



Unless you're a Mac user, cool and classy is probably not a phrase you'd choose to describe your computer. But it doesn't have to be that way – your choice of PC can be stylish as well as powerful. Gordon Laing says goodbye to beige and boxy

Designer PCs

A revolution in PC design is taking place, so why not consider something different for your next system? Miniature and so-called 'designer' options are now offered by numerous PC manufacturers, while the build-it-yourself market has never provided a wider selection of stylish cases and accessories. And, unlike most designer goods, an eye-catching or slimline PC won't cost the earth either, with many options working out cheaper than you think.

Over the following pages we'll tell you everything you need to know about designer PCs, the secrets behind shrunk-down systems and where to buy or how to build them. To demonstrate the possibilities we've highlighted six designer PCs guaranteed to draw admiring glances from friends and colleagues. It's time to make over your PC's image and banish the beige box from the office as well as the home.

One size fits all

There's a very good reason why PCs tend to be so large and box-like: they have to accommodate a number of standard-shaped components while offering adequate means of configurability and future expansion. Take an A4-sized motherboard, add a processor and memory and insert a variety of expansion cards and you've a system roughly the dimensions of a large shoebox. Add at least one hard disk and optical drive, a power supply and fans to keep it cool and it's easy to see why the average PC is so hefty.

Systems can only be made more compact if the components inside them are made to slim down. Ideally, there will be fewer of them too. Notebook PCs are the most obvious example of such miniaturisation and portable systems now come in many weights and configurations, from ultra-sleek models that are very light but thin on specs to hybrid laptops-cum-desktops such as tablet PCs.



Though originally designed for mobile use, many of us are now buying notebooks to use solely in the home or office. The best equipped notebooks' specs are now sufficiently high that they can do pretty much anything a desktop PC can. If you want to be able to fold away your office and make it disappear at the end of the working day, a notebook is an ideal choice. And however hefty it may be compared with other portable devices, a notebook will always be sleeker than a standard PC tower.

There's nothing to stop notebook components being used as part of a traditional PC setup. Indeed, the Paysan M-Series (see page 92) features slimmer notebook drives and, its maker claims, is the world's smallest desktop PC.

But other notebook parts such as processors and motherboards are either hard to come by or proprietary to certain models. Consequently, system integrators or DIY enthusiasts wanting to build designer PCs need to find alternatives.

Integration is the answer

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reason motherboards are usually so large: every last inch of them is already occupied by some sort of slot, connector or switch.

Once you've accommodated a processor and its heatsink, slots for memory and expansion cards, plus ports providing sufficient connections to plug in the required drives, you need a roughly A4-sized circuit board. If you still want to use cheap, readily available standard components, something clearly has to go. But if you were a motherboard designer, what would you lose?

Believe it or not, the most redundant part of any new system is its internal expansion slots. In the past these were absolutely vital for adding audio and ethernet connectivity, as well as for

upgrading to new standards such as FireWire and USB 2.0 when they came along. Each required a separate expansion card and a motherboard slot to accommodate it. This is no longer so.

While most motherboards still have around six expansion slots, the vast majority additionally feature a vast wealth of built-in or integrated connection options. Audio, ethernet and USB 2.0 are now standard fittings on motherboards, while decent models additionally feature FireWire ports and more.

There are also very few add-ons that can't be connected to an external USB port. Bluetooth and wireless networking functionality, analogue video capture and TV tuner cards and even dialup modems can all be fitted this way. What's more, the increasingly common USB 2.0 standard ensures data is delivered fast enough to ensure demanding external peripherals aren't compromised in terms of performance.

Even if you prefer some of these features to be fitted internally for convenience, most people would still only really need one or two expansion slots. By eliminating the rest, valuable inches can be shaved off an average motherboard, so it can be squeezed into a smaller case.

