

UNDERCOVER BUYING >>

group test



Undercover operation

Posing as members of the public, we bought ten £1,000-PCs for this group test. On these pages we reveal the **levels of advice and customer service we received as private buyers.**

Unless you have an extremely healthy bank balance, buying a PC will take a large slice of your salary. Therefore, you should make sure that you know more about a PC manufacturer than merely whether or not it can build a good machine. What is the company's sales service like? Will it try to sell you a more expensive PC than you wanted? Will it include the components you specified? How long will it take to deliver the PC, and will it be well built or falling apart at the seams when it arrives? And if you have a problem, will technical-support staff be able to talk you through a solution?

To assess these factors, we posed as ordinary members of the public and went out to buy ten PCs. Of course, as the manufacturers had no idea that the machines were destined for the PCW test laboratories, they did not have the opportunity to try to impress our review team in any way. Our "cover" was as a small-businessman with £1,000 to spend. We revealed an average level of knowledge, but expected the sales staff to provide recommendations on what to buy.

Our experience of the sales and technical support services of each manufacturer was dependent on just a few calls and on speaking to a few members of staff from each company. Because we were posing as ordinary customers,

any PC owner — or prospective PC buyer — could expect the same treatment. Here, we reveal our findings.

We subjected our buys to rigorous testing, and assessed the sales and technical support services. Also, to arm you with all the facts, the PCW team provides advice on everything from how to buy a PC, to warranties, financing, and future-proofing your investment.

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PCs reviewed by Ajith Ram, Nik Rawlinson and Paul Trueman.

Illustration by Amanda Hutt

How to buy a PC

It's pretty easy to **protect yourself** when buying a PC mail order. Just follow our direct buying tips.

You don't need to be nervous when you buy a PC by mail or over the phone. The law is often on your side, and if you follow some simple tips, you can make sure you are protected.

➔ **First, always make** a note of the name of the person to whom you are speaking. If possible, note down any specific claims made during your conversation, such as confirming a particular feature. Record the date and time, too, in case of later queries. When phoning about problems, remember to keep calm; it's unlikely that the person on the other end of the phone is directly responsible for what's wrong and annoying them won't help solve the problem.

➔ **When you're placing** an order, making enquiries about whether or not something is suitable, or if you're not sure about something, don't be afraid to ask. The law requires that items must be fit for the purpose you have specified at the time of purchase. So, if you say you want a PC with enough memory to run Windows NT, then that is what you should be sold.

All-inclusive package?

Don't assume that certain things are included, such as a toner cartridge for a printer, or blank CDs and software for a recorder. Always check, and either ask for written confirmation of price and what's included, or include that on a confirmatory fax or letter of your own. However, if you do confirm an order in writing, make sure it's clearly marked as such; you don't want to accidentally end up ordering everything twice!

➔ **When you're ready** to buy, use a credit card if you can. Under the Consumer Credit Act, you're automatically protected as long as you're

spending between £100 and £15,000. What this means is that if the company fails to deliver, or if there's some other problem, then the credit card issuer is jointly liable, and you can take up the issue with them if the seller is reluctant to sort out problems.

➔ **If you're buying** goods or services using someone else's credit card, or perhaps buying for the office with your own card, check whether or not there are any delivery restrictions; for security



reasons, many companies will only deliver to the registered cardholder's address. Others will simply ensure that you actually know the address.

Make a date

Never rely on a vague promise of a delivery date, such as "It'll be around two weeks". When it's essential that a system is delivered by a particular time, make sure you make your requirements quite clear to the person who takes your order, and state that "time is of the essence" in any written confirmation. Failure to do this could leave you with no recourse if the company you buy from has a problem meeting the deadline.

➔ **Once you have placed** the order, if all goes well, your new computer will be delivered when you expect it and it will be in perfect working order.

Sometimes, though, things do go wrong, so never sign for the delivery until you have checked the outside of the packaging. If there are any obvious dents or tears, note them down on the courier's receipt. Ideally, you should unpack everything immediately and check that it is okay, but the courier is unlikely to want to wait while you do

this. In that case, state clearly on the delivery note that the packaging was damaged when you received it, and that you have not yet checked the contents. Do so as soon as possible, and report any problems immediately.

Play it safe

With all these warnings, it may sound like buying over the phone, or via the internet, is prone to difficulties. Be assured that it certainly is not: the vast majority of people buy their PCs without any problems at all. Remember to choose a reputable supplier, and if

you want more reassurance, turn to our *Buyers' Guide* at the back of the magazine where you'll find details of PCW's own buyer protection scheme.

➔ **Whether you place** your order by post, telephone or the internet shouldn't make any difference; the law is the same in every case. And the usual precaution about shopping via the internet applies: only give your credit card details to a secure server.

Ultimately it is your choice how you place an order, but picking up the telephone provides the best balance between speed, convenience and being able to ask those essential questions.

NIGEL WHITFIELD

Illustrations by Trevor Dunton

Warranties

When your PC plays up you'll be glad of a **good warranty**. Make sure you're adequately covered.

What do you do when your PC goes wrong? It depends on the warranty and support you have. If you rely on the PC for your work, then it is worth making sure you understand the warranty before you part with your hard-earned cash.

Which warranty?

There are essentially two types of warranty for a computer system: "on-site", and "return to base". The former involves someone coming to your premises to fix a problem, while the latter means you'll have to get the computer back to where it came from (which is by far the most common). Naturally, it's not as simple as merely deciding whether you want to pack the computer up or to have someone sent around. With either choice there are extra factors involved and the final decision depends on how much you're prepared to spend, and how long you can manage without the computer.

Your business needs

For most people using a computer in business, on-site service is the only option worth considering. Not being able to access your customer database, for instance, could cost a lot of money in lost sales. But don't just take on-site service for granted. Find out the guaranteed response time: will an engineer come the same day, or the next day, or "perhaps during next week, but we can't say when"? The faster the response, the more you'll pay, either explicitly or in the bundled cost of the computer.

➤ **And remember**, there's a big difference between having an engineer come and say, "I've looked, but I can't fix it" in two hours, or someone coming the next morning and saying, "I can't fix it, but there's a spare in the van you can have on loan." Find out exactly what service is being offered on-site. Another popular marketing trick is to offer an on-site warranty for one year, with further years "return-to-base".

➤ **Even a return-to-base** warranty

can be far from straightforward. Will someone come to collect a broken computer, or will you have to pay to send it back? And do you even know where it will have to be sent back to? A trip down the road may be one thing, but a courier shipment across the country, or even to a repair centre in another country, could be pretty expensive and you'll often have to pay, at least to get the computer there.

➤ **You'll also need** to find out what's included and whether the warranties are the same on everything. For example, a system including a printer and a monitor from a mail-order manufacturer might have different warranty lengths on different pieces of equipment. You may even find that while a system has a one-year warranty, items such as hard disks have a three-year version. Just don't expect the PC manufacturer to draw your attention to it.

Complete cover?

Check very carefully for exclusions on the warranty. For example, a printer warranty might exclude damage caused by recycled toner cartridges, and some PCs have even had stickers on the back saying that upgrading will invalidate the warranty. Since a PC is, by nature, designed to be upgradeable, it's unlikely that such a clause would hold up in court (provided you've done nothing obviously destructive),

but it's worth making sure in the first place that there's no small print to catch you out. If you're concerned, consider finding out before buying how much it will cost to have the manufacturer install upgrades for you in future.

➤ **The biggest exclusion** of all, of course, is software. You will usually be entitled to some technical support for Windows, but not for long. Make sure you're clear what support is available for the software on your computer, and who provides it. For Windows, it's down to the PC maker; for other software, it may not be. And in the grey area where software collides with hardware, the opportunities for avoiding responsibility would make a used-car salesman blush.

➤ **If you're going to rely** on your computer, don't just chance it. Invest in a proper support contract and ensure that it covers everything — computer, peripherals and software. Shop around to see what's on offer, and when you're quoted a price, remember to think how much it would cost *not* to have your computer when you needed it.

NIGEL WHITFIELD



Future-proofing your PC

Sensible buying and prudent upgrading will help you counter **the march of technology**.



It is a sad fact that no matter when you buy your PC, it will start to look dated after a very short period of time. A new processor will come along, as will new, faster graphics cards, and you will need more RAM to run the increasingly power-hungry applications that are released. However, if you buy sensibly and upgrade gradually, you can get a good lifespan out of your PC and keep it reasonably up to date.

Memory matters

The one component most people add to their PC is RAM. It is, after all, a relatively cheap and easy way of giving the machine more kick. When you buy your PC, make sure that all the RAM is put in to a single slot, leaving you the maximum room to expand in future. When you buy the PC, specify a motherboard with as many DIMM slots as possible. That way, even if you buy your upgrade RAM in smallish doses, you do not have to waste RAM by throwing out smaller-denomination RAM DIMMs to make room for more memory.

➤ **It also worth** making sure that you get 100MHz RAM now, even if your processor will not work with RAM of this speed: 100MHz RAM will simply clock down to 66MHz until it detects a

processor that supports the faster speed. There is no price difference, and if you change your processor later, you will be grateful for the speed boost from the faster RAM.

Chips

Of course, if you need more processing power, you will need to upgrade your processor. If you choose an AMD K6-2, be aware that the days of Socket7

are numbered and that although AMD is due to carry on with Socket7 for a year, it is debatable whether or not it will continue to make them thereafter. If you go for an Intel chip, especially one of the Celerons suggested by some of the manufacturers in this test, you have the option to upgrade to a PII at a later date as both these processors fit in to the same Slot1 socket. While Intel is not going to be making Slot1 processors forever, the technology has a longer shelf life than Socket7.

