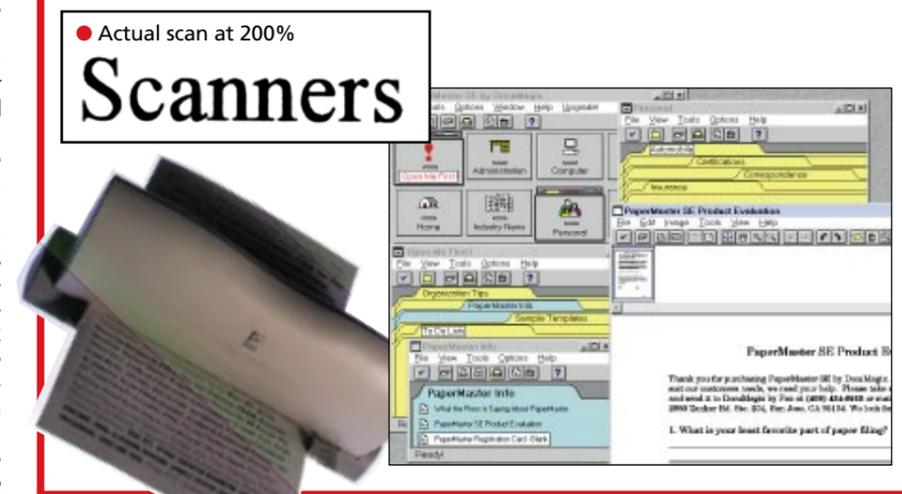
The PageScan connects to the PC's parallel port via a 'soap on a rope' box and cable arrangement. This means less hardware jutting from the back of the PC but it does give a tangle of cables on the desktop. Rather than the scan-on-demand approach of the ScanJet 4S, the PageScan requires the type of scan to be selected in the PageScan Control Center application before a sheet is fed to it.

The Control Center offers five scan options. Text scans are

processed by the Control Center's OCR and then saved as text files. Image scans are displayed in the Image Editor application but this offers only a rudimentary selection of functions and is really only useful to see what the scan looks like. Control Center also offers copying and faxing (via separate software) functions but perhaps the most useful ability is filing scans using the PaperMaster SE application.

Of all the software provided with the scanners tested here, PaperMaster most closely follows the idea of a filing cabinet. The

Logitech PageScan Colour



Note: We scanned the word 'Scanners' with each device and show each of these scans magnified by 200% to allow you to make comparisons.

main window contains several drawers, which in turn can contain one or more folders to hold documents. The software is very intuitive – double-clicking on drawers and folders opens up new windows and documents can be dragged and dropped between them.

As well as scanning single sheets fed through its paper feed slot, the PageScan can also scan thicker objects. Unclipping the scanner from its base puts the PageScan into 'detached' mode. When it's placed on a level surface and the 'start' button is pressed, the scanner will propel itself over the scan subject. A steadying hand is still needed to keep the scanner true but the feature is very handy for scanning pages larger than A4.

Its ease of use, excellent document management software and 24-bit colour scanning make the Logitech PageScan Colour everything a document scanner should be, and more.

£299
Logitech: 01344 894313

Logitech PageScan Colour

Ease of use	★★★★★
Performance	★★★★★
Software	★★★★★
Value for money	★★★★★
Overall	★★★★★

Microtek PageWiz

The Microtek PageWiz is barely wider than the A4 pages it's designed to scan but it still has a bigger footprint than most. It's also unsuitable for standing behind a keyboard as pages have to be fed into the PageWiz via a clip-on tray at the top of the unit and emerge from a slot at its base. This also means that unless you want your newly scanned pages to get crumpled as they emerge, you need to



keep 11in or so of desk space clear at the front of the scanner, expanding its effective footprint still further.

The PageWiz is a parallel port scanner and it has a parallel-through port at the back so that a printer can be connected to the PC at the same time. Setting up is straightforward and the scanner can be used as soon as the software has been installed and a calibration scan made.

There are no external controls on the PageWiz and it begins scanning as soon as a page is inserted into its paper feed slot. Scanned pages then appear on the PageSuite desktop as a thumbnail, where they can be manipulated in various ways. Once scanned, however, there's not much that can be done to a document's image, other than add a highlight or a comment. There's no way to straighten a scan, for example, and so skewed documents have to be re-scanned. Fortunately, documents are easily sent to an external application by dragging them to one of the icons that run down the left of the window.

