Acorn Computer Products

June 1991

Archimedes 540
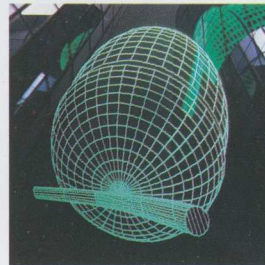

BBC A3000

Archimedes 400/1 Series

Master 128

The Learning Curve
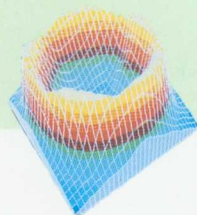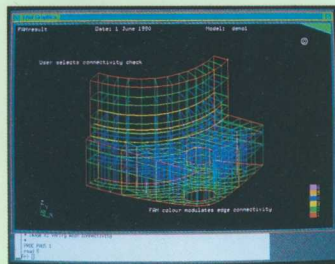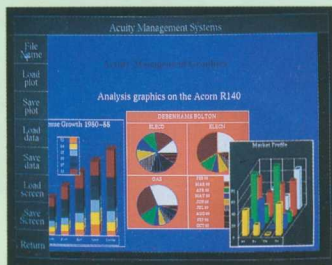

R140

Connectivity

R200 Series

Acorn

The R200 series of workstations builds on the success of the R140 personal workstation (with which there is full binary compatibility). In addition, the latest version of Acorn's UNIX (RISC iX) is X/Open XPG3 BASE compliant.

■ Acorn's R200 series and R140 together provide a range of products from low cost discless workstations through to powerful workstations and fileserver configurations. From a single workstation to a complete UNIX network, Acorn systems develop with your needs.

- ■ **R140 Workstation**
- ■ **R140 Base System**
- ■ **R260 Workstation**
- ■ **R225 Discless Workstation**

x/Open
BASE XPG3 X

SOLUTIONS

■ Graphics

X Window System (version 11, release 4) software provides windowing and graphics facilities and windowed terminal emulation. A toolkit derived from OSF Motif is provided together with the *mwm* window manager. GKS and UNIRAS libraries are available under RISC *iX* and the built-in monitor circuitry supports both VGA and Super VGA colour, as well as high resolution monochrome monitors (1152 x 900).

■ Imaging

The R200 series with Super VGA provides an entry into the world of image processing. Specialist software such as TCL image is available.

■ Artificial Intelligence

An R200 series workstation with expanded memory is the ideal platform for memory intensive AI applications.

Delphi Common LISP and Edinburgh Prolog are available for the R140 and R200 series.

■ Data visualisation

Powerful solutions such as UNIRAS and Acuity can turn complex data into a visual representation that is meaningful to others, changing numerical, financial and statistical data into charts, graphs, maps and 3D models.

■ Databases

Some of the best known UNIX database software, such as Informix, Dataflex and Seachange, is available for RISC *iX*.

■ Office automation

Office environments looking to use integrated packages for electronic mail, text retrieval, spreadsheets and business graphics will find the R260 an ideal platform.

Each machine in the range is based around the Acorn RISC Operating System (RISC OS) which gives you the most straightforward way of controlling computer tasks. Directing your Archimedes system with the windows, icon, mouse and pointer interface is easy to learn and very productive.

▌ Archimedes 540

No matter how demanding your applications are for memory and speed the Archimedes 540 will give you the professional edge. The combination of large RAM with the excellent video display capabilities makes the Archimedes 540 the ideal machine for desktop publishing, complex spreadsheets, CAD and 3D modelling, as well as image analysis and multimedia training. Even the most demanding applications can be run in a multi-tasking environment. The new central processor (ARM3) operates faster than most top of the range PCs.
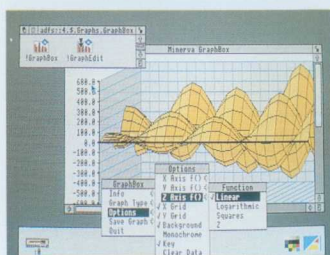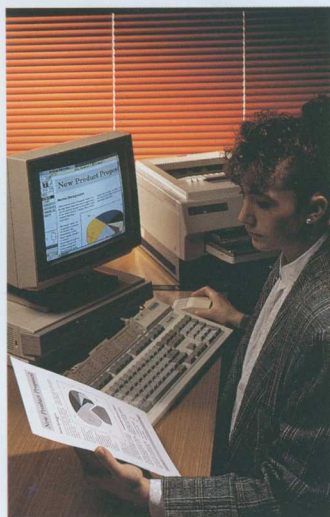
▌ Archimedes 400/1 series

