

Actinet Netrunner Celeron

Carrera Power Media C300

Evesham Micros Vale Prestige
Celeron 300

Mertec Home Media C266 AGP

Panrix Nexus

Simply Computers Multimedia
210P

Viglen Home C300

Watford Electronics Aries
Perfecta 6120

Cheap thrillers

You want a high-powered PC, without the price tag to match? Fear not, Intel's new Celeron chip may be the answer to your prayers. We rounded up eight contenders and put them to the test

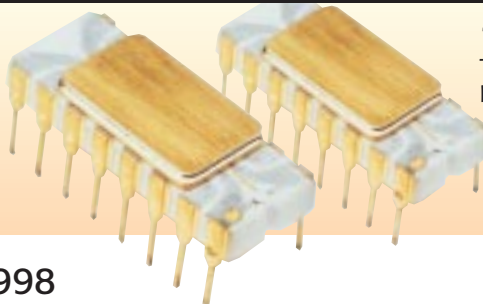
Strapped for cash but still after a PC powered by a trusty Intel processor? Enter the Celeron, the Pentium II's little brother aimed directly at the budget PC buyer. This new processor is based on Pentium II technology, but it lacks the PII's built-in 512Kb of Level 2 cache, making it cheaper to produce.

This month we tested three PCs fitted with the latest 300MHz Celeron chip, plus a crop of lower-cost 266MHz contenders. Prices start at just over £700 including VAT, but despite this, these machines come packed with the latest, greatest features. All are fitted with 56Kbits/s modems, two came in with ATT's new Xpert 98 8Mb graphics card and we saw one ZIP and one LS-120 Super Floppy drive. So now let's take a look at what we can expect from Intel's brand new-processor.

30 YEARS OF INTEL... 30 YEARS OF INTEL... 30 YEARS OF INTEL... 30 YEARS OF INTEL... 30 YEARS OF INTEL... 30 YEAR

1971 – 4004 Microprocessor

Founded in 1968, Intel introduces the 4004 with a clock speed of 108KHz, in 1971. This was the processor that set the chip manufacturer on the route to becoming the largest supplier of PC processors in the world.



1972 – 8008 Microprocessor

The first of many processor speed hikes as Intel launches the 8008 with a clock speed of 200KHz, almost double that of its predecessor.

1974 – 8080 Microprocessor

Two years later and Intel makes the leap into

Actinet Netrunner Celeron



Actinet's Netrunner Celeron has a somewhat bulky case, which makes it great when you want to fiddle around inside but a bit of a monster to set up on your desk. It comes with a handy user guide that took us right through the setup procedure, aided by clearly labelled ports on the back of the tower unit.

Although this is low-cost system,

complete with a basic keyboard, mouse and speakers, there are some nice touches. For a start, it's fitted with an ATI All in Wonder Pro graphics card, which comes with a TV tuner to allow you to watch TV or Teletext on your PC. It's also fitted with an LS-120 Super Floppy drive that can take 120Mb SuperDisks as well as standard 1.44 Mb floppies.

The machine's 15in Shinho monitor is a good-quality display, and has the added bonus of a degauss button, which blasts out the magnetism from your display to cut down distortion. You can adjust any of the other screen settings by using an onscreen display.

Inside the Actinet the picture isn't too appealing – cables are tied together with rubber bands and trailed across the top of the components, which looks very messy. The design of the inner case might also make it awkward to add a new 5.25in device into one of the two free external bays, as the only access to the bays is through a hand-sized hole. Having said

this, it's easy enough to get at the two free external 3.5in bays and there are three free power cables to plug in new devices.

This PC features a 266MHz Celeron chip twinned with 32Mb of RAM, and a 4.2Gb hard drive. But it was way down the list in our performance test even amongst the 266MHz Celeron-based PCs, although the ATI video card helped it to score a bit better in the Final Reality graphics test.

The Actinet Netrunner Celeron is a decent budget system, with a few added bonuses including a good graphics card with a TV tuner and an LS-120 Super Floppy drive.

