# ATOMWIDE


# *Products and Services Winter 1997-8*

# General Information

## Contact details

Atomwide Limited is based at:

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*Email:* sales@atomwide.co.uk
WWW: http://www.atomwide.co.uk/

## Ordering

- Atomwide is pleased to accept orders by telephone, fax or email. Payment is possible by cash, cheque to 'Atomwide Ltd.', VISA or MasterCard credit/debit card, Eurocheque, or direct bank transfer.

- All quoted prices exclude VAT @ 17½% and carriage.

- Goods will be despatched, subject to availability, within 48 hours of receiving an order. Royal Mail recorded delivery is used for small items, while next day courier delivery, at a cost of £10, is applicable for heavier or more valuable items.

## Support

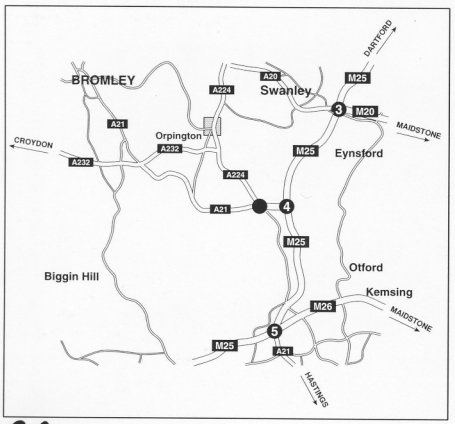
- Atomwide offers free, unlimited technical support on all of its hardware and software products. This is available by email to support@atomwide.co.uk, post, fax, or telephone between 2pm and 4pm.

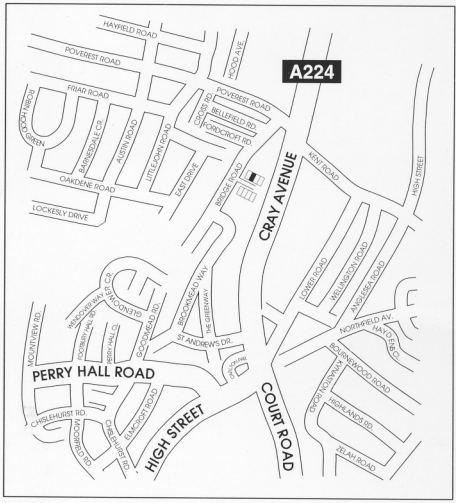
- All hardware supplied by Atomwide is covered by a 1 year return-to-base warranty.

*E&OE* *Revision 1, October 1997*



# How to find Atomwide



# Company Background

Atomwide Limited began life over ten years ago as an Acorn Computer dealer and developer. One of the company's first products was an Ethernet interface, and the success of this has led to a complete range of highly regarded ANT Ethernet cards for RISC OS computers, used all around the world and by Acorn themselves.

In addition, Atomwide has been responsible for a number of other widely used Acorn-based products including memory upgrades, RiscPC backplanes, and High Speed Serial Cards.

## Networking

Over the last few years, Atomwide has grown sufficiently to undertake the design and installation of complete network solutions for schools and businesses around the country. With the release of software products such as Microsoft® Windows NT™ and Acorn OmniClient®, complemented by our own applications such as NTFiler and NTUsers, Atomwide has been able to provide customers with true multi-platform networks, on which Acorn, PC-compatible and Apple Mac systems can co-exist and share resources.

## Partnerships

In addition, Atomwide has been appointed an Acorn Centre of Technology, to acknowledge its technical expertise and friendly, quality support (demonstrated by an Acorn User magazine 'Best Dealer' award), an AST Associate Reseller and Server Solutions Partner, plus a Netscape AffiliatePlus Partner.

During 1996, Atomwide formed a division called Zero One UK, which operates as a distributor for the professional networking hardware of the Zero One Technology Corporation of Taiwan. Founded in 1980, Zero One is a leading designer and manufacturer of network components, and this trading partnership enables Atomwide to offer quality network products at very affordable prices.

## Xemplar Education

Atomwide has been an Agent for Xemplar Education since it was formed, reflecting our commitment to supplying schools with the best possible I.T. solutions. This relationship has recently led to Atomwide helping with strategic planning and training in order to set up a nationwide group of skilled Xemplar Network Agents.

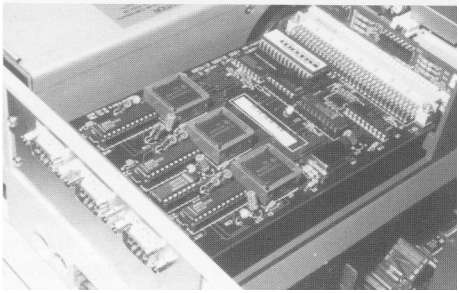
## The Complete Solution

Atomwide now has an enviable reputation for fulfilling and supporting the needs of all kinds of customer, from non-technical users wanting help and upgrades, through advanced users looking for highly specified computer systems, to establishments wanting a top quality, expandable and reliable computer network.

By approaching the requirements of each customer individually, and drawing on the wide ranging skills of a close-knit team of experienced staff, we are pleased to be able to say that we regularly receive new business

thanks to recommendations by previous satisfied customers.

# High Speed Serial Cards



*Based on the original design by The Serial Port, Atomwide's High Speed Serial Card enables users of most Acorn Archimedes computers to take full advantage of modern, fast modems. Furthermore, any Acorn computer user with several serial devices can keep them all simultaneously connected, so removing the need to constantly swap cables or invest in a cumbersome manual switch box.*

The extra serial ports provided by the high speed cards are accessible from all applications that support serial block drivers, including ARCterm7, ANT's Internet Suite, ArcBBS, ArcFax, HearSay, Termite and Voyager.

Applications such as !PocketFS, which do not support block drivers, can continue to be used through the computer's internal serial port.

In addition, a driver is supplied to make the serial card's ports accessible from a PC card.

High speed serial cards are available with one, two or three ports fitted. Each of these takes the shape of a 9-pin "D"-type plug, and is capable of running at up to 460,800 bits per second. Each port employs a FIFO buffer to reduce loading on the computer's processor, and so improve communications reliability.

The serial cards are standard single-width podules, and so can be fitted to any Acorn computer except the A3010, A3020 and A4000. The cards are fully compatible with Atomwide six- and eight-slot RiscPC backplanes.

A single port card costs £79, with dual and triple variants available for £89 and £99 respectively. It is possible to have single or dual port cards upgraded with additional ports at a later date, for a cost of £30 per port.

# The Serial Port's ARCterm7

*Ideal for bulletin board access, The Serial Port's ARCterm7 is a feature-packed communications package which supports a wide range of terminal emulations, including TTY, VT52, VT102, PC-ANSI, Minitel, Viewdata, Avatar, Campus 2000 and BBC mode 7.*

Many makes of modem, such as Hayes, US Robotics and Pace are specifically supported by ARCterm7, while most others will function with generic drivers. Connecting cables wired for either Acorn or PC serial ports can be used.

When transferring files, ARCterm7 can adopt protocols including Xmodem, Ymodem, Zmodem, SEAlink, Kermit, CET and ASCII.

