Acorn A5000

The A5000 is a move Acorn had to make in order to compete on price/performance with the mainstream PS/2 world. Roger Howorth assesses the new age of the Archimedes.

Since its launch in 1987 the Archimedes has been at the forefront of technology. Acorn pioneered 32-bit RISC processors on the desktop, and the company's multi-tasking operating system is respected for an innovative GUI and font manager. Acorn is also an important supplier in UK education: it counts 91% of UK schools among its customers.

The A3000 accounts for most ofthese sales; indeed, this is the fourth bestselling computer in the UK, and Acorn the fifth biggest UK supplier. The company is developing sales in Europe, and the A3000 is an officially accepted educational platform in Canada and Australia.
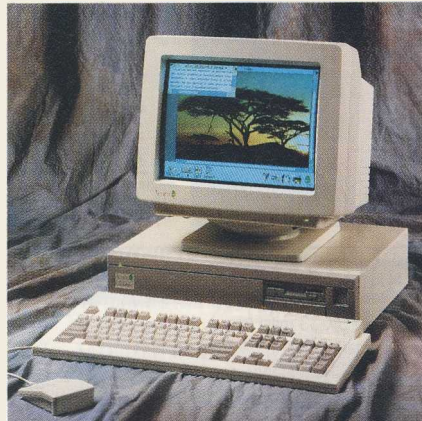
Most of the Archimedes line, including the A3000, is based on the ARM2 (Acorn RISC Machine) CPU which began development in 1983. Since production began in 1987, Acorn has improved the design, resulting in the ARM3, a compatible chip with its own 4K on-chip cache and extra support for co-processor and multi-processor installations.

The ARM3 has been available for some time both as an upgrade to earlier Arcs, and as the CPU in the high-end A540 Archimedes and R260 Unix workstation. ARM3 is also the first fruit from the joint venture set up by Apple, Acorn and VLSI.

Restructured range

Faced with falling prices and higher specifications from competitors, Acorn restructured its product range and announced a wave of price cuts and the new A5000. This replaces the old A400 series, but is essentially an update of that hardware and a continuation of the line. The restructured range now has the A3000 at entry level, the A5000 in the mid-range and the A540 at the high end. The ARM3 used in both the A5000 and the A540 delivers a staggering 13 MIPS, an improvement of around 100% over the old flagship A440.

However, Acorn regards the A5000 as a significant update with vastly increased price performance, rather than simply a response to competition. RISC OS has been updated to version 3 and is now stored completely in ROM. Other software elements including 12 out-

line fonts, 'modules' and bundled applications are also in ROM, which has grown from 512K to 2Mb in version 3. For the average user, this results in around 150K more free RAM.

The entry-level A5000 is fitted with 2Mb of RAM and a 40Mb hard disk; this may seem small compared with Mac or PC hardware, but the Archimedes is far more economical with its storage. This is achieved by executing the OS from ROM and using a single shared font manager and a large 'Shared C' run-time library.

The floppy disk system been updated with a 1.5Mb high-density drive, and is compatible with various Acorn formats plus DOS and the Atari ST. In typical Acorn style, this has been thoroughly integrated within RISC OS so that directory windows appear and work in the same way regardless of format, much as Dayna's DOS Mounter does on the Mac.

The Archimedes has never been a slouch at graphics, and is even less so now. New screen modes have been added to reflect market demand and show off the A5000's bundled VGA monitor. In fact, most users will get a monitor equivalent to SVGA, but this is not part of the specification so Acorn is not advertising it as such.

Power on the move

For an example of ARM3's power, look no further than moving a window around the screen. Rather than dragging an outline, as is the case using Windows or System 7, the Arc can redraw windows in real time, as they are moved. This has been a feature of

RISC OS for some time, but the ARM3 makes the movement all but completely smooth, even for large windows.

The mouse now has a 6-foot cable, making it easier to share in the classroom. The keyboard feels much lighter than previous models, whose solid feel I prefer.

The Archimedes has a reputation as a noisy machine. Although the fan has been moved from the front to the back, the new model remains the loudest in my office. With the industry devoting so much attention to Health and Safety, it's about time computers became quieter without users having to resort to a screwdriver being jammed in the fan.

Of course, although Acorn is pleased with its success in the education market, it is keen to develop sales in the business community. Although the Archimedes has consistently outperformed all but a handful of other processors and has pioneered some innovative software, most of this has been at operating system level, and that OS isn't DOS.

IBM emulator

Acorn has a solution in the shape of its IBM emulator. Its performance varies between applications, but as a rule of thumb it will be OK for most tasks such as simple word processing but too slow for CAD/CAM. Running on an ARM3 it should give performance somewhere between an XT and a 286. The emulator and DOS partition capability certainly offer a degree of comfort to those in need of occasional DOS functionality: it even copes with Windows, albeit slowly. But even the ARM3's sparkling performance can't turn an Archimedes into a PC — and who would want to?

The A5000 begins a new age for the Archimedes in terms of price/performance. While the mainstream world of PS/2 computing marches on, the Archimedes proves itself a capable machine with a healthy spirit of its own. But that may not be enough. What's changed is that, thanks to the low prices of fast PCs, this is a necessary upgrade to make the Archimedes halfway competitive on price/performance, rather than giving it the lead it once held.

Acorn is on (0223) 245200.