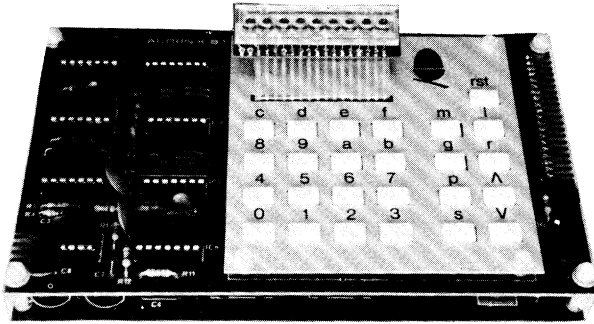


ACORN SYSTEM 1



The 6502 processor Eurocard (100 x 160 mm) has crystal control, 1K bytes of RAM and 512 bytes PROM containing a system monitor. A second Eurocard is mounted above it using pillars and the two are connected by ribbon cable. The top card has a click action 25 key hexadecimal keyboard and an eight digit seven-segment LED display.

The system monitor contained in two fusible link PROMS(74S571) is very easy to use and provides the following facilities using one of the 8154 devices as a keyboard interface and display driver.

RESET, MEMORY ALTER AND EXAMINE, GO

RESTORE, allows continuation in original environment of program after break

BREAK POINT INSERT/REMOVE allows setting and cancellation of break point anywhere.

SAVE TO TAPE - transfers memory contents between given locations on the tape.

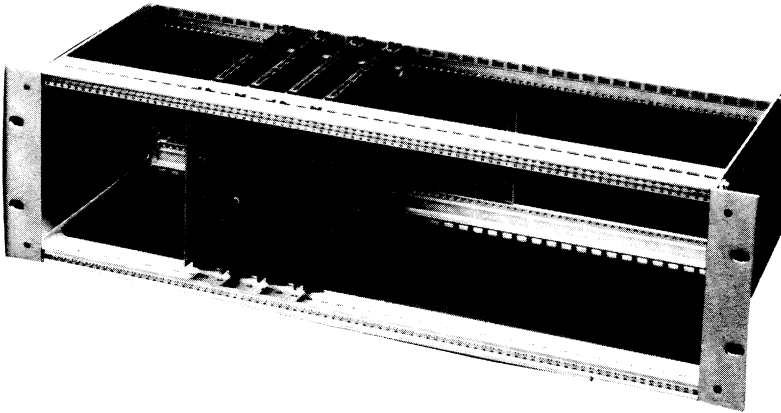
LOAD FROM TAPE - loads data into locations specified by the first two bytes on tape.

The monitor also includes a character font for seven segment representation of the complete ASCII character set.

The system 1 is provided with a users manual which includes an introduction to binary numbers, descriptions of the 6502 internal architecture and Acorn hardware, a listing and explanation of the instruction set and monitor program and a step by step introduction to machine code programming complimented by 16 original applications programs.

CODE	DESCRIPTION	PRICE
335	Acorn system 1 users manual	5.00
1100	Acorn System 1 (including manual)	79.00
1105	System 1 RAM i/o CHIP INS 8154	9.00
1110	System 1 mains adaptor	7.00

ACORN SYSTEM 2



Provides the basis for the addition of more Eurocards. The system 2 contained within a 19" card frame consists of the following Eurocards all of which are described individually in this catalogue.

6502 CPU (code 720)

This is a crystal 6502 processor card, with a 2K byte Cassette Operating System (COS) and a keyboard interface.

VDU Interface (code 740)

- 40 column x 25 lines, 8 colours including black and white.
The COS provides drivers for display of text and graphics and hardware scrolling.

MEMORY BOARD (code 735)

Carries 4K bytes of RAM (a further 4K may be added) and the 4K BASIC ROM. A second ROM containing a floating point package and scientific functions may be added. Customers may specify CU-MEM as an alternative to this memory card, at no extra cost.

CASSETTE INTERFACE (code 935)

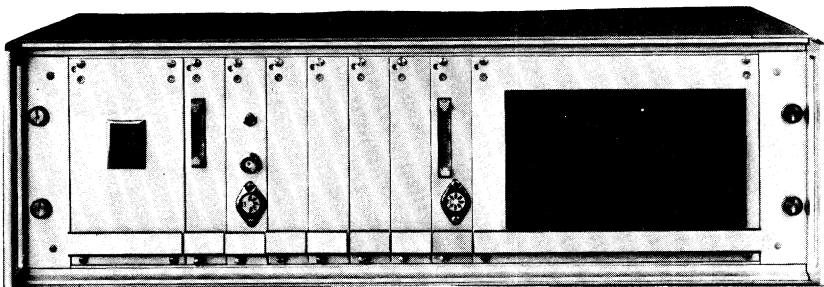
Using this board, programs and data may be stored on an audio cassette recorder.

The four boards are connected in the card frame using an 8-slot backplane with two part Eurocard DIN connectors.

Please note that a keyboard is usually required for this system. Printers and TV monitors suitable for this system are listed elsewhere in this catalogue.

CODE	DESCRIPTION	PRICE
1115	ACORN SYSTEM 2 Consists of 6502 CPU card, cassette interface, VDU interface, 4K RAM card frame with 4 Eurosockets, cassette operating system in ROM, 4K BASIC in ROM	£320.00
1120	ACORN SYSTEM 2A As System 2 with 8K RAM card, card frame with 8 Eurosockets, 8K BASIC in 1 ROM + 1 EPROM, front panels and connectors, in a Euro-rack enclosure with 5v 3A power supply.	£480.00
930	Keyboard, cased for system 2, 3 and 4	£136.00

ACORN SYSTEM 3



The system 3 in its minimum form is a system driving a single disk. The hardware consists of a card frame, backplane with 4 sockets, 6502 CPU, VDU interface, 8K RAM, floppy disk module, DOS (Disk Operating System) and resident 4K BASIC.

The mini floppy disk drive is mounted in a 7" module together with its controller card and provides approximately 100K bytes of storage. A DOS ROM on the CPU card controls the drive and handles files and input/output eg: the parallel ASCII keyboard and memory mapped VDU.

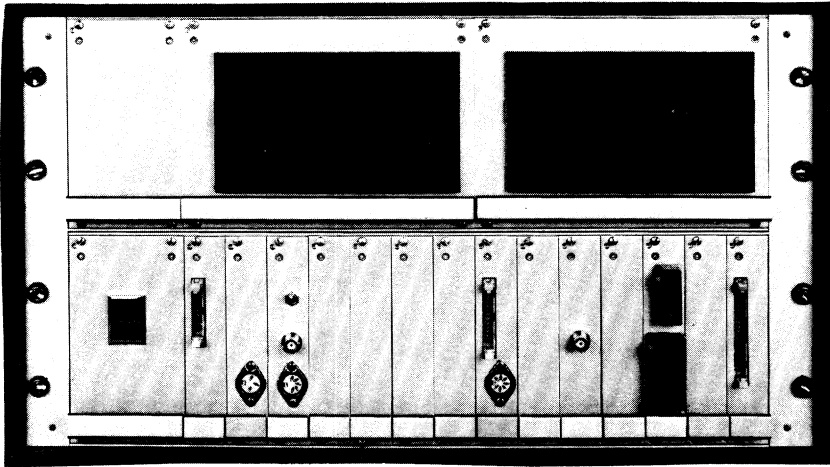
Software may be loaded from disk or contained on ROM. All the Acorn Eurocards are compatible with this configuration, allowing enormous variations on a modular basis. The illustration above shows the addition of a further 3 RAM cards (giving 32K bytes of memory in total) and a versatile interface board.