The Archimedes 400/1 series of workstations offers a range of specifications with the advantage of easily fitted upgrade options. As a result, you can select the Archimedes model best suited for your immediate needs and budget, and upgrade if and when required.

▌ Using the large selection of software available, the Archimedes system performs equally well in business, professional, educational, medical, scientific and research environments. The system is also especially useful to those who develop their own software. As well as the fast ROM-based BASIC interpreter supplied as standard, compilers such as ISO Pascal and ANSI C and other tools for developers are available.

▌ The Archimedes range is also ideal for many specialist applications in education, training, healthcare and many other areas.

▌ Archimedes 410/1
▌ Archimedes 420/1
▌ Archimedes 440/1
▌ Archimedes 540
▌ Archimedes Learning Curve

SOFTWARE

The following software packages are produced by Acorn and are available for the Archimedes, BBC A3000, R140 and R200 computers. For details of these and the wide range of titles available from independent software companies (including over 1000 packages described in the Acorn Education directory), please ask your local supplier.

▌ Acorn Desktop Publisher

Use Acorn Desktop Publisher to create any printed material you choose, and make it look completely professional. Newsletters, notices, price lists, posters, course notes, leaflets, programmes, manuals – the list is as long as your imagination.

▌ PC Emulator

The PC emulator software creates an environment that enables the Archimedes system to behave like a PC compatible computer – an obvious benefit in business applications. The speed of the RISC processor achieves this without the need for additional expensive or complex hardware or software. The PC Emulator comes complete with DOS software.

▌ 1st Word Plus (Release 2)

This word-processing package features windows which allow editing and copying of up to four different documents at the same time; a 70,000 word spelling checker; an impressive choice of typestyles; graphics integration and mail merge.

▌ ANSI C (release 3)
▌ FORTRAN 77 (release 2)
▌ ISO-Pascal (release 2)
▌ ASSEMBLER
▌ Software Developers' Toolbox
▌ TWIN

LEADING APPLICATIONS

▌ **Word Processing**   ▌ **Spreadsheets**
▌ **Art and graphics**   ▌ **Databases**
▌ **Desktop publishing**   ▌ **Multimedia**

ARCHIMEDES LEARNING CURVE

The Archimedes Learning Curve package includes a range of specially selected software for home and school applications. The Archimedes 420/1 combines an integral hard disc and 2 Mbytes RAM as standard. This capacity allows you to get the best from the multi-tasking operating system, ensuring that all programs are easily to hand, without changing discs, and providing fast loading at the click of the mouse.

▌ Whether your needs are business, professional, educational or entertainment the Archimedes Learning Curve allows you full access to a vast range of DOS and Acorn software. The complete package comprises:

▌ Archimedes 420/1
▌ Applications suite on hard disc
▌ Acorn Desktop Publisher
▌ 1st Word Plus
▌ Genesis
▌ PC Emulator and DOS software
▌ Informative video
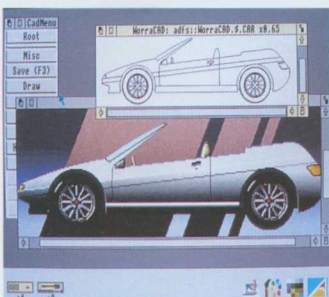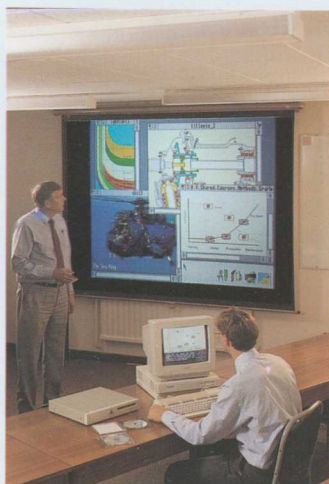### ▌ Guide to the National Curriculum