General functionality includes a one hundred phone number memory, call costing, numerous keyboard short-cuts including user-defined macros, and the ability to save sessions or screenshots to disk.

For advanced users, ARCterm7 has a scripting language to allow the automatic execution of commands and a host mode so that other users can dial in to your computer, then send and retrieve files. In addition, debugging display modes can show a hex dump or control codes.

The latest version is fully compatible with all serial port-equipped Acorn computers. There is also support, of course, for original and new high speed serial cards. 2Mb of memory is recommended for running ARCterm7, although it is possible to cope with only 1Mb.

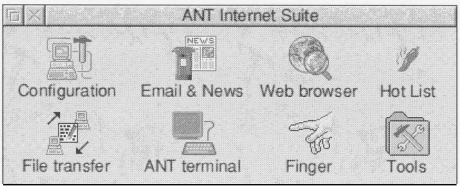
ARCterm7 costs £49. Serial modem cables (9-pin " D"-type socket to 25-pin "D"-type plug) are available for £7.50 each; remember to specify your machine's model when ordering.

Upgrades to the latest version of ARCterm7 cost £5, although certain bug fix upgrades are available free of charge - call for details.

# ANT Internet Suite

*The ANT Internet Suite is a powerful, fully integrated collection of software that gives Acorn users access to the vast resources of the Internet. While supporting a wide range of services, from the most basic electronic mail to advanced World Wide Web features such as frames, the ANT Internet Suite remains easy to use, and has been thoroughly tested to be reliable and flexible.*

The Suite supports a wide range of Internet Service Providers (ISPs), and support for more is regularly added, so users can subscribe to the service of their choice. After this has been done, software configuration is simply a case of answering a few questions about the ISP account and the type of modem or local area network connection which is being used.




Once installed, the programs available include:

- Marcel, the electronic mail & news client. This software allows messages to be exchanged with other Internet users, either on a private, one-to-one basis via e-mail, or through the thousands of public discussion forums which make up Usenet news. Marcel also includes support for uucode and MIME attachments, so that users can send files to each other as well as plain text. With additional features like an address book for storing contact details and a versatile folder system for archiving old emails, Marcel offers a complete messaging solution.

- **Fresco®, the World Wide Web Browser.** Probably the most-talked about aspect of the Internet is the Web. Offering millions of inter-linked pages of information covering every subject imaginable, from headline world news to trivia about television shows, it is viewed by many as the ultimate library. Fresco supports an extensive range of HTML v3.2 features, including forms, tables and frames, to ensure that pages are displayed as the author intended. Coupled with highly refined code to display pages on screen as rapidly as possible and automatically correct badly-written HTML, Fresco is surely the most advanced Web browser available for RISC OS - a statement backed up by the fact that Acorn adopted it for use with their range of Network Computers. Additional features such as a 'Hotlist' of favourite sites, the ability to save and print pages, and control over which sites can and cannot be accessed only add to Fresco's leading position.

- FTPclient. Used when downloading files from older sites, or uploading pages to a Web site, FTPclient provides a familiar RISC OS drag-and-drop interface for file transfer.

- ANTterm. This terminal utility provides a means for logging in by Telnet to network servers such as Unix systems, and also accessing services such as France's Minitel.

- Finger, along with other tools like Ping and TraceRoute, enables network connections to be tested and information about certain Internet systems and users to be determined.

Of course, one of the great advantages of a commercial product such as the Internet Suite, compared with public domain alternatives, is that comprehensive support is provided. Help is available to registered users via email, phone, fax and post. Additional resources, including answers to Frequently Asked Questions, are always available from ANT's Internet Web site. Program upgrades are also available from here, in line with ANT's policy of continued investment in software development to support new Internet technologies as they arise.

The ANT Internet Suite can be used on any Acorn computer fitted with RISC OS 3.1 or later, a hard disk, and at least 4Mb of memory. A single user licence for the Suite costs £99.

To complement ANT's other network hardware and software, site licences are also available, at a cost of £399; contact Atomwide for advice about methods of implementing Internet access throughout a school or business network.

# Memory Upgrades for the Archimedes

*Atomwide manufactures its own range of upgrades to expand the memory of older Acorn computers to 4Mb or 8Mb of RAM. Available products are shown in the following table:*

| | 1-2Mb | 1-4Mb | 2-4Mb | 4-8Mb |
|---|---|---|---|---|
| A3000 | ✔ | ✔ | ✔ | ✘ |
| A3010 | ✔ | ✔ | ✔ | ✘ |
| A3020 | N/A | N/A | ✔ | ✘ |
| A4000 | N/A | N/A | ✔ | ✘ |
| A5000 | N/A | N/A | ✔ | ✔ ✣ |
| A310 | ✔ † | ✔ † | ✔ | ✔ |
| A400 series | ✔ | ✔ | ✔ | ✔ |

Entries marked t involve soldering, and so should only be performed by qualified Acorn dealers. The A5000 4-8Mb upgrade, marked +, will involve soldering if the computer's serial number does not include the code ALB32, ALB35, ALB28 or ALB27. In this case, arrangements should be made with Atomwide to have the upgrade fitted. All other upgrades require only a basic screwdriver and pair of small pliers, and so can be completed by users.

All upgrades are constructed using high-quality four-layer printed circuit boards, to ensure maximum reliability. Due to regular changes in the cost of memory, please phone for details of prices.

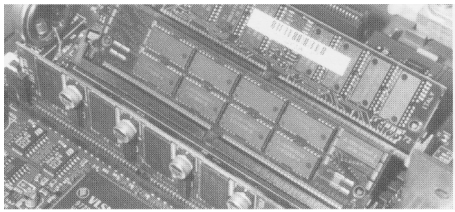
# Memory Upgrades for RiscPC & A7000

**Normal memory (DRAM)**

Memory expansion of Acorn A7000 and RiscPC systems is achieved by fitting small plug-in cards called SIMMs. The RiscPC has two SIMM slots on its motherboard, and one of these is filled at the time of manufacture. By contrast, the A7000 only has one slot, but its standard memory is soldered to the motherboard, so this is normally vacant. Each SIMM can provide between 2Mb and 128Mb of system memory.

Although many models of modern computer ( including PC-compatibles) use similar-looking 72-pin SIMMs, Acorn systems should only be fitted with devices that comply with a number of specific hardware criteria. For example, no SIMM should feature more than sixteen chips, and the access time should be less than 7Ons. Installing out-of-specification SIMMs may not immediately show problems, but can cause system unreliability when other hardware, such as a PC co-processor, is added. Buying SIMMs from an Acorn specialist such as Atomwide, who understands these requirements, is therefore strongly recommended.

For users who have filled all available SIMM slots, Atomwide can also offer part-exchange deals to facilitate upgrading. Please call to find out our latest competitive prices.



**Video memory (VRAM)**

In addition to DRAM SIMM slots, the Acorn RiscPC also has a single slot which can accept a special video memory module. Although a RiscPC can operate without this VRAM, adding it has several advantages:

•It will reduce the computer's processing load, thus improving the overall performance of the system and giving noticeably faster screen redraws.