➤ **However, if you are** going to upgrade from a Celeron to a PII, you must make sure your chipset supports this. It is worth investing in a BX motherboard from the start, even if you are saving money by buying a cheaper processor now. It may seem cheaper to get an LX or even an EX board, but this would be a false economy in the long run. The BX chipset supports processors up to 450MHz and 100MHz RAM, thus allowing for a much faster processor to be fitted later.

➤ **In specifying** your motherboard it is also important to make sure you have enough free slots for any components you may choose to add; either parts from your old machine, or new ones

you intend to buy later. Many manufacturers are now producing motherboards with very few PCI and ISA slots but with chips on-board (for graphics, sound and even SCSI, for instance). Before you buy a new PC, it may be worth counting the number of cards you have in your old machine and working out just how many slots you will need in the new machine to accommodate any older cards plus the new cards you may be buying, and specifying a minimum number of slots.

Peripherals and cards

While specifying your motherboard, do not forget to consider the number of ports. While USB peripherals are starting to appear on the market, including keyboards, mice, printers and cameras, it may be some time yet before you can throw away all your serial devices. If you have, for example, an external modem and a device such as a Rex card, you will still need two serial ports for these, even if you run your mouse off a USB or a PS/2 port.

➤ **If you are** offered on-board sound or graphics, think very carefully before accepting them. Not only are they typically less good than standalone cards, they can also make upgrading more complicated. Often, on-board graphics cards also have the disadvantage of using a portion of main memory, effectively reducing the amount of RAM you have available to run applications. You will have to disable any on-board chips in the BIOS before adding new cards. For many, this will not be a problem, but it can be more complicated than is strictly necessary.

Storage space

When choosing storage, it pays to get as much as you can when you buy the PC. For example, there is very little difference in price between a 4Gb hard drive and a 6Gb drive for 50 percent more storage space. Similarly, it will probably save you money if you buy an internal removable storage drive at the same time as the PC.

Not only will any savings, made by the manufacturer when bulk buying, be passed on to you, but you will also save yourself the bother of having to fit it and it should be covered by your warranty. It is worth checking, however, that your manufacturer will provide technical support for the drive. If you intend to add more storage drives later, make sure the case has plenty of room to accommodate them.

➤ **The vexed question** of whether to buy DVD now or later is one which has still to be resolved. DVD-ROM drives will

currently play all your CDs and CD-Rs, although there are few actual DVD titles available in the UK at present. If you accept that at some point you will want a DVD drive, the question of whether to buy later comes down to how much you will be expected to pay for it. Bear in mind that a DVD drive bought later may turn out to be a better drive, and prices will no doubt drop as take-up of the drives increases.

➤ **Finally, your choice** of monitor should be given careful consideration. If you are spending around £1,000 on a

PC, it is easy to decide that you will save a bit by buying a cheap monitor. But the monitor is, after all, what you look at all the time you are using your PC. If you skimp on this, you will not be doing your eyesight any favours. It is worth paying a little extra for a good monitor when you buy the PC, because purchasing a bad one and then having to replace it can be an expensive business. It might even be worth paying a little bit extra and getting a flat-screen monitor, being offered by some manufacturers for as little as £300 over the price of a 19in monitor.

ADELE DYER

Making your PC more affordable

Strapped for cash? Then consider these **alternative schemes** to fund your PC purchase.

Pentium PCs, only £799! It's still a lot of dosh, and many people will want to avoid forking out a large amount of money in one go. While credit cards are a solution, not everyone has one, or you may not have a high enough credit limit to add the cost to your card. But there are other solutions which can help you afford the computer you need.

Company credit

One of the first things to find out is whether or not credit is available from the computer's supplier. Many of the larger mail-order companies can offer some type of credit, either in the form of a standard agreement or a "buy now, pay later" deal. Before you sign up to credit, however, check to see what the APR (Annual Percentage Rate) is: often it will be much higher than would be available on a credit card. A company is obliged to give you a written quotation for credit if you ask for one, so that you can see how much the deal is really costing you. Do not sign up without first having seen and evaluated the figures, as even an APR can be calculated in different ways.

➤ **An alternative** to credit is hire-purchase, but it's less common now that credit is widely available. It is most useful

to those with a poor credit rating, and you can usually hand back a system if you can no longer afford it, or do not need it; but check for minimum contract periods and don't forget to work out



how much a system will really have cost you by the time you own it.

➤ **For a business**, leasing may be a good option, as you can set the costs against tax. Alternatively, with an outright purchase, you'll have to write off the cost over a number of years. Depending on the type of business you run, it may even be worth registering for VAT as there's around £200 to claim back on a PC system costing £1,350 after VAT.

■ Money-off schemes

It's unlikely you'll be able to get much for an old PC, but in some cases you can claim discounts on software or hardware. Competitive upgrades can knock hundreds off, say, the cost of Caere's OmniPage program.

➤ **The biggest group** to be offered discounts is students. However, many schemes such as the Microsoft Student Discount won't give you the goods until you come up with proof that you are a student. Buy the MS Student Edition of Office, for example, and you receive a box with a form in it. Only when the form has been completed by someone who can vouch that you're enrolled as a student, do you receive the software. You cannot, for example, buy it in the gap between leaving school and starting university.

● *At the time of writing, Gateway launched a new scheme called Your:ware. Buyers will be able to trade in their old Gateway system for a newer one. To qualify, the system must have been purchased after 18th September 1998 along with one of eight software bundles costing from £50, and the trade-in itself made between two to four years later. The value of your old system is based on estimates of secondhand equipment, made on an independent web site.*

NIGEL WHITFIELD

Armari NBX 350 Workstation



Technical Support

Armari is a manufacturer based in Brentford. In five years it has established a reputation at the high end of the market, catering largely for graphics users, but also supplying individuals.

Sales

In direct contrast to Evesham's representative [p179], the sales assistant at Armari told us that the Celeron 333 is slightly slower than an equivalent Pentium II running at the same speed. The validity of either of these statements depends on the type of applications being used. In tests, we have found the Celeron 333 to be slightly slower at running business applications, whereas in games environments it can actually be more suitable than the PII. We were told that the Celeron would save us money, and so, keeping our business sense about us, we followed this recommendation.

The assistant recommended that for £20 we opt for Lotus SmartSuite rather than the more expensive Microsoft Office, but when our faxed spec arrived this had been changed to the inadequate Microsoft Works due to incompatibility problems with Windows 98. This was in spite of the fact that we were told on the phone that we would have no major problems with Windows 98.

Two graphics cards were offered: the Diamond Viper 330 with 4Mb SGRAM, which was recommended and accepted, and the Millennium G200 with 8Mb. Without having to check, the assistant was able to tell us that the monitor had a 1024x768 refresh rate of 85Hz. When we called back, a different, exceptionally knowledgeable sales assistant dealt with our purchase. He recommended upgrading to 100MHz RAM (the quote had been for 66MHz) and to a PCI sound card from the recommended ISA at no extra cost. Delivery was promised in ten days. Following this second assistant's performance, we felt reassured.

The company dropped its prices just a couple of days after we had placed our order. Manufacturers with less scruples may have let our order stand as it was but Armari called back and offered a free upgrade on both the hard drive and the graphics card. When the PC arrived, even the processor had been upgraded to a PII 350.

The system

All the drivers and manuals you could need were contained within the Asus motherboard box. However, there was little consideration given to the virgin

user; it is assumed that you know what you're doing when setting up the PC. The NBX 350 was one of the larger PCs in the group test, and a dream for anyone who already has existing top-notch kit such as storage devices which they want to fit in their new PC. There were two spare forward-facing 5.25in drive bays, complementing two 3.5in units, one of which was internal, the other forward-facing.

Armari had opted for quality, branded components. For our money, we got a PII 350 processor, with the (seemingly now standard) 64Mb SDRAM. We also had the excellent Millennium G200 graphics card from Matrox, the Creative Labs SoundBlaster PCI 128, as well as the Diamond Supra 56K modem. The machine was equipped with a 6.5Gb Medallist Pro hard drive from Seagate.

Armari scored bonus points for its choice of monitor, the 15in Vision Master 350 from Iiyama. Offering 75Hz vertical refresh rate at 1024x768 resolution, this was an impressive performance from a monitor with an excellent OSD (on-screen display).

Technical support

Of all the technical support calls we made, the Armari help desk was the fastest to answer our call and the man at the other end identified himself as the technical support manager in charge of the help desk. This was not surprising, as Armari is a far smaller firm than multinationals like Dell and Gateway. Speaking in a polite voice, at times even enthusiastic, he correctly identified the problem. Of all the technicians to whom

we talked, the Armari manager was the only one who gave two possible reasons for our (supposedly) blank monitor. He correctly informed us that it was either a loose graphics card or memory module, and offered to send an engineer over the next morning to repair the system.

Our second call, about a "defective" printer was, again, answered promptly. On being told that we had installed the latest drivers for the printer, he correctly assumed that the printer was not the default one in Windows and instructed us on how to make it so. For transferring large files from one PC to another, he suggested the Iomega Zip drive as being cheap and easily available.

PCW DETAILS

Price £1,398 (inc VAT & delivery), £1,167 (ex VAT)

Contact Armari 0181 810 7441
www.armari.co.uk

Good Points Quality components. 56K modem. Excellent graphics card.