PageSuite also follows the filing cabinet analogy and can store documents in nested folders several layers deep. Unfortunately, the usefulness ends there, as the filing cabinet isn't integrated with the desktop view and a document is in either one or the other. Drag a thumbnail to the filing cabinet icon, for example, and it is removed from the desktop and stored there. Open the filing cabinet and although the document's name can be seen, it cannot be viewed. Double-click it and it goes back to the desktop as a thumbnail and out of the filing cabinet. If this sounds convoluted, that's because it is and it's certainly not intuitive.

The PageWiz's compactness is deceptive and the comparatively low scan resolution and colour depth somewhat limit its usefulness. Add to this the confusing document management software and the PageWiz's only real strong point is its price.

- £116.33
- Eurotech: 01734 810011

Microtek PageWiz

Ease of use	★ ★ ★ ★ ★
Performance	★ ★ ★ ★ ★
Software	★ ★ ★ ★ ★
Value for money	★ ★ ★ ★ ★
Overall	★ ★ ★ ★ ★

Primax PaperEase

Some document scanner manufacturers seem to be of the opinion that the smaller their devices are, the better. Not so Primax. Not only does the PaperEase have one of the largest footprints of the group, it's also the least compact. Before a page can be scanned, a small flap on top of the unit must be lifted and two long paper supports folded out. As scanned pages emerge from the bottom of the scanner, this means the PaperEase takes up over a foot and a half of desk space, which is more than that of many flatbed scanners.

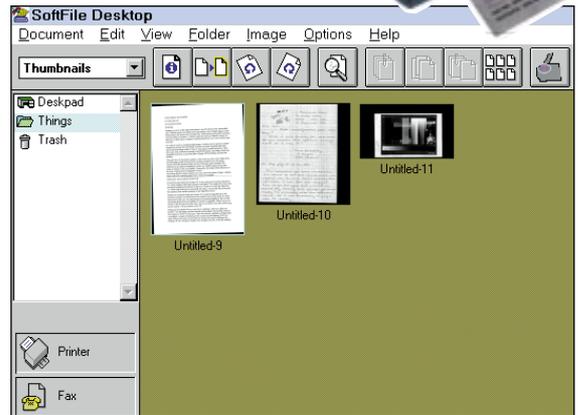
The PaperEase has one of the more fiddly scanning mechanisms of the group. Sheets have to be fed through two narrow paper guides before they pass through the paper entry slot, which adds to the time it takes to make a scan. Pages are also prone to slip to one side as they are being scanned, resulting in a skewed image. The image can easily be straightened on screen but this does add another step to the scanning sequence. One useful feature of the PaperEase, though, is the ability to change the scan type (text or photo) and function (scan, 'photocopy' or fax) using two buttons on the scanner itself, rather than through the software preferences.

The PaperEase is another parallel port scanner but rather than use a standard cable and have a parallel-through port on the unit itself, it uses a large adaptor that plugs into the PC's parallel port. With this connected and the printer cable plugged into it, well over 5in have been added to the back of your PC, diminishing your desk space still further.

Primax PaperEase



● Actual scan at 200%
Scanners



Thankfully, 'SoftFile', the document management software supplied with the PaperEase, is a little better thought out than the hardware. Scanned pages appear on the desktop, where they can be manipulated to improve their quality before being stored in one of several folders. Scans can be printed or faxed by dragging them onto one of the icons on the left of the window and the supplied Xerox TextBridge software makes it possible to use OCR on a document just as simply.