● £868.33 (inc VAT)

● Actinet: 01952 270703

www.actinet.co.uk

Actinet Netrunner Celeron					
Build quality	★	★	★	★	★
Features	★	★	★	★	★
Performance	★	★	★	★	★
Value for money	★	★	★	★	★
Overall	★	★	★	★	★

Carrera Power Media C300



Carrera supplied a 300MHz processor in its PC, the most powerful Celeron chip available at the time of this test. The rest of the spec is one of the best too, with 64Mb of RAM and a 4.5Gb hard drive. It also uses ATI's brand-new Xpert 98 graphics card, which benefits from a generous 8Mb of RAM.

One of the first things that struck us about the Carrera was the huge tower unit. It's almost 50cm tall so it will be an imposing presence on, under or around any desk. This certainly isn't a space-saving PC as the Altec Lansing satellite speakers come with their own subwoofer so you'll have to make room for this too.

The 15in LG monitor supplied with the machine is impressive, and the display is clear even towards the edges of the screen. The Keytronics keyboard has a comfortable typing slope and felt pretty solid and it's twinned with a standard Microsoft mouse.

Getting inside the PC is the usual palaver of undoing numerous screws. But, as you can imagine, there's plenty of space to work inside the tall tower unit. If you want to fit new drives there are two external 5.25in bays, plus one internal and one external 3.5in bay, with two free power cables supplied.

When it comes to expansion cards the

machine has two free PCI slots, one ISA slot and a shared PCI/ISA one. In common with all the systems in this test it comes ready fitted with a 56Kbits/s modem.

Carrera's choice of a fast 300MHz processor really paid off as it helped the Power Pro II to come out equal first with the Viglen Home 300C in our performance test. The new ATI Xpert 98 card also acquitted itself well in our graphics test, snatching the top Final Reality score.

Overall this PC impressed us and it tied for the top slot in our performance test. But the massive tower unit might be a problem on the average desk.

● £999 (inc VAT)

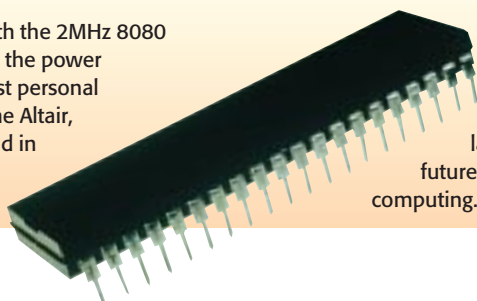
● Carrera: 0171 830 0468

www.carrera.co.uk

Carrera Power Media C300					
Build quality	★	★	★	★	★
Features	★	★	★	★	★
Performance	★	★	★	★	★
Value for money	★	★	★	★	★
Overall	★	★	★	★	★

30 YEARS OF INTEL... 30 YEARS OF INTEL... 30 YEARS OF INTEL... 30 YEARS OF INTEL... 30 YEARS OF INTEL... 30 YEARS OF INTEL...

Megahertz with the 2MHz 8080 chip. This was the power behind the first personal computer – the Altair, which was sold in kits for \$395. The



success of the Altair, which won tens of thousands of orders within months of its launch, signalled the future popularity of home computing.

1978 – 8086-8088 Microprocessors

A pivotal sale to IBM's new personal computer division made the 4.77MHz 8088 the brains of IBM's new hit product – the IBM PC. This chip's success propelled Intel into the ranks of the Fortune 500.



Evesham Vale Prestige Celeron 300



Evesham Micros was one of three manufacturers to send in a PC powered by the latest 300MHz Celeron processor. There is no on-board Level 2 cache on these chips, but the higher clock speed should give a performance hike.

The Evesham Vale Prestige Celeron 300 is simple to set up; it comes with a user guide and all the ports on the back of the tower are labelled. The case is rather squat and both the external 3.5in drives are a different colour from the rest of the

case, which isn't too attractive, but since one of these is a handy ZIP drive we are prepared to overlook this.

Its 15in Taxan monitor is a nice clear display, although we detected some blurring towards the corners of the screen. We were also impressed by the Yamaha satellite speakers and subwoofer, which gave an unusually rich sound for a relatively low-cost system. The mouse and keyboard are unbranded models, but they're sturdy and comfortable to use.