Please note that a keyboard is usually required for this system. Printers and TV monitors suitable for this system are listed in sections 10 and 11.

Customers may specify CU-MEM in place of Acorn 8K RAM cards for use in these systems at no extra cost.

CODE	DESCRIPTION	PRICE
1125	ACORN SYSTEM 3 Consists of 6502 CPU card, Teletext-type VDU card, one 8K RAM card, floppy disk controller and one drive, card frame, backplane for 3 cards, DOS EPROM 4K BASIC in RAM	775.00
1130	ACORN SYSTEM 3A As System 3, with two 8K RAM cards buffered backplane for 8 cards, 8K BASIC on disk, with front panels for all cards in a 3U case, with 5v/5A, 12v/2A power supply	1075.00
930	Keyboard, cased, for system 2, 3 or 4	136.00

ACORN SYSTEM 4A



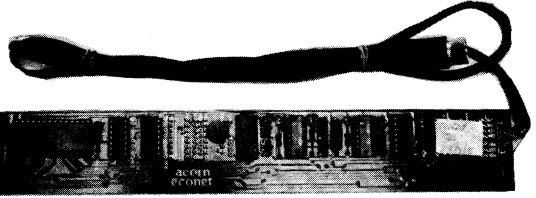
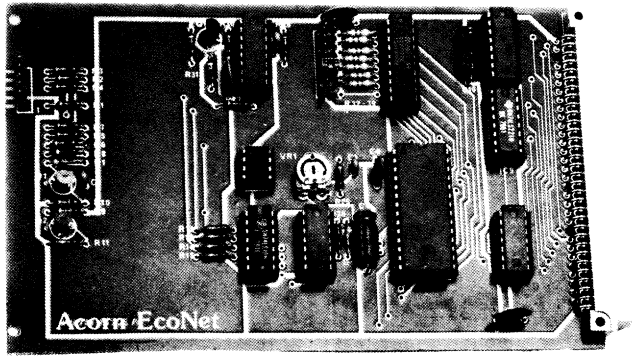
The system 4A is housed in a double height rack with capacity for up to 14 Eurocards. The minimum system has as standard two floppy disk drives, power supplies, card frame buffered 14 slot backplane, 6502 CPU, VDU interface, 16K RAM and disk controller. A DOS(Disk Operating System) controls both disk drives and a disk with utilities programs including disk copy is supplied with each system.

Customers may specify CU-MEM in place of the Acorn 8K RAM card at no extra cost.

The system illustrated has the additional audio cassette interface, 32K bytes of RAM and serial and parallel interfaces using the versatile interface board.

Please note that a keyboard is usually required for this system. Printers and TV monitors suitable for this system are listed in sections 10 and 11.

CODE	DESCRIPTION	PRICE
1135	ACORN SYSTEM 4A With 6502 CPU, VDU card, two 8K RAM cards, disk controller, 2 drives, two card frames, buffered backplane for 14 cards, DOS EPROM, 8K BASIC on disk, with front panels fitted to all cards in a 6U case with 5v 5a, 12v 2a power supply	1525.00
930	Acorn ASCII keyboard	136.00



The Econet communications network system was developed by Acorn to enable a number of Atoms and/or other systems to communicate with one another and to share facilities such as disks and printers.

All stations have equal status and, unless specifically prohibited, any station may communicate with any other without recourse to an intermediary. The only unique station is the one that generates the network clock, but this may be an Atom or larger system.

ECONET EUROCARD INTERFACE

The Econet Eurocard is the system version of the Econet interface card that fits into the Atom computer. It plugs into the backplane and carries the ROM with the low level Econet software to allow the host system to be linked to other Acorn products.

ATOM ECONET INTERFACE

The Econet Interface for the Atom is specially shaped to fit inside the Atom case, using connectors already provided. The 4K Econet ROM is plugged into the expansion ROM socket at hex A000.

ECONET SPECIFICATION

Up to 255 stations per Econet.
 Econets may be joined together by Gateways.
 Connection by 4-wire cable to each station.
 Station separation up to 1 kilometre.
 Data transfer rate up to 210 kilobaud.
 Differential signals for high noise-immunity and minimal radiation.
 Clash detect circuitry, collision-arbitration algorithm minimise need for retries.
 Econet executed automatically on BRK.

CODE	DESCRIPTION	PRICE
911	Econet card for Atom	45.00
912	Econet module on Eurocard for rack mounting	65.00
914	Econet operating ROM for Atom econet module	25.00
915	Econet operating ROM for Eurocard module	25.00
916	File server disk for Acorn System 3 or 4	100.00

ACORN SYSTEM SOFTWARE

794 CASSETTE OPERATING SYSTEM (COS)

supplied in ROM 20.00

The Acorn COS is designed for use with system 2. It is supplied as a 2k ROM which provides operating vectors, keyboard, 40 column video and printer driver software. It provides a tape mass storage system using a domestic cassette recorder and the CUTS recording system. (Computer Users Tape Standard), and relies on the Cassette Interface, which is described in its own section in this catalogue, page 3.3.

BASIC

Acorn system BASIC is configured in two sections. The 4k integer BASIC provides the general purpose routines for line numbering, subroutines, input and output to and from keyboard, video, printer, disk, tape etc., integer arithmetic and string handling. Any command not understood by integer BASIC is referred to the BASIC extension.

Two versions of the extension are available. Floating point BASIC extension provides floating point arithmetic to nine significant figures, trigonometrical and exponential functions, graphics and numerical evaluation of a string.

ONLI extension to BASIC is also available, as an alternative to floating point. ONLI is short for ON-LINE and is designed for real-time applications involving timers and input and output channels such as in machine control or experiments.

Acorn Atom BASIC is available for use in a 6k version for system 3 and 4, and in a 10k version for CUBIT systems operating under CUBOS. The 6k version offers dimension statements and a machine code assembler as an alternative to the floating point extension, and the 10k version offers these facilities in addition to the floating point extension.