MEETING INDUSTRY STANDARDS

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

▌ The SCSI interface (standard on the A540 and R260) supports direct access to up to seven peripherals such as large capacity disc drives, tape streamers, CD ROMs, optical drives, DAT drives and scanners.

OPERATING SYSTEM OPTIONS

Acorn's UNIX operating system, RISC *iX*, is available as an upgrade for users who need to link to other 'Open Systems' in the future. Included are the X Window System (version 11, release 4), X.desktop, Motif, TCP/IP, NFS, ONC, ANSI C, FORTRAN 77 and ISO Pascal. Low cost software is also available to turn your Archimedes computer into an X terminal.

▌ The optional PC Emulator software, complete with MS DOS, enables an extensive range of business applications to be used.

SPECIFICATIONS

All Archimedes models feature a three-button mouse, a 103 key 'enhanced PC' style keyboard, and both serial and parallel interface ports for connection to printers, modems and other peripheral devices.

▌ **Archimedes 540**

The Archimedes 540 computer is the flagship of the Archimedes range with 13.5 MIPS performance, a 120Mbyte hard disc and 4 Mbytes of RAM (expandable to 16Mbytes).

▌ **Archimedes 410/1**

The Archimedes 410/1 has a full 1 Mbyte of RAM with RISC OS held in 0.5Mbyte of ROM making more RAM available for applications and data.

▌ **Archimedes 420/1**

The Archimedes 420/1 computer combines all the features of the 410/1 model but with 2Mbytes of RAM and an internal 20Mbyte hard disc.

▌ **Archimedes 440/1**

The Archimedes 440/1 computer model leads the 400/1 series and features a 50Mbyte hard disc and 4 Mbytes of RAM.

EXPANSION

With the huge range of additional cards and peripherals available, you can customise your Archimedes computer to meet your specific requirements. In addition to the plug-in RAM option, expansion cards are available to configure your ideal system.

SPECIALIST APPLICATIONS

In healthcare, image analysis is speeding up the monitoring of spinal deformities and improving the chance 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 benefits from the connectivity of the Archimedes system, as huge amounts of data need to be transferred onto mini and mainframe computers.

▌ Archimedes computers are also redefining expectations of multimedia training, providing the ideal environment for the development of cost-effective computer-based training and desktop simulation.
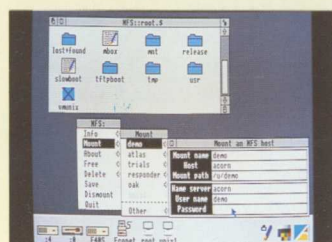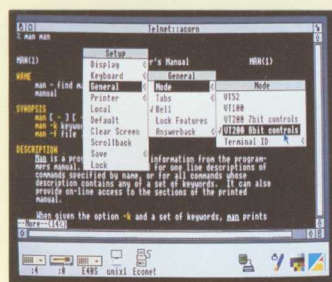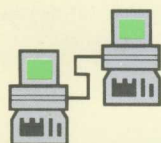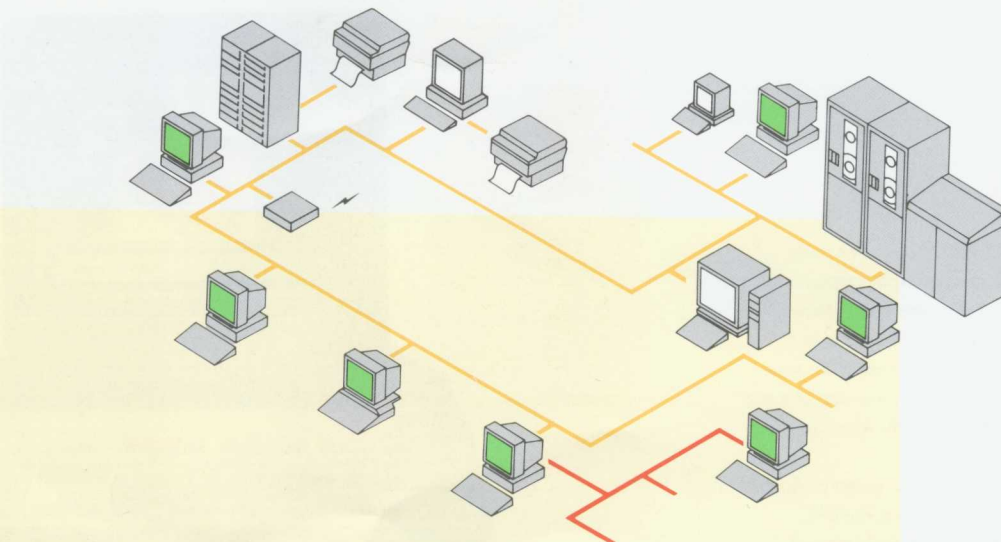
COST EFFECTIVE DATA COMMUNICATIONS