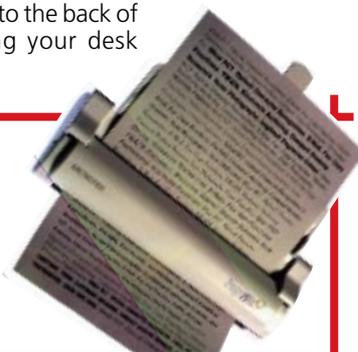
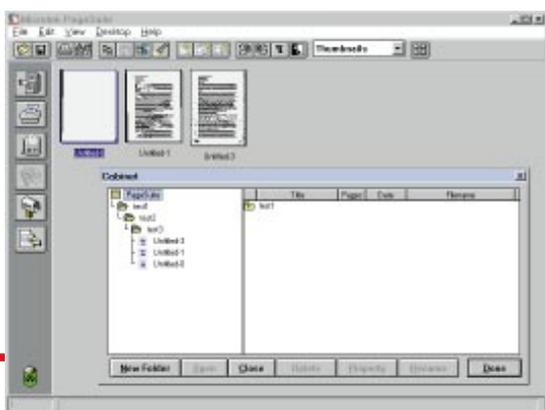
Despite the high (600dpi) resolution of the PaperEase, scan quality is nothing to get excited about. Add to this the fussy nature of the hardware and you get a scanner that doesn't offer much that can't be bettered elsewhere.

- £149
- Primax: 01235 559922

Primax PaperEase

Ease of use	★ ★ ★ ★ ★
Performance	★ ★ ★ ★ ★
Software	★ ★ ★ ★ ★
Value for money	★ ★ ★ ★ ★
Overall	★ ★ ★ ★ ★

Microtek PageWiz



● Actual scan at 200%
Scanners

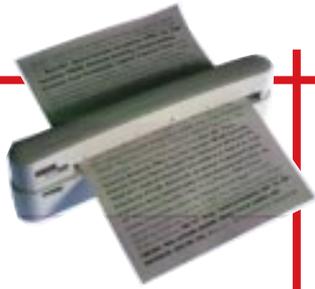
Sicos DMS 2000

The big advantage of most document scanners is that their small size and parallel/serial connection makes them ideal for scanning on the move with a notebook PC. If this is what you have in mind, then you can cross the Sicos DMS 2000 off your shopping list straight away as the product uses its own expansion card for connection.

The DMS 2000's expansion card ▶

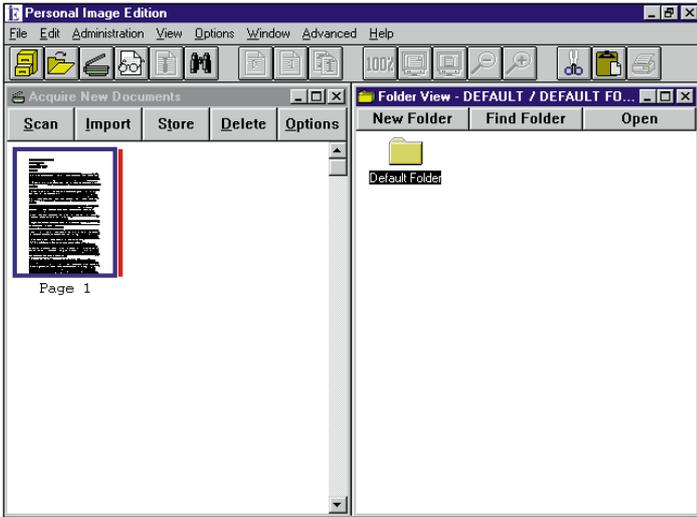


Sicos DMS 2000



● Actual scan at 200%

Scanners



means that the scanner doesn't need a separate power supply (all power is drawn from the card), and that potentially valuable serial or parallel ports aren't otherwise used. It does mean, however, that your PC needs a free ISA slot and you have to spend 10 minutes (if all goes well) fitting and configuring it.

Unfortunately, the software supplied with the DMS 2000 isn't quite as sophisticated as that of other packages and this makes managing electronic documents something of a chore. There are two applications: 'Action Manager' and 'Personal Image Edition'. Action Manager is a simple utility that allows you to assign scanner-related applications to an icon – fax software, OCR (optical character recognition) program, and so on. Insert a page in the scanner and a window pops up, prompting for an application. Double-click an icon and the page is scanned and sent to the appropriate place. Not quite as fluid as the other scanners, but it works.

Personal Image Edition is an electronic document manager and it allows scans to be cropped and rotated and then stored in a folder. It can also be used to drive the scanner directly, providing such controls as a preview scan and selectable scan area. It isn't, however, particularly intuitive to use and that makes the manual required, rather than optional, reading.

If you're happy with the proprietary interface, then the DMS 2000 is a cheap way to get documents into

your PC. Scan quality is good, particularly at the highest 800dpi setting and the only fly in the ointment is the confusing document management software.