To get the case off you have to undo six screws, all of which have been tightly screwed in. Once we had gained entry we were pleased to see the cables had been tidily bundled away, though we thought leaving just one power cable to feed the free two external 5.25in bays and one internal 3.5in bay was a bit mean.

The position of the power supply would make it difficult to get at the processor but most of the other components are easily accessible. If you want to add in new cards there are three free PCI slots and one

shared ISA/PCI slot free, plus one DIMM slot if you need to boost the RAM.

While this Celeron 300 model gave one of the higher performance results in our test, we couldn't really see a huge leap between this PC and the 266MHz systems. In the Final Reality test its 4Mb ATI Xpert@Work failed to bring it in among the top performers; in fact it came in behind the 266MHz Panrix Nexus.

Evesham gave us a well-specified PC for this test. We were impressed by the build quality and the ZIP drive, but its performance was a bit of a let down, particularly at this price tag.

● £1,056.33 (inc VAT)

● Evesham: 01386 765500

www.evesham.co.uk

Evesham Vale Prestige Celeron 300					
Build quality	★	★	★	★	★
Features	★	★	★	★	★
Performance	★	★	★	★	★
Value for money	★	★	★	★	★
Overall	★	★	★	★	★

Mertec Home Media C266 AGP



We've looked at PCs from Mertec in the past and have always been reasonably happy with what we've found. The Home Media C266 is no exception; it has a few nice touches including a keyboard with a detachable palm-rest and a large space bar for comfortable typing and a Microsoft Intellimouse.

The 15in ADI monitor is a good-quality standard screen, but nothing fancy, and delivers a bright, clear picture. If you need to adjust the settings it uses icons and

LEDs on the front of the monitor instead of an onscreen display. The speakers are pretty basic, but this is what we would expect from a budget system.

The Home Media C266 comes in a spacious case, which means there's loads of room to fiddle around inside. The internals of this PC are very neat with all the cables fed along the side of the case, which looks good, but unbundling all these wires to upgrade would be a pain.

All the components are easy to get at and there's plenty of scope to upgrade with four free PCI slots and three DIMM slots for more memory. There are also four free bays, one internal and one external 3.5in and two external 5.25in, though Mertec has only provided two free power cables for these.

We weren't too pleased to see that Mertec had glued the 4Mb ATI Xpert@Work graphics card into its AGP slot. We have often written about the problem of AGP cards popping out of their slots in transit, but this is no solu-

tion as it would be virtually impossible to upgrade to another card.

The Home Media C266 is fitted with a 266MHz Celeron processor and 32Mb of RAM, twinned with a 4Gb hard drive. This combination pulled in an adequate score in both our performance and Final Reality tests. By the time this review hits the shelves Mertec plans to ship this PC with the new ATI 8Mb Xpert 98 graphics card fitted in the Carrera and Viglen systems.

Overall, we liked this PC and its test results were fine, but we were very disappointed by Mertec's clumsy solution to the problem of loose AGP graphics cards.

● £851.88 (inc VAT)

● Mertec Computers: 01792 473700

www.mertec.co.uk

Mertec Home Media C266 AGP					
Build quality	★	★	★	★	★
Features	★	★	★	★	★
Performance	★	★	★	★	★
Value for money	★	★	★	★	★
Overall	★	★	★	★	★

30 YEARS OF INTEL... 30 YEARS OF INTEL... 30 YEARS OF INTEL... 30 YEARS OF INTEL... 30 YEARS OF INTEL... 30 YEARS OF INTEL...

1982 – 286 Microprocessor

Seasoned computer users will be familiar with the next addition to Intel's family of processors – the 286, or 80286. This ran at a clock speed of 6MHz and within six years of its launch it had been fitted into an estimated

15m PCs worldwide. It was the first backwards-compatible chip that could run software written for its forerunner.