795	4k BASIC on PROM	25.00
800	8k BASIC on disk	40.00
801	8k BASIC on PROM	50.00
803	ONLI 2k extension on PROM for use with system 2, 3 or 4	90.00
804	ONLI 2k extension on PROM for use with Atom	90.00
813	6k Atom BASIC for use in system 2 3 or 4 on disk	40.00
814	8k Atom BASIC for use in system 2 3 or 4 on PROM	50.00
804	10k Atom BASIC for use with CUBIT under CUBOS on disk "CU-BASIC"	60.00
817	10k Atom BASIC for use with CUBIT under CUBOS on PROM "CU-BASIC"	60.00

ASSEMBLER

805	Assembler/Disassembler/Editor on disk	25.00
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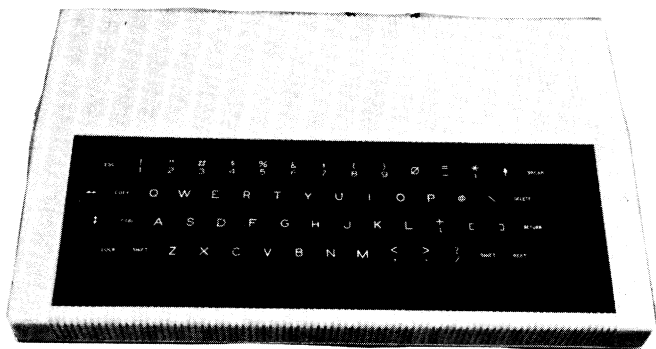
This 4k software provides a wide range of facilities for two pass 6502 machine code assembly. It is most suitable for disk systems and makes extensive use of the advantages offered by disks. Features include labels, arithmetic, disassembly, and linked files.

WORD PROCESSING/TEXT EDITING

This 4k software package allows the creation of text files, which can be saved and loaded with tape or disk, and can be output to a printer with a variety of formatting commands, includes right hand text justification, and control of the printer to modify print styles. Editing facilities allow the fast location and altering of one or more defined strings anywhere in the text.

1305	EDIT for system 2, 3 or 4 for use with 40 column VDU card	40.00
1306	EDIT for system 2, 3 or 4 for use with 80 column VDU card or for use with Systems 10 - 25 and CU-GRAPH	40.00
1350	WORDPACK for Atom - uses the user socket at hex A000	26.00
1351	WORDPACK for Atom run under Econet - uses socket at hex C000	40.00

ACORN ATOM



The Atom measures 15" long x 9.5" deep x 2.5" high. It contains a full sized keyboard laid out in the conventional typewriter way, the full travel, light pressure keys give a positive reliable action.

The Atom is ready to use with any colour or monochrome tv, or with a simple modification can be used with a video monitor. Colour output is built-in for use with a monitor; the PAL encoder is required for use with colour tv.

The minimum Atom has an initial 2K of RAM and 8K of ROM which can be increased to 12K of RAM and 12K of ROM. BASIC and ASSEMBLER (machine code), graphics and sound output, and direct cassette and TV interfaces are standard features.

The printer interface output requires the addition on board of a i/o chip 6522 and a 74LS244 buffer.

See separate catalogue entries for the following Atom accessories:-

Econet - local area network communication to other Atoms and central disk and printer facility. Page 4.5

Games, business, teaching and mathematical software on tape.

Page 5.3 - 5.20

Word processor software on PROM Page 5.17

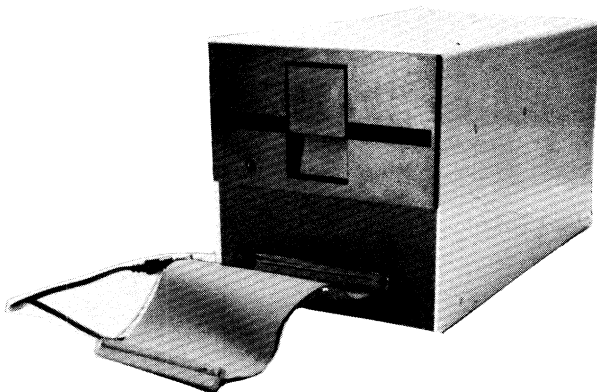
Disk pack Page 5.2

PAL encoder Page 5.2

Forth programming language Page 5.12

CODE	DESCRIPTION	PRICE
880	Atom with 8K ROM + 2K RAM	150.00
881	Atom with 8K ROM + 2K RAM in kit form	120.00
885	Atom with 12K ROM + 12K RAM	250.00
890	Atom 4K floating point ROM	20.00
900	Power supply - 8v at 1.8a unregulated	10.00

ACORN ATOM DISK PACK

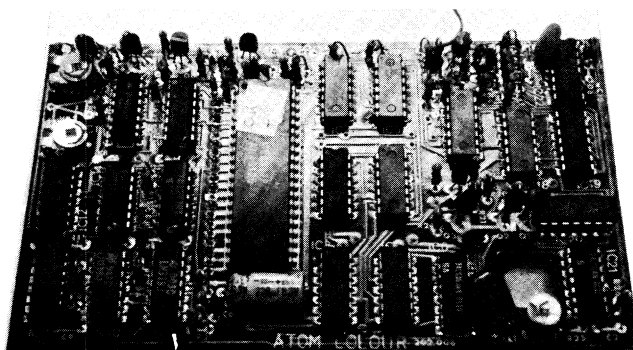


The new disk pack made by Acorn for use with the Atom offers amazing value for money. If put together from the parts at Acorn standard prices, it would cost well over 400. However, for 299 this unit comes complete with single sided single density disk drive, disk controller, disk operating system, power supply for itself and to drive the Atom that it is plugged into, 64 way cable to connect to the Atom and full documentation. The capacity of the drive is up to 92kBytes, arranged in up to 31 files. Loading or saving a 4k program takes less than 1 second.

882 Acorn Atom disk pack

299.00

ACORN ATOM UHF COLOUR INTERFACE (PAL ENCODER)



The PAL encoder is a small board designed to fit inside the Atom to give it the facility to generate a colour signal suitable for feeding directly into an ordinary colour television, to give a full colour display.

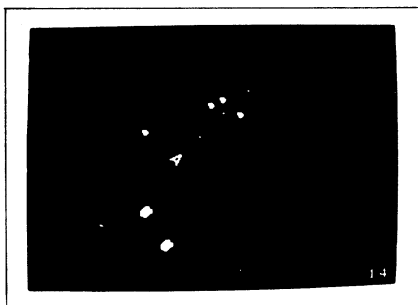
925 Acorn Atom PAL encoder

39.00

PROGRAMS FOR THE ATOM FROM ACORNSOFT

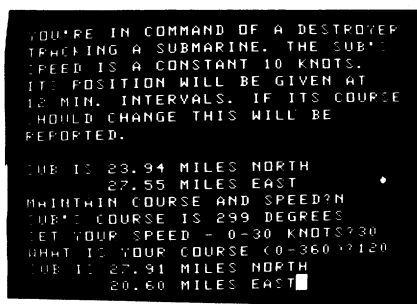
SEE PAGE 5.20 FOR PRICES

GAMES PACK 1



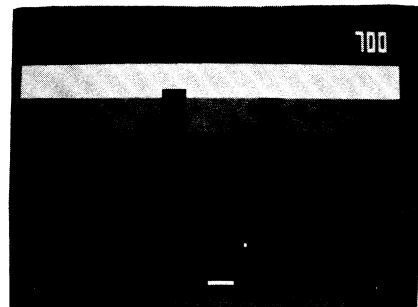
ASTEROIDS

Your spaceship is encountering an asteroid storm; you must shoot the asteroids before they collide with your ship; but beware that large asteroids will break into smaller asteroids when hit. As in the popular pub version the game keeps a ladder of the ten best scores, together with the names of the scorers. Program 4K, graphics 6K.



