

HIGH PERFORMANCE COMPUTER SYSTEMS



Archimedes 540



Acorn 

ARCHIMEDES 540: IMAGE OF THE FUTURE

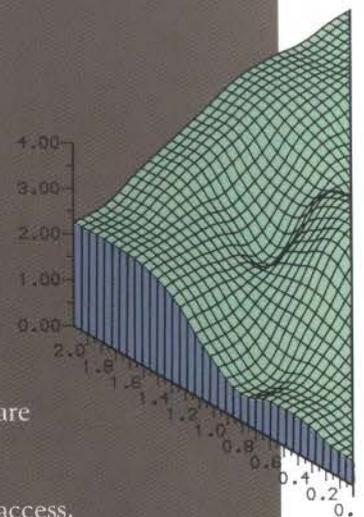
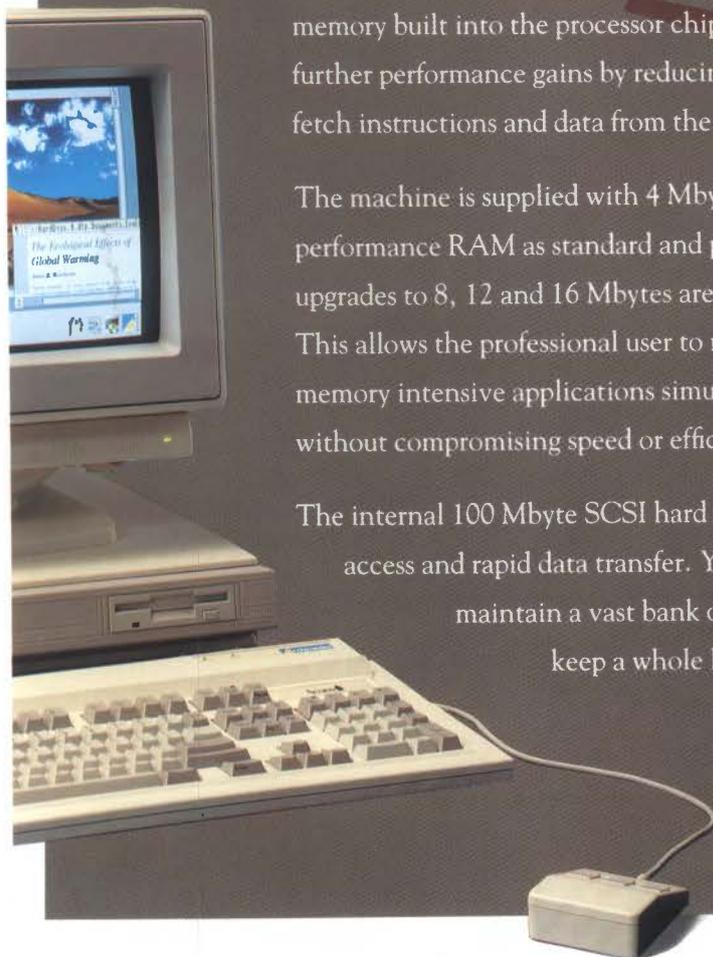
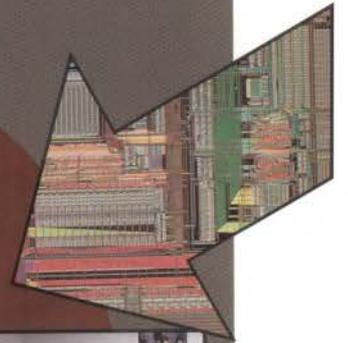
The Archimedes 540 is built for performance.

No matter how demanding your applications are for memory and speed the Archimedes 540 will give you the professional edge. The combination of fast, fully addressable and expandable RAM, with the excellent on-board video display capabilities makes the Archimedes 540 the ideal machine for desktop publishing, complex spreadsheets and CAD/CAM as well as image analysis and multi-media training. Even the most processor-intensive and memory demanding applications can be run in a multi-tasking environment.

The new central processor (ARM-3) operates faster than a 25MHz 486 processor. † 4K of cache memory built into the processor chip provides further performance gains by reducing the need to fetch instructions and data from the main memory.