The ability for computer installations to communicate with one another, both on local and more distant levels, is becoming increasingly important – not just for large international organisations but for small work groups which need to share information with one another.

Acorn provides a range of options which can be used to create self contained, low cost networks or expanded to provide industry standard products such as Ethernet. Acorn's proprietary network, Econet, provides users with a cost effective means of communicating with one another using electronic mail and allows access to information stored centrally. Industry standard Ethernet allows users to communicate with a wider range of computers and connect to wide area networks.

- **Archimedes Econet module**
- **Econet Bridge**
- **TCP/IP Protocol Suite**
- **Level 4 Fileserver**
- **Ethernet expansion card**
- **Broadcast loader**

Education

Whether the need is for small clusters or classrooms of computers, Acorn provides effective solutions with the Econet network or both Econet and Ethernet for campus-wide networks.

Laboratories

Network users can access the results of a range of different experiments and incorporate them into their own work. The network systems can also be used as the basis for highly reliable and cost effective process control systems.

Manufacturing

By using computers close to the manufacturing process, it is possible to gather essential management information which, using an extended network linked to separate departments, helps to increase business efficiency. Networks not only speed up the information gathering process, they also help to promote communication between different departments and sites.

Corporate organisations

Acorn networks can also provide an extremely cost-effective solution for the large corporate which has, or needs, an industry standard infrastructure but, for reasons of economy, prefers to use Acorn equipment in selected departments. Thus a number of departments can each have their own Econet network linked to the corporate Ethernet systems. Econet network users can share information within the department and Ethernet users can have access to it.

Training centres

Where computers are used to train people it makes sense to make the computer equipment as easy to use as possible. Using networks, individual trainees are able to concentrate on the educational content of the program rather than on how to use the computer equipment.

Business

One thing all offices share is that the people working in them all rely on information collected or created by other people in the business. Marketing departments need information from sales, production, distribution and finance departments; order processing departments need information from sales and distribution departments; and finance departments need information from all parts of the company. By joining small group networks any department can gain access to the information it needs to conduct its business.
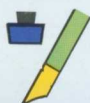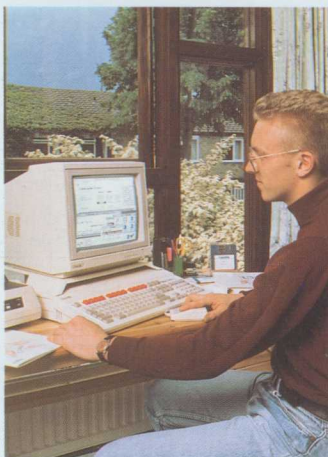
BBC A3000

The BBC A3000 is an immensely adaptable and powerful computer with a 3.5″ floppy disc drive and 1Mbyte of RAM as standard. It matches and exceeds the power of some of the most widely used business computers at a cost that puts it firmly in the home computer price range.