Shuttle XPC SB61G2

Shuttle is one of the biggest names in small PCs thanks to its revolutionary XPC 'barebones' products. Each XPC consists of a small motherboard mounted into a compact case complete with a wealth of ready-wired, front-mounted ports. All the system integrator or DIY builder has to do is add a processor, memory and hard disk.

Shuttle offers XPCs with the latest chipsets supporting the fastest processors and memory as well as the broadest connectivity. Its latest XPC is the SB61G2, based on Intel's 865G chipset and supporting Socket 473 processors with 400, 533 or 800MHz buses, along with dual-channel DDR memory running up to 400MHz.

The 845G chipset has integrated graphics, but the SB61G2 comes with an AGP 8x slot for the latest 3D cards, while a single PCI slot provides further expansion. With onboard FireWire, USB 2.0, ethernet and digital and analogue audio outputs, virtually all bases are covered. Shuttle XPCs are also simple enough to build yourself. And don't forget your accessories: Shuttle offers a wide range including glowing front panels.

→ Overclockers UK: 0870 443 0880 → www.overclockers.co.uk

→ £222.90 ex VAT (barebones for DIY builders)



Shuttle offers XPCs with the latest chipsets supporting the fastest processors and memory as well as the broadest connectivity



↑ Design innovation from Apple has inspired PC notebook makers to create sleeker, better looking laptops

Mini motherboards

These high levels of integrated connectivity have fostered a new breed of tiny motherboards, thus enabling small form factor PCs to become a reality. Most small form factor PCs are based around Flex-ATX or Mini-ITX motherboards which typically measure 262x180mm or 170x170mm.

This shaves off a considerable amount from standard ATX motherboards which are usually 305x244mm and their comparatively dinky proportions mean Flex-ATX and Mini-ITX motherboards fit into much smaller cases.

Flex-ATX motherboards are the same as standard ATX motherboards, except with fewer expansion slots (normally just two). This means they can take the same processors and memory, and sport potentially identical internal and external connectivity. Depending on the model, the two expansion slots will either both be PCI or one AGP and one PCI. The latter configuration is more common as it allows high-end graphics cards to be fitted, while still leaving a PCI slot for internal expansion.

Mini-ITX motherboards manage to be a third smaller still than Flex-ATX designs thanks to two key differences. They come with just one PCI expansion slot and there's no room for a traditional Intel or AMD desktop processor. Indeed, the most common Mini-ITX motherboards dispense with large

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Hush Technologies Mini-ITX

Hush by name, hush by nature: the Mini-ITX PC not only looks fantastic, fitting nicely into existing audio/video environments, but it also allows virtually silent operation thanks to the big heatsinks running down each side.

Inside you'll find a tiny VIA Mini-ITX motherboard and slimline notebook optical drive to save space, but there is room for a standard 3.5in hard disk and one PCI card mounted horizontally. Hush offers various configurations with different VIA CPUs, drives and memory, starting at £450 ex VAT for an Epia M9000 motherboard (933MHz C3 processor), 128MB RAM, CD-ROM drive, 40GB disk and no operating system or display. For the best performance select the M100000 motherboard with 1GHz 'Nehemiah' C3 processor, as this is VIA's fastest. While none of VIA's Epia motherboards can match a traditional P4 or Athlon-based PC for performance (especially gaming), they're sufficient for running Office applications and the M models also feature acceleration for smooth DVD playback.

→ Hush Technologies: 01780 765 368

→ www.hushtechnologies.net → from £450 ex VAT (excludes OS, display, keyboard and mouse)



! Apple iMac

Apple has always been a leader in computer design, but its latest range of iMacs are quite possibly its most innovatively styled yet. Processor, memory, drives and power supply are all squeezed into a compact round base which measures just 10.6in in diameter. The thin LCD screen is mounted on an adjustable silver neck attached to the base. Remarkably, the entire unit feels incredibly stable even with the display leaning right over.