- £116.33
- Eurebis Distribution: 00 353 1 456 9383

Sicos DMS 2000

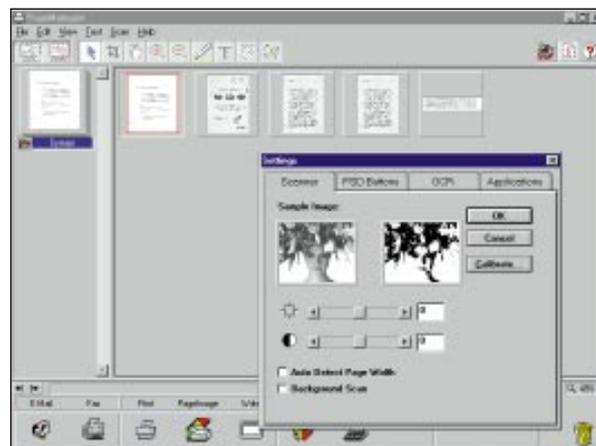
Ease of use	★ ★ ★ ★ ★
Performance	★ ★ ★ ★ ★
Software	★ ★ ★ ★ ★
Value for money	★ ★ ★ ★ ★
Overall	★ ★ ★ ★ ★

Umax PageOffice



● Actual scan at 200%

Scanners



Umax PageOffice

The most distinguishing feature of the Umax PageOffice is its size – with a footprint of about 12x5in, it takes up as much space as some inkjet printers. Add another foot or so of clearance at the front of the unit so that scanned pages can emerge unhindered and you have a document scanner that demands a lot of desktop.

The Umax PageOffice is a SCSI device; it needs a SCSI adaptor card in the PC it is to be connected to. Unfortunately, despite the fact that SCSI is a universally accepted standard, Umax has opted to fit non-standard SCSI ports on this scanner. Fortunately, a non-standard SCSI adaptor card is also included in the box but this seems to be an unnecessarily complicated solution. In its favour, though, the Page-Scan does allow several pages to be stacked in its paper tray and scanned in turn.

The PageOffice is supplied with several applications. PageManager is the most important, as without it, no scans can be made. PageManager provides a desktop on which scans appear and it provides some basic image manipulation tools to tidy up images. It also acts as a link between the other applications and it has a row of icons across the bottom of its window to which scans can be dragged. Although PageManager can be used as a document manager and can apply OCR to documents, it doesn't offer much in terms of structured storage and so scans are best dragged to the PageFile icon.

PageFile allows comments to be added to documents before



they are filed away in a notional filing cabinet. Unfortunately, PageFile isn't the most easy-to-follow program and many of its conventions are somewhat confusing. The image manipulation program, PageImage, is better, and there's also a form-generation program, PageType.

The Umax PageOffice isn't the most outstanding scanner of the group tested here but it's one of the most expensive. Its bulk and irritatingly non-standard SCSI interface make it an unattractive option.

- £233.83
- IMC: 01344 872800

Umax PageOffice

Ease of use	★ ★ ★ ★ ★
Performance	★ ★ ★ ★ ★
Software	★ ★ ★ ★ ★
Value for money	★ ★ ★ ★ ★
Overall	★ ★ ★ ★ ★

Alternative scanners

Primax Photo Organiser

The Primax Photo Organiser is a parallel port device, making it suitable for both notebook and desktop PCs. The separate mains adaptor, however, means it can't be used on the move.

The Photo Organiser is best thought of as a 'mini' document scanner. If you load a document into the paper feed slot, then press the 'Start' button, the scanner will drag it through automatically. This solves the problem of wobbly scans due to unsteady hands, but it does mean that you can't scan anything wider than 5in this way. The scanner can, however, be used in hand-held mode by removing it from its base and then dragging it over a scan manually.

The supplied PhotoBridge software acts as an interface between the scanner and the image-editing applications. The scanner's settings can be altered from here, as can the scan's ultimate destination – file, clipboard, ImagePals software or ImagePals album. This done, a double-click starts the scan.

The ImagePals software provides a comprehensive selection of tools for image manipulation, although the file formats it can save to are limited to six. Resolution is restricted to 400dpi, but the 'Acquire' option from within ImagePals offers linear interpolation up to 800dpi although it can still only scan in 24-bit colour, 8-bit greyscale or 1-bit mono. Fortunately, colour depth, and hence file size, can be reduced later.