•It will allow desktop resolutions of up to 1280x1024 pixels (in 256 colours) and the display of over 16 million colours (in modes up to 800x600 pixels).

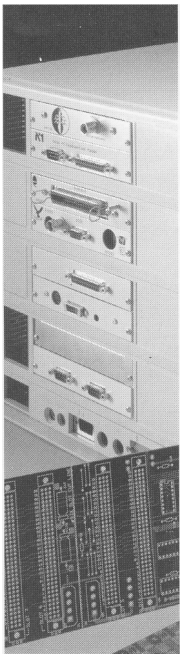
Current models of RiscPC can be fitted with either 1Mb or 2Mb of VRAM. Atomwide can supply both of these types of device, and also offer a trade-in deal for owners of 1Mb modules who wish to upgrade to a 2Mb version.

# RiscPC Case Upgrades

*The Acorn RiscPC case is based on a modular system, so extra 'slices' can be fitted to increase the internal space available for expansion cards and storage devices. Atomwide is able to supply genuine Acorn moulded case slices, as well as longer sets of the bolts which secure the case together - up to a maximum of a huge seven slices!*

In theory, each case slice can house a 3.5" drive, a 5.25" drive, and two expansion podules. However, extra parts may be necessary to achieve this potential. For example, a RiscPC power supply is only rated to supply enough current for up to five drives, so one or more extra power supplies will need to be installed if many drives are to be fitted.

Similarly, a longer backplane will be necessary if more than the standard two or four expansion cards are to be installed. Atomwide manufactures



both six and eight slot backplanes, using high-quality six-layer printed circuit boards and high-speed chips to ensure compliance with Acorn's specifications. Note, however, that some expansion cards may require hardware or firmware upgrades to achieve correct operation in these longer backplanes.

Bare case slices cost £35 each, and are available in 'open' (with power supply and 3.5" drive bay panels removed) or 'closed' (no cut-outs removed) form. A set of four metal case bolts costs £30, while additional power supplies cost £50 each.

Complete kits, including case slices, case bolts, brackets, screws, cables, a power supply, backplane, and step-by-step fitting instructions are also available at the following costs:

1-3 slice = £279 1-4 slice = £309

2-3 slice = £229 2-4 slice = £279

# Archimedes - PC Keyboard Encoder

*The Atomwide Keyboard Encoder allows most modern PC-compatible PS/2 keyboards to be used with pre-RiscPC Acorn computers. This means that users of old worn Archimedes keyboards are no longer restricted to the standard, expensive Acorn replacement, but can instead choose from almost any type in the competitive PC marketplace.*

The keyboard encoder uses PIC microprocessor technology to ensure excellent reliability and minimal size: the device is housed inside a case little bigger than a matchbox.

The reset switch that used to be found on Acorn keyboards is replaced by a small, recessed button on the encoder which can be gently pushed using a object such as a pen-tip or paper-clip. All other keys are correctly mapped between Acorn and PC layouts.

Absolutely no configuration is required to install the encoder. After plugging in three cables, everything is set up and ready to go!

The encoder will come as a great relief to people who regularly use Acorns and PCs and bemoan the different key layouts, as well as users of keyboard switch boxes.

The keyboard encoder plugs into Acorn A300, A400, A540, A4000 and A5000 series machines using a short trailing cable; the box is designed to be mounted on the side of the computer using two supplied self-adhesive pads.

The top socket connects to a standard Acorn mouse, while the lower one accepts almost any IBM PS/2 or Cherry-compatible keyboard. This includes special types, such as those incorporating card swipes and barcode readers.

The Atomwide keyboard encoder costs £39 on its own, or £59 when bundled with a good quality tactile (clicky) PC keyboard. Atomwide also sells replacement three-button mice for Acorn computers, excluding the A7000, at a price of £15.

# Introduction to Networking

*The trend for I.T. facilities in schools and businesses is to connect computers together in a network, and there is no doubt that this can bring many benefits. For a start, files and programs can be stored on a central 'server', so that they can be accessed from every networked computer. Furthermore, peripherals like printers and CD-ROM drives can be shared between a number of users. At a wider level, computers can be connected to the world-wide Internet to exchange messages and data.*

Of course, wiring up an entire school for computer networking and installing all of the necessary hardware can be very expensive. So, before making such a large investment, it is important to decide what facilities you want to provide, and what scale of installation you wish to undertake. Do remember that although fitting the cable infrastructure is one of the biggest costs, it is not worth economising on this only to have to replace it a couple of years later. Similarly, choosing a proprietary standard now may leave you with a technology that quickly becomes obsolete.

At Atomwide, we are committed to the installation of structured Ethernet 10baseT networks using Category 5 UTP cable. Ethernet is an internationally recognised standard (IEEE802.3) that can be used with virtually any computer platform, including Acorns, PCs and Apple Macs. Because of its widespread use, Ethernet technology is fairly cheap and the standard is constantly being developed to improve its speed and functionality. Our use of Category 5 cable means that full advantage can be taken of these advances as they happen, simply by upgrading the hardware at each end.

The 10baseT wiring system employs a system of interconnected 'hubs', which each provide a number of active network ports. One computer is connected to each port by up to 100m of cable. The advantage of this configuration is that if any computer, network interface, or length of cable should fail, then the rest of the network will continue operating normally.

However, in situations where the network needs to span large distances or any kind of external route between buildings, Category 5 wiring is inappropriate. For a start, the cable's outer insulation may perish due to exposure to direct sunlight and the copper wires inside could corrode due to water ingress. More importantly, there is a risk that a lightning strike, through conduction, could damage equipment throughout the network. In these cases, therefore, Atomwide would normally install a fibre-optic link.

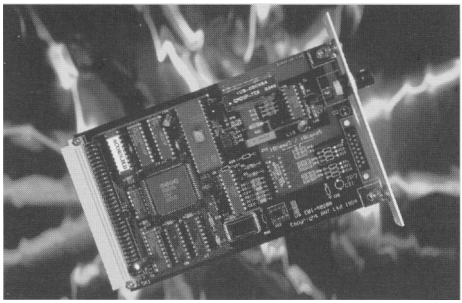
Because of the large number of variables involved in quoting for a network installation, including the quantity and arrangement of points required, types of building construction, and whether any areas have listed status, it is impossible to give a guide price for networking that is any more accurate than £50 to £150 per outlet point. In general, we recommend that establishments invest in a day of on-site consultancy by one of Atomwide's design engineers to survey the site, discuss precise requirements and assess installation options. Following this, Atomwide will write a proposal including a detailed and accurate quotation.

Note that we are happy to provide prospective customers with details of references to indicate the quality of our work; Atomwide has worked with, and continues to work with, many of the key Acorn-based schools in south-east England.

once network cabling and central equipment has been installed, the next task is to make each computer network-ready. This may be as simple as just fitting an Ethernet card and installing appropriate network software, but other upgrades such as extra memory are sometimes required. Either way, Atomwide's experienced engineers will be able to supply, install and configure all of the necessary parts.