▌ Designed to use the power of Acorn's 32-bit RISC processor, the BBC A3000 shares many sophisticated features with the Archimedes 400 series such as a 103 'enhanced PC' keyboard, a 3 button mouse, windows and multi-tasking. The BBC A3000 is versatile and easy to use. It comes complete with printing, drawing and text editing applications, so there is immediate access to a useful and stimulating environment. The mouse and pointer system makes it easy to create diagrams and illustrations and a wide variation of tone and shading can be achieved. Try using your BBC A3000 for spreadsheet applications or to build up a database. Develop from word processing to desktop publishing or explore the fascinating world of computer aided design. You can even compose music on your BBC A3000! With the BBC A3000, the emphasis is on practicality, education and fun.

▌ The BBC A3000 and Archimedes computers are supplied with an application suite of software including:

▌ **Paint** – a painting program with airbrush, flood-fill and paintbrush capabilities

▌ **Edit** – a versatile text editor that enables you to create text and program files

▌ **Draw** – a powerful object-based drawing package for diagrams, technical drawings or artwork

▌ **Maestro** – a music creation and editing program with full playback facilities

SPECIAL NEEDS

The BBC A3000 Special Access computer has been packaged specifically for users with special needs. It comes with factory-fitted serial upgrade and user/analogue expansion card to enable the connection of alternative input devices, such as the Concept keyboard. A disc of utilities facilitating access to users with visual impairment and motor problems is also supplied together with an overview booklet and handbook.

THE LEARNING CURVE

The Learning Curve has been thoughtfully designed and specifically packaged to serve the requirements of family computing in the 1990s. In schools, the National Curriculum will take effect during the '90s and recommends that core subjects be taught with the use of computing technology. The BBC micro is the standard for educational computing, used in over 85% of British schools. The latest model, the BBC A3000, is the powerful heart of the Learning Curve – a package that extends learning from school into the home with a highly creative range of software and support materials.

▌ The BBC A3000 Learning Curve package contains:

▌ 32-bit BBC A3000 micro

▌ Application suite of software including Paint, Draw, Edit, a music program, games and a range of utilities

▌ 1st Word Plus – a fully functional word-processing package

▌ Genesis – a suite of applications combining information with user creativity and integrating animation, text, graphics and music

▌ PC Emulator and DOS software

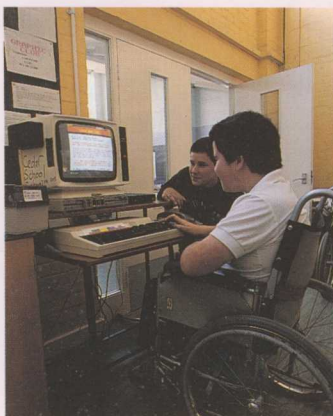▌ Informative video cassette (VHS), welcome guide, user manual and a guide to the National Curriculum

This versatile, reliable machine is a development of the highly successful BBC Model B microcomputer, which is in widespread use in schools, homes and scientific establishments both in the UK and internationally.

▌ The Master 128 can be used for tasks such as word processing, budgeting, planning, estimating, or used with some of the vast range of available add-ons, peripherals and software for specialist applications. The Master 128 can function as a low cost terminal to Acorn's multi-user UNIX platforms, the R140 and R260.

OPTIONS
▌ **Master Turbo module**
▌ **Master Econet module**
▌ **Optional system ROM**

SPECIAL NEEDS
The BBC Master 128 continues to be the most widely used machine in special needs computing. Due to its success over the last five years, a great number of peripherals have been developed to support it. These include alternative keyboards (both expanded and mini); keyguards and input devices (including touchscreens); keyboard emulators; various switches; tracker balls and a variety of specialist software.