The ImagePals Album provides a means of organising images, which can then be organised into groups or 'albums' and searched by keyword. Albums aren't just limited to images; any type of file can be stored and indexed, making the program particularly useful for keeping

Primax Photo Organiser



track of related files for different projects, for example.

The 5in scan width restricts the Photo Organiser's usefulness a little but, as its name suggests, it's happiest when scanning photos.

- £149.99
- Primax: 01235 559922

Primax Photo Organiser

Ease of use	★ ★ ★ ★ ★
Performance	★ ★ ★ ★ ★
Software	★ ★ ★ ★ ★
Value for money	★ ★ ★ ★ ★
Overall	★ ★ ★ ★ ★

Primax Mobile Direct



Primax ColourMobile Direct

The ColourMobile Direct, also from Primax, is another variation on the theme of a document scanner. The scanner component is identical to that of the Photo Organiser (see *opposite*) but it has an extra neat feature in the shape of a small plastic box that clips to the back of the scanner.

This box contains motorised wheels that transform the ColourMobile Direct into a self-propelled hand-scanner. All you need to do is press the 'Start' button on top of the scanner and it will creep across a page, scanning as it goes. This may sound like a gimmick but it does mean that, providing the surface is level, it's extremely easy to obtain straight, even scans. Since the scan width is only 5in, this is a particularly useful feature enabling you to make several accurate scans that are long and thin and then join them into a single image.

The ColourMobile Direct incorporates less software than the Photo Organiser, having just a simple image retouching application and an OCR program. Fortunately, the scanner is Twain-compliant (see *box on last page of this group test*), making it suitable for use with any compatible program. **A little cheaper than the Photo Organiser, Primax's ColourMobile Direct has the same functionality but less software. The self-propulsion feature though, makes it useful for people who suffer from unsteady hands.**

- £139.99
- Primax: 01235 559922

Primax ColourMobile Direct

Ease of use	★ ★ ★ ★ ★
Performance	★ ★ ★ ★ ★
Software	★ ★ ★ ★ ★
Value for money	★ ★ ★ ★ ★
Overall	★ ★ ★ ★ ★

Document scanners compared

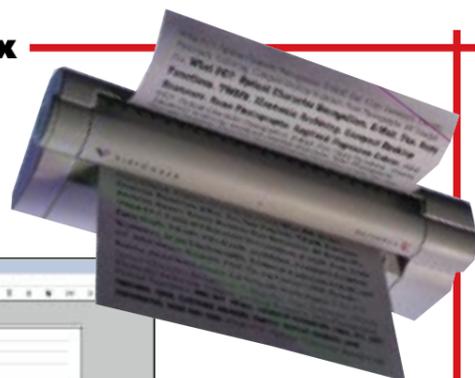
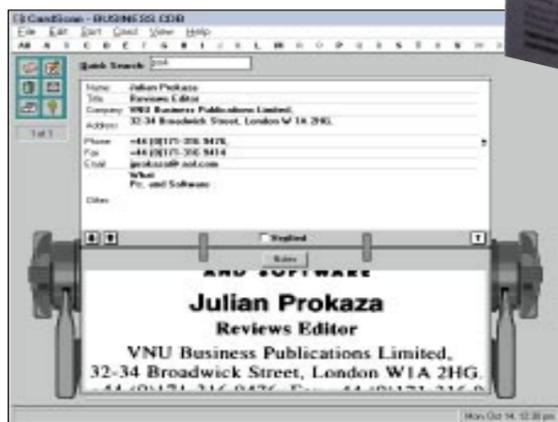
Manufacturer	Model	Maximum Resolution	Colour-depth	Twain compatible	Maximum paper width	Straight-through paper path	Interface
Hewlett-Packard	ScanJet 4S	400dpi	8-bit greyscale	○	9.5in	●	Serial
Logitech	PageScan Colour	400dpi (mono), 200dpi (colour)	24-bit colour	●	8.75in	●	Parallel
Microtek	PageWiz	300	4-bit greyscale	○	9in	●	Parallel
Primax	PaperEase	600dpi	8-bit greyscale	●	8.5in	●	Parallel
Sicos	DMS2000	800dpi	8-bit greyscale	●	9in	●	Proprietary
Umax	Page Office	300dpi	8-bit greyscale	○	8.5in	●	Proprietary SCSI
Visioneer	PaperPort	400dpi	8-bit greyscale	○	9.5in	●	Serial
Primax	Colour Mobile Direct	400dpi	24-bit colour	●	5in	●	Parallel
Primax	Photo Organiser	400dpi	24-bit colour	●	5in	●	Parallel