Bad Points Not user-friendly for novices.

Conclusion A quality piece of kit for someone who knows what they're doing.

Sales Rating

Details of spec given ★★★★★
Sales overall ★★★

PC Rating

Build quality ★★★★★
Value for money ★★★★★

Technical Support Rating

Technical knowledge ★★★★★
Technical explanation ★★★★★

Dabs Direct Atlantis Home Office

Set up in 1987, this public limited company has bases in Bolton and Bracknell, and last year's annual turnover was in excess of £50m.

☛ Sales

Dabs' freephone number was answered on the first ring by an automated service that put us into a queue of two. The company recommended an Atlantis Value bottom-end PC when we had outlined only the basics of our requirements. The representative said he would send out a catalogue, but didn't want to talk to us any more until we had received and read it, which made us wonder if the reps didn't know their product line as well as they should. We later tried phoning Dabs' custom-build lines and were put into a queue. At 5pm our call was terminated even though we were still queueing. We phoned back on a different occasion to check whether this occurred because their lines closed. We were informed that the line's closing time depended on whether the firm can get staff to work the line late in the day. On this second occasion, it was to remain open until 7pm.

So, back to General Sales, where we were 23rd in a queue. A recorded message assured us that our call would be answered in five minutes; it took 12. As we pretended to have read their catalogue, the company advised us that the 300MHz Pentium II is now obsolete,

and because the Celeron is too slow, it is best avoided.

The next day we placed an order. Talking to a different salesperson, because no name had been given, this new assistant was helpful and knowledgeable, and advised us on a number of sensible upgrades such as a BX rather than LX chipset to take full advantage of the 100MHz frontside bus. This efficiency unfortunately came a little too late. Our Dabs buying experience failed to impress.

☛ The system

The PC Dabs sent was the cheapest in this group test, although obviously this was partly due to the Dabs salespeople. We were impressed by the setup of the PC: for less than a grand it included a fair amount of impressive kit. Dabs had included a PII 333MHz processor along with the 64Mb of SDRAM, and a 32-speed Creative Labs CD-ROM drive as well as a 56K modem based on the Rockwell chip. We were not too impressed by the S3 Virge GX2 graphics card which, while useful enough for running 2D office applications, is not so suitable for playing relatively up-to-date 3D games. There was a respectable amount of expansion room inside the PC, with a stonking three 5.25in bays and one 3.5in bay all free and forward facing, as well as four DIMM slots, with the 64Mb filling just one of them.

On a user-unfriendly note, we were surprised by a missing plate at the rear of the PC that should have been covering up the motherboard. Instead, the USB, parallel and serial ports jutted out. The Belnea 10 30 35 15in monitor was a disappointment, with substantial blurring at 1024x768 and unable to produce a healthy refresh rate at that resolution.

☛ Technical support

Our first call to the Dabs Direct help desk was held in a queue for ten minutes. Unlike most other help lines, there was no music playing and so it was slightly irritating to listen to the ringing tone of a telephone for that length of time. The technician who came on the line was quite polite and immediately identified a loose graphics card as the problem behind our (supposedly) blank monitor. However, he could not identify any other possible reason, including a loose memory module. Having failed to teach us about reseating the graphics card, he offered to arrange for a courier to pick up the computer.

Our second problem, regarding the "reluctant" printer, was answered in the same polite manner by another technician. He suggested reinstalling the drivers and trying to print a test page. He also gave the printer manufacturer's technical support number. For transferring large files across PCs, the technician suggested an Iomega Jaz drive as it had a capacity of 1Gb and was good value for money.



PCW DETAILS

Price £945 (inc VAT & delivery), £795 (ex VAT)

Contact Dabs 0800 558866
www.dabs.com

Good Points Very reasonable price.

Bad Points Unwanted access to the motherboard at rear. Graphics card.

Conclusion Affordable, impressive office machine.

Sales Rating

Details of spec given ★★★★★
Sales overall ★★

PC Rating

Build quality ★★★
Value for money ★★★★★

Technical Support Rating

Technical knowledge ★★★
Technical explanation ★★★★★

Dell Dimension XPS R350



Technical Support



PC System

Dell has a long-established reputation for selling direct to customers, whether individual home users or large corporate clients. Other companies, like NEC, have copied its successful direct-selling approach.

Sales

The call was answered after just one ring and we were asked our name, contact details and the use we would make of our new machine. We were then put on hold for an operator in the appropriate department who already had our details to hand — impressive.

Dell was quick to recommend a 350MHz-based system from its Dimension range, with a 10Gb hard drive and a 17in monitor. Throughout the call the telesales representative was efficient and courteous and seemed to have great faith in the products he was selling. We were a little disappointed that when enquiring about the monitor's refresh rate we were told that it was 800x600 (a resolution specification). This is a fairly fundamental mistake that we did not expect from the likes of Dell. An upgrade to a 3D graphics card with 8Mb onboard for better 3D game playing was recommended, but we were disappointed that should we opt to downsize to a 15in monitor from the standard 17in model supplied, we would save no more than £17. Windows 98 and Microsoft Office 97 Small Business Edition were bundled.

The assistant gave us his direct phone number so that we could call him back to place an order. We did this, and after having given our postcode, our details were called up and we were asked to confirm our spec and opt for either a mini-tower or desktop case. We turned down the offer of an upgrade to a three-year "collect and return" warranty, but there was no attempt at a hard sell to change our mind.

The system

The first thing to greet you on opening up the Dell box is the reassuring "Getting Started" poster that details in the simplest terms how to treat the equipment out-of-the-box and, more importantly, how to connect it all up. Underneath the poster was a box filled with every conceivable manual and driver diskette, including a copy of Windows 98 (not all manufacturers supply a copy — essential if you need to format your hard drive and start over).

For our wedge, Dell had supplied us with a Dimension XPS R350 with a fairly

hefty specification. Along with the PII processor running at 350MHz and the 64Mb of SDRAM, there was a 9.3Gb hard drive from Maxtor, as well as the Xpert98 graphics card from ATi, fitted with 8Mb of SGRAM (the maximum amount available with that card). Internet access is provided by the US Robotics Sportster Winmodem, capable of connecting at 33.6Kbps.

Everything was relatively neat and tidy inside, and there was plenty of room to upgrade, should you wish. Three free PCI slots, with one free ISA slot next to the modem, and all 64Mb of SDRAM was on one DIMM, leaving two DIMM slots free.

The 15in monitor was Dell's D828L, with 13.7in viewable. Those 13.7 inches were best viewable at 800x600 where the refresh rate was a healthy 85Hz; it dropped to 60Hz at 1024x768.

Technical support

Our first call to Dell was answered within a minute by the switchboard operator who routed us to the technical support desk. This wait was slightly longer and was answered by a polite technician. On hearing the "problem" of the blank monitor, he asked us to reconnect the cables and switch the system back on.

When we informed him of the two long beeps, he correctly identified the problem as a loose graphics card. He even took the effort to explain to us the role of a graphics card in a computer system. He then offered to send a courier to collect the PC.

Trying to stretch his patience, we insisted that Dell should repair our PC on-site, that afternoon. Still retaining his composure, he politely pointed out that our warranty did not cover on-site maintenance. When we continued to



insist on it, he offered to expand our warranty to on-site maintenance for an extra £80. He also assured us that a technician would be able to come in that afternoon or the next morning.

Our second call was answered in the same prompt, polite manner. When asked about the best method for transferring data from one PC to another, the technician suggested an external Zip drive which connects to the parallel port.

PCW DETAILS

Price £1,261 (incl VAT & delivery), £1,044 (ex VAT)

Contact Dell 0870 1524625
www.euro.dell.com

Good Points Expansive hard drive. Plenty of headroom.

Bad Points No speakers, despite having on-board sound.

Conclusion A quality performer.

Sales Rating

Details of spec given ★★★★★
Sales overall ★★★★★

PC Rating

Build quality ★★★★★
Value for money ★★★★★

Technical Support Rating

Technical knowledge ★★★★★
Technical explanation ★★★★★

Evesham Micros Prestige Scorchers

Evesham is based in Worcestershire. The company has five branches and is one of the UK's largest PC companies.

Sales

After having spent 12 minutes on hold, we were recommended to choose the highest processor possible to run the latest games, but also warned to buy the cheapest possible processor the company offers to cover our needs, because whatever we bought would be obsolete within three years. A compromise was reached and we opted for a 333MHz Celeron, billed as being faster than a Pentium II of the same speed (see what Armari had to say about this, in its review on p170).

The machine was bundled with a Lexmark 1000 ColourJetPrinter, although the sales assistant advised against choosing this printer and suggested that we upgrade to a more suitable Hewlett-Packard DeskJet 690. The assistant informed us that the 15in CTX monitor had a refresh rate of 85Hz at 1024x768 which was, she assured us, the correct resolution to run a monitor of this size.

When we called back, our original contact was already busy on the phone but there was no offer to put us through to anyone else on the sales team. We called back once more and, because our contact was again busy, we were put on hold. After six minutes of waiting we asked to speak to anyone in sales, wondering why this had not been offered anyway, and had to wait a further four minutes.

The bundled Lexmark printer once again came in for criticism and we were warned that we would have to change

cartridges on it. We turned down the offer of an upgrade. While frankness is admirable, the playing down of products in this way gave us a feeling of general unease about the remainder of our order.