Finally, depending on the size of the network and the demands which are likely to be placed on it, it may be worth buying a highly-specified computer that is dedicated to serving files around the network. On an Acorn-only network, this might just be a RiscPC, but on a mixed-platform network, it is more likely to be a PC-compatible system running Microsoft Windows NT. Again, this is an issue on which Atomwide can offer objective advice during the planning of the network.

# Atomwide Ethernet Interfaces



*The Atomwide range of Ethernet interfaces, designed and manufactured by Atomwide but featuring driver software written by ANT, offers models to suit all Acorn RISC* OS *computers except the A4 laptop. With a reputation for high performance while maintaining extremely competitive pricing, Atomwide Ethernet cards are used successfully all around the world.*

As standard, Atomwide Ethernet cards are supplied with an on-board EPROM which contains Acorn AUN Level 4 client software and Access+ peer-to-peer networking software. The built-in DCI4-compatible device driver means the card can be used with all modern disk-based networking software too, including OmniClient and the ANT Internet Suite. To help with network fault-finding, this driver also includes self-test and statistic gathering code.

For specialist applications, it is possible to supply TCP/IP diskless boot EPROMs for use with bootp servers instead.

Each model of Atomwide Ethernet card complies with IEEE802.3 standards, operates at 10Mbits per second (around forty times faster than Acorn Econet), and provides one or two of the following connection types:

• 10base2, also known as 'thin' Ethernet, which uses 50ohm coaxial cable and round, metal BNC connectors.

• 10baseT, which uses twisted pair cable and square, plastic RJ45 connectors.

• 10base5, also known as AUI, which uses thick coaxial cable and 15-pin 'D'-type connectors.

Note that all models of Ethernet card require that the host computer is fitted with RISC OS 3.1 or later, and a minimum of 4Mb of memory is recommended in order to make effective use of Acorn Access+.

### RiscPC/A7000 'combi' card (EtherM)

Offering both 10base2 and 10baseT ports on the same interface, and automatically sensing which is in use, this card plugs into the dedicated network expansion slot on RiscPC and A7000 motherboards and offers good performance at a cost of only £89.

### RiscPC/A7000 standard NIC (EtherB)

Also designed for the RiscPC/A7000 network slot, this card provides either a 10base2 or a 10baseT port. Benchmarked slightly faster than the EtherM card, this model also costs £89.

### A400 series 16-bit podule (Ether3-16)

These standard single-width podules can be used in A300, A400, A5000, A7000 and RiscPC series computers, or on the rear expansion socket of an A3000 with the addition of an external box. Models with either a 10base2 or a 10baseT connection are available for £89, while 'combi' variants with both 10base2 and 10baseT or 10base2 and 10base5 cost £99.

### A3000 8-bit mini-podule (Ether3-8)

This smaller design of card can be used in A3000, A3010, A3020 and A4000 computers. Offering either a 10base2 or 10baseT port, these models also cost only £89.

### 8-bit NIC and MAU (Ether3-8)

Acorn A3020 and A4000 systems also feature a dedicated network slot, into which this 8-bit card can be inserted. A matchbox-sized media adaptor unit (MAU) then plugs into the back of the computer to provide a 10base2 or 10baseT connection. As a result, the normal mini-

podule slot is left vacant for another expansion card. These NIC /MAU models cost £99 each.

# Acorn Access+

*Acorn Access+, based on code originally developed by ANT, offers simple but effective peer-to-peer networking between RISC OS computers. Loading entirely from ROM, Access+ automatically installs itself on the icon bar when a suitable Ethernet card is fitted, so offering a true 'plug and play' solution.*

Once Access+ is running, it is possible to share entire hard disks (or just certain sub-directories) across the network so that other users can read from them and, optionally, write to them. If a network station has a hard disk and a printer, then that printer can also be shared.

CD-ROMs can also be shared using Access+, and memory cacheing facilities are included as standard to boost performance. Optional Access CDShare software can implement disk cacheing too. However, it is important to realise that just a few users accessing a multimedia CD-ROM over normal Ethernet could fill the network's capacity, or 'bandwidth', and make it extremely slow for everyone else.

Finally, Access+ implements password-protected file areas so that access is restricted to authorised users only. It is therefore possible to set up a separate share for each year group.

For Acorn-only networks of up to twenty-five stations, where the ultimate in performance and security is not required, there is no doubt that Access+ is an ideal, easy-to-manage solution.

Access+ is available for almost all brands of Acorn Ethernet card. ANT or Atomwide cards produced before the release of Access+ can be fitted with upgrade ROMs at a cost of £10 each.

# Acorn OmniClient®

*OmniClient is a universal network client application which allows file servers and printers based on Acorn, IBM PC-compatible, Macintosh and Unix systems to be accessed from RISC OS.*

Once loaded, OmniClient offers a single, consistent log-on point for all kinds of network server. Password authentication and its resultant access restrictions are, of course, fully supported to guarantee system security. A separate application supplied with OmniClient v2 even makes it possible to change Windows NT passwords directly from RISC OS clients.

After logging-on, the appropriate network file area is mounted on the icon bar. Clicking on this will open a directory display for the area, allowing disk operations to take place through the familiar RISC OS drag-and-drop filer interface. The details of regularly used mounts (excluding passwords) can be saved for access from OmniClient's menus in future sessions.

OmniClient's modular basis makes it possible to load only those network protocols which are actually needed, so saving valuable client memory. In addition, it means that new types of server can easily be supported in future versions.

At present, versions of OmniClient exist that support connections to:

- Acorn AUN Level 4 servers.
- Acorn Access+ systems.
- LanManager-based systems using either NetBEUI or, with OmniClient v2, TCP /IP. These include Microsoft Windows for Workgroups, Windows 95 and Windows NT; full domain log-ons to Windows NT are possible when using OmniClient v2.
- Unix NFS-based systems.
- AppleTalk systems.

Novell NetWare is not yet supported directly, but can be made accessible by configuring it through a Windows NT gateway server, or running NFS for NetWare services.

OmniClient makes it possible to access network printer resources as well as file areas. What's more, this is achieved simply using Acorn's standard ! Printers application.

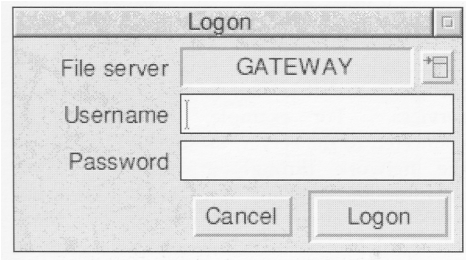
OmniClient can be used on any Acorn RISC OS computer that is fitted with a DCI4-compatible Ethernet interface. A single user licence of v2 costs £75, while a site licence costs £500. Upgrades from v1 to v2 are available for £30 and £200 respectively.