1985 – Intel 386 processor

Initially running at 16MHz, the clock speed

for the 386 processor leapt up to 33MHz in just four years. It was this 32-bit chip that introduced us to the concept of multitasking, so we would never again have to work with just one program at a time. Intel later released the 386SX, which



Celeron vs Pentium II

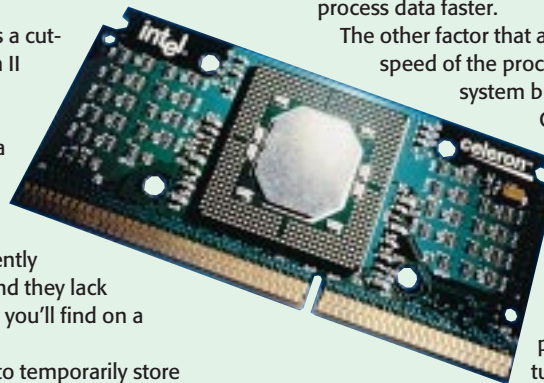
If you're thinking about buying a new PC one of the questions you will have to ask is what type of CPU (central processing unit) will lie at the heart of your system. If you plump for an Intel processor, which power the majority of PCs, the choice boils down to two options — Pentium II or Celeron.

Intel designed the Celeron chip as a cut-down version of its popular Pentium II chip, suitable for budget PCs. The difference between these two types of processor lies in their speed and a small amount of fast Level 2 cache memory. Pentium II chips scale up from a clock speed of 233 to a super-fast 400MHz. Celerons currently come in at either 266 or 300MHz, and they lack the 512Kb of Level 2 cache memory you'll find on a Pentium II chip.

The function of cache memory is to temporarily store frequently used instructions and data so the CPU can access them straight away. Data can be retrieved fastest from the 32Kb of Level 1 cache found on both Pentium II and Celeron chips. If the processor can't find what it's looking for here, however, it will

look in the Level 2 cache, before going to slower parts of the system such as RAM and the hard disk. Therefore the fact that the Pentium II has 512Kb of Level 2 allows it to process data faster.

The other factor that affects the speed of the processor is the system bus frequency.



Celeron and Pentium II chips at 300MHz or below have a frequency of 66MHz, but the latest 350- and 400MHz processors have increased to 100MHz to offer increased data bandwidth to speed up performance.

In simple terms the Celeron is the poor relation of the Pentium II chip and turns in much slower performance results due to its lack of Level 2 caches. Even a 233MHz Pentium II PC with just 32Mb of RAM can produce a faster score in our performance benchmark tests than a 300MHz Celeron with 64Mb of RAM.

Panrix Nexus



Founded in 1990, Leeds-based Panrix makes a welcome return to our group tests this month. As with others here, the company offers a complete range of PCs from home multimedia systems through to high-end professional workstations with various customisable options.

The Panrix Nexus proved to us that the tired old maxim about not judging a book by its cover is founded in truth. Its

case is an ugly thing with a large gold tacky-looking logo, and the machine's bulky keyboard does nothing to improve its looks. But this PC turned out to be one of our best performers.

It came with a 34x CD-ROM drive, which is the fastest fitted in any of the machines and a Microsoft Intellimouse, which is always a nice little extra. Its 15in CTX monitor provided a crisp display and it comes bundled with all the software you need to start using the 56Kbits/s modem.

We were pleased to see an enabled infra-red port on the front of the case. This allows you to communicate with other infra-red devices, such as printers or notebook computers, without the need for any connecting cables.

Removing the case is a simple job as all you have to do is undo one screw and you're in. There's plenty of room to manoeuvre inside and all the cables are tied up out of the way. There are three PCI slots available, plus two free 5.25in bays, one internal and one external, and

one free 3.5in bay. Panrix has supplied enough free power cables to service any new devices you add in.

The Panrix Nexus is powered by a 266MHz Celeron processor, which is twinned with 32Mb of RAM and a 4Gb hard drive. It turned in a good result in our performance test and its 4Mb Diamond Viper V330 graphics card helped it to score well in the Final Reality test.

While the Nexus wasn't the most beautiful PC in our test, it is a nippy little performer. Its impressive graphics score should make it a hit with games enthusiasts.

