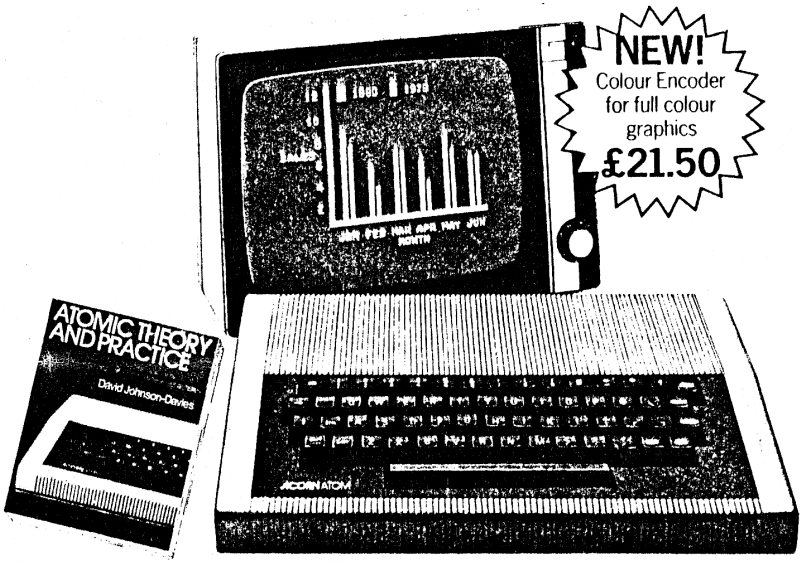
Unique in concept-the personal computer that grows as you wish.



The Acorn Atom

The ATOM is a British-designed personal computer – simple to operate, and in kit form, simple to build. It has all the features found in machines twice the price or more, and yet has one outstanding advantage. It is designed on an expandable basis.

Expandability

What does expandability mean to you? It means that as you grow in confidence and knowledge you can add more power. more facilities without having to throw away or exchange your existing equipment. It means that you can buy safely, knowing that your investment won't be overtaken by new technology.

The Basic ATOM

Elegantly designed and injection moulded in heavy duty polystyrene, the ATOM measures only 15" long x 9½" deep x 2½" high fitting snugly inside a normal briefcase.

And yet it still contains a full sized keyboard laid out in a conventional typewriter way. The full travel, light pressure keys give a positive reliable action, better for both the amateur and experienced typist.

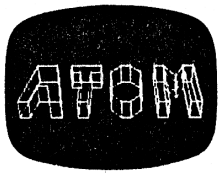
To use the ATOM immediately you just connect the power supply and a cable into the aerial socket of a television set. Any UHF colour or monochrome set will do – the ATOM doesn't harm them at all.

The ATOM has an initial 2K of RAM and 8K of ROM but of course this can be boosted enormously. The standard computer has BASIC and ASSEMBLER (machine code) graphics and sound output, with direct cassette and TV interface. (See further for list of specifications.) BASIC is the language used by ATOM and is indeed the language used by most personal computers. The BASIC used has all the normal functions you would expect plus many powerful extensions making it easier for you to operate and write your own programs. In personal computer terminology 'powerful' means the machine works harder cutting down the amount of information that you would otherwise have to type in.

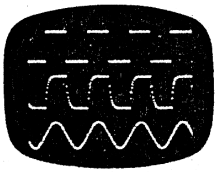
The Uses of ATOM

The advanced facilities of the Atom will soon become useful in programming your own choice of functions. For example:

Financial
Cash flow forecasts
Payroll Costing



Fun
Composing Draughts and Chess
Graphic Games



Scientific
Data Acquisition Statistics
Control Functions

Data Banking
Bus and train schedules
Phone numbers Diary entries

Predictions
Biorhythms Compatibility tests
Fortune telling

Diet
Meal Planning Recipe Instructions
Calorie Calculation

Education
Languages Mathematics
Computer Art

Business
Stock control Sales Forecasts
Text processing

All these and many more. But of course what it also does is introduce you and your family to the world of computing. (Over 9,000 children took 'O' level computing and an estimated 50,000 personal computers were sold in the last twelve months.) So start inexpensively and as your needs grow more sophisticated so can your personal computer.

The ATOM manual- Your introduction to computing

A comprehensive manual is free with every ATOM. It's written in two sections. The first is the beginners section simply describing the operation of keyboard and keyboard functions and taking you step by step through the fundamentals of BASIC so that in minimum time, with no previous experience of computers, you can be writing your own programs. This section also deals with machine code programming at the same level.

The second section describes the same subjects in much greater depth allowing the more experienced programmer to take advantage of the Atom's more advanced features and extended BASIC commands. Both sections are fully illustrated with example programs.

