BEYOND THE B+

With the huge range of add-ons available for the BBC Micro, compatibility has become a real headache. Every extra you buy for your computer might lock you out from a host of others, even if it works with those you already possess.

The ARIES range, designed by experts on the BBC Micro, offers you the solution to your upgrade nightmares. ARIES products are compatible with double-density disc controllers, modems, second processors, ECONET, hard discs, EPROM programmers and, of course, other members of the ARIES family! Several major companies now test all their products with ARIES-B20 to ensure compatibility.

By fitting both ARIES-B32 and the ARIES-B12 ROM/RAM board, you can have a BBC Micro with 80K of RAM and a full 16 sideways ROM/RAM slots, which is considerably better than the B+!

PROFESSIONAL QUALITY
The ARIES range is designed to work with *all* BBC Micros, not just some of them. This means it has a sensible regard for the capacity of the power supply and the natural variations in critical timings between machines. All new ARIES products are subjected to stringent testing in extreme conditions before they are released on the market.

In quality of construction, the ARIES range sets a standard against which others are judged. Custom-made connectors eliminate the damage to the BBC machine caused by inferior products. There are no awkward flying leads, no soldered connections to be made. Units are electronically tested before, during and after manufacture. And all this is backed up by the ARIES 1-year no-quibble guarantee.

This attention to quality at every stage from design through to manufacture has led to ARIES' unrivalled reputation as the 'Rolls-Royce' of the add-ons.

ARIES-B32 Multi-Rôle Expansion System

18 months of intensive research and development have produced a worthy successor to the widely acclaimed ARIES-B20: the revolutionary ARIES-B32. This 'second-generation' expansion board features 32K of RAM and a 16K ROM socket.

Like the BBC B+, ARIES-B32 provides 20K of shadow screen RAM and 12K of sideways RAM. Unlike the B+, ARIES-B32 has simple software commands which allow the user to reconfigure the RAM as 16K of shadow RAM and 16K of sideways RAM, or all 32K as sideways RAM.

CRUSHED BETWEEN AN IRRESISTIBLE FORCE AND AN IMMOVABLE OBJECT?
If your high-resolution screen is squeezing you from one side, and your operating system from the other, isn't it time you tried the ARIES shadow RAM solution? ARIES-B32 banishes forever the conflict between screen graphics and program memory. 'Bad mode' and 'No room' become nightmares of the past when your BBC Micro possesses this unique expansion.

ARIES-B32's shadow RAM gives you *transparent* access to 20K of extra memory, replacing the RAM swallowed up by the high-resolution graphics modes. The extra RAM is switched in completely automatically, meaning that existing software can make use of it *without modification*.

This means that if you're a programmer, you have up to 28K of RAM available for BASIC, LOGO, COMAL, FORTH, LISP and BCPL programs in *any screen mode*. If you're a business user, the extra memory is used by VIEW, VIEWSHEET, WORDWISE and many other applications. And if you're a scientific type, you can get access to a massive 47K of data storage using the Acorn-approved *FX call.

TOO MANY ROMS?
Sideways RAM enables you to load sideways ROM images from disc, allowing you to have a large disc library of sideways ROMs (subject to the authors' permission). This means that you can escape the limit of 16 ROMs, as well as avoiding the problems of compatibility between certain ROMs. You can also develop your own specialist ROM software in sideways RAM.

ARIES-B32's sideways RAM can also be used to extend any operating system buffer (such as the printer buffer) or to load tape programs into a disc system.

SOFTWARE
ARIES-B32's control software implements many new features requested by existing ARIES users. New commands include a comprehensive sideways ROM/RAM management system, simplified direct access to the screen RAM, and the ability to control RAM allocation and to move or swap the contents of any area of memory.

Despite the apparent complexity of ARIES-B32, the control software sets a new standard of user-friendliness, for beginner and expert alike.

NEW COMMAND SUMMARY

*XON & *XOFF
Control allocation of RAM in system. Options allow shadow RAM to be switched in and out without pressing (BREAK) or moving PAGE.

X (command)
Used in shadow mode to execute commands that need direct access to the screen, e.g.:
*X*SAVE PICTURE 3000 8000
saves a graphics screen to disc.

*BUFFER
Allows any buffer (printer, keyboard, serial in, serial out, sound, speech) to be extended to 4, 8, 12 or 16K.

*RLOAD
Loads a file into a specified sideways RAM bank.

*RWRITE
Write-enables the specified bank of sideways RAM on ARIES-B32, or external sideways RAM (e.g. on ARIES-B12). Also write-protects all other sideways RAM.

*RKILL
Disables a specified ROM on <BREAK>; removes a specified ROM image from sideways RAM. ROMs return to their normal state the next time <BREAK> is pressed.

*XSTATUS
Gives reports of the system memory status, including MODE, PAGE and HIMEM; full details of sideways ROMs; information on extended buffers in use.

*XMOVE, *XSWAP
Move or swap the contents of specified areas of the memory map, including sideways ROM/RAM, shadow RAM and screen RAM. Many uses, including switching from graphics to text screens and back.

*OSCLI
Minimal language which allows you to start up your system with no actual language ROM fitted and load the language of your choice from disc.

*XCONFIGURE
Allows a sequence of ARIES-B32 commands to be entered to reconfigure your system without the need to press <BREAK> until the last command.

*XTEST
Full function test of ARIES-B32 and ARIES-B12.

*FX111,0 and *FX111,1
Switch between screen RAM and shadow RAM.