▌ Master 128-based systems are being used for a wide range of special needs applications from environment control to communication, and from therapy to rehabilitation. The system is used for work, leisure, education and training by people with physical disabilities and by their carers, teachers, therapists and trainers.

SOFTWARE
▌ **View**
▌ **ViewStore**
▌ **ViewSheet**
▌ **Printer Driver Generator**
▌ **ViewIndex**
▌ **ViewPlot**
▌ **OverView**
▌ **Forth**
▌ **LISP**
▌ **MicroProlog**
▌ **Comal**
▌ **6502 Development System**
▌ **ISO Pascal SAG**
▌ **C**
▌ **Microtext Plus**

EXPANSION OPTIONS

A540, A400/1, BBC A3000, R260 and R140

▌ Econet Module

The Econet module enables Acorn computers to use Econet facilities. The module requires no soldering or complicated connection methods and is easy to install.

A400/1 and R140

▌ Floating point co-processor card

This single width card enhances the speed and arithmetic capability of the host computer. It contains an IEEE 754 compatible WE 32206 co-processor chip.

A540, A400/1, R260 and R140

▌ SCSI expansion card

This single width expansion card (standard in the R260 and A540) provides the industry standard SCSI interface for use with all Archimedes computers. BBC A3000 users will require an optional housing for the card. The SCSI bus can potentially support up to seven devices in daisy chain fashion (maximum of four hard discs).

▌ Ethernet card

This single width card is standard on the R260 and R225. It provides either 10Base2 Cheapernet (thin Ethernet) and 10Base5 (AUI or thick Ethernet). On Archimedes products the card should be used in conjunction with the TCP/IP protocol suite.

▌ MIDI expansion card

MIDI is the acronym for Musical Instrument Digital Interface. By installing the MIDI interface in your Archimedes and connecting a music keyboard, you can use the computer as a musical instrument. The sound can be made by the speaker on the computer, or you can plug in headphones or your hi-fi system. The Archimedes system can also be used to extend the capabilities of instruments with a MIDI interface.

▌ I/O expansion card

The I/O expansion card allows various existing 6502 BBC peripherals to be connected to Archimedes computers. The Input/Output interfaces provided are the 1MHz bus, the user port and analogue port.

▌ ROM/RAM expansion card

The ROM expansion card provides a ROM filing system for use on the Archimedes range. It has five vacant sockets into which 16Kbyte, 32Kbyte, 64Kbyte ROMs/EPROMs or 128Kbyte JEDEC EPROMs may be plugged in.

BBC A3000 only

▌ Serial port upgrade

This upgrade provides the components required to add an RS232 serial port to the BBC A3000. An RS232 serial port is an industry standard interface which gives access to a wide range of peripherals, such as printers and modems.

▌ User port/MIDI expansion card

The BBC A3000 User Port MIDI Module (UPM) provides both User Port and MIDI IN, OUT and THRU connections on a small hardware module that fits inside the BBC A3000. The MIDI interface implements music data protocols in line with the international MIDI association specification.

▌ Memory upgrades and peripheral devices

▌ Memory upgrade to 2Mbytes
▌ Memory upgrade to 4Mbytes (third party)
▌ Monitor stand
▌ External hard disc (third party)
▌ Second floppy disc drive (third party)

TCP/IP PROTOCOL SUITE

The TCP/IP protocol suite provides a communications environment that ensures the reliable transmission of data across an Econet or Ethernet network. Running in the RISC OS environment, the TCP/IP protocol suite is very easy to use and has the following major features:

▌ High connectivity within networks consisting of many different host computers and terminal devices
▌ NFS filer gives access to files on UNIX computers
▌ Straightforward file transfer by use of the RISC OS desktop on the workstation
▌ Terminal access with a full window-based VT220 emulation running under the RISC OS desktop
▌ An updated version of MailMan allows the transmission and reception of electronic mail over NFS

THIRD PARTY OPTIONS

A wide range of third party applications is available from high speed sound sampling to STE bus and IEEE488.

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