How your ACORN ATOM grows

Internally.

Both screen and program memory can be expanded in 1K blocks up to 12K total, and the fixed memory can be added to in two blocks of 4K. One is the 4K floating point arithmetic package. The printer interface output requires the addition on board of a 6522 and buffers.

The PAL encoder module when fitted allows full colour output to a domestic colour TV although a simple modification allows direct connection to a colour monitor without a PAL encoder.

Externally.

The most exciting addition however is the communication module which fits inside the case and allows high speed communication to other systems which can be anything from an Acorn System One to an IBM 370 and what's more any number of other Atoms. Designed for classroom use where, for example, twenty Atoms may be linked both to each other and to the teacher's system. The teacher can take control of any keyboard and display for instruction purposes, and can link any pupil to a printer or disc storage facility. In the home or laboratory however, this module may be used to control substations such as System I with any of the Acorn interface modules.
nb. Existing owners of Acorn systems may use the tape interface as a simple communication line to and from the Atom.

Kit or Built

The cheapest way of buying an Atom is in minimum configuration in kit form, when supplied in this form a construction manual is included which gives a checklist of components, preliminary advice on soldering, a suggested assembly schedule, Pre switch-on tests, operational testing and fault finding hints.

All components are guaranteed and faulty components will be replaced free of charge. Our service department will handle enquiries and repairs, if necessary, will be charged for at minimum cost. Reasonable skill with a soldering iron is required.

The assembled version is priced as shown and is fully tested and guaranteed for six months provided serious misuse has not occurred.

Technical Description

HARDWARE

Memory: From 2K to 12K RAM on board (in steps of 1K) up to 40K including external memory. From 8K to 16K ROM (two 4K additions).
Processor: 6502 with 1 Mc/s clock.
Video Display Generator: 6847 generates video signals for 8 different modes including: high resolution graphics (256 x 192), Red, green, and blue graphics up to resolution of 128 x 192, and mixed ASCII characters and semi-graphics.
PIA: 8255 provides keyboard scan, cassette I/O, audio output, graphics control and user I/O.
VIA: 6522 provide two 8 bit + control I/O ports (one used for printer output) plus a wide range of serial I/O functions and dual timers.
Cassette Interface: CUTS 300 baud, involves minimum hardware (zero crossing detector input and output from timer) to allow user to redefine tape routine to virtually any speed or standard.
Loudspeaker: Driven from 8255 via buffer allowing software tone generation of any frequency.
B/W Video Output: To monitor.
UHF Modulator Output: Channel 36 domestic TV.
Bus Output: Fully buffered address and data bus plus internal connections for one Acorn Eurocard.
Power Requirement: Minimum system: 8 volts @ 800 mA (from ATOM power unit feeding internal regulator). Maximum system: 5V @ 1.8A from external regulator supply.

SOFTWARE

ATOM BASIC: • 32-bit arithmetic (± 2 000,000,000) • High speed execution • 43 standard and extended BASIC commands • Variable length strings (up to 256 characters) • String manipulation functions • 27 32-bit integer variables • 27 additional arrays • Random number function • PUT and GET bytes, words and strings to and from files • WAIT command for timing • DO-UNTIL construction • Commands may be abbreviated for economy • Multiple statements per line • Logical operators (AND, OR, EX-OR) • LINK to machine code routines • Numbers can be input and printed in hexadecimal • Symbolic labels for fast branches and subroutine calls • Powerful indirection operators (?,!) • Graphics facilities to draw points and lines • 16 PLOT commands, MOVE and DRAW.
ASSEMBLER: • Mnemonic Assembler for machine code programming • Formatted listing • Assembler and BASIC may be combined • Standard 6502 mnemonics • Provides symbols, automatic resolution of forward references • Macro-facilities • Breakpoints may be inserted for debugging.
VDU: • 32 characters x 16 lines • Inverted characters • Automatic scrolling • Paged/Non paged modes • All control codes can be generated • Screen editing.
Operating System: • CUTS cassette routines with checksum • Filenames up to 12 character • LOAD and SAVE BASIC and assembler programs or text files • Search (catalogue) routine • Software hook to optional disc drive and communication loop modules • Printer drive routines.
Optional Maths Software: • Floating point maths functions to 9 digit accuracy including arithmetic, trigonometric and hyperbolic functions.
Optional Communication Software: • Allows high speed bi-directional interface to other ATOMs or peripherals • Allows transfer of control or data to other modules in loop.
Optional Utility ROM: • Such as the ONLIBASIC extension for real time control of laboratory experiments.

Service/Guarantee Each kit is provided with assembly instructions and all components are guaranteed. Service facilities exist at our Cambridge premises if required.

ACORN COMPUTER

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