# Atomwide NTFiler

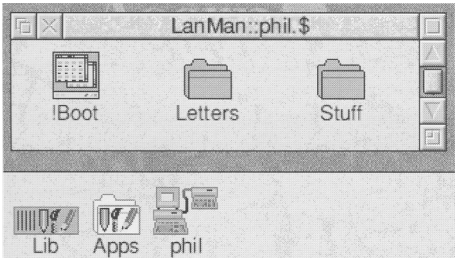
*Atomwide's NTFiler software provides an alternative user interface for OmniClient which greatly simplifies the process of logging on to Windows NT servers for novice network users.*

Although OmniClient is very powerful, its flexibility means that there are many configuration and log-on options, which can be difficult for some network users to understand. Installing NTFiler enables the network administrator to pre-configure most of these variables, and so considerably reduce the amount of training needed by users.

In fact, the log-on procedure will normally become as easy as typing in a username and password. Users will then be connected automatically to their own private file area and up to four pre-set public file areas.

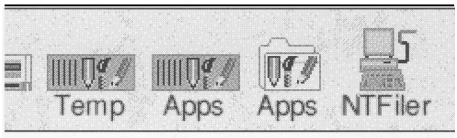



With appropriate configuration by the network administrator, NTFiler can automatically open a directory display of the user's private area, and/or run a file stored there, during log-on.




Of course, since NTFiler uses the core modules of OmniClient, all password authentication and read/write permissions continue to be enforced as usual. Furthermore, printing can still be directed across the network to shared printers.

Uniquely, NTFiler can also offer access to up to four network areas even when no user is logged on so, for example, an applications area could always be available on the icon bar.




As an option, these shared areas can be configured not to appear on the icon bar, which is ideal for hiding resources like !System, !Scrap and !Fonts.

Straight-forward options also make it possible to execute files and applications automatically upon connection. As well as booting !System and other resources, this could be used to load common programs like !Printers or !Style. NTFiler can even be run before the RISC OS desktop, so that modules can be loaded.

While maintaining its ease-of-use, NTFiler can also be used with larger networks, where many servers are present. The network administrator need only enter a list of their names in NTFiler's configuration file, then users can choose from these via a pop-up menu during log-on.

By default, the private area presented to a user upon log-on will be a directory on the server which has been shared with his or her name. However, an NTFiler option enables users with suitable access rights to log-on to alternative areas. This allows, for example, the network administrator to reach any file area, and is simply achieved by toggling the size of the log-on dialogue box then entering an alternative share name in the extra field that is revealed.

Atomwide NTFiler will run on any Acorn computer that is fitted with RISC OS 3.1 or later, at least 4Mb of memory and a DCI4- compliant Ethernet card.

NTFiler is available now, and costs £99 +VAT for a site licence. This price does not include a site licence copy of OmniClient, which is also required (version 1 or 2).

# Microsoft® Windows NT™ Servers


*Software developments like OmniClient now make it possible to install network servers that can be simultaneously accessed by Acorn, Apple and PC-compatible computers. This means that users can not only connect all types of machine to the same Ethernet cabling, but also access the same file and printer resources, so bringing the idea of a platform-independent network another step closer.*

The network servers in question are high-performance PC-compatibles running the Microsoft Windows NT operating system. Although lacking the ease-of-use of Acorn RISC OS, this environment is very reliable and secure, and capable of supporting the demands of dozens of network clients, which could be any of hundreds of registered users. As an added bonus, selected Microsoft suppliers normally offer heavily discounted education prices on Windows NT software and licences.

As with all PCs, the range of available machine specifications is vast. Xemplar Education distribute several models of server, while Atomwide can produce customised systems to meet users' exact needs. These may be based on AST's powerful and competitively-priced Manhattan servers, which are covered by comprehensive three year on-site warranties or, for customers on a particularly tight budget, be assembled to almost any specification from a range of high-quality 'clone' components. In addition, Atomwide is sometimes able to obtain end-of-line clearance stock from AST which can result in particularly good bargains for customers.

At the time of writing, a typical configuration might include a 200MHz Intel Pentium Pro-based motherboard fitted with 32Mb of error-correcting memory, fast local bus SCSI and auto-sensing 10/100 Mbit/s Ethernet interface cards, a CD-ROM drive and 4Gb of SCSI hard disk storage. With a 14" colour monitor, keyboard and mouse, this would currently cost around £2,300. Popular upgrade options include a tape backup drive, more RAM or hard disk space, and a second processor.

It is clearly possible to make PC-compatibles running Microsoft DOS or Windows to log on to an NT server, and this can equally be achieved from a RiscPC x86 card, of course. When using Acorn RISC OS, running a copy of OmniClient or NTFiler will provide users with a standard filer front-end to the NT server, through which files can be loaded and saved in the familiar drag-and-drop way.

An additional benefit of standardising on NT servers is that it is easy to add extra network services. For example, printers can be connected to the server, or attached directly to the network through a Network Printer Adaptor, and then any user can send his or her work to be output on a nearby printer. More advanced functions include electronic mail or World Wide Web access, either just within the site's local network or across the whole Internet.

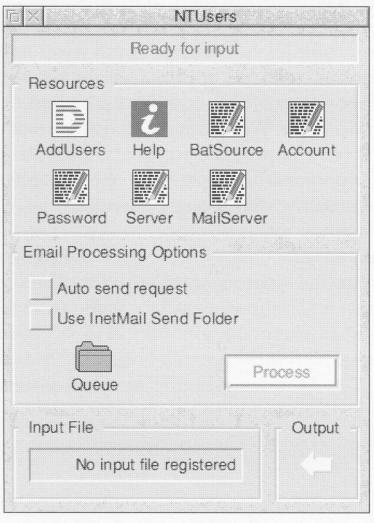
With so many network facilities on offer, Atomwide appreciates that most customers will need detailed advice prior to investing in a system, and thorough training afterwards. These services are always available from Atomwide's team of experienced network engineers, either on-site or at Atomwide's Orpington base, with costs ranging from £250 to £450 per day. Other facilities offered to help busy I. T. staff include pre-configuration of user accounts and directories, and the automation of regular data backups.

Certainly for medium to large network installations, Windows NT-based systems now provide the fastest and most flexible servers. Furthermore, the expandability and scalability of the machines means that the investment, though large, will last for many years to come.

# Atomwide NTUsers

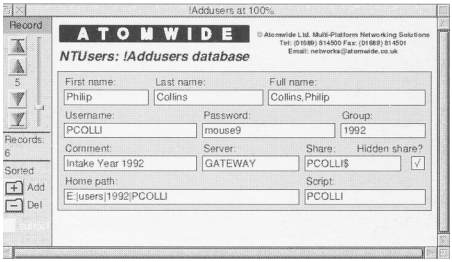
*Atomwide's NTUsers software for Acorn RISC OS provides an easy method for the bulk creation and deletion of users, plus their private file areas and electronic mail accounts, on file servers running Microsoft Windows NT.*

Working with a copy of Iota's DataPower (not included), NTUsers can import a CSV file containing pupils' names and years of entry, then process it to derive usernames, adding a suffix where necessary to avoid duplicates. This CSV file can normally be generated by a school's administration software, such as SIMS.