SUB HUNT

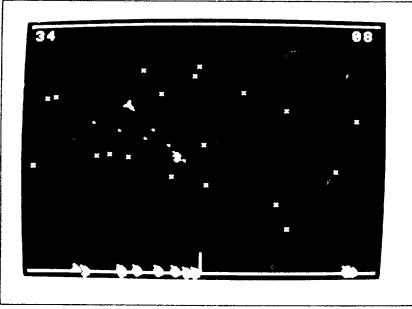
You are in command of a destroyer tracking a submarine; knowing the submarine's course and position you must choose your course and speed to catch it. Program 1K, graphics ½K, needs floating-point.



BREAKOUT

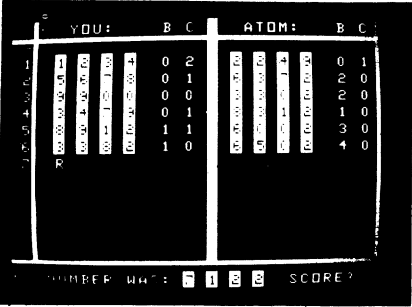
Breakout is a version of the popular pub game in which you score points for knocking bricks from a wall. Balls can get trapped behind the wall and knock out a great many bricks. To add to the skill the balls undergo two changes of angle and speed, and when hitting a ball two angles of reflection are possible. The game keeps a record of the highest score. Program 3K, graphics 1-2K.

GAMES PACK 2



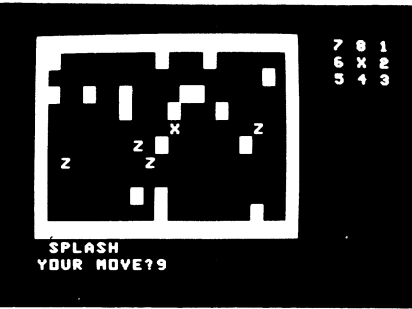
DOGFIGHT

A two-player game in which each player controls a plane from the keyboard, and tries to shoot down the opponent without crashing into the stars. Each player has control of the direction of flight, a fire button, and an accelerate control. Program 4K, graphics 6K.



MASTERMIND

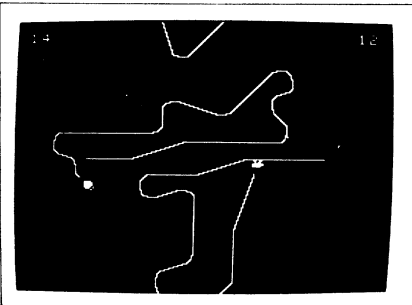
Guess the computer's code before the computer guesses yours; a test of logical deduction and reasoning. Program 3K, graphics ½K.



ZOMBIE

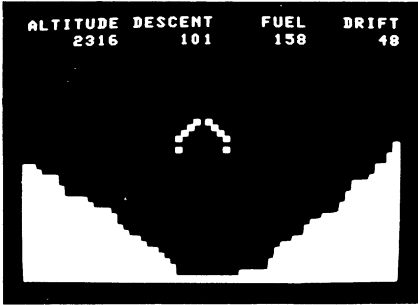
Your plane has gone out of control and you are plummeting into the unknown. You land on Zombie island; your only hope of survival is to lure all the zombies into the swamp. In desperation you can try a jump into hyper-space! Program 3K, graphics ½K.

GAMES PACK 3



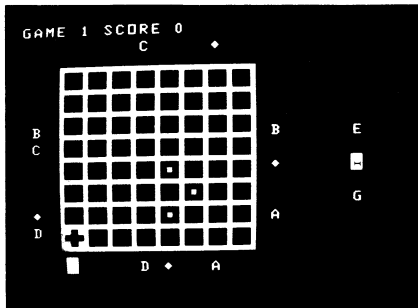
RAT TRAP

Move your rat without colliding with the trails left by either rat, and entangle your opponent before he entangles you! With high-speed action-replay feature. Program 4K, graphics 5K.



LUNAR LANDER

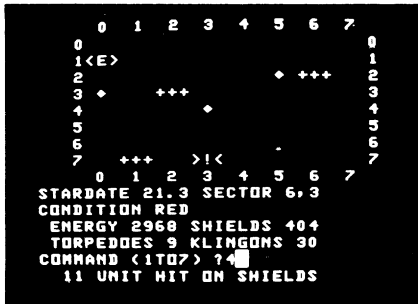
Land a spacecraft on a lunar crater; instrument panel gives readout of altitude, velocity, fuel remaining, and drift velocity, and provides control over thrust and drift. Program 1K, graphics ½K.



BLACK BOX

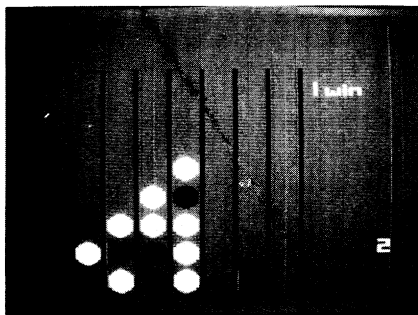
Deduce the position of four invisible objects in the Black Box by firing rays at them and observing how they are reflected or absorbed. Program 3K, graphics ½K.

GAMES PACK 4



STAR TREK

A full implementation of the now classic computer game in which you must rid the universe of Klingons. With short and long-range scans, galactic map, phasers, photon torpedoes, shields, etc. Program 5K, graphics 1K.



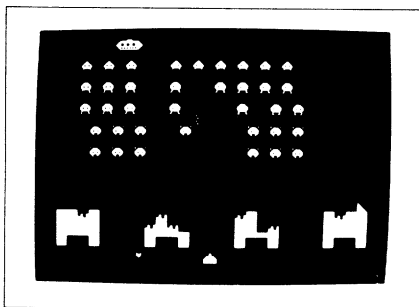
FOUR ROW

You and the computer take turns in placing marbles on the board, and the first to get a line of four marbles horizontally, vertically, or diagonally, wins. Program 5K, graphics 6K.

SPACE ATTACK

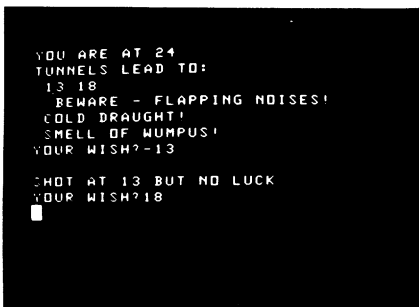
Earth is being invaded by hostile aliens; armed with a laser-gun you must repel the invasions and avoid being hit by the gunner ships. If you fail, the mother ship lands and the invaders take over. The game becomes progressively harder with each subsequent invasion; if you survive ten invasions the earth is saved! Program 3K, graphics 6K.