A link on the board enables ARIES-B32 to power up with shadow RAM either 'off' or 'on', for compatibility with the B+ or ARIES-B20 respectively.

FIVE MINUTE FITTING
ARIES-B32 simply plugs into the processor socket on your BBC Micro – no flying leads to connect and no soldering. Provision of the on-board ROM socket means that ARIES-B32's control ROM does not use up one of your existing ROM sockets. Because ARIES-B32 can be removed at any time without risk of damage to your computer, there are no problems with your guarantee.

ARIES-B12 Sideways ROM Expansion

ARIES QUALITY – ARIES INGENUITY
The ARIES-B12 sideways ROM board was designed in response to popular demand for a ROM expansion board which was well-designed and well-made, simple to install, reliable when fully-loaded and compatible with ARIES-B20 and ARIES-B32.

The ARIES solution is not just all of the above, but also extremely versatile – ARIES-B12 may be fitted either externally or internally.

For the business user or educationalist, the compact and secure internal fitting is ideal, with the ROM board tucked neatly inside the lid where it won't cause overheating problems.

The serious software developer and the hobbyist may prefer to mount the board externally, giving instant access to the sockets for experimental purposes. A zero-insertion force socket may be fitted to the board to enhance this mode of operation.

ROM, RAM RELIABILITY
ARIES-B12 provides a total of twelve sideways ROM sockets (the four in the original machine are replaced by the twelve on the board), all fully accessible by the MOS sideways ROM system. In addition, there are two sockets for sideways RAM, giving up to 16K of RAM using two 6264 static RAM chips.

The ARIES-B12 system consists of two parts: a large, detachable 'mother board' which carries the extension ROM sockets, and a small 'base board' on a short ribbon cable, which plugs into the existing sideways ROM sockets. This two-board design eliminates the reliability problems previously associated with ribbon-cable based systems. ARIES-B12s have worked successfully with over a metre of cable!

Although the BBC Micro operating system can support up to sixteen sideways ROMs, ARIES-B12 imposes a limit of thirteen (including the sideways RAM). The other three sideways ROM slots supported are provided by ARIES-B32.

PLUG IN AND GO
ARIES-B12 simply plugs into the sideways ROM sockets on your BBC Micro. A single cable connects it to ARIES-B32 or ARIES-B20, eliminating untidy and unreliable techniques such as leads stuffed down beside chip legs or soldered directly to your machine.

If you haven't got ARIES-B32 or ARIES-B20, a small adaptor unit (ARIES-B12C) is available at nominal cost.

6264 8K×8 static RAM chips for ARIES-B12 are available from Aries Computers: please contact us for the latest price.

Other ARIES products

ARIES-B488
Aries Computers' ARIES-B488 is an interface unit to enable the BBC Microcomputer to control and monitor IEEE-488 bus systems. The IEEE-488 bus (also known as 'GPIB' or 'HP-IB') is the standard method of interconnecting programmable laboratory instruments and control equipment. Using ARIES-B488, up to 15 devices may be connected in a single high-speed data network.

PROSPERO SOFTWARE PASCAL AND FORTRAN COMPILERS FOR THE BBC MICRO WITH ACORN OR TORCH Z80 SECOND PROCESSOR
Aries Computers is the official distributor of both ProPascal and ProFortran for the BBC Microcomputer with Z80 Second Processor (both Acorn and Torch). And Aries Computers has added its own free BBC Micro Support Library to the compilers, giving access to the features and facilities of the BBC Micro's operating system, with particular emphasis on graphics.

How to get ARIES

To cope with the continuing growth of demand, the complete ARIES range has now been made available through selected dealers. Although ARIES products can be fitted by a complete layman in a matter of minutes, a fitting service is offered by approved dealers to any customer unwilling to delve inside the case of his or her BBC Micro.

Naturally, Aries Computers will always be happy to offer support and advice directly to the user when necessary.

ARIES Range Hardware Requirements

ARIES-B32:   BBC Microcomputer Model B; MOS 1.2; hardware plugs into CPU socket.

ARIES-B12:   BBC Microcomputer Model B; MOS 1.2; hardware plugs into all four sideways ROM sockets and connects to ARIES-B32 or ARIES-B20. Adaptor board 'ARIES-B12C' necessary where these are not fitted.

ARIES-B488:   BBC Microcomputer Model B; MOS 1.2; hardware plugs into 1 MHz Bus.

ProPascal,
ProFortran: BBC Microcomputer with either Acorn Z80 Second Processor or Torch Z80 card.

NB: Although the ARIES range is designed for compatibility with other products, we strongly advise you to call to check the feasibility of your proposed combination.

ORDERING INFORMATION
You may order any of the above products direct from Aries Computers at the address below. If you are not completely satisfied with your purchase, we will refund your money in full, provided that you return the goods within 14 days of shipment, undamaged, and in their original packaging. Please allow 21 days for delivery.

The prices below include postage and packing. Please enquire for carriage costs on overseas orders. Educational and dealer discounts are available on all products. Prices and specifications may be subject to change without notice. See our current price list for other products available.

Product	Price (ex. VAT)	Price (inc. VAT)
ARIES-B32	£ 80.00	£ 92.00
ARIES-B12	£ 40.00	£ 46.00
ARIES-B12C	£ 5.00	£ 5.75
ARIES-B488	£235.00	£270.25
ProPascal*	£220.00	£253.00
ProFortran*	£220.00	£253.00

* – Please specify Acorn or Torch format.

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