● £938.83 (inc VAT)
● Panrix: 01 132 444958

www.panrix.com

Panrix Nexus					
Build quality	★	★	★	★	★
Features	★	★	★	★	★
Performance	★	★	★	★	★
Value for money	★	★	★	★	★
Overall	★	★	★	★	★

0 YEARS OF INTEL... 30 YEARS OF INTEL... 30 YEARS OF INTEL... 30 YEARS OF INTEL... 30 YEARS OF INTEL... 30 YEARS

featured a 16-bit address bus.

1989 – Intel 486 DX CPU Microprocessor

And the acronyms begin. The 486 DX kicked off with a speed



of 25MHz, increasing to 50MHz over the next two years. It offered a built-in maths co-processor to speed up complex calculations. As with the

386, Intel later introduced the SX version without the co-processor.

1993 – Pentium Processor

This is a name most of us are familiar with since the Pentium chip is still the basis for



A desktop computer setup featuring a CRT monitor, a tower unit, a keyboard, and a mouse. The monitor displays a vibrant, abstract image with a rainbow and figures. The tower unit is a light-colored, vertical case with a floppy disk drive and a CD-ROM drive. The keyboard is a standard full-sized keyboard, and the mouse is a simple, light-colored button mouse.

It was easy to put this PC together, although some of the port labels on the

The Multimedia 210P didn't fare too

www.simply.co.uk

Build quality	★	★	★	★	★
Features	★	★	★	★	★
Performance	★	★	★	★	★
Value for money	★	★	★	★	★
Overall	★	★	★	★	★

A vintage desktop computer setup. The monitor is a CRT type, showing a vibrant, abstract image with a rainbow and various colorful shapes. The tower unit is a vertical, light-colored case with a floppy disk drive and a CD-ROM drive. A standard keyboard and a mouse are positioned in front of the tower.

www.viglen.co.uk

Build quality	★	★	★	★	★
Features	★	★	★	★	★
Performance	★	★	★	★	★
Value for money	★	★	★	★	★
Overall	★	★	★	★	★

with sound and images on our computers. Four years later Intel released the Pentium MMX, which featured additional commands to enhanced multimedia performance.

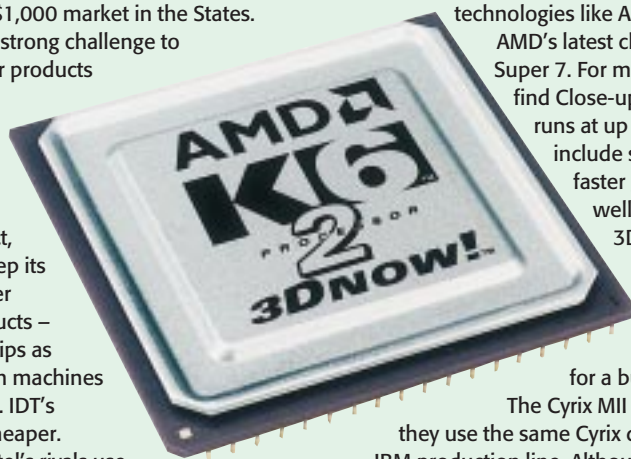
Is Intel Inside the only option?

Intel markets Celeron as the best processor for cheap and cheerful PCs, but it was only created so Intel could keep selling chips for the lucrative sub-\$1,000 market in the States.

Other manufacturers mount a strong challenge to the mighty Intel here, and their products are certainly worth considering.

Chips from AMD, Cyrix, IBM and IDT are all cheaper than those sold by Intel, and they can be better value. In fact, AMD – which is pledged to keep its prices at least 25 percent under those of competing Intel products – Cyrix and IBM all pitch their chips as Pentium II rivals, yet they are in machines the same price as Celeron PCs. IDT's WinChip is slower, but even cheaper.

In part, this is because all Intel's rivals use Socket 7 motherboards. This older design was abandoned by Intel when it introduced the Pentium II, which uses Slot One. Socket 7 boards are much cheaper and, although Intel claims Slot One is faster, new developments mean that Socket 7 is



catching up fast. The new Super 7 standard means that even if you opt for an Intel rival, you can get the full benefits of technologies like AGP and the faster 100MHz system bus.

