Amstrad PC20

In this exclusive review, Steve Withers looks at a pre-release version of Amstrad's $899 PC compatible, the Amiga 500-style PC20.

A pre-release review is never easy, and this one was no exception. There are many things that help determine a reviewer's overall impression of a finished product, and when some of them are missing it can be difficult to draw firm conclusions. Indeed, it may even be risky to make statements, as the facts can change before the product reaches the shops.

However, it has always been *APC's* policy to present benchtests that accurately reflect the review hardware and software. I'll follow that tradition, but in doing so I'll remind you in appropriate places of the pre-release nature of the system. One thing that should be noted is that *two* computers were provided for review; the first was a pre-production sample of the Australian version, the other was in the form that it is sold in the UK.

Although the remains of Clive Sinclair's computer business were purchased by Amstrad, his name lives on. The British version of the PC20 is marketed as the Sinclair PC200, and indeed the power-on message displayed by the PC20 still identifies itself as a Sinclair product.

Although the mouse is standard equipment, the colour monitor adds $300 to the total price

Hardware

Probably the simplest way of describing the PC20 is to call it a PC-compatible in Amiga 500-style packaging, although the resemblance to the Amiga is little more than skin deep.

Apart from the monitor — which is an optional extra anyway — the PC20 is a self-contained unit. Connect a display and plug into the mains, and it's ready to go. A nice feature, since the system appears to be aimed at the domestic market. As the machine looks like an overgrown keyboard, I'll start with a run-down of the keyboard. The layout is the now-familiar 102-key format. Whether that is advantageous depends largely on the software used, especially with the use of SHIFT, ALT and CTRL to modify the effect of function keys. On the pre-production machine a few characters seemed to be in the wrong place, but pressing most of those keys generated the 'right' character. Incidentally, the legends are printed on the keytops, and so may wear off after heavy use. Two-

shot mouldings are preferable, but the cost is higher.

The 'feel' of the PC20's keyboard is run-of-the-mill. Its downfall, however, is the absence of progression in the springs — unless you have a very light touch you will find the keys bottom out with quite a jar. Unfortunately, the same can be said for many other low-cost systems. Raised 'pips' on the home keys are a feature that touch-typists may appreciate.

As a result of the one-piece design, the keys sit much further above the desk than most authorities would recommend. However, given that home computers are usually less intensively used than office systems, this is not a major consideration.

Like some other Amstrads, the PC20 uses the 8086 processor. At one time, '8086' and 'fast' always seemed to appear in the same sentence, but in these days of '386-based systems that adjective no longer seems so appropriate, even with a 10MHz clock. The new *APC* benchmarks are designed to give a good indication of a system's performance in real-life situations, but because of the Amstrad's entry-level configuration it seemed unreasonable to attempt the high-level tests (you just don't use PageMaker without a hard disk!).

As the low-level index relates the machine under test to an IBM PC/XT with a hard disk, the Amstrad is handicapped by its floppy drive.

The decision to build the machine with only 512k of memory is unusual. Even though the PC20 is aimed at a particularly price-sensitive market, the advantage of a full 640k would outweigh the relatively small extra cost. Although buyers of this system are less likely to run memory-hogging software, any surplus can be used as a RAM disk. Such an arrangement is particularly useful in a single-drive system like the PC20. Still, the 512k formula seems to have served Amstrad well in earlier machines.

'If you are looking for your first MS-DOS system and are prepared to sacrifice some expandability for price, then the PC20 should be on your list.'

In the absence of a metal case, virtually all the motherboard is shielded. The large number of fastenings make it difficult to see the layout of the board, but its small size suggests the use of VLSI chips. In fact, the board is not even fully populated, presumably reflecting a design that provides for assembly in more than one form.

The single disk drive mentioned above is a 720k, 3.5in unit mounted in the right-hand side of the case. In common with other systems with side-on drives, a repeater for the 'drive active' light is provided on the top of the case. All very sensible, but because the light is on the opposite side of the case to the drive, I often found myself forgetting to check it. In my experience, most problems novices have with corrupted disks can be attributed to their removing them from the drive at the wrong time, so this apparently minor weakness could have a significant effect.

A connector on the back panel allows the connection of a second (external) drive which may be either another 3.5in unit or a 5.25in, 360k drive. The connec-

tor itself is of the kind normally associated with parallel printer interfaces, while a DIN socket provides the power. This bears a distinct resemblance to the arrangement on Amstrad's recently announced 2000 series. It may be possible to install a hard card (a hard disk mounted on its controller), but there is no other provision for a hard disk.

Accompanying the floppy disk interface are the usual printer and serial ports, plus connectors for monitor and television. The joystick and mouse interfaces are unconventionally mounted *under* the keyboard. Although this arrangement seems strange, it does make sense. These two devices are generally permanently attached (you don't need to unplug a mouse when moving a computer, but a printer is a different story), and moving the socket towards the front of the case effectively lengthens the cable.

The mouse is supplied as standard equipment. Although I have been a fan of the 'rodentiometer' for years, I was unimpressed by this example. My hand did not fit comfortably around its wedge-shaped body, and the lack of low-friction pads or rollers meant it did not slide easily.

The PC20's display is purportedly compatible with the colour graphics adaptor and the monochrome display adaptor, but only a colour monitor was provided. The colour monitor is a $300 optional extra, which is certainly a competitive price. It was hard to determine the overall quality of the monitor, because the convergence was poorly adjusted. Like the PC20, the monitor was a pre-production sample, so take a look at a real one in a local showroom and draw your own conclusion.