The system

For a company that is proud of its sales to individual home users, we were surprised that Evesham had not opted for the immediacy of the "idiot's guide" poster that had greeted us on opening the Dell (p174) and the Mesh (p183) boxes. The rear of the Evesham PC was clearly and comprehensively labelled, though, so that even the novice would really have to put some effort into hooking it up incorrectly. Besides this, Evesham had included a wealth of information with the PC, as well as a folder which included manuals for the CD-ROM and graphics card.

Evesham had used a small tower case to house the Prestige PC, and the engineers had utilised the EX chipset in the Chaintech motherboard. The EX is principally designed for the Celeron and as such Evesham is cutting off a significant processor upgrade as the EX cannot handle a 350 or 450MHz processor. This minute motherboard nonetheless contained an AGP slot along with two ISA and two PCI slots. Filling the AGP slot was ATI's Xpert 98, a popular graphics-card choice of the companies here, and one of the PCI slots contained the SupraExpress 56Kbps modem using the Rockwell chip. At the price, this was a reasonably-configured PC and even after adding VAT and delivery charges, the Prestige was still

one of the cheaper PCs in this group test. At our price point, the standard for monitors seemed to be 15in, and Evesham's offering was no different. Taxan's impressive Ergovision 550 offers 13.7in of viewable screen, and its manual image controls worked well.

Technical support

Answering our first call within two minutes, the technician at the Evesham help desk asked us to try and plug the monitor in to another PC in order to solve our (fictitious) blank monitor problem. When we reported it working, he identified a loose VGA card as the problem. When we pretended to be total novices, he proceeded to explain the purpose of a graphics card. He also tried giving us clear instructions for reseating the graphics card. When we asked for on-site technical support, he promised to send a technician over the next day.

Our second call to the Evesham help desk was held in a queue for about ten minutes and was answered by a technician who seemed to be suffering from a severe cold. To add to his misery, we again proved ourselves thoroughly inept when he tried to figure out our (concocted) problem with the printer. However, he was quite patient, and suggested reinstalling the drivers and securing the cable.

Intriguingly, he asked whether we had upgraded our operating system from Windows 95 to Windows 98. When we confirmed this, he said that the new operating system has wrought havoc with many other PCs' printer settings and that we should download the latest printer drivers from the manufacturer's web site. This is quite sound advice, as Windows 98 uses a different driver model from Windows 95. Indeed, it has caused problems with many PC peripherals like printers and CD-Rs.



PCW DETAILS

Price £1,156.40 (incl VAT & delivery), £965.17 (ex VAT)

Contact Evesham 0800 496 0800

www.evesham.co.uk

Good Points User-friendly setup.

Bad Points The smaller motherboard may frustrate future expansion.

Conclusion A modestly-configured machine.

Sales Rating

Details of spec given ★★★★★

Sales overall ★★★★★

PC Rating

Build quality ★★★★★

Value for money ★★★★★

Technical Support Rating

Technical knowledge ★★★★★

Technical explanation ★★★★★

Gateway GP6 333



Gateway is one of the larger companies in this group test, a PC giant whose European manufacturing base is centred in Ireland.

Sales

We explained to a receptionist that we were looking for a business PC, before being put into a queue to speak to a sales representative who quickly recommended a 333MHz Celeron-based system. This business system included Word, Excel, Outlook and Microsoft Money, while Encarta and a pair of "standard" speakers should keep the kids happy. A fax modem was also included as standard and would meet our requirements to fax direct from applications such as Word.

Although no specific figures were given, we were assured that there was plenty of room for memory expansion, although unless we were using memory-hungry applications we should need no more than the standard 64Mb for quite some time. We were advised against downgrading from the package's 17in monitor, as 15in would apparently make us squint and is considered "very small" these days. It was eventually the low system price quoted that convinced us to stick with this recommendation.

The sales assistant's extension number should have helped when phoning back to order, but as her number was diverting to voicemail we were passed to general sales. The order number came to the rescue and without further delay delivery was promised within the next ten working days.

At the time we phoned, President Clinton was in the building, and we could hear him in the background giving a speech to the Gateway staff. We suggested that the assistant should dump our call and join in because it sounded like much more fun, but she assured us that we were their "number one priority". A nice touch.

The system

We may only have paid £945 (ex VAT), but then, Gateway wasn't exactly pushing the boat out. It had sold us a stripped-down, no-frills PC. We had purchased a PC housing the much-criticised Celeron, albeit one running at 333MHz. Of course, the GP6 was kitted out with the 64Mb of SDRAM that only six months ago seemed extravagant, but there wasn't much else for this reviewer to get his teeth into.

On-board graphics were provided by the Mpack graphics chip from Chromatic, a 4Mb chip that we hadn't come across before. The single ISA slot was filled with the Sportster 33.6Kbps modem from US Robotics. That left four free PCI slots and no AGP, should you have wished to try and upgrade your graphics capabilities. We have criticised other, similarly spartan specifications in this group test for their lack of expansion potential, but the Gateway PC did not suffer from these problems. There were spare bays for two forward-facing 5.25in drives, one forward-facing 3.5in and room for another two internal 3.5in drives, slung vertically.

Gateway had included its own branded 17in monitor, the excellent EV700 capable of a healthy 85Hz at 1024x768. User-friendly and comprehensive, with a great OSD, the monitor was a joy to use. Seeing as we had a 17in monitor rather than a 15in, Gateway's price was still competitive.

Technical support

Gateway has a most unusual system for answering technical support calls. After an initial five-minute wait, we were connected to a technician who put us on hold for another 15 minutes. This was followed by a connection to a four-way conference call being handled by a single technician. Predictably, this tactic produced some moments of mirth, particularly when all four callers tried to talk to the technician at the same time. he became confused as to which problems belonged to whom, and went off for a few minutes to refresh his memory or to ask a colleague. During these breaks, frustrated callers could be heard trying to sort out *each other's* problems. One of the callers even surprised us by suggesting a loose graphics card as the gremlin behind our blank monitor "problem". It was an excruciating 72 minutes before the technician was able to answer our question. Even then, he was constantly interrupted by new callers and we had to hold for an additional 25 minutes before he could complete the answers to our questions. The technician was polite and had good technical knowledge, but he sounded exhausted at times.



PCW DETAILS

Price £1,068 (incl VAT & delivery), £909 (ex VAT)

Contact Gateway 0800 172000
www.gateway.co.uk

Good Points 17in monitor.

Bad Points Limitations of the EX chipset.

Conclusion A no-frills performer.

Sales Rating

Details of spec given ★★★★★
Sales overall ★★★★★

PC Rating

Build quality ★★★★★
Value for money ★★★★★

Technical Support Rating

Technical knowledge ★★★★★
Technical explanation ★★★★★

Hi-Grade Winputer PV2 333



Hi-Grade has won its fair share of awards in PCW group tests, and was recently listed as one of Britain's 100 fastest-growing companies.

Sales

We were offered the choice of an EX or BX chipset. Hi-Grade explained that although the EX allowed us a maximum of a 333MHz processor and a 66MHz frontside bus, we would be wiser to opt for the BX, giving us the option of a 450MHz processor and a 100MHz bus. The assistant recommended that we opt for a 333MHz processor, citing the 450MHz as too expensive. His advice was to wait for a year until the price of the 450MHz PII had dropped to around £100 and then consider upgrading. He also recommended upgrading the 4Gb hard drive we had requested, to 6Gb which would cost us only £10 more. Warning us that Windows 98 was not yet particularly stable, he proposed sticking with Windows 95 at this time. He also suggested that we do away with the need for an extra high-capacity removable storage device by swapping our floppy drive for an LS120.

This assistant was very knowledgeable and able to talk competently and with interest about the Hi-Grade product line. He was not afraid to lead the conversation but always went at a speed we could follow, putting us at ease and never once making us feel we were being cajoled into buying more than we would need.

At the end of the call he gave us his name and direct telephone number to use should we choose to place an order. This considerably speeded up the ordering process, and although there was a three percent surcharge on our American Express card, delivery was promised within five to ten working days.

The system

Rather than suffer the constraints of the EX chipset and motherboard which some of the other companies in this test had offered, Hi-Grade had used the BX chipset in tandem with Intel's PII 333 processor. Upon opening up the PC, we found the innards of the machine to be as neat and orderly as any can be, bearing in mind the number of wires floating around.

There was nothing in this machine that really stood out in terms of generous amounts of hardware. We had the standard 64Mb of SDRAM, a PII 333, the seemingly ubiquitous ATi Xpert 98 AGP card, as well as a generic 56K modem using the Rockwell chip. Hi-Grade is a large enough company to have its own branding on equipment, and this stretched to the ergonomically impressive Logitech mouse. With the roomy Asus P2B motherboard there was plenty of room for upgrading hardware, with four spare PCI slots, both ISA slots filled with the modem, and the Yamaha OPL3-SA sound card. There were two forward-facing 5.25in bays free, and an internal 3.5in unit free

for a drive. Hi-Grade's own branding also extended to the 15in monitor it supplied with the system, the AlphaScan 511. It was a disappointing monitor, though, providing a blurred view of icons at the corners of the screen at an 800x600 resolution, and was almost unwatchable at 1024 x 768, despite its refresh rate of 85Hz.

Technical support

Our first technical support call to the Hi-Grade help desk was answered within a minute by a pleasant female voice. On hearing that the monitor was blank and Windows not booting up, the technician immediately identified the problem as a loose graphics card. When we asked whether that could be the only problem, she told us that was usually the case.