The machine is supplied with 4 Mbytes of high performance RAM as standard and plug-in upgrades to 8, 12 and 16 Mbytes are available. This allows the professional user to run several memory intensive applications simultaneously without compromising speed or efficiency.

The internal 100 Mbyte SCSI hard disc gives fast access and rapid data transfer. You can maintain a vast bank of data and keep a whole library of software available for instant access.



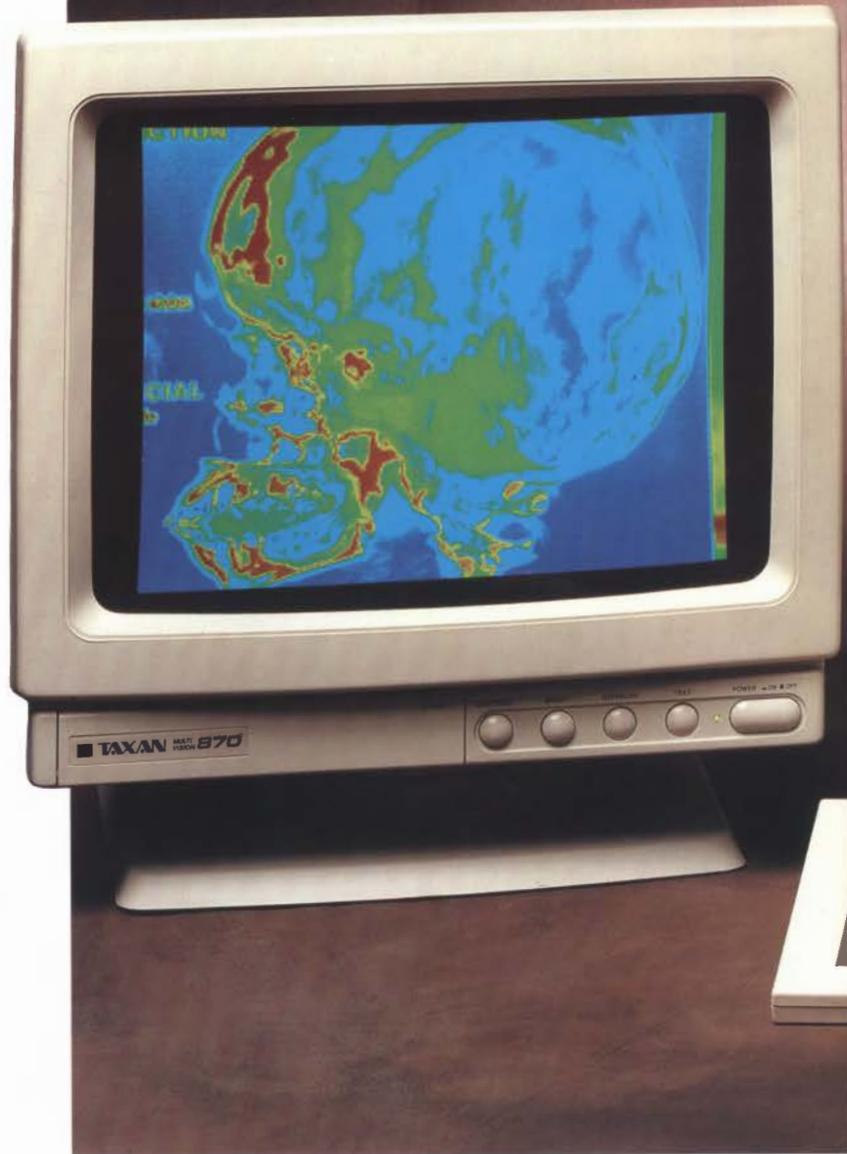
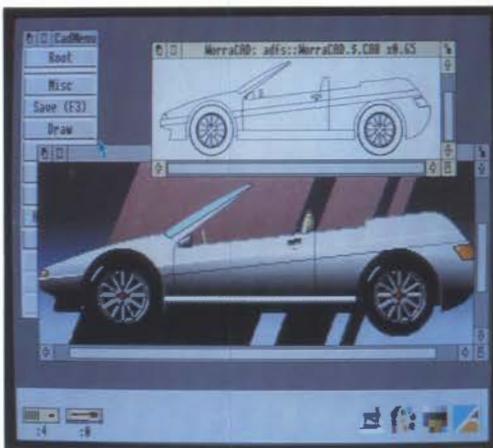
†Using the benchmarks as described in BYTE (March '90)

LEADING THE ARCHIMEDES RANGE

The Archimedes 540 leads the Archimedes range of high-performance computer systems.