GAMES PACK 5



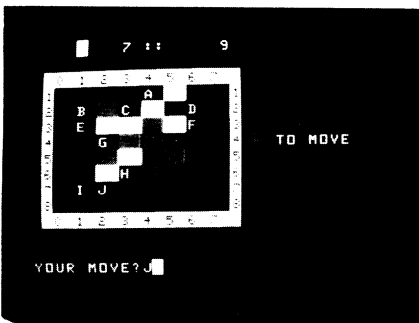
INVADERS

The most popular video game, with invaders, flying saucers, shelters, and full sound effects, now available for the ATOM. Program 5K, graphics 6K.



WUMPUS

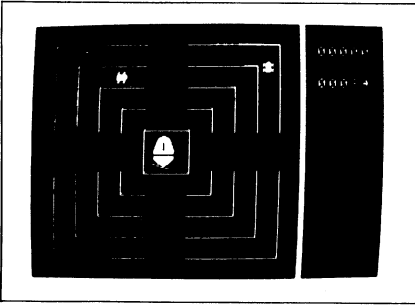
You are wandering in a network of caves inhabited by the Wumpus. Discover where he lurks and shoot him before he eats you; the pits and bats don't make things any easier. Program 2K, graphics 1/2K.



REVERSI

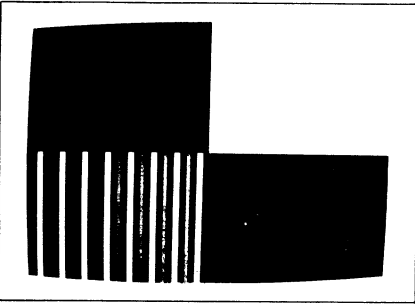
Reversi, also called Othello, is played with counters that are black on one side and white on the other; players take turns in placing and turning over counters, and the player with the most counters wins. Program 3K, graphics 1/2K.

GAMES PACK 6



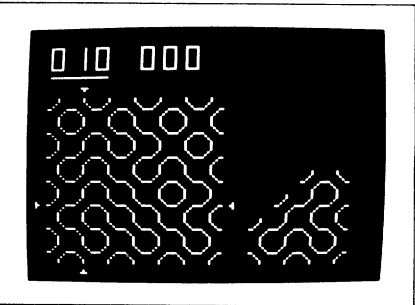
DODGEMS

Steer your car around the lanes, collecting points, but avoid the computer-controlled car which is programmed to collide with you. If you survive, the game gets faster. Program 4K, graphics 6K.



SIMON

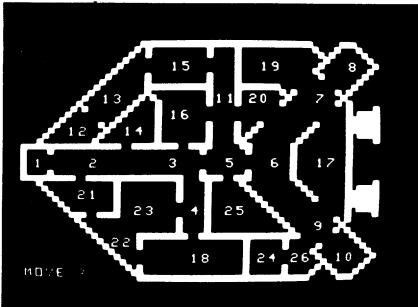
Test your ability to remember a progressively longer sequence of lights and tones. With adjustable skill level. Program 2K, graphics 3K.



AMOEB A

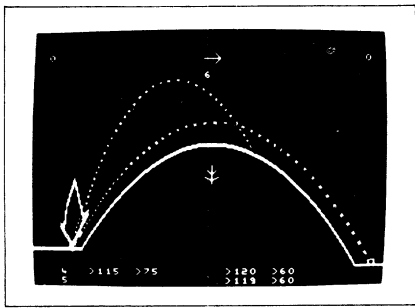
Try and create the shapes devised by the computer; for up to 4 players. Program 3K, graphics 3K.

GAMES PACK 7



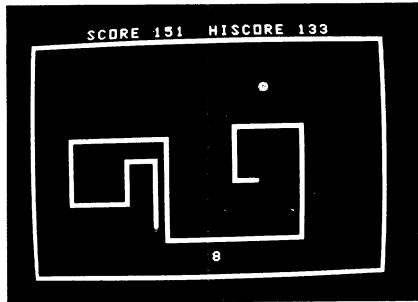
GREEN THINGS

Your computer has just informed you that an alien life-form has invaded your spacecraft; your only hope of survival is to discover a way of destroying the green things with the weapons available on the ship. Program 5K, graphics 2K.



BALLISTICS

A two-player game in which you take turns in firing shells at the other player, taking into account the wind and shape of the hill. Program 3K, graphics 6K, needs floating-point.



SNAKE

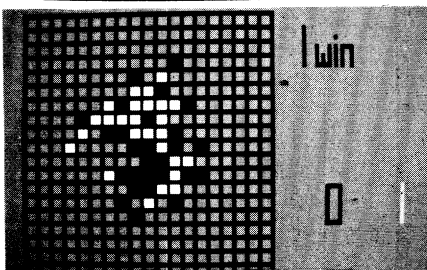
Grow yourself a snake by guiding it towards digits which it eats; but don't let it eat the walls, or itself. Program 2K, graphics ½K.

GAMES PACK 8



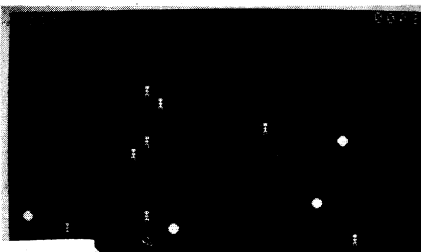
STARGATE

Protect your missile base against the waves of invading aliens who attack by warping through stargates, and aim for the highest score. A high-speed game with astonishing sound effects. Program 5K, graphics 2K.



GO-MOKU

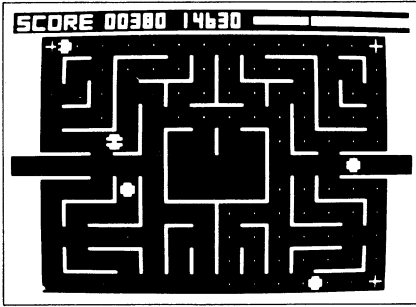
Play against the computer to get five counters in a line in this traditional Japanese game; with convenient cursor-entry of moves. Program 4K, graphics 6K.



ROBOTS

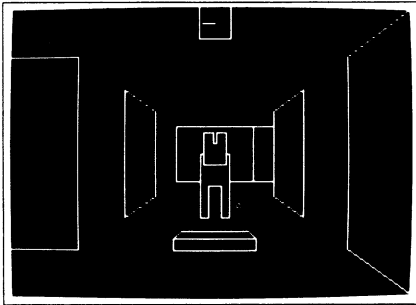
Robots are following your car. Lure them into potholes, or be converted into scrap metal! Program 4K, graphics 6K.