She then proceeded to give step-by-step instructions for opening up the PC and reinserting the graphics card. When we proved ourselves totally inept at even this simple task, she seemed slightly annoyed and condescending. When we insisted on on-site maintenance, she reminded us that our warranty did not cover it and that we would have to return the PC for repair.

Our second call was answered in the same prompt manner, this time by a male voice. To get the printer working again, he suggested updating the drivers, securing the cable to the parallel port and also making sure that Windows had identified the printer as the default unit.

For transferring large files across computers, he suggested using an external Zip drive and offered to sell us one. He also suggested a CD-R for archiving data.

PCW DETAILS

Price £1,304 (inc VAT & delivery), £1,110 (ex VAT)

Contact Hi-Grade 0181 532 6133

www.hi-grade.com

Good Points Room for expansion.

Bad Points The monitor.

Conclusion A well-built machine.

Sales Rating

Details of spec given ★★★★★

Sales overall ★★★★★

PC Rating

Build quality ★★★★★

Value for money ★★★

Technical Support Rating

Technical knowledge ★★★★★

Technical explanation ★★★

Mesh Elite Connect PII300

Compared to giants such as Compaq and HP, Mesh is a relative newcomer to the scene. It regularly makes an impression in our group tests, and has scooped armfuls of *PCW* awards in the past, so we were intrigued to see what it would offer in this undercover test.

➤ Sales

Mesh recommended its "lowest spec" machine, a 300MHz Celeron, but we were told that we could opt to upgrade to a PII 300MHz if we felt the need. The details of both systems were given and we chose the Celeron at around £200 cheaper than the upgraded option.

The assistant put us on hold while he checked on the monitor's refresh rate, and at the end of the call we were told that we could speak to anybody when we called back to order. As it turned out, this was not helpful advice. We called back later that same afternoon and were asked for the name of our contact — we didn't know it. We were asked for the system name — he hadn't given it. We were asked for the system reference — it had not been given. In general, we felt that this second assistant was quite unhelpful.

Using our address details, she located our machine, told us it was the Connect 300 and named our original sales assistant. We asked to purchase the spec quoted but were told that Mesh was no longer dealing with 300MHz Celeron processors so we could not have the system detailed in our first call. We asked to upgrade to the 300MHz Pentium II, but neither was this available. In the end we had to upgrade to a 333MHz processor, thereby effectively changing the whole basis of our order. We were not impressed.

➤ The system

Mesh is another company, along the lines of Dell, that never makes the mistake of overestimating its customers. "Please Read This First!" shouts the headline on the poster, the first thing you see when opening up the box. This clearly shows you how to set up your PC, even if you don't know your PCI from your PIM. There is also the reassuring sight of the Mesh pack, full of drivers on floppy and CD, complete with manuals.

The Mesh PC was kitted out with 64Mb and a PII 333MHz processor. Sound was provided by Creative Labs' SoundBlaster Vibra 16, graphics by ATI's Xpert 98 card. There is a fair amount of room for expansion, given the two free 5.25in bays with the two



free 3.5in bays. The rear of the PC was not quite as user-friendly as the novice would hope: although labels such as "USB" and "Parallel" were stamped in the casing, this was not as impressive as the fully-integrated colour coding on some PCs.

Mesh scored points for its inclusion of the Taxan Ergovision 550, a 15in monitor that afforded an excellent 85Hz resolution at 1024x768 with an impressive OSD.

➤ Technical support

Mesh has garnered a reputation for building excellent systems and we were hoping that this expertise would carry through to its help desk. Our first call was answered by a recorded message telling us that we would be attended to shortly — but "shortly" turned out to be 20 minutes. Right from the start, the support person who answered the call appeared very annoyed and gave only curt answers to our questions. When told about the (supposedly) problematic monitor, he immediately assumed it was a problem with the PC and did not bother to ask if the cables had been plugged in properly or whether it worked when connected to another system. He informed us that our warranty did not cover on-site maintenance and that the PC would

have to be returned to Mesh for repair. He assured us that the system would be returned within five working days.

Our second technical support call was put on hold for 15 minutes. When posed with the (imaginary) problem of the non-working printer, the technical support person said that we should try downloading the latest drivers from the manufacturer's web site. He mentioned no other possible solutions.

PCW DETAILS

Price £1,149 (inc VAT & delivery), £978 (ex VAT)

Contact Mesh 0181 208 4706

www.meshplc.co.uk

Good Points 56K modem. An easy PC to set up.

Bad Points Hard drive not very big.

Conclusion A solid machine.

Sales Rating

Details of spec given ★★★★★

Sales overall ★★

PC Rating

Build quality ★★★★★

Value for money ★★★★★

Technical Support Rating

Technical knowledge ★★

Technical explanation ★★

NEC Direct SM-333CL

We have featured a fair representation of PC manufacturers in Britain in this group test, and NEC Direct is a good example of one of the global brand giants with a base in the UK. Recently converted to the direct "model", it set up its direct-selling arm only this year.

☛ Sales

Our call was answered by a receptionist within four rings. She then put us on hold for sales. Four minutes later, we were answered and then put through to yet another line. Throughout our call, a problem with the voicemail system meant that an automated system was continuously interrupting our conversations with the sales assistant. This was distracting and offputting.

The PC recommended, based around a 333MHz Celeron processor, had only 32Mb RAM. Although we pointed out that we already had this on our existing machine and were a bit worried because in our experience this seemed a little stingy, we were assured that it would be plenty for our needs.

A modem did not come as standard in the recommended machine but the telesales assistant was able to add a 56K model for around £40, allowing us to fulfil our wishes to fax from the desktop. At the end of the call NEC faxed a quote and promised to post a catalogue to us.

When we called back, our call was answered before the first ring and we were put in a queue. After five minutes we reached an operator who immediately accessed our specification through the use of the order number on the fax. NEC Direct was the only manufacturer to ask us to sign the quotation and send it back, but the company did not think to ask for our payment details, meaning we had to call back a few days later after NEC had left a message to this effect.

☛ The system

The PC was set up for a first-time user. A large introductory poster was present when we opened the box. Oddly, bearing in mind this consumer-friendly touch, the ports on the rear of the PC were neither clearly labelled nor colour-coded.

This machine was one of the cheapest in the group test, and looking at the specification, the reason for this was immediately obvious. Kitted out with Intel's Mendocino Celeron processor, running at 333MHz with 128Kb of L2 cache, this was the only PC we saw with 32Mb SDRAM. That said, NEC had opted for the LX motherboard, rather than the EX, which meant that users

could always upgrade to a PII, albeit cut off at 333MHz by the limitations of the LX. There was plenty of room to upgrade the PC inside. Even though the sound card and modem filled the PCI slots, there were still two free, and both ISA slots were empty. There was a spare 5.25in drive bay as well as two free 3.5in bays. There was a full set of manuals and drivers for the relevant components, all clearly labelled and bundled together.

Despite having ordered a 15in monitor, we ended up with a 17in NEC-branded C700 for only £40 more than the original price quoted for a 15in. We liked this monitor nonetheless, with its useful OSD and sharp focus.

☛ Technical support

NEC has separate help desks for its various PC models. Although slightly confusing if the user does not know the exact model of his system, this does mean that the technicians are well equipped to handle the questions.

The NEC technician identified the (supposed) lack of image on the monitor as the result of a "hardware call on the motherboard". When asked to explain this in more palatable English, he said that a piece of hardware was sending the "wrong" signals to the motherboard. With more probing, he identified our (supposedly) malfunctioning hardware as the graphics card which, he said, was faulty and would have to be replaced. He did not consider the possibility that the graphics card or memory module might just be loose. As our call was made on a Friday morning, the

technician said that an engineer would only be able to come over "early next week". Furthermore, he was not willing to promise that the engineer would arrive during the first days of the week.

Our second call, this time about our "faulty" printer, received the same indifferent response. The technician sounded disinterested and seemed eager to get us off the line. After much hassling on our part, he said the problem might be related to the printer driver installation and hence was not NEC's problem. He suggested contacting the printer manufacturer to sort this out.



PCW DETAILS

Price £896 (inc VAT & delivery),
£734 (ex VAT)

Contact NEC Direct 0870 333 6320
www.necdirec-europe.co.uk

Good Points Easy to set up. Plenty of potential to upgrade.

Bad Points Will 32Mb prove future-proof?

Conclusion Affordable, attractive PC.

Sales Rating

Details of spec given ★★★★★
Sales overall ★★★★★

PC Rating

Build quality ★★★★★
Value for money ★★★★★

Technical Support Rating

Technical knowledge ★★
Technical explanation ★★

Panrix Lightning 266

Panrix has developed a reputation at PCW for delivering top-notch machines to our group tests, and we were keen to see what would be delivered when we posed as an ordinary customer.

☛ Sales

Panrix recommended one of its entry-level Lightning systems running Windows 98. A 266MHz Pentium II processor would take care of the business end of things and Lotus SmartSuite is bundled, which would replace the ageing applications we told the sales assistant we were currently using. The representative's knowledge of the system was demonstrated when he informed us that the 64Mb RAM would be supplied on a single module, leaving us with a further two slots free to increase this at a later date. He was also able to confirm that at 75Hz, the 1024x768 resolution refresh rate of the 15in monitor was above the recommended safe minimum. Although a modem was not included as standard, we added a 56K model to our spec for just £55. The assistant had this information to hand and did not need to keep us on hold while checking the facts.