● = Yes ○ = No

Visioneer PaperPort Vx

● Actual scan at 200%

Scanners



Visioneer PaperPort Vx

The Visioneer PaperPort Vx is a little more rounded than the near identical Hewlett-Packard ScanJet 4S but there's not much in it. As stated earlier, both of these scanners are made by HP and both come with Visioneer's document management software. For a description of the hardware, read the ScanJet 4S review (see the opening page of this group test) as we're concentrating on the software here.

Like the ScanJet 4S, Visioneer's PaperPort Vx is idle until a page is inserted into its paper feed slot. It then seizes the page, scans it and starts up the PaperPort software. Once the scan is complete, it appears on the desktop as an image. The PaperPort desktop consists of a large area where the scans appear, together with a row of buttons along the top and icons along the bottom. The buttons provide quick access to such functions as rotating a page and stacking sev-

eral related pages into a single pile and scans can also be magnified, cleaned up and have comments added. Scans can be stored in different folders, so you could, for example, have one folder for letters and another for bills.

Once on the desktop, what the PaperPort does with a document depends on what software is installed. The icons across the bottom of the window represent different applications; if you have fax software installed, for example, then dragging a particular document onto the fax application's icon will send it to be faxed. Turning a document into editable text via OCR is extremely straightforward – simply drag the scan onto the word processor icon and it will be sent via the OCR application (Xerox TextBridge is supplied with the PaperPort Vx) before being pasted into the word processor.

The PaperPort Vx is also bundled with a couple of other applications that the ScanJet 4S doesn't get. PictureWorks copier is a simple utility that turns the scanner, PC and printer into a photocopier – scan the page, set the number of copies and print them.

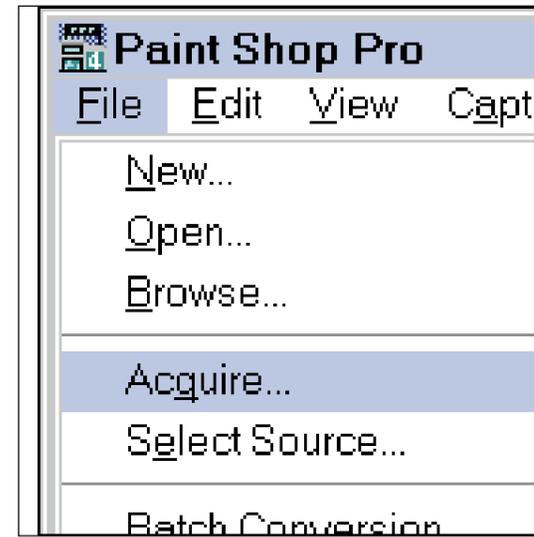
CardScan SE is a little more useful. When provided with a scan of a business card, it applies its own OCR and converts the card's information as editable text on an on-screen business card. It's pretty good at putting text in the right places – names in the name field, for example. If you're swamped with business cards then the program is a handy way of getting them onto your PC.

Identical to the ScanJet 4S in almost every respect, the Visioneer PaperPort

Twain compliance

Twain (Technology Without An Interesting Name? The acronym doesn't stand for anything!) is a standard that dictates how a scanner should communicate with a program. Before Twain, every scanner required a separate driver, which created something of a headache for programmers writing image-editing software. Today, Twain compliance is all that is required as any software worth its salt will be able to work with a Twain-compliant scanner.

Twain has also made it possible for programs other than image editors to use scanners – an 'Acquire' command is simply added to the File menu. By choosing this, an image can be retrieved directly from the scanner and dropped into the application.



performs just as well. The software bundle is a little fuller, but then so is the price – quite significantly, in fact. On that basis, unless you desperately need to scan business cards, go for Hewlett-Packard's cheaper ScanJet 4S instead.