Each machine in the range is based around the Acorn RISC Operating System – RISC OS – which gives you the most straightforward way of controlling computing tasks. Directing your Archimedes system with the windows, icon, mouse and pointer interface is easy to learn because it is intuitive, and exceptionally productive.

The Archimedes 540 maximises the potential of the RISC OS multi-tasking system, enabling you to run more than one application at a time and to transfer data quickly between applications.



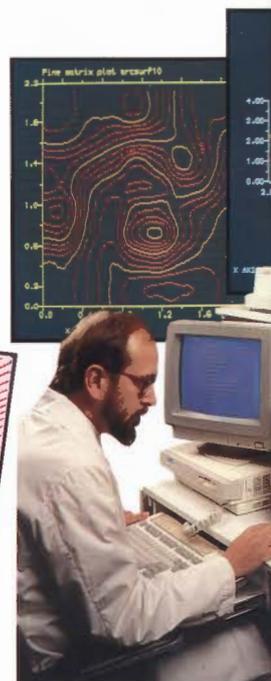
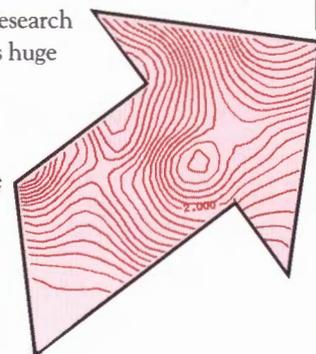
LEADING APPLICATIONS

Archimedes computers are helping to break new frontiers in research.

In healthcare, image analysis is speeding up monitoring for spinal deformities and improving the chances of identifying abnormalities in their early stages. The power of the Archimedes system is also proving invaluable in the analysis of visual pigments in patients with retinal disorders, enabling researchers to compensate for the difficulties caused by constant eye movements by producing average images.

The Archimedes system is currently being used in X-ray astronomy, an area of research that will benefit immediately from the introduction of the new TCP/IP suite, as huge amounts of data need to be transferred onto mini and mainframe computers.

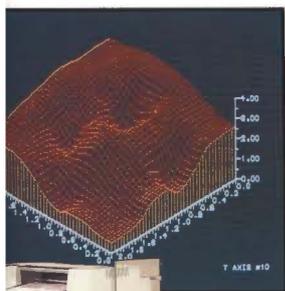
Archimedes computers are also redefining expectations from multi-media training, providing the ideal environment for the development of cost-effective computer-based training and desktop simulation.



EXPANSION

With the huge range of add-ons and peripherals available, you can customise your Archimedes 540 to meet your specific requirements. In addition to the plug-in RAM options, expansion cards are available to configure your ideal system. Expansion options include:

- I/O Expansion Card for specialised communication and control functions, such as scientific instrumentation, or non-keyboard input systems.
- ROM Expansion Card for specialised system development.
- The Floating Point Accelerator (FPA), being developed as a fifth member of Acorn's RISC chipset, will offer increased speed for highly intensive mathematical computations. This new floating point solution will be available in 1991.
- MIDI Expansion Card providing standard control interface for electronic musical instruments.
- High performance video output with genlock for video overlays
 - High resolution frame stores
 - Direct laser printer cards which give high quality and high speed print capability for DTP.
 - Real time colour digitisers for video image capture
- IEEE 488
- STE Bus
- Ethernet and Econet cards



In one example, simulations of helicopter operations incorporate real-time colour animation to simulate real equipment and processes. This is combined with built-in digital audio for high fidelity reproduction of sound effects which simulate verbal procedures.