A 3D accelerator card was recommended, ranging from £85 to £150 in price depending on the model we chose. We were assured that this was a necessary addition to any standard graphics card and that it would improve our game playing. It was then that a technical fault cut all the Panrix phone lines dead. When we later rang back to order, we were connected to our previous operator who remembered the system we had been discussing. There was a two percent surcharge on our American Express card and delivery was scheduled for the following week.

☛ The system

Panrix is another company that presents the user with a welcoming poster as the first thing they see when they open up their new PC. For the unwary, the "Quick Start Connection Guide" details what goes where.

Our first reaction was one of surprise; believing that we had ordered a PC worth nearly £1,200 with 64Mb of SDRAM, we discovered that we had, in fact, ordered a PC worth £1,200 with 128Mb of SDRAM. Despite the PII 266 being considerably slower than the PII 350s in some of the other machines, we were even more impressed by the Lightning when we saw that all 128Mb was on one DIMM, leaving the other two DIMMS free in case we came up with

some reason (or application) to need more RAM. Despite the Panrix PC being one of the more expensive in this test, we could at least see where our money had gone. Rather than the on-board graphics and sound we saw in other machines, the Lightning was fitted with the stormingly impressive Millennium G200 2D/3D card from Matrox. Diamond supplied the cards for both the 56K Supra modem and the Sonic Impact 64 PCI card. Additionally, Panrix had also kitted out the PC with a massive 10.1Gb IBM Deskstar hard disk. Bundled with the machine was a 15in Vision Master 350 monitor from Iiyama. At 1024x768 resolution, it provided a healthy 75Hz vertical refresh rate across its 13.8in of viewable screen.

☛ Technical support

Our first call to the Panrix help desk would not connect due to a "temporarily unavailable" phone line (the telephone operator, rather than Panrix, is the more likely culprit). Our second call was answered after ten minutes by a technician who was laughing hysterically. However, after he had calmed down, he gave us the proper answers to the problem of our (supposedly) blank monitor. He then informed us that we would have to send in the PC for repair and that it would be returned within five working days.

We had to wait 20 minutes for our second call to be answered. The technician sounded distracted, as if

he were searching for something. On hearing about the (imaginary) problematic printer, he suggested reconnecting the cable and downloading the latest drivers. He didn't pause to consider that the printer might not be the default one used by Windows.

During both calls, we could hear a lot of distracting noise in the background. At times we had to almost shout into the handset to make ourselves heard. The technician apologised for this and was polite at all times.

PCW DETAILS

Price £1,197 (inc VAT & delivery), £999 (ex VAT)

Contact Panrix 0113 244 4958

www.panrix.co.uk

Good Points A generous amount of top-notch kit.

Bad Points One of the more expensive packages in this group test.

Conclusion A stunning configuration.

Sales Rating

Details of spec given ★★★★★

Sales overall ★★★★★

PC Rating

Build quality ★★★★★

Value for money ★★★★★

Technical Support Rating

Technical knowledge ★★★

Technical explanation ★★★



Tiny Computers Home Plus

Tiny Computers should be a familiar name to readers of *PCW*, as the company is one of Britain's largest PC manufacturers.

➤ Sales

When we called Tiny, the phone rang 29 times and then we were cut off. On our second attempt we got through to a salesperson on the fourth ring. She said she would send us a brochure, but was happy to talk about the company's systems, recommending a Pentium II 333MHz-based machine, currently on offer at just under £1,000.

We were told that there was plenty of room to expand the system's memory to 256Mb, although it was not made clear whether this would involve replacing the memory already installed. We asked about an office package and were assured that the system came with Microsoft Money, a word processor, Encarta and a few games, as well as an Epson Stylus 300 printer.

The sales assistant had a reasonable level of knowledge and seemed to know the product line well. The only time it was necessary for her to leave the phone was to check on the refresh rate of the monitor. She explained that it was 85Hz unless you switched to the "top" resolution when it would drop to 65Hz. The resolutions involved were not explained, and we were not warned that at 65Hz the flickering screen would be unpleasant on the eye.

At the end of the call, the assistant gave her name and extension so that we could deal with her again. Upon calling back to order, our quotation was recalled via reference to our postcode. Without further ado, our order was placed and delivery within a week was promised. There was no attempt to sell us more.

➤ The system

For £1,200, we had been expecting something more impressive than the PC we actually got. Onboard sound, onboard graphics, a single ISA slot and two PCI slots, plus 64Mb of SDRAM filling both the slots, leaving none free for expansion (despite what we had been told over the phone).

A small motherboard is fair enough, if the manufacturers make the most of it and use a small box to fit it in, thereby potentially saving desk space. Tiny, however, employed a standard-size box. The motherboard didn't even reach the bottom of the case, rendering the bottom three blanking plates useless as the motherboard doesn't reach them.



This would not be a good buy if you wanted to upgrade your PC in the future. Apart from the tricky task of upgrading from onboard graphics to a graphics card (inadvisable) there was no AGP slot on the motherboard, even if you had wanted to buy a top-of-the-line card. Having seen the system itself, although we got the Epson Stylus 300 colour printer, we would rather our money had been spent on the former.

Tiny was one of the few manufacturers to supply an unbranded 15in monitor with its system, and this could only produce 60Hz refresh rate at a 1024x768 resolution. There was no OSD, although the monitor had a set of decent manual controls instead.

us that this meant nothing and offered to send over a courier to pick up the monitor (which would be replaced within 48 hours).

He did not even ask if we could hear the sound of Windows booting up or whether we had tried connecting the monitor to a different computer.

Our second call, regarding a "non-working" printer, elicited better, more accurate, answers. The waiting period was a tedious 15 minutes, though. Overall we found Tiny's help desk to be polite, but inadequately trained.

PCW DETAILS

Price £1,205 (inc VAT & delivery), £999 (ex VAT)

Contact Tiny 0800 731 3476

www.tiny.com

Good Points A printer is included.

Bad Points Everything else.

Conclusion A poor specification with almost no room for manoeuvre.

Sales Rating

Details of spec given ★★★★★

Sales overall ★★★★★

PC Rating

Build quality ★★★★★

Value for money ★★

Technical Support Rating

Technical knowledge ★★

Technical explanation ★★

➤ Technical support

On calling up Tiny Computers' help line a voice informed us that no technical support was available by fax and that we would have to continue holding the phone line. After we'd spent five minutes listening to Wagner's *Ride of the Valkyries*, a technical support person came on the line. On being posed with our "problem" of a monitor with no image, he asked whether all the cables were plugged in properly. When we told him they were, he jumped to the conclusion that the problem was a defective monitor. We even tried providing hints by mentioning the two long beeps when the computer boots up, but he assured

How we did the tests

Sales

When buying these PCs, we had to assume an identity other than that of IT journalist. We assumed the guise of a small businessman; a sole trader who would mainly use the machine for word processing, spreadsheets and accounts. We had a couple of children who were keen to play games, so we wanted the manufacturers to recommend a graphics card that would cope with the demanding requirements of modern entertainment.

We told the manufacturers that we were currently using a P90 with a 1Gb hard drive ready to burst its seams. Our theoretical machine had originally been supplied with a rather feeble amount of memory that we had increased over time to 32Mb. This meant that all of our memory slots were full, so we wanted to make sure that our new machine could grow as our needs evolved.

We expected suppliers not only to know their product line, but also to have some general technical knowledge. They would be expected to explain simple concepts like refresh rates, and delving into the realms of chipsets and upgrade opportunities would score them extra marks. Although we had some idea of the system we wanted to buy, we were open to suggestions, to see whether the suppliers would try to sell us upmarket or downgrade our requirements to match a standard product line.

Rather than buying our PC there and then, we set one final test: we asked for a period of reflection and phoned back later that day to see whether the suppliers had accurately recorded our specifications. Although we did not want to repeat them, we did want to make sure that should we be put through to a different sales assistant on our second call, he or she would be able to pick up from where the first assistant left off.

The systems

Once we had the machines in the labs, we ran two sets of tests on them: Final Reality to test their graphics capabilities, and SYSmark 98 on Windows 95 and Windows 98 PCs to test the speed of the machines when running 2D office applications.

The SYSmark test measures the speed of the PC running eight common office applications and the time taken by the PC to perform a variety of tasks in each application. Each test is run three times to ensure consistent results. Performance depends on a variety of factors: processor speed, RAM, graphics card and disk I/O. As the tests are based on business software packages, SYSmark scores accurately reflect how the machine will perform in a real-world situation. The better the score, the longer the bar in the graph. We have also marked our Editor's Choice and Highly Commended machines, so it is easier to spot the winners.

Final Reality is a suite of tests designed to examine the processing power of the 3D accelerator on your graphics card, 2D image processing, and AGP. It runs under Windows 95/98 and DirectX 5, and uses a 3D engine developed by Remedy. It supports Direct3D, a 3D standard developed by

Microsoft, and looks at how the graphics accelerator handles the kind of data it would have to process when you are playing a game. The visual appearance factors are weighted in importance and combined with the overall processing speed to produce an overall mark. So, the higher the score and the longer the bar, the better the result.

Technical support

Technical support is one of the critical areas that customers need to consider while buying a computer. This is particularly relevant to first-time buyers who may not be very computer literate. Unfortunately, this is also one of the areas about which buyers often forget to enquire and which companies tend to neglect.