The cheapest model costs £850 ex VAT and comes with a 15in LCD screen, 800MHz PowerPC G4 processor, 256MB SDRAM, 60GB disk, DVD-ROM/CD-RW drive and GeForce2 MX graphics. The next model up (pictured here) is £1,233 ex VAT, but that buys you a desirable 17in widescreen display, DVD recorder, 1GHz processor, DDR memory and GeForce4 MX graphics. All models feature a wealth of connectivity including USB, FireWire, ethernet and a 56K modem.

Macs are more than happy to open most PC files and many of the same applications are available on both platforms, if you work exclusively with files from other PCs you're probably better off with a Windows system. But if you're after a highly capable computer with the ultimate designer looks, the latest iMac is virtually impossible to beat.

→ Apple: 0800 039 1010 → www.apple.com/uk → from £850 ex VAT



> Processor, memory, drives and power supply are all squeezed into a compact round base which measures just 10.6in in diameter



↑ Your keyboard and monitor will dwarf one of Paysan's tiny M-Series systems

ZIF processor sockets altogether by simply soldering the CPU directly to the surface.

Eliminating traditional ZIF processor sockets saves precious space on the motherboard and allows Mini-ITX to achieve its tiny dimensions. Of course the down side to having an embedded processor is that you can't upgrade it and you're limited to whatever the motherboard manufacturer has chosen to fit.

The Mini-ITX standard was developed by VIA, which just happens to be the main manufacturer of Mini-ITX motherboards. Perhaps unsurprisingly, then, VIA's Epia range of Mini-ITX motherboards are embedded with the company's own C3 or Eden processors.

These may be less powerful than standard Intel and AMD processors but they're cheaper, less power-

hungry and cooler too. They generate so little heat that the fan on C3 processors is barely audible, while the less powerful Eden models don't require a fan at all. Lower power consumption also allows smaller, quieter power supplies, which all adds up to potentially smaller systems.

While the Epia's combination of a modest CPU and basic integrated graphics won't satisfy gamers or power fanatics, they're sufficient for running office applications.

The latest M versions also feature hardware Mpeg-2 decoding in the chipset, enabling smooth DVD playback. Consequently, Epia-based PCs have already found niches as compact second systems, firewalls, basic servers, media players or affordable PCs for those on tight budgets.

Amazingly a handful of new Mini-ITX motherboards from other manufacturers accommodate a Pentium 4 socket yet are usually only an inch or so longer. A P4 will deliver better performance than an embedded VIA CPUs, but they also generate more heat, cost more and consume greater power so are unsuitable for the smallest and quietest systems.

The Mini-ITX form factor has inspired many enthusiasts to build highly customised PCs with innovative and, in some cases, just plain crazy cases. For inspiration (or simply a peek at the quirkiness of other PC users' efforts) browse the various projects on the Mini-ITX website at www.mini-itx.com, where you'll also find a shop selling Mini-ITX boards, cases and accessories.

Dare to go bare

Realising that the biggest challenge in building designer PCs is finding tiny motherboards, cases and power supplies which work well together, several cunning manufacturers now offer complete packages. These so-called 'barebones' solutions consist of a compact motherboard already fitted into an optimised case complete with power supply. By designing the case around the motherboard, it can include a variety

Contacts

- Alienware: www.alienware.co.uk
- CoolCaseMods: www.coolcasemods.com
- Kanam: www.kanam.co.kr
- Chyang Fun: www.chyangfun.com
- Kustom PCs: www.kustompcs.co.uk
- VIA: www.viavpsd.com
- Mini-ITX: www.mini-itx.com
- Overclockers UK: www.overclockers.co.uk
- Quiet PC: www.quietpc.com
- Shuttle: www.shuttle.com

With potentially uncompromised performance and connectivity in a tiny case, it's no wonder Shuttle's XPCs are so popular; you can even customise them with coloured or glowing front panels

of front-mounted ports which come ready wired up to the right internal connectors. Simply fit a processor, hard disk and memory and you're ready to go.