Of course, you can also run the full range of software packages designed for the Archimedes family. There is already a wealth of software available, from word processors to databases, from 3D modelling to multi-media environments.

In addition, the PC emulator software transforms your machine into a PC at a click of the mouse. MS-DOS can be loaded from your hard disc, giving you access to the wide range of standard business software developed for IBM compatible machines. You can store your MS-DOS applications on the hard disc for fast access, along with your files and data, or alternatively on standard IBM format floppy discs. The power of the new ARM-3 processor gives the speed of an AT class PC machine† for MS-DOS applications.

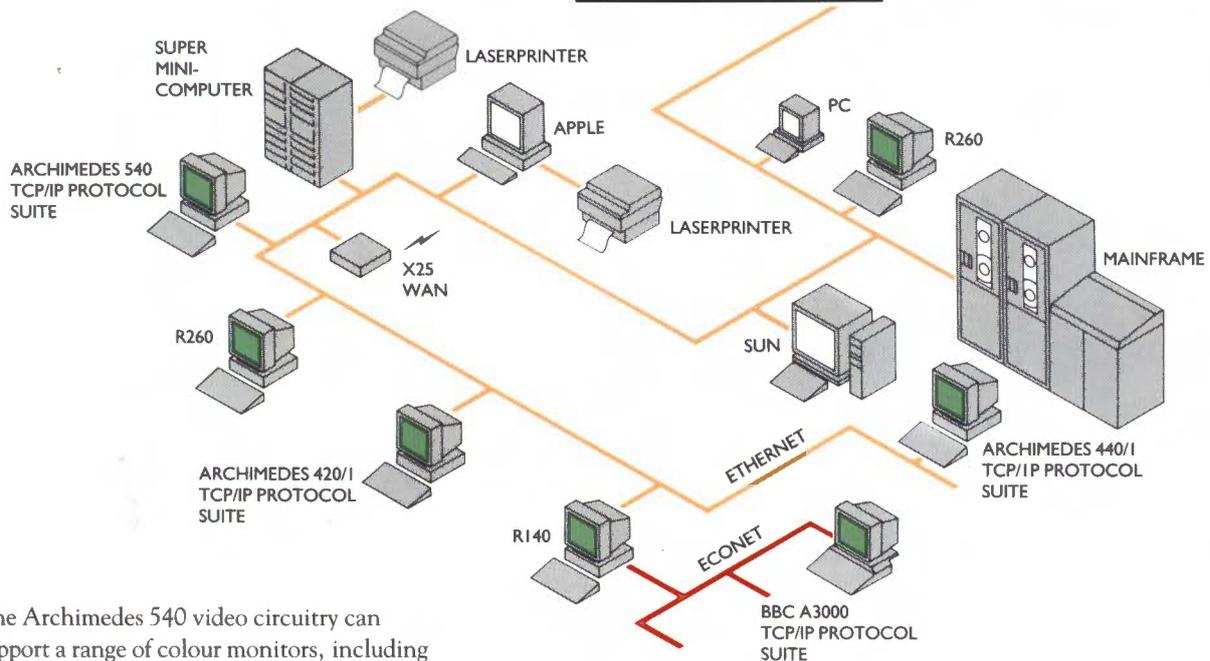


†PC Labs Benchmark Suite version 5

MEETING INDUSTRY STANDARDS

The Archimedes 540 embraces a whole spectrum of industry standards.

With the Ethernet expansion card, you can link your Archimedes 540 to the rest of your computer system using industry standard networking technology. The optional TCP/IP Protocol Suite software enables you to connect your Archimedes 540 straight into a UNIX environment. This enables you to add the power and flexibility of the Archimedes 540 to your LAN, integrating with other TCP/IP-based systems in a window on the RISC OS desktop. For local departmental connectivity of work groups any Archimedes computer can act as a gateway between Econet, Acorn's low cost proprietary network, and Ethernet subnetworks.



The Archimedes 540 video circuitry can support a range of colour monitors, including multiscan monitor options, VGA or SuperVGA monitors and very high resolution monochrome monitors. You can upgrade or change your monitor with no requirement to add graphics expansion boards. This gives you the benefits of a supercrisp, rock steady display and enables you to select the most appropriate monitor from the most economical to the highest specification.