We tested the technical support lines of all the companies in our group test by calling at different times and on two different days. This way, we could ask more questions and have the chance to speak to more than one technical support engineer. Most of our questions dealt with problems that are likely to be faced by buyers and were fairly non-specific. We did not, for example, claim to have any major problems with the PC.

During our first set of calls, we pretended that there was no picture on the monitor that came with the PC. There could have been three possible causes for this: a loose signal cable, a loose graphics card, or a loose memory module. In the last two cases, most computers give two warning beeps. Any qualified technical support person should be able to identify the problem as one of the above three, and one of the last two when we dropped the hint about the beeps.

On this first call we also asked for advice on the best way to transfer our data from our old PC on to the new one. As many of the systems had little more than standard floppy drives for transferring data between PCs, this gave us the chance to ask about bulk transfer of files. The most common answer to this problem would be to buy an Iomega Zip drive.

On our second call, we stuck to mundane questions, seeing how quickly the technical support engineers would tire of our call. We asked how to get around the problem of a non-working printer (a component which had not been supplied by the PC manufacturer) to see whether or not they were willing to offer support on this. We also asked about the best way to fax a document from Windows 98, and the best method to get the £ instead of the \$ symbol on-screen — questions intended to test their patience with us, as well as how well they could talk through a solution. Finally, we asked whether we could get the Euro symbol on the screen using the keyboard. We knew that this would be baffling to many technicians, as Microsoft has so far refused to incorporate the Euro symbol into its products.

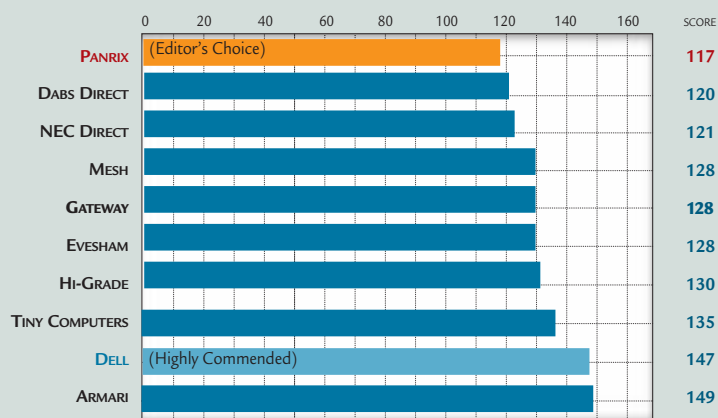
On the second round of questions, all the technicians were able to give competent answers. However, to see if we could provoke a response, we pretended not to understand them. This often annoyed them and some did show their frustration. The truly professional technicians, however, repeated their answer in detail.



PCW Labs Report



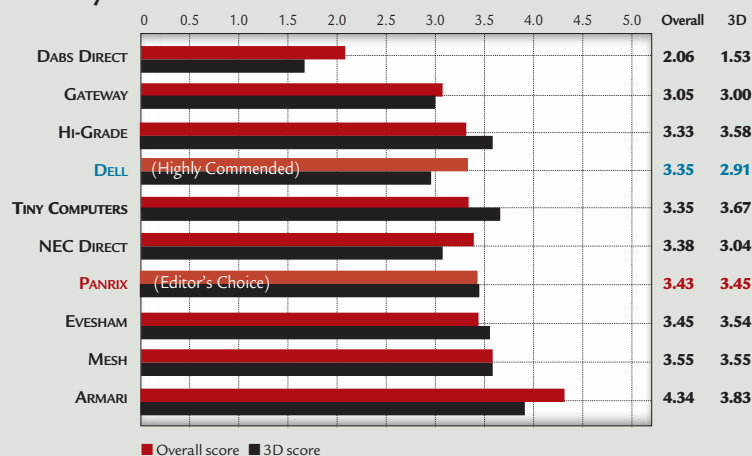
Sysmark 98 scores



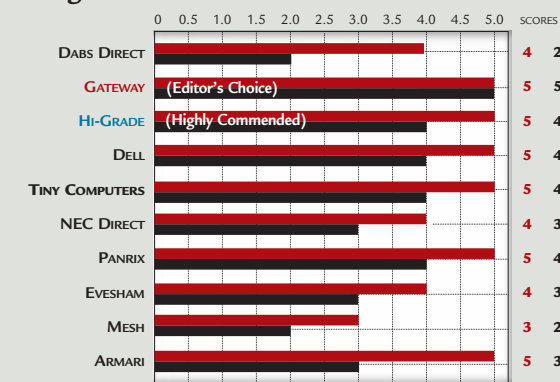
It might seem a little odd that our Editor's Choice is the Panrix, when it scored the lowest of the group in the Sysmark tests. The reason for its score was its PII 266 processor, outgunned by those PCs with a PII 333 and PII 350. However, Panrix will be supplying the machine with a PII 333 for the same price, and otherwise it was one of the best specified PCs, and the best built, in the test. It is no coincidence that the Armari and the Dell machines were the only two with the next-generation 350MHz processor and the 100MHz front-side bus. While the 350MHz processor is only marginally faster than the PII 333 when running with 66MHz bus RAM, it gets its kick from the 100MHz bus.

The Armari PC again triumphed in our Final Reality tests, kitted out with the excellent Millennium G200 card from Matrox with 8Mb of SGRAM. The slower graphics chips on the Dabs and the Gateway, combined with a measly 4Mb of SGRAM, also slowed down each of these machines. The 32Mb of SDRAM with which the Dabs was fitted undoubtedly contributed to its last-place position, as all the other machines had a more robust 64Mb. The Millennium G200 card won a Highly Commended award in our last graphics card group test and is one of the best all-round cards available.

Final Reality scores

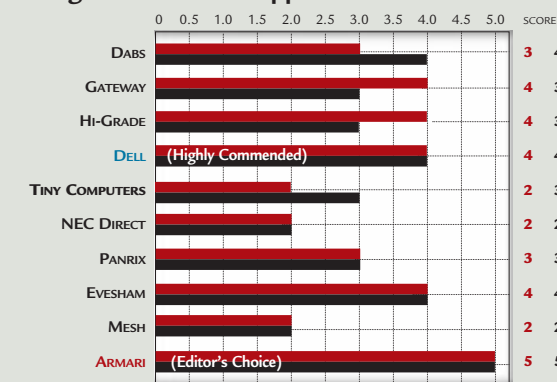


Ratings for sales service



■ Details of spec given
■ Sales overall

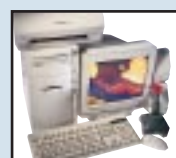
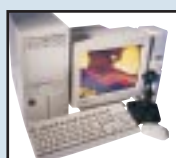
Ratings for technical support



■ Technical knowledge
■ Technical explanation



Table of features



MANUFACTURER	ARMARI	DABS DIRECT	DELL	EVESHAM MICROS	GATEWAY
MODEL NAME	NBX-350	ATLANTIS HOME OFFICE	DIMENSION XPS R350	PRESTIGE SCORCHER	GP6-333C
Price (ex VAT)	£1,167	£795	£1,044	£965	£909
Price (inc VAT + delivery)	£1,398	£945	£1,261	£1,156	£1,068
Telephone	0181 810 7441	0800 558866	0870 152 4625	0800 496 0800	0800 172000
Fax	0181 810 8846	0870 129 7000	01344 723695	01386 769795	00353 1848 2022
Web address	www.armari.co.uk	www.dabs.com	www.euro.dell.com	www.evesham.co.uk	www.gateway.co.uk
HARDWARE SPECS					
Processor	PII 350MHz	PII 333MHz	PII 350MHz	Celeron 333MHz	Celeron 333MHz
SDRAM	64Mb	64Mb	64Mb	64Mb	64Mb
L2 cache	512Kb	512Kb	512Kb	128Kb	128Kb
Hard disk	Seagate Medalist	Seagate Medalist	Maxtor	Samsung	Quantum Eclipse
Size/Interface	6.5Gb UDMA	3.2Gb UDMA	10Gb UDMA	6.4Gb UDMA	6.4Gb UATA
MOTHERBOARD COMPONENTS					
Motherboard manufacturer	Asustek	Abit	Dell	Chaintech	Intel
Model	P2B	440BX	XPSR	ESA	Andover
Chipset	440BX	440BX	440BX	440EX	440LX
EXPANSION AND I/O					
No. of free 3.5in bays	2	3	3	1	3
No. of free 5.25in bays	2	1	1	2	2
AGP slot	Yes	Yes	Yes	Yes	No
No. of free PCI/ISA/shared slots	2/2/1	4/1/1	2/2/1	0/1/1	3/0/1
No. of USB ports	2	2	2	2	2
No. of Serial ports	2	2	1	2	1
No. of Parallel ports	1	1	1	1	1
No. of PS2 ports	2	2	2	2	2
MULTIMEDIA					
CD-ROM manufacturer	Asustek	Creative Labs	Teac	Panasonic	Mitsumi
CD-ROM speed/interface	40X/EIDE	32X/EIDE	32X/EIDE	32X/EIDE	32X/EIDE
Sound card manufacturer	Creative Labs	Pine	Crystal	ESS (onboard)	Creative Labs
Sound card model	SoundBlaster 128	Schubert 64	Sound Fusion	Solo 1	AudioPCI 64
Speakers	Yamaha YST	Logic3 Maxim 60W	None	Zyfi	GCS 100
Graphics card	Matrox Millennium G200	S3 Virge GX-2	ATI Xpert98	ATI Xpert 98	Chromatic Mpackt
RAM/Max RAM/type	8Mb/16Mb/SGRAM	4Mb/4Mb/SGRAM	8Mb/8Mb SGRAM	8Mb/8Mb SGRAM	4Mb/4Mb SGRAM
Graphics card interface	AGP	AGP	AGP	AGP	PCI
Monitor	Iiyama VisionMaster 350	Belinea 10-50-35	Dell	Taxan Ergovision 350	EV700
Monitor size	15in	15in	15in	15in	17in
Refresh rate at 1024x768	85Hz	60Hz	85Hz	85MHz	85Hz
OTHER INFORMATION					
Modem	Diamond SupraExpress	Dabs 56 Internal	USR Winmodem	Rockwell	USR Winmodem
Modem speed	56K	56K	56K	56K	56K
Misc hardware	-	-	-	-	-
Bundled software	MS Works v4.5	Lotus SmartSuite 97	Office SBE 97	MS Office SBE	Win98, Office SBE II
		13-title software pack	BT Internet, one month		Cypress Megaphone
					McAfee Antivirus
Standard warranty	1yr on site	1yr on site + 4 yrs labour	1yr collect-and-return	2yr on site	1yr on site
Options	3yrs on site	Extensions to on-site	1yr on site (2nd/3rd c & r)	3rd yr upgrade	Upgrade 3yr on-site
			3yrs on-site		
Tech support no.	0181 810 6491	0870 1293350	0870 9080800	Non-disclosable	0800 552000