○ £287.88
○ Ingram Micro: 01908 260422

Visioneer PaperPort Vx

Ease of use	★★★★★
Performance	★★★★★
Software	★★★★★
Value for money	★★★★★
Overall	★★★★★



For its low price and excellent document management software, Hewlett-Packard's ScanJet 4S stands head

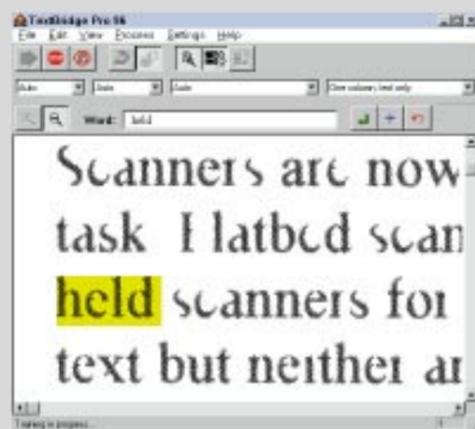
and shoulders above the other document scanners. Its 400dpi scan resolution gives sharp and accurate images and although it can't scan in colour, scanned images and photographs are nevertheless clear. A good buy for anyone striving for a paperless office.

Optical character recognition

The single biggest reason for scanning a page of text is, of course, to avoid someone having to type it into the computer. Scanning text, however, only results in an image of it and usually a pretty poor-quality one at that. To turn an image of some text into something that can be edited in a word processor requires something else – optical character recognition, or OCR for short.

An OCR program looks, for example, at a picture of the letter 'a' and turns it into an 'a' that could have been produced by pressing the appropriate key on a keyboard. If this process sounds simple, it's only because we can do it without a second thought and accurate OCR is one of the computer industry's holy grails.

Most scanners come with an OCR program of some sort and some of these packages are very good indeed. As a general guide, using OCR on a document should be quicker



than retyping it – otherwise it's pretty useless. Some of today's more sophisticated OCR packages are capable of remembering what they've seen before and applying that to new scans, resulting in more accurately recognised text. This feature is particularly useful if you are planning to scan poor-quality originals, such as faxes that often have distorted or incomplete characters.

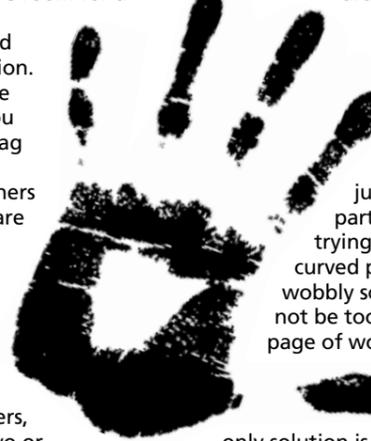
Unfortunately, despite the sophistication of OCR programs, they have one monumental limitation – they can only work their magic on typewritten text. Given a page of handwriting, no matter how neat and legible, and an OCR program will fail miserably. True handwriting recognition by computer is still a long way off and so if you're faced with the problem of someone sending you handwritten documents, the simplest solution is to buy them a typewriter.

By hand

If you only want to scan text occasionally or want to scan pages from books but don't have room for a flatbed scanner on your desktop, then a hand-held scanner may be the solution.

Hand-held scanners are exactly that – scanners you hold in your hand and drag across the page to be scanned. Hand-held scanners are relatively cheap and are very portable but they're not without their drawbacks. The biggest is the width of scan they can make. If the image to be scanned is wider than the 4in or so of most hand-held scanners, it has to be scanned in two or more sections which can then be

pasted together. This method works for most situations but it can be an arduous process.



The other drawback is accuracy. It can be quite difficult to move your hand in a perfectly straight line without any jolts or judders along the way, particularly if you're trying to do it down the curved page of a thick book. A wobbly scan of a picture may not be too noticeable but a page of wobbly text will fox most OCR programs. If this happens, the only solution is to re-scan it until you get it right.



If you want to scan more than just pages of text, then Logitech's PageScan Colour is ideal. Capable of scanning single sheets and pages from books, it's extremely versatile and the superb document management software adds to its appeal. If you're working to a tight budget, then the Sicos DMS 2000 offers a cheap way of getting scans onto your PC but its proprietary interface and expansion card do restrict it to desktop PCs. The software isn't particularly great but the low price and the 800dpi scan resolution go a long way to make up for it.

Julian Prokaza