The biggest name in barebones PC manufacture is Shuttle with its range of incredibly popular XPC systems. Each of these systems is housed in a compact cube-style case that, at 200x185x300mm, is roughly the size of a toaster. The cases come with a huge range of front-mounted connection options.

Despite their compact dimensions, an XPC case can accommodate one 5.25in and two 3.5in drives as well as a pair of expansion cards. The motherboards are roughly the same size as Flex-ATX, with versions for Intel or AMD processors and a variety of chipsets.

Shuttle's latest SB61G2 model (see page 88) demonstrates how compact size doesn't have to compromise performance. Based on Intel's latest 865G chipset, it can handle the latest 800MHz frontside bus Pentium 4 processors, dual-channel 400MHz DDR memory and both parallel or Serial ATA hard disks.

While it has integrated 3D graphics, an AGP 8x slot allows high-end cards to be fitted. It additionally boasts the vast range of both front and rear-mounted ports we've come to enjoy from Shuttle XPCs.

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Many system integrators offer PCs built using Shuttle XPCs and several take customisation and component selection that bit further (see Alienware's small form factor range at www.alienware.co.uk). Self-build enthusiasts can also easily put together their own Shuttle XPCs like the one described on page 88.

Chyang Fun (www.chyangfun.com) is also making a name for itself in barebones with products sporting similar capabilities to Shuttle XPCs, but alternative case designs.

Other suppliers of barebones packages for those who fancy a unique PC design include Overclockers UK and Kustom PCs.

Hi-fi PCs

As PCs become better at playing music and video, an increasing number are being connected to existing hi-fi and TV systems. The two biggest issues facing such a PC in the living room are obtrusive fan noise and styling which matches a conventional hi-fi.

Solving both issues in one fell swoop is Hush Technology's Mini-ITX system (see page 88). The slim Hush case cleverly uses a large amplifier-styled heatsink running along its entire side to cool the embedded processor without the need for a fan. It looks great too.

If you need to accommodate a full-size ATX motherboard and conventional internal components, check out the Accent range of Home Theatre cases from Korean-based Kanam Electronics. All models feature thick aluminium front panels and are available in gold, silver or black with optional fluorescent displays.

Accent cases are available from Quiet PC (www.quietpc.com), which also sells innovative cooling solutions enabling a PC to operate virtually silently. Expect to see many more hi-fi styled PCs in the coming months as systems based on Microsoft's Windows XP Media Centre operating system hit our shores.

The finishing touch

Whether you're buying a designer PC or building your own, there are a number of finishing touches which show you've gone the extra mile.

Rather than allowing the beige front panels of CD and DVD drives to spoil your designer case, consider swapping them for coloured bezels which match the rest of the system. If you have a spare front-facing drive bay, you might like to install an LCD or fluorescent display which can indicate all manner of information from



! ECS AiO LCD PC

ECS' stylish all-in-one system occupies little more desk space than a notebook yet enjoys a high-level of integration. Hidden below the 15in LCD display are stereo speakers and a subwoofer, while a combination DVD-ROM/CD-RW drive pops out the side. The whole unit can also be tilted to the desired angle using an adjustable frame at the rear.

ECS has made full use of its unique case design, equipping it with ports at every turn. A FireWire port, modem and headphone jack are fitted on one side, while four USB 2.0 ports can be found on the other. These are joined by the usual array of rear-mounted ports including ethernet and 5.1 channel audio. At the AiO's heart beats a 2.4GHz Pentium 4 processor with 512MB DDR memory and a 40GB hard disk running Windows XP Professional. Rounding off the package is a wireless keyboard and mouse, ensuring your desk is cluttered neither by wires or a huge PC case.

All in all the AiO is a uniquely styled system which combines power and connectivity with some neat design touches. ECS additionally offers a version of the AiO with a 2GHz Celeron processor for £100 ex VAT less.