Table of features



MANUFACTURER	HI-GRADE	MESH COMPUTERS	NEC DIRECT	PANRIX	TINY COMPUTERS
MODEL NAME	WINPUTER PV2 333	ELITE CONNECT PII 300	SM-333CL	PANRIX LIGHTNING	HOME PLUS
Price (ex VAT)	£1,110	£978	£734	£999	£999
Price (inc VAT + delivery)	£1,304	£1,149	£896	£1,197	£1,205
Telephone	0181 532 6133	0181 208 4706	0870 333 6320	0113 244 4958	0800 731 3476
Fax	0181 532 6101	0181 208 4493	01506 402520	0113 2444962	01293 822514
Web address	www.hi-grade.com	www.meshplc.co.uk	www.necdirect-europe.co.uk	www.panrix.co.uk	www.tiny.com
HARDWARE SPECS					
Processor	PII 333MHz	PII 333MHz	Celeron 333MHz	PII 266MHz	PII 333MHz
SDRAM	64Mb	64Mb	32Mb	128Mb	64Mb
L2 cache	512Kb	512Kb	128Kb	512Kb	512Kb
Hard disk	Quantum	Seagate	Maxtor	IBM Deskstar	Fujitsu
Size/Interface	6.8Gb UDMA	6.4Gb UDMA	6.4Gb UDMA	10.1Gb UDMA	6.4Gb UDMA
MOTHERBOARD COMPONENTS					
Motherboard manufacturer	Asustek	Asustech	Micronics	Asustek	Microstar
Model	PB2	P2B	440LX	P2B	MS6312
Chipset	440BX	440BX	440LX	440BX	440EX
EXPANSION AND I/O					
No. of free 3.5in bays	2	1	2	1	1
No. of free 5.25in bays	1	2	1	1	1
AGP slot	Yes	Yes	Yes	Yes	No
No. of free PCI/ISA/shared slots	4/3/1	3/2/2	2/1/1	2/3/1	2/0/0
No. of USB ports	2	2	2	2	2
No. of Serial ports	2	2	2	2	1
No. of Parallel ports	2	1	1	1	1
No. of PS2 ports	2	2	2	2	2
MULTIMEDIA					
CD-ROM	Teac	Teac	Toshiba	Asustek S-400	Panasonic
CD-ROM speed/interface	32X/EIDE	32X/EIDE	32X/EIDE	40X/EIDE	32X/EIDE
Sound card manufacturer	Yamaha	Creative Labs	Creative Labs	Diamond	Yamaha
Sound card model	OPL3-SA	SoundBlaster 16	AudioPCI 64	Sonic Impact	XG 32 integrated
Speakers	Jazz 7W	Contec	Labtec LS1025	Yamaha M20	Tiny CPR50
Graphics card	ATi Xpert 98	ATi Xpert98	ATi Xpert 98	Matrox Millennium G200	ATi Rage Turbo (onboard)
RAM/Max RAM / type	8Mb/8Mb/SGRAM	8Mb/8Mb SDRAM	8Mb/8Mb/SDRAM	8Mb/16Mb/SGRAM	4Mb/4Mb/SGRAM
Graphics card interface	AGP	AGP	AGP	AGP	AGP
Monitor	Hi-Grade AlphaScan511	Taxan Ergovision 550	NEC C700	Ilyama VisionMaster 350	Tiny Computers
Monitor size	15in	15in	17in	15in	15in
Refresh rate at 1024x768	85Hz	85Hz	85Hz	85Hz	60Hz
OTHER INFORMATION					
Modem	Modular Tec	Internal PCI	Diamond SupraExpress	Diamond SupraExpress	Etech
Modem speed	56K	56K	56K	56K	56K
Misc hardware	-	Lexmark 1100 printer	-	-	Epson Stylus Color 300
	-	-	-	-	Joystick
Bundled software	MS Office 97 SBE	Lotus SmartSuite97	MS Word 97	Lotus SmartSuite 97	MS Family pack
		Windows98	MS Works 4.5		Dorling Kindersley pack
			CorelDraw7		
Standard warranty	1yr on site (parts+lab)	1yr collect-and-return	1yr on site	1yr pts+lab, return to base	1yr collect-and-return
Options	Extra yrs on-site	Upgrade to on-site	Upgrade to 3yrs	Upgrade to 1/2yr on-site	1yr on-site
Tech support no.	0181 532 6199	0181 208 4791	0870 901 8000	01132 444948	01293 821222

Editor's Choice

Our awards **reflect the service** that you, the buying public, can expect from PC manufacturers.

For this test decided to hand out a range of awards, covering sales service, the PC system and technical support. In each category we have awarded one Editor's Choice and one Highly Commended.

Best sales service

In actually purchasing our kit, the level of service we received varied greatly between the ten manufacturers we approached. In making our enquiries we were keen to ensure that the companies approached could sell an ordinary purchaser, who had a competent, although by no means exceptional, knowledge of computers, a product that would meet their needs. On the whole, we were largely pleased with our experiences.

It should be remembered that this test provides a "snapshot" image of the service received from just one or two representatives from any particular company on a particular day. But when you're spending a large sum of money on a computer, it is only reasonable



► **GATEWAY**
— BEST
SALES
SERVICE

to expect courteous, competent service. Of the companies featured here, it was Gateway which most ably fulfilled this requirement. The representative's comment that we were her "number one priority" was demonstrated by the way the company handled our call, its staff taking their time to consider our requirements and ensuring that the enquiry and ordering process was as swift and as painless as possible.

We also salute Hi-Grade. The company's sales assistant demonstrated an excellent knowledge of the firm's product line and of computer hardware concepts in general. We were lead by

the hand from start to finish but never felt that we were being patronised or encouraged to spend money on components we did not need. A range of sensible upgrade options that would considerably extend the useful life of our purchase was proposed.

Gateway and **Hi-Grade** receive our **Editor's Choice** and **Highly Commended** awards respectively.

Best PC systems

This was by no means a usual group test; we had after all made our buying decision based on the advice of the salespeople. In so doing, we had been persuaded in some instances to spend slightly more or slightly less than our original budget of £1,000 (ex VAT). So, despite not having the usual set price limit, we were still swayed by price when deciding which machines should be given awards.

Commiserating pats on the back should go to the well-built, impressive machine we received from Gateway and the very affordable Dabs Direct PC. After much deliberation, the Armari NBX-350 PC narrowly missed out on an award. Instead, the **Dell Dimension XPS R350** is **Highly Commended**. Both machines had similar specifications (PII350 processors, 64Mb) and although the Armari had the edge over the Dell in a few departments, the XPS R350 had a massive hard drive and was £100 cheaper. As stated, although price was not a major factor, because we were buying these PCs ourselves, when we were faced with two similar machines, their costs were taken into account in our final decision.

▼ **PANRIX LIGHTNING 266** — BEST PC SYSTEM



Editor's Choice in this section is the

excellent **Panrix Lightning 266**. Kitted out with 128Mb of SDRAM, the Matrox Millennium G200, and even a PII 266 processor, we were very impressed.

● At the time of going to press, we learnt that Panrix was about to replace the soon-to-be-defunct PII 266 processor with a PII 333, for the same cost.

Best technical support

No matter how experienced a PC user you are, there are always going to be occasions when you need to call technical support. Before buying a system, you would be well advised to make detailed enquiries about the level of technical support available, and for how long. Some companies offer lifetime phone support, while others may limit the free telephone support to a few years. Others are even planning on charging for calls made to the technical support help desk. From the calls we made, it is obvious that there is tremendous disparity between the level of support offered by various manufacturers.

Armari is our **Editor's Choice** for the best level

of technical knowledge displayed by any help desk and the courteous manner in which they answered our queries. The technicians also exhibited a willingness to respond quickly by offering to send a courier to pick up the system.

The **Dell** help desk is deservedly **Highly Commended** for the ease with which we got through, and the professionalism evident in the way the technicians handled our queries. Their offer to upgrade our warranty to on-site service even after the problem had occurred, is very rare in this industry.



▲ **ARMARI** — BEST TECHNICAL SUPPORT