GAMES PACK 9



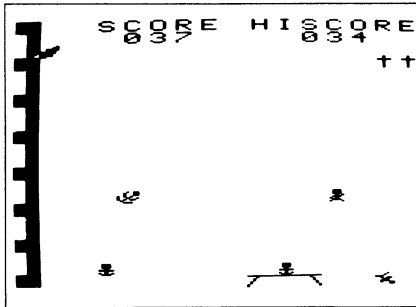
SNAPPER

Guide the Snapper through the maze eating dots and avoiding the creatures from the cave. Before you can eat them you must eat a cross to become invulnerable. Later screenfuls have different mazes and faster creatures. Program 5K, graphics 3K



MINOTAUR

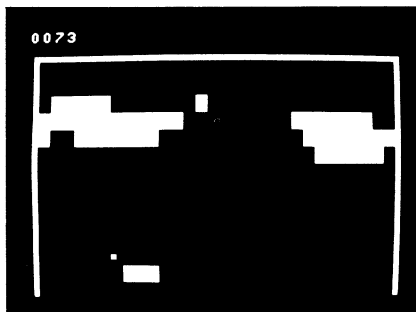
Wander in a three-dimensional labyrinth, and move the five gold bars from their treasure chests to the safe without being eaten by the hungry Minotaur. The audio minotaur detector warns you when he is nearby, and a map, compass, and marker crosses help you find your way through the passages of the labyrinth. Program 5K, graphics 6K



BABIES

Use the trampoline to rescue babies that are falling from a burning building, by bouncing them to the safety of the right-hand side of the screen. Program, 5K, graphics 3K.

GAMES PACK 10



BREAKOUT

Ten Games for the Minimum ATOM

This pack includes video games such as Breakout and Squash, games of deduction such as Mastermind, and simulations such as Ski-Run and Track, all of which will run on an 8+2K ATOM.

BREAKOUT – Knock bricks from a wall and beat the high score.

HECTIC – Catch the blocks falling from the sky before they block your way.

MASTERMIND – Guess the computer's code in less than ten attempts.

RELATIONS: ? D = B * C / E = D * 115 / 100

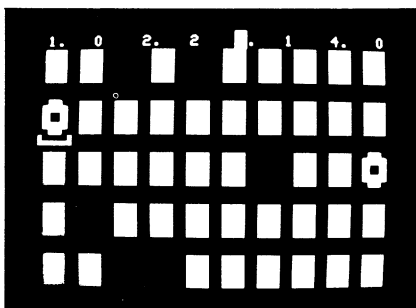
A	B	C	D	E	
ITEM	COST	QTY	TOTAL	+VAT	
CAMERA	156	1	156	179	
LENS	53	1	53	60	
TRIPOD	23	1	23	26	
FILM	2	10	20	23	
FILTER	5	4	20	23	
DRIVE	75	1	75	86	
CASE	32	1	32	36	
	0	346	19	379	433

MINICALC

MINICALC



TYPYR



MEMORY

Cassette 2 – Financial Planning

The MINICALC program will introduce you to the concepts of financial modelling that are widely used in business, and will prove invaluable for household budgeting.

SALES uses graphical techniques to chart sales over a 12-month period, with cumulative and 3-monthly averages.

Cassette 3 – Household

Programs for use in the home.

TBOOK is a computerised telephone-book, which can hold 95 names and telephone numbers for quick and easy access; these can be stored on cassette.

Learn to touch-type with TYPYR, which gives you a carefully graded series of exercises which get harder as you improve; it includes a diagram of the keyboard so you do not have to look down at your hands.

Timing a series of actions is difficult, even with a stopwatch; TIMER will automatically organise the timing of a series of events, such as the stages in preparing a meal, display the current time and a countdown, and ring an alarm when each one is due.

Cassette 4 – Games

ATTACK – defend yourself from attack with a laser gun.

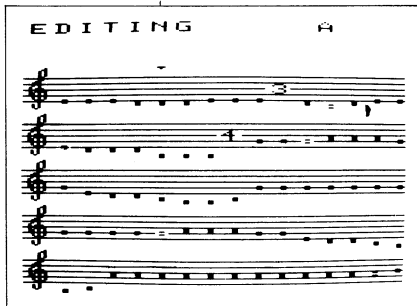
CONNECT4 – Play against the computer, or another player, to get 4 counters in a row.

BREAKOUT – Knock bricks from a wall with a bat and ball, and try to beat the high score.

MEMORY – For 1 to 4 players; the computer lays out 25 pairs of cards face-down, and you must remember where the pairs are.

MASTERMIND – Crack the computer's code in less than ten attempts.

ATOM SYNTHESISER



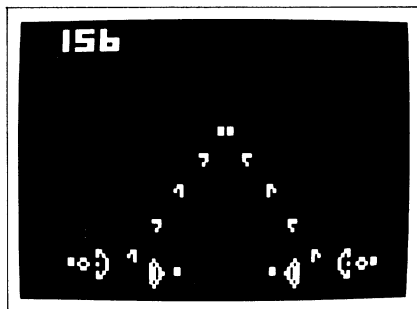
The ATOM Synthesiser turns the ATOM into a programmable synthesiser, using the keyboard as a piano keyboard, with the ability to record, and edit four separate tunes, and play them through the internal speaker. As well as altering the tempo, the notes can be played in four different voices which can be selected at any point in a tune. While a tune is being recorded, played or edited, the notes are displayed on musical staves.

Commands: Manual, Record, Play, Edit, Tempo, Save, Load.

ATOM Synthesiser comes complete with some demonstration tunes on cassette, including Variations on Bach's Toccata and Fugue, and "The Teddy-Bear's Picnic".

Program 5K, graphics 6K.

ATOM LIFE PACKAGE



The ATOM LIFE package is one of the fastest versions of Life available on any microcomputer, and will process a full 256 x 192 screen in less than 2 seconds, or an 128 x 64 screen in under ½ second. It uses the standard set of rules for survival and reproduction. These rules, though simple, give rise to a very complicated and fascinating selection of patterns. Some patterns are stable, others die out, some oscillate between different states, and some (such as the glider and the spaceship) move with successive generations.

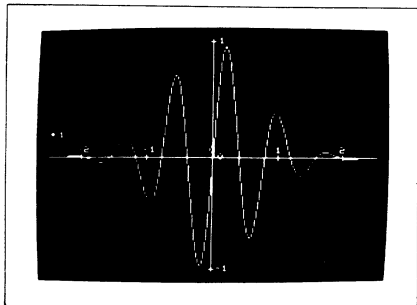
A cursor-drawing system allows any shape to be drawn on the screen. The program comes complete with 7 programmed shapes, which can be called up in any part of the screen in any orientation. These shapes are:

Glider, small spaceship, flying machines, glider gun, queen bee, 15 cycle, and eater.

Complex patterns can be saved to cassette and reloaded, and 5 interesting patterns are provided with the program:

Newgun, two oscillators, a poisoned cell, and a grid pattern.

MATHS PACK 1



PLOT

A versatile graph-plotting package for use in research, accounting, schools, and mathematics, or simply for amusement. Will draw a graph of a specified function, with automatic scaling if required, or a plot of coordinate data, connected by line segments or a smooth curve; a regression line can be fitted to data. Annotated axes are drawn if required. Program 5K, graphics 6K.