NTUsers can then load configuration data and template files to generate batch files which, when run on the server, will perform the following tasks for each user:

- Creation of a user account, with membership of a group containing all pupils in the same year of entry.
- Creation of a personal home directory, shared over the network with permissions set so that only the appropriate user and the network administrators can access it.
- Creation of a log-in script which will be executed if the user connects to the server from a Windows client.



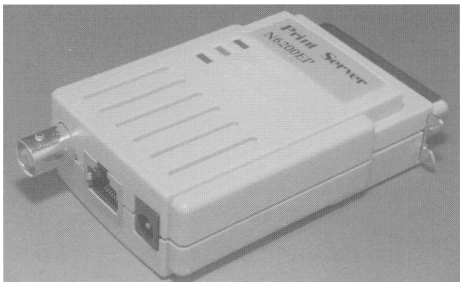

If Netscape Mail Server v2 software is installed on the network, then NTUsers can generate account request forms which will set up a mailbox for each user when submitted by email. When used with the ANT Internet Suite, these forms can be sent to the Mail Server completely automatically.

To complete its functionality, NTUsers also simplifies the process of removing groups of user accounts and adding extra users, so that management chores at the start of each academic year are reduced.

Developed by Atomwide to assist with the configuration of servers that it sells to schools throughout the country, NTUsers is available now, with several different types of licence:

- **School Licence** (£99) - For use with any number of servers on a single site.
- **LEA/IT Support Centre Licence** (£299) - For use by central IT support teams to configure servers owned by schools under their support. Software is not to be left with individuals or schools under any circumstances, as it remains licensed to the purchaser only.
- **Dealer Licence** (£299) - For use by authorised dealers to configure servers supplied or supported by them. Software is not to be left with individuals or schools under any circumstances, as it remains licensed to the dealer only.

# Atomwide Network Printer Adaptors




*The Atomwide Network Printer Adaptor is a small device that connects between a 10base2 or 10baseT Ethernet point and the parallel port of any printer. On a network featuring a Windows NT server, printers attached to this small box can then be used by clients as if they were connected locally. As a result, the need for a dedicated printer server is eliminated, each printer can be located alongside any convenient network socket, and the server handles all print job queueing and spooling.*

Where more than one network printer is required, a variant of the printer server is available which features three parallel ports, and so allows several printers to be connected to a single network point. Alternatively, multiple printer servers can be used on the same network; for example, one could be located in each room or storey of a building.

Configuration of the adaptors is quite straightforward. A few commands must be executed to assign an IP address to each unit and a name to each of its ports; note that although the TCP/IP protocol must be installed on the Windows NT server in order to use a Network Printer Adaptor, it is not necessary to set this up on every client. Of course, each printer must also have a software driver installed and be shared across the network in the usual way.

On PC clients, the network printer will be visible when browsing the network from Windows and can be used once a suitable driver has been installed. On RISC OS clients using OmniClient or NTFiler, the standard Acorn !Printers application is simply configured with an appropriate driver and set to print to a file on the server, whose path references the Windows NT printer share. In this way, it is possible for every client to print to any network printer by using the corresponding driver and filename.

An Atomwide Network Printer Adaptor with one parallel port is available for £199. The variant with three parallel ports costs £299. Note that these devices can also be used on Novell NetWare or Unix-based networks, although Atomwide is unable to offer detailed technical support in these situations.

# Atomwide NPASpooler

As standard, the Network Printer Adaptors described above require some kind of network server to handle the task of queueing and spooling print jobs. This means that users of small peer-to-peer networks cannot take advantage of their convenience and flexibility.

Currently under development, Atomwide's NPASpooler software will make it possible for Acorn Ethernet systems to directly address NPA units. A small companion program to Acorn ! Printers, NPASpooler will establish contact with any specified NPA, then re-direct print jobs to the appropriate IP address and port. This does mean, of course, that the Acorn systems in question must be running the TCP/IP protocol.

Communications with the NPA will allow NPASpooler to determine whether it is in use, and delay printing if necessary.

NPASpooler is expected to be available from the end of 1997, with a site licence costing £99.

# Intranet and Internet Services

*With many schools and businesses looking to provide Internet-type services on their networks, Atomwide has assembled a range of solutions which offer site-wide (Intranet) or world-wide (Internet) electronic mail and Web browsing.*

### World Wide Web

Windows NT v4 includes Internet Information Server, which enables an Intranet Web site to be created. This can then be 'browsed' by the ANT Internet Suite's Fresco on Acorn RISC OS systems, and Netscape Navigator or Microsoft Internet Explorer on PCs and Apple Macs.

In order to access Web pages on the Internet, an account must be set up with an Internet Service Provider; connection to the Internet is normally established via a 64kbps ISDN telephone line and external terminal adaptor.

As long as the Service Provider permits it, installing Microsoft Proxy Server will allow a whole network of computers to access Web pages around the world using the single IP address allocated with the account. The Proxy Server can also cache information, so that recently fetched Web pages are held on the Windows NT server, for rapid access by other users who also wish to see them.

### Electronic mail

Atomwide recommends the use of Netscape Mail Server as a Windows NT email server. This software is freely available to education users, and supports the versatile IMAP4 protocol, which is supported by the ANT Internet Suite's Marcel on Acorn systems, and a variety of packages including the freeware Sun Solstice on PC compatibles.

The great advantage of the IMAP4 system is that messages always remain stored on the server, and so every user can read and write messages equally well at any client station. Furthermore, because messages are only sent to client systems when requested, overall network traffic is minimised.

Electronic mail can operate just within an establishment or, if a link to a Service Provider is available, all around the world.

### Remote Access

A service supplied with Windows NT v4 makes it possible to configure a connected modem or ISDN terminal adaptor to accept incoming calls. Users away from the server can then dial in, log on to the network and access its resources.

# ANT WebTool

*ANT WebTool is an easy-to-use utility which integrates with the ANT Internet Suite and makes it possible to save collections of World Wide Web pages on a network server or local hard disk.*

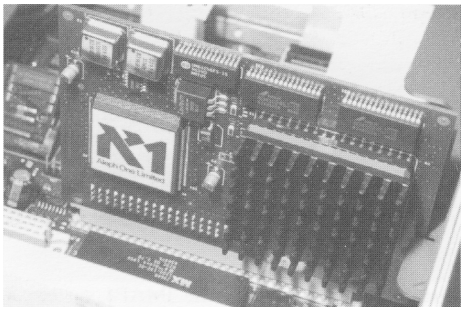
Because each Web page may be constructed from many separate text and graphics files, it used to be difficult to save all of these elements so that they could be viewed again at a later date. WebTool removes this problem by downloading all relevant files and saving them in a suitable directory structure on the chosen disk.

Furthermore, WebTool can download an entire Web site or selection of pages from a site. For example, you might want to fetch all of the pages which make up the technical support section of a software developer's Web site, or all the sections of a report. You can even choose whether or not to save the graphics as well as the text from the pages.

WebTool can be particularly useful on academic networks, since it allows I.T. staff to download a selection of pages to a server, then make this information available to all users. Browsing of these can take place as normal, but without continuing to run up large call charges.