AMD's latest chip, the K6-2, takes full advantage of Super 7. For more detail, look at page 23 where you'll find Close-up reviews of two PCs which use it. It

runs at up to 300MHz and is the first processor to include specialised 3D graphics instructions for faster graphics. IDT is taking up this idea as well. The WinChip 2+3D will use the same 3DNow technology as the K6-2, but this chip will not appear until later in the year. The current 200 or 233MHz WinChip is a very low-cost alternative and well worth looking at for a budget PC.

The Cyrix III and IBM 6x86MX chips are identical – they use the same Cyrix design and even come off the same IBM production line. Although IBM claims its quality control is better, we've seen little difference between the two and machines using them are certainly fast enough for general use, especially at PR333. However, it's worth noting that neither chip is good at calculating fractions, which are a vital part of 3D graphics.

Watford Electronics Aries Perfecta 6120



The Aries Perfecta 6120 is housed in a big, bulbous case with the familiar Watford Electronics green power button, which adds a splash of colour. Once you've removed the chunky case there's lots of room inside. If you undo a couple more screws you can even slide out the whole motherboard for clear access to all the internals, not that you would need to because everything is easily accessible anyway.

If you need to fit new PCI cards there are four free slots, illustrating Watford Electronics' commitment to the new standard, but there are no free ISA slots. There are three drive bays available, one external 3.5in and two external 5.25in bays. You have to hunt down the extra power cables supplied for these bays as they are really tightly tied down to the internal metal case.

The spec of this PC was similar to all the other 266MHz Celeron-based systems. It came fitted with 32Mb of RAM, but the 4Gb hard drive was one of the smallest in the test, so if it's stacks of storage you're

after this may not be the computer for you.

Although this is a budget PC it managed to beat off some of its more expensive competitors in the performance test, turning in the fastest score for a 266MHz Celeron-based system. It's 4Mb Matrox Productiva G100 graphics card failed to help in bring in such a good result in the Final Reality graphics test and it trailed in last.

The low-cost of this PC is reflected by the budget peripherals and smaller hard drive. But it was the top performer amongst the 266MHz Celeron PCs and there's lots of room to upgrade with PCI devices.

● £703.83 (inc VAT)

● Watford Electronics: 01582 745555

www.watford.co.uk

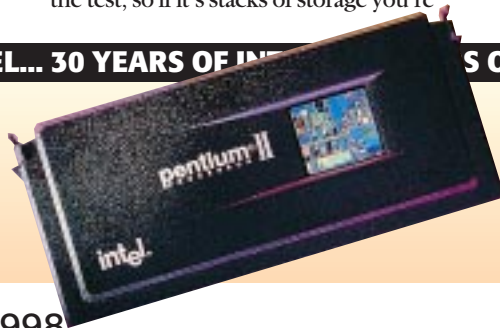
Watford Electronics Aries Perfecta 6120					
Build quality	★	★	★	★	★
Features	★	★	★	★	★
Performance	★	★	★	★	★
Value for money	★	★	★	★	★

Watford Electronics supplied the least expensive PC in our test and this was reflected in the basic but functional peripherals it came with. The 15in AOC monitor is a quite a good display, but as with most budget screens we could detect blurring towards the corners. The mouse, keyboard and speakers are all unbranded, cheap and cheerful models.

30 YEARS OF INTEL... 30 YEARS OF INTEL... 30 YEARS OF INTEL... S OF INTEL... 30 YEARS OF INTEL... 30 YEAR

1995 – Pentium Pro Processor

The race is on to produce ever faster processors and the Pentium Pro stormed onto the market with a clock speed of 150MHz. The Pentium Pro chip packed 256Kb of Level 2 cache to offer faster data



processing and enhanced performance; this figure had risen to 1Mb by 1997.