→ ECS: 0870 555 000

→ www.microwarehouse.co.uk/ecs

→ Price: £799 ex VAT

➤ The whole unit can be tilted to the desired angle using an adjustable frame at the rear

If you're stuck with your PC but can't stand the beige anymore, consider swapping its case for something a little more exciting

CPU temperature to the current MP3 track – great for media PCs. Bezels and displays are available from Kustom PCs.

And finally, if you're stuck with your PC but can't stand the beige anymore, consider swapping its case for something a little more exciting such as a clear acrylic one from Overclockers UK. Or why not customise your old one with cutout windows and internal neon lighting? Check out the CoolCaseMods website (www.coolcasemods.com) for inspiration.

Unconventional cool

Wanting a great-looking PC in the past meant hunting high and low then paying through the nose for a machine which often suffered from compromised performance and connectivity that consigned it to the obsolete category in next to no time. Thankfully that's no longer the case.

As we have seen here, there's an increasing number of compact and great-looking systems which not only feature the fastest processors, but even surpass many conventional desktops in terms of connectivity and quiet cooling.

So why settle for beige when you can enjoy the latest PC technology in a cool case that's less than half the size of your old PC and is competitively priced too? No, we can't think of a single good reason either. The designer PC revolution has begun. ■



! Paysan M-Series

Paysan claims its M-Series PCs are the smallest desktops in the world. Certainly there's no denying the machines in the M3-3000 range are absolutely tiny at only 157x146x58mm; even systems in the most powerful M4-7000 line measure just 198x161x62mm.

To achieve such miniscule dimensions, Paysan has exploited slim hard disks and optical drives which, while originally designed for notebooks, are perfectly at home in desktop machines. Like many small form factor systems, the M-Series sports greater connectivity than the average full-size desktop PC, including FireWire, ethernet and USB, along with a 56K modem. Perhaps most remarkably, each M-Series also has built-in speakers.

There are numerous configurations based on Paysan's three main ranges. Systems in the M3-3000 series are powered by Socket 370 Celeron or Pentium III processors, while the M4-5000 and M4-7000 series use Socket 478 Celeron or Pentium 4 processors. A display costs extra, however.

The M3-3000 starts at £334 ex VAT for a 1.3GHz Celeron, 128MB RAM, 20GB disk and CD-ROM drive, but there's no operating system, keyboard or mouse. The top-of-the-range M4-7006 features a 3GHz P4, 40GB disk, 512MB RAM, CD-ROM drive, wireless keyboard and mouse and Windows XP Home for £999 ex VAT.

→ Paysan: 01884 232 060

→ www.paysan.co.uk

→ from £334 ex VAT (OS, keyboard, mouse and display sold separately)

! Sony Vaio TR1MP

Notebooks are in many ways the ultimate designer computers. They're small, light, portable and require little performance compromise. Indeed some are so capable they're used as complete replacements for desktop PCs. Several models combine power and portability with designer looks.

Perhaps inspired by Apple's latest range of portables, the Sony Vaio TR1MP is a sleek white notebook fitted with a 10.6in widescreen display. It's powered by an ultra low-voltage 900MHz Pentium M processor which supports Intel's Centrino platform and features built-in 802.11b wireless networking capabilities. A Bluetooth wireless connection is also provided and Sony claims the batteries will last up to five-and-a-half hours before they need charging.

The TR1MP comes with 256MB memory, a 30GB disk and also squeezes in a DVD-ROM/CD-RW drive. There's plenty of connectivity including ethernet, FireWire and USB 2.0 along with a built-in 56K modem, PC Card and Memory Stick slot. There's even a VGA digital camera in the lid – ideal for taking snaps or impromptu video conferencing.

Most impressively, it measures a sylphlike 270x35x188mm and weighs just 1.4kg. There may be smaller or faster notebooks out there but few match the Sony Vaio TR1MP's balance of portability, power, connectivity and designer looks.

→ Sony: 08705 424 424 → www.vaio.sony-europe.com → £1,534 ex VAT



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