A single user licence for WebTool is available now, and costs £25. Multi-user licences can be obtained as part of an ANT Internet Suite site licence. Please note that copyright implications may need to be considered when using WebTool to store and redistribute certain data.

# Aleph One PC Cards



*Acorn RiscPC users can turn their computers into powerful IBM compatible PCs with the addition of a 5x86 second processor card from Aleph One. Sharing memory, disk and display resources with the host computer, these PC cards give RISC OS users the ability to run most DOS and Windows software at speeds similar to those of a real PC.*

The card simply fits into the second processor slot which is a standard part of all Risc PCs. When setting up the RISC OS support software, an area of the computer's hard disk is allocated for use with the PC card; regular copies of DOS and Windows software can then be installed into this. Up to 32Mb of the RiscPCs memory can be accessed by the PC card, which can operate either in single-tasking mode, or within a window on the RISC OS desktop when using multi-tasking mode.

The current model of PC card is based on a 5x86 processor running at 100MHz, which includes a floating-point unit for improved calculation speed. 512k of external write-back cache memory is provided to boost performance yet further. Linking the PC card to the RiscPC's Open Bus interface is a second-generation Gemini II ASIC, developed by Aleph One and Future Technology Devices International in conjunction with Acorn.

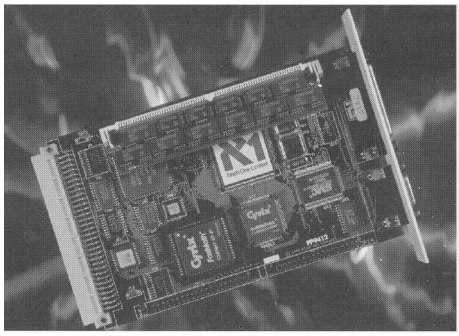
To maximise integration, the PC card support software makes it possible to access the RiscPCs parallel and serial ports, as well as floppy and CD-ROM drives, from the PC environment. As a result, printers, modems and other resources can easily be used. In addition, a dedicated PC format SCSI drive can be addressed as a second hard disk area.

When running Windows 3.1 or Windows 95, custom-written graphics and sound drivers are available to enhance functionality. The graphics driver makes it easy to run Windows in any available resolution and colour depth. Furthermore, it employs the RiscPCs native ARM processor as a powerful graphics accelerator to speed up display operations. The sound driver supports SoundBlaster sample playback, as long as the host RiscPC has 16-bit sound capabilities (early RiscPC models may require a £60 plug-in upgrade).

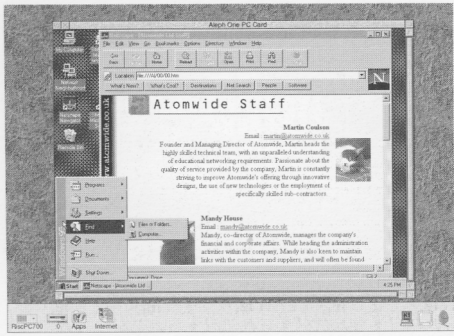
If only the most basic DOS programs need to be used, then it is possible to use a PC card in a RiscPC that has just 4Mb of RAM and 20Mb of free hard disk space. However, running Windows 3.1 effectively will require a system with at least 8Mb of RAM and 100Mb of disk space, and Windows 95 really requires more than 16Mb of RAM and 200Mb of disk space. The presence of video memory ( VRAM) will significantly improve display performance.

The 5x86-100 RiscPC co-processor card costs £300, and includes a copy of !PCPro. Free technical support is available from Aleph One, whose years of experience in combining Acorn and PC technology guarantee an unsurpassed level of after-sales service.

Note that Aleph One also cater for owners of older Archimedes systems, through their range of PC486 podule expansion cards. Although not able to offer the same level of performance as a RiscPC co-processor, these cards continue to bring valuable PC compatibility to many users. While stocks last, these cards are available with prices starting at £200.



# Aleph One PCPro




*Aleph One's !PCPro is an enhanced and updated version of the RISC* OS *support software for the PC x86 second processor cards which are available for Acorn RiscPC computers, and features:*

- Faster overall performance from Windows 3.1 and Windows 95.
- Better support for Windows 95.
- Shared memory drivers, which accelerate data transfer to and from hard disk drives and CD-ROMs.
- StrongARM compatibility.
- VESA support for DOS, which enables a wider selection of DOS-based games to be run using the card.
- Simplified installation of the support software and its drivers.

Aleph One's tests using the Ziff-Davis WINSTONE® 96 (version 1) benchmark show that compared with v1.921 of the old !PCx86 software, !PCPro produces a 37% speed increase on the same 5x86 hardware using Windows 3.1, and a 54% increase using Windows 95, compared with earlier versions of the !PC support software. (The StrongARM figure is compared with the equivalent ARM610 benchmark.)

When running these tests, !PCPro was set to use 8Mb of RAM and an 800 x 600 x 256 colour screen mode allocated 700kb of memory. 128kb of cache memory was fitted to the PC card.

| | Windows 3.1 | | | Windows 95 | | |
|---|---|---|---|---|---|---|
| Processor | v1.92 | PCPro | % up | v1.92 | PCPro | % up |
| DX/2-66 | 9.1 | 11.2 | 23 | | | |
| DX/4-100 | 9.6 | 12.3 | 28 | 7.7 | 11.4 | 48 |
| 5x86-100 | 10.4 | 14.2 | 37 | 8.3 | 12.8 | 54 |
| 5x86 + SA | | | | | 14.1 | 10 |

!PCPro is free to existing registered owners of Aleph One PC cards; customers should simply send in an original floppy disk containing an earlier version of !PC and featuring an Aleph One Software label. For £5, the updated Issue 6 of the User Guide is also available.

Users of Acorn's range of PCx86 cards can purchase !PCPro for £41.70 including a copy of the Acorn PC Exchange utility, which facilitates file transfer between RISC OS and DOS/ Windows. Alternatively, !PCPro can also be bought without PC Exchange for £33.19.

# Aleph One Network Links

*Network Links is a software driver module for use with RiscPC co-processor* or *Aleph One podule PC cards which makes any installed Ethernet card emulate a PC 'NE2000' interface.*

NE2000-compatible devices are supported by the vast majority of PC networking programs, including Novell NetWare client software, Microsoft Windows for Workgroups, and Windows 95. As a result, an Acorn system can become just another PC client on the network! OmniClient is not needed in this situation.

When using Network Links with certain Acorn Ethernet cards, including those in Atomwide's range, it is even possible to access the same physical network interface from RISC OS and the PC card simultaneously, using a special driver facility called 'multiple mode'.

Network Links costs £25 for a single-user copy; site licences are also available, including a version for four to ten users which costs £100, and a version for eleven to twenty users which costs £175.