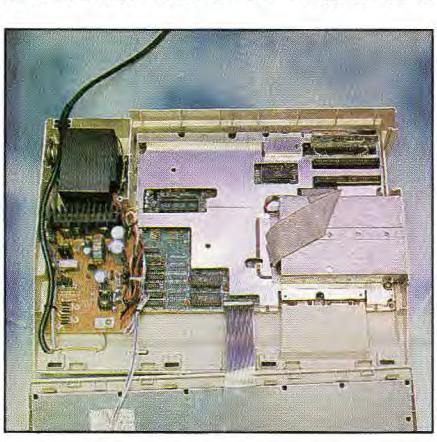
I was impressed by how well the system worked with a TV instead of a monitor. In 40-column mode the individual characters were very dense and clear, and when I switched to 80 columns I was pleasantly surprised by the legibility of the display.

Now, I'm not suggesting that it is anywhere near as good as a monitor, but conventional wisdom says a monitor is mandatory for 80-column displays. If most of your work is in 80 columns you should buy a monitor, but a TV could suffice if you only occasionally need the full-width display.

The absence of a composite video output was surprising. Unless you live alone or have a second set, there is normally too much competition for the TV to make it your regular display. If you are on a budget (as many potential buyers will be), a composite monitor for around $100 would otherwise be the cheapest option.

One feature of the PC20 that should be standard on all computers is the volume control. Whether you're working at home or in an office, the ability to regulate the sound is a blessing. Despite being fitted with a very small speaker, at full volume the PC20 emits enough sound to keep the dedicated gamer happy, and by turning it down you can still hear what's going on without disturbing the person sleeping in the next room.

From left to right: external disk power and signal connectors, TV and monitor sockets, parallel and serial ports



This view of the well-shielded motherboard also reveals the limited space for expansion

Expansion

Turning to the possibilities for expansion, the top right-hand section of the case hinges open to reveal the system configuration switches, a vacant 8087 coprocessor socket and two full size expansion slots. On second thoughts, 'full length' would be a more accurate description as the bay is only five centimetres deep, which is much shallower than an expansion board. Apart from giving an untidy appearance, this design also means that there is nowhere to attach the mounting brackets that normally keep add-on boards securely in place. There seems to be a significant risk of damage to both the boards and the flimsy-looking hinges of the lid, not to mention a good chance of radio frequency interference from the unshielded circuitry.

A replacement lid could be produced, but it may not be aesthetically pleasing.

Documentation

The quality of documentation is always an important consideration. Novices require clear 'how to begin' instructions, while more expert users may need detailed technical material. Unfortunately, no documentation was available for this review, due to the newness of the machine.

Software

The review system was accompanied by a copy of MS-DOS 3.3 for the PPC512/640, a 'Show Partner' presentation of the earlier Amstrad computers and GEM. There is probably nothing new left to say about DOS 3.3, so I'll simply say that it worked.

Show Partner ran uneventfully, but GEM completely ignored the mouse. Whether this was due to incorrect configuration or a hardware problem remains a mystery, largely because of the absence of documentation.

Amstrad advised me that the PC20 will be sold with DOS 3.3, GEM, Typing Tutor, Decision Maker, Memory Builder, Speed Reader, Home Office Writer, Home Office Filer, Gunforce, Backgammon, Space Vaders [sic] and Bricks. Since those programs were not made available for this benchtest, I am unable to comment on their quality or usefulness, but they certainly cover the applications commonly associated with home computing. Assuming they are at least reasonably good, Amstrad must be praised for providing a package that the first-time buyer can take home and put to use without making additional purchases.

Conclusion

There are two questions in my mind. Firstly, if someone wants a MS-DOS system, will the low price be enough to attract them to the PC20, or will they spend another one or two hundred dollars on a conventional clone (or even one of Amstrad's other models)? Such a system would probably have the extra RAM and a clock/calendar, and adding the very important second disk drive would almost certainly be cheaper. On the other hand, the Amstrad's compact size will be an important advantage to some, and the 3.5in disk is a big plus for anyone using that format.

Secondly, will buyers as yet uncommitted to a particular style of computer choose the PC20 over the Amiga 500? Again, the 500 costs about $100 more, but I think many people buying for recreational purposes would pick the Amiga for its superior graphics and sound capabilities.

If you ask a simplistic question like 'which computer should I buy?', or 'which is the best computer?' the answer is always the same — 'it depends on what you want to do'. If you are looking for your first MS-DOS system and are prepared to sacrifice some expandability for price, then the PC20 should be on your list.

Amstrad seems to be betting that there are enough people sufficiently sensitive to prime cost to allow the company to ship the PC20 in the volume it expects without cutting into the sales of its more expensive systems. However, since there isn't that much difference in price, the company might not get the result it anticipates.

END

Technical specifications

Processor:	8086, 10MHz
Main RAM:	512k
Mass storage:	Single 720k, 3.5in floppy drive
Standard I/O:	One parallel port, one serial port, one monitor port, one TV port, one external floppy port, one joystick port and one mouse port
Keyboard:	102 keys
Display:	CGA in three modes: 40 by 25 or 80 by 25 in 16 colours; 320 by 200 in four colours; 640 by 200 in two colours. Colour monitor $300
Expansion:	Two PC compatible slots
Operating software:	MS-DOS 3.3, GEM

Benchmarks

Amstrad PC20

Usability index	3 (limiting factor: slots)
Disk tests	0.43
Video test	1.56
Memory test	2.34
CPU test	2.24
Low-level index	1.37

For an explanation of these Benchmarks, see the article 'Benchmarks revisited' elsewhere in this issue.