1997 – Pentium II Processor

Enter the men in shiny suits with the super-fast Pentium II incorporating MMX

Celeron-powered PCs compared

Manufacturer	Actinet	Carrera	Evesham Micros	Mertec	Panrix	Simply	Viglen	Watford
Model name	Netrunner Celeron	Power Media C300	Vale Prestige Celeron 300	Home Media C266 AGP	Nexus	Computers Multimedia 210P	Home C300	Electronics Aries Perfecta 6120
Price (inc VAT)	£868.33	£999	£1,056.33	£851.88	£938.83	£821.33	£999	£703.83
Contact	01952 270703	0171 830 0468	01386 765500	01792 473700	01132 444958	0181 523 4020	0990 944944	01582 745555
PR/Processor speed	Celeron 266	Celeron 300	Celeron 300	Celeron 266	Celeron 266	Celeron 266	Celeron 300	Celeron 266
Memory	32Mb SDRAM	64Mb SDRAM	64Mb SDRAM	32Mb SDRAM	32Mb SDRAM	32Mb SDRAM	64Mb SDRAM	32Mb SDRAM
Hard disk	4.2Gb	4.5Gb	6.4Gb	4.3Gb	4Gb	4.3Gb	6.4Gb	4Gb
CD-ROM/DVD	32x	32x	32x	32x	34x	32x	32x	32x
Sound card	Yamaha	Videologic Sonic Storm	AWE64 Value	Creative Labs SoundBlaster	NUSound 3D	Videologic Sonic Storm	Vortex Multiwave PCI	AWE64
Speakers	unbranded	Altec Lansing	Yamaha	unbranded	Arowana	Labtec	built in	unbranded
Graphics card	All in Wonder Pro	ATI Xpert 98	ATI Xpert @Work	ATI Xpert @Work	Diamond Viper 330	ASUS 3D Explorer 3000	ATI Xpert 98	Matrox Productiva G100
Graphics type	AGP	AGP	AGP	AGP	AGP	AGP	AGP	AGP
VRAM	8Mb	8Mb	4Mb	4Mb	4Mb	4Mb	8Mb	4Mb
Monitor	Shinho 15in	LG 15in	Taxan 15in	ADI 15in	CTX 15in	Hitachi 15in	Viglen 15in	AOC 15in
Modem	56Kbits/s	56Kbits/s	56Kbits/s	56Kbits/s	56Kbits/s	56Kbits/s	56Kbits/s	56Kbits/s
Mouse	unbranded	MS mouse	unbranded	MS I/Mouse	MS I/Mouse	MS Mouse	MS I/Mouse	unbranded
Software	SS97 + 12 titles	SS97		MS Works + 7 titles	SS97	8 titles	Home Essentials	SS97 + 6 titles
Other	LS-120 floppy drive		Iomega ZIP drive				MS joystick	
Warranty	1yr OS	3yr RTB	2yr OS	5yr RTB	1yr OS	1yr OS	1yr C&R	1yr OS
Fmark	2.88	3.22	2.92	2.90	3.03	2.52	2.99	2.42
BAPCo	176	211	206	178	195	167	211	198



The top slot in this test goes to Viglen's Home C300, which came in equal first in the performance test. Its 8Mb Xpert 98 graphics card from ATI also served it well in the Final Reality test. The system's 6.4Gb hard drive is generous enough to keep up with most storage demands, and there is plenty of scope to upgrade in the future.

This is a well-built PC both inside and out and it's also bundled with some nice extras, including an Intellimouse, a joystick and a Windows 95 tutorial package. Viglen has put a lot of thought into the setup procedure, so putting this PC together will not be a challenge to even the most amateur PC user.



We chose to recommend two PCs: one 300MHz and one 266MHz system. Carrera's Power Media C300 shared first place in our performance test with the Viglen Home C300. It also uses the same 8Mb Xpert 98 graphics card, which helped it to come out on top in the Final Reality graphics test.

But performance isn't everything and we were concerned about the massive tower unit, which would be difficult to

accommodate in some situations. It also offers slightly less scope to upgrade with new cards than the Viglen. Our choice for the 266MHz system is the Watford Electronics Aries Perfecta 6120, which is the cheapest option at £703.83.

Despite its low price it was the best performer of the 266MHz PCs we looked at. It was let down by its Final Reality result, but there are four free PCI slots free for you to plug in accelerator cards to improve performance if you wish. UrsulaTolaini