The built-in SCSI interface supports direct access to up to six external peripherals such as large capacity disk drives, tape streamers, CD ROMS, optical drives, DAT drives and scanners.

HARDWARE

| | A410/1 | A420/1 | A440/1 | A540 |
|---|---------------------------------|---------------------------------|---------------------------------|----------------------------|
| CPU (32 bit RISC architecture) | ARM2 | ARM2 | ARM2 | ARM3 |
| Main memory (Dynamic RAM) | 1Mbyte | 2Mbytes | 4Mbytes | 4Mbytes |
| Expandable to | 4Mbytes* | 4Mbytes* | 8Mbytes* | 16Mbytes |
| Embedded Cache (4Kbytes) | | | | yes |
| ROM | 512Kbytes | 512Kbytes | 512Kbytes | 512Kbytes |
| Floating point Co-processor | Expansion card option (WE32206) | Expansion card option (WE32206) | Expansion card option (WE32206) | New ARM-FPA available 1991 |
| Internal hard disc (formatted, 1:1 interleave) | - | 20Mbytes | 47Mbytes | 100Mbytes |
| Floppy disc (formatted) | 720Kbytes | 720Kbytes | 720Kbytes | 720Kbytes |
| Keyboard (103 'enhanced PC' layout) | yes | yes | yes | yes |
| Mouse (3-button) | yes | yes | yes | yes |
| Serial and parallel (Centronics 8-bit compatible) | standard | standard | standard | standard |
| ST506 controller | standard | standard | standard | optional |
| SCSI controller | optional | optional | optional | standard |
| 3.5mm jack for stereo sound | yes | yes | yes | yes |
| Free expansion slots | 4 | 4 | 4 | 3 |

Display support†

| | | | | |
|--|-----|-----|-----|-----|
| Analogue RGB (640×256) up to 256 colours | yes | yes | yes | yes |
| Multi-scan (640×512) up to 256 colours | yes | yes | yes | yes |
| VGA (640×480), with 16 colours | | | | yes |
| VGA (640×480), with 256 colours | | | | yes |
| SVGA (800×600), with 16 colours | | | | yes |
| High-resolution (1152×900) monochrome | yes | yes | yes | yes |

SOFTWARE

All Archimedes machines are supplied with the following software:

Stored in ROM:

- RISC Operating System (RISC OS)
- Desktop manager and pointer system
- Advanced disc filing system (ADFS)
- Advanced network filing system (ANFS)
- BBC Basic V
- Character sets: ISO 8859, Latin 1-4, Greek
- Font manager
- Interactive Help system

Installed on the internal hard disc:

- Draw, Edit and Paint applications
- Configure, Fonts, Help
- Printer drivers for Dot matrix, Postscripts, Inkjet and Laser Jet
- 6502 Emulator, Alarm clock, Calculator, Magnifier
- Electronic mail utilities
- BASIC editor

†High-resolution monochrome monitors and a range of multi-scan and VGA/SVGA (Archimedes 540 only) are available from third party suppliers.

*Acorn Dealer or third party upgrade options

OPTIONS

Acorn expansion options include:

- Ethernet expansion card
- Econet module (internal)
- I/O expansion card
- MIDI expansion card
- ROM expansion card
- Additional SCSI expansion card
- Floating point accelerator (available in 1991)

DOCUMENTATION

- Installation Guide, RISC OS User Guide, BBC BASIC Guide.
- Optional Programmer's Reference Manual

THIRD PARTY EXPANSION OPTIONS

Many other options, such as the IEEE 488 interface, video digitisers, sound samplers and external floppy and hard disc units, are available from third party suppliers.

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All benchmarks were performed by Acorn Computers Ltd at Cambridge.

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For further information please contact:

Acorn Computers Limited
Fulbourn Road, Cherry Hinton
Cambridge CB1 4JN, England
Telephone (0223) 245200
Telex 817875 ACORN G
Fax (0223) 210685
Viewdata (0223) 243842

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