SIMULTANEOUS

Solves a set of simultaneous equations, with integer or real coefficients, by the rapid Gaussian-elimination technique. Program 2K, graphics ½K.

REGRESSION

Calculates the best-fitting straight line to a specified set of data points, gives the equation of the line, and the correlation coefficient of the fit. Program 2K, graphics 1/2K.

MATHS PACK 2: Picomath Algebraic Manipulation Package

The Picomath suite of programs will perform a wide range of algebraic manipulations, and expressions can be symbolically differentiated or integrated.

POLYNOM can expand and simplify, differentiate, or integrate, a polynomial expression such as:

$$(2x - y) \cdot (x + y)^2 - (28z - 1)^2$$

into the equivalent polynomial:

$$2x^3 + 3x^2y - y^3 - 784z^2 + 56z - 1$$

RATIONAL can expand and simplify an expression such as:

$$1 + \frac{1}{x-1} - \frac{1}{x-1} + \frac{2x}{x^2-1}$$

into the equivalent ratio of two polynomials, reduced to lowest terms:

$$\frac{x+1}{x-1}$$

TRIGONOM can expand and simplify, differentiate, or integrate, a trigonometric expression such as:

$$\frac{1 + \tan^2 x}{1 + \cot^2 x}$$

into the equivalent standard form:

$$\sec^2 x - 1$$

FOURIER can perform trigonometric transformations into a linear combination of sines and cosines of integer multiples of x . For example:

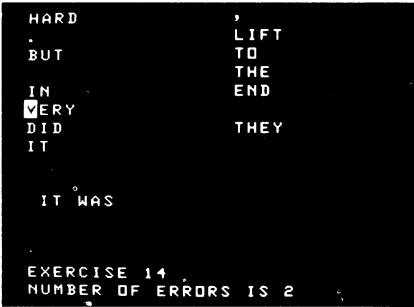
$$64 \sin^4 x \cos^3 x$$

will be transformed into:

$$3 \cos x - 3 \cos (3x) - \cos (5x) + \cos (7x)$$

Memory requirements: Programs 5K, graphics 1/2K, need floating-point.

ATOM WORD TUTOR



SENTENCES

ATOM WORD TUTOR consists of three versatile programs designed to aid the development of language abilities in children of primary school age. Each program is supplied with a sample database that provides the material for a full set of exercises, and the supervisor can enter further teaching material and build up libraries of databases on cassette. A simple, clear cursor method allows the pupil to answer the problems without typing. The names and scores of up to 16 pupils are recorded and can be viewed by the supervisor. Programs 5K, graphics 6K.

PAIRS

Words are presented with pairs of letters replaced by blanks. The pupil can choose from up to four possible pairs, only one of which completes each word.

RELATIONS

One of each pair of related words is displayed along with a linking phrase. The phrase is completed by adding the second word of the pair, selected from the list on the screen.

SENTENCES

Each exercise shows a sentence with the words and punctuation marks randomly rearranged. The pupil must reconstruct the original sentence by selecting the items in the correct order.

INTRODUCTORY PACKAGE

A set of 4 cassettes containing programs designed to introduce you to the world of personal computing. Complete with a booklet giving full instructions on loading and running the programs — all you need is an Atom with at least 3K text-space.

Cassette 1 — Interactive Teaching

Step by step this tape teaches you to 'talk' to the Atom — no manuals or experience necessary. The display on the TV screen will tell you what the computer is doing, what you should do next, and even what you have done wrong.

Word Processor

The processor commands can be inserted into the text to give great flexibility in how it is printed. Pages can be printed in any format, with optional page numbers, and sections can be justified as required. The processor caters for most makes of printer, and for single-sheet printing the processor can be made to wait for a keypress after each page.

Processor Commands:

Allow lines to be on the same page, allow new page, centre line, double-space lines, equal-position line numbers, indent, justify lines, keypress for new page, set lines per page, line one of document, margin, no justification, output character to printer, set page number, no page numbers, right margin, single-space, temporary indent, width of page, exchange control character, comment line.

ATOM DATABASE

```
#>>SET TYPE SUB R AND DRINK = NO
#>>PRINT NAME TYPE YEAR
#>>SORT NAME
#>>GO
NAME           TYPE YEAR
BEAUNE         RM3  1976
LA TOUR-HAUT-BRID RM2  1976
VDLNAY         RM3  1976
#>>
```

The ATOM DATABASE is a very versatile and efficient cassette or disk based database system. Possible applications include:

Keeping a personal telephone directory

Recording the stock of a wine cellar

Storing data on the chemical elements

Organising census data

The information can be typed in and edited just like a BASIC program, making it very easy to create and edit databases. The format of the database is chosen by the user, and consists of

any number of named fields of specified width. The program includes commands to list subsets of the database, and output the database to a printer with full control over the output format.

Subsets of the database are selected with a versatile testing command, allowing searches for equality, substrings, and alphabetical inequalities. The data can be sorted into alphabetical order of any field, and will sort 100 records in under 20 seconds.

The ATOM DATABASE comes complete with a 16-page booklet giving full instructions, and a sample application.

Database Commands:

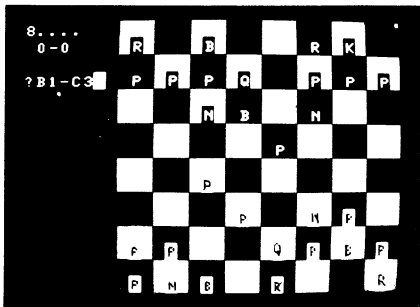
Give all values taken by field, edit database, leave program, list fieldnames, execute search, specify fields to be printed, switch printer on/off, renumber database, reset, specify search, sort database on any field, print current test, discard sort.

Test options:

AND, OR, >, <, >=, <=, <>, =, SUB, NSUB

Program 5K, graphics 1K.

ATOM CHESS

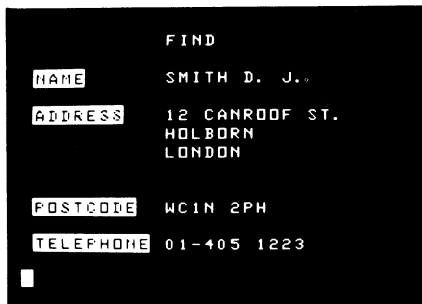


ATOM CHESS is a complete chess-playing program, with the following features:

- 6 levels of play, giving novice to professional standards.
- Computer moves in 2 seconds at the lowest level.
- Board display with coordinate entry of moves, and rejection of illegal moves.
- Computer and human castling (0-0 and 0-0-0).
- En-passant captures allowed, and played by computer.
- Up to 127 moves each side are stored, and can be replayed from any point in the game.
- A game can be restarted at any earlier point.

Program 5K, graphics 6K.