# Acorn Computer Systems

*As one of Acorn's longest-standing dealerships, with Centre of Technology and Registered Developer status, Atomwide is able to supply and support the full range of Acorn hardware and software products, including the extremely popular range of high performance RiscPC computers.*

### Xemplar Education

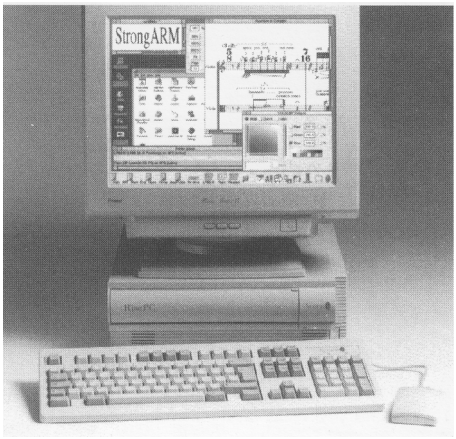
Xemplar was set up in 1996 as a joint venture by Acorn and Apple to promote their education based I. T. solutions, including the systems described here, to schools throughout the U.K. Atomwide is currently the appointed Xemplar Agent for the London Borough of Bexley, and schools in this area who are interested in these solutions should contact us for advice.

### Acorn A7000+

This entry-level system uses the highly-integrated ARM7500FE processor to offer excellent performance at a remarkable price. The A7000+ includes 8Mb of memory, 16-bit sound playback and high-resolution graphics as standard, with a 1.2Gb hard disk and a fast CD-ROM drive available as an option.

The power of this hardware is harnessed by Acorn's easy-to-use, multi-tasking RISC OS 3.71 operating system. With a wide range of compatible software, from word processors and databases to games and educational titles, the

A7000+ is an ideal system for schools and regular home users. A typical model, including a 14" colour monitor, costs around £900.




### Acorn RiscPC

Now featuring the awesome StrongARM processor, the RiscPC offers exceptional speed and expandability for demanding users. Extending the hardware specification of the A7000+, the RiscPC can support up to 256Mb of memory, and a PC co-processor upgrade for running DOS and Windows applications. Also, its innovative modular case means that users should never run out of room for expansion.

The RiscPC is ideally suited to multimedia applications, with optional video memory allowing screen modes including 1280x1024 pixels in 256 colours, or 800x600 pixels in over 16 million colours. Prices, including a 14" colour monitor, start at around £1,200.

### Acorn Network Computer

The Network Computer, or NC, is one of the new breed of 'Internet appliances'. Simply plugging in to a television, telephone line and mains outlet, the NC allows Web browsing to take place from the comfort of an armchair using a hand-held remote control.

Not intended to replace desktop computers, but rather to introduce the Internet to a whole new market, NCs may become as popular as video recorders. With no floppy or hard disk, all software is fetched from the 'net, meaning that hardly any system maintenance is required, and that prices start around only £300.

# Miscellaneous Products & Services

## Printer SCSI Adaptors

These useful devices allow most SCSI hard disks and removable drives of up to 500Mb, plus certain models of CD-ROM drive, to be connected to the printer port of Acorn A3010, A3020, A4000, A5000, A4, A7000 and RiscPC computers. Due to the hardware limitations of some parallel ports, the adaptor only operates at speeds up to 250k/sec.

The Printer SCSI Adaptor is popular with users who have filled all available expansion slots in their computers, and with people who need to transfer large amounts of data between sites. Simple but effective accompanying software automates configuration of the devices so that they appear on the RISC OS icon bar. While stocks last, the adaptor is available for £75.

## HiPoint Mice

Designed for users of the Acorn A4 laptop, the HiPoint mouse is a small trackerball unit which clips on to the side of the computer's case. The device simply plugs into the A4's mouse port, and immediately makes controlling the pointer far easier than manipulating cursor keys or balancing a mouse on an unsteady surface.

The HiPoint mouse features three buttons to cope with the requirements of RISC OS, and is available in left and right-handed versions to suit all users. The price is £49.

## Hard disks & CD-ROM drives

Atomwide can supply hard disk and CD-ROM drives for most models of Acorn computer. Both IDE and SCSI models are normally available; note that users of RISC OS 3.5 and earlier can only use IDE hard disks of up to 500Mb, and Acorn do not recommend the use of IDE drives with capacities over 2Gb, even on RISC OS 3.7 systems.

Because the drive market is changing so fast, we are unable to specify accurate prices here, but quotes are readily available by phone or email, and you can be sure that our close relationships with major distributors will allow us to offer very competitive prices.

## Modems

Atomwide generally sells the US Robotics Sportster Voice external modem, which supports communications standards up to 33,600 bits per second, also known as v34+. Note that we do not plan to sell 56,000 bits per second modems until one of the currently competing standards has been ratified.

The Sportster modem can be used with any Acorn computer, although A3000 owners may need to enable their serial port by fitting an extra chip. With machines prior to the RiscPC and A7000, an Atomwide High Speed Serial Card is recommended, so that full advantage can be taken of the speed of these modems.

At the time of writing, these modems cost £119. A serial cable for use with most Acorn systems is included, although A300 /A400 series owners may need a special Acorn-wired cable, which we can supply for £7.50. Users who wish to make use of this modem's fax and voice mail facilities from RISC OS should purchase David Pilling's ArcFax software, which costs £29.79.

## Training

Whether or not you are investing in a network designed and built by Atomwide, we are always able to offer training courses covering subjects including RISC OS, Acorn Access+ and Windows NT. Drawing on our accumulated experience, we can also give less structured consultancy on almost any aspect of Acorn and PC systems, plus Ethernet networking.

Training or consultancy services for one to three people are available at Atomwide's base in Orpington or at a customer's site, with prices ranging from £250 to £450 per day.

## Tender Documents

As well as constructing network quotations for customers, Atomwide can also write a detailed tender document for schools who wish to

obtain competitive, comparable quotes from a number of companies. Including a site survey, which is required, this service costs £500.

# Who's Who at Atomwide?

## Martin Coulson

Founder and Managing Director, Martin heads the technical team, and has an unparalleled understanding of educational networking requirements.

## Andy Williams

Andy handles most in-house product testing and repair tasks for Atomwide, and is also a leading member of the busy network installation team.

## Mandy House

Mandy is the co-director of Atomwide, and manages the company's financial and corporate affairs.

## Keith Vant

Keith's role centres around configuring PCs and network servers for Atomwide's customers, but he is also an active network installation engineer.

## Paul McKinnon

As Sales & Marketing Manager, Paul is responsible for the Xemplar Agency, plus the promotion of the company at both local and national levels.

## Lynn Day

Handling customer enquiries and orders plus a variety of administrative tasks, Lynn's voice greets most of Atomwide's telephone callers.

## Philip Chapman

Phil is responsible for the day-to-day running of Atomwide's technical support service, as well as site surveys and product literature (like this!).

## Vicky Morten

Vicky runs the day-to-day accounting tasks and is also a 'demon buyer', who always insists on the best deal for Atomwide and its customers.

## Mark Gillman

Mark also provides technical support, and helps to expand the range of services and solutions that Atomwide offers.

## Cleo

With special responsibility for looking after any customers that visit, Cleo is the attention-seeking member of Atomwide's staff.