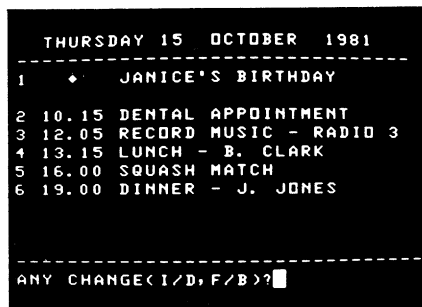
ATOM DESK DIARY



ADDRESS BOOK

Allows a file of up to 100 names, addresses, post codes, and telephone numbers to be built up and searched in a fast and convenient way. Options are selected from menus displayed by the program, and it allows all the entries to be printed out for mailing lists, etc.

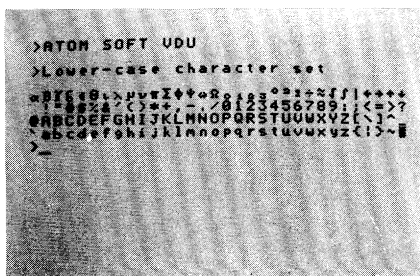
Program 5K, graphics 6K.



PLANNER

Works just like a written diary with many automatic features, and space for up to 300 entries. Three types of entries can be made: appointments, at a specified time-of-day; permanent entries, such as birthdays and holidays, which automatically get carried through to subsequent years; and exclusive entries, for trips and holidays, which prevent further appointments to be made on that day. Program 5K, graphics 6K.

SOFT VDU



SOFT VDU

The soft VDU replaces the normal ATOM VDU, but provides 128 characters including upper and lower-case letters, and mathematical symbols. The characters can be mixed with high-resolution graphics, and the DESIGN program allows new characters, such as foreign letters, to be designed and added to the character set. Program 1.5K, graphics 6K.

ATOM SOFTWARE AND BOOKS

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1335	Games Tape 4. "Star Trek", "Four row", "Space attack"	10.00
1336	Games Tape 5. "Invaders", "Wumpus", "Reversi"	10.00
1337	Games Tape 6. "Dodgems", "Simon", "Amoeba"	10.00
1338	Games Tape 7. "Green Things", "Ballistics", "Snake"	10.00
1339	Games Tape 8. "Star Gate", "Gomoku", "Robots"	10.00
1343	Games Tape 9. "Snapper", "Minotaur", "Babies"	10.00
1347	Games Tape 10. "Breakout", "Hectic", "Mastermind", "Ski-run", "Snake", "Track", "Simon", "Squash", "Moon", "Bombs-away"	10.00
1348	Games Tape Adventures.	10.00
1349	Games Tape Life Package.	10.00
1353	Word Tutor Tape	10.00
1354	Chess Pack Tape	10.00
1355	Introductory Pack (4 Tapes)	20.00
1356	Desk Diary	10.00
1342	Utility pack 1	10.00
1341	Maths Pack 1	10.00
1344	Maths Pack 2	10.00
1340	Soft VDU	10.00
1357	Data Base	10.00
1358	Business Tape	10.00
1359	Business Book	10.00
1346	Peeko Pack	8.00
1350	Word Pack in ROM	30.00
1351	Word Pack for use with Econet (PROM)	50.00
1360	Forth Tape	10.00
1361	Forth Book	7.00

UTILITY PACK 1

```
ATOM DISASSEMBLER
HEX START ADDRESS?#835F
END ADDRESS?#8400
BRK/RTS OPTION?Y
CODE STORAGE TEXT SPACE:
(EG. #29)?N
835F 24 91 BIT #91
8361 10 11 BPL #8374
8363 A9 00 LDA #000
8365 85 89 STA #89
8367 85 8D STA #8D
8369 85 8C STA #8C
836B A9 0A LDA #00A
836D 85 8B STA #8B
```

DISASSEMBLER

A versatile disassembler which can list machine code in standard ATOM assembler form, or store the assembler text into memory so that it can be edited and re-assembled with any starting address. Graphics 2K.

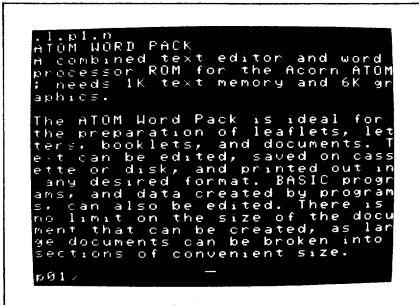
FAST COS

Speeds up program saving by modifying the ATOM's standard cassette-interface routines to operate at 1200 baud, or 4 times the standard speed. Program 1K.

RENUMBER

A fast renumber for BASIC or assembler programs, which gives a display of the line numbers for labelled lines. Program 1K.

WORD PACK ROM



A combined text editor and word processor ROM for the Acorn ATOM; needs 1K text memory and 6K graphics.

The ATOM Word Pack is ideal for the preparation of leaflets, letters, booklets, and documents. Text can be edited, saved on cassette or disk, and printed out in any desired format. BASIC programs, and data created by programs, can also be edited. There is no limit to the size of document that can be created, as large documents can be broken into sections of convenient size.

The Word Pack is supplied in a 4K ROM which simply plugs in to the ATOM's utility ROM socket. The ROM adds the commands EDIT and TEXT to the ATOM's command set, and these commands can be inserted in programs. The EDIT command enters the text editor/word processor. The TEXT command stores text to the editor's text area, so that output generated by programs, or by the LIST command, can subsequently be edited.

The Word Pack comes complete with a 16-page booklet giving full instructions, and examples of use.

Text Editor

The Text editor uses the ATOM's high-resolution screen to display the text, with full upper and lower case. Editing commands are all single keystrokes; they allow text to be added anywhere in the document, deleted, or moved, using a cursor to specify the required position. Any part of the document can be viewed, and the editor includes a 'find' command which will search for a string, and replace all or selected occurrences of it by another string; thus, for example, spelling mistakes can be corrected throughout the text with a single command.

Text-Editor Commands:

Insert after, insert before, copy text to buffer, end of text, delete, enter text, escape/delete mark, find (and replace), home cursor, insert character, next page, output to printer, previous page, quit to BASIC program, replace text, move to start, transfer text to buffer, where is end of text, exchange character, move to end, roll up one line, cursor to start of line, cursor to end of line, mark cursor position, load text file, save text file, execute COS/DOS command.

Word Processor

The processor commands can be inserted into the text to give great flexibility in how it is printed. Pages can be printed in any format, with optional page numbers, and sections can be justified as required. The processor caters for most makes of printer, and for single-sheet printing the processor can be made to wait for a keypress after each page.

Processor Commands:

Allow lines to be on the same page, allow new page, centre line, double-space lines, equal-position line numbers, indent, justify lines, keypress for new page, set lines per page, line one of document, margin, no justification, output character to printer, set page number, no page numbers, right margin, single-space, temporary indent, width of page, exchange control character, comment line.

ATOM DATABASE

```
#>>SET TYPE SUB R AND DRINK = NO
#>>PRINT NAME TYPE YEAR
#>>SORT NAME
#>>GO
NAME                TYPE YEAR
BEAUNE              RM3  1976
LA TOUR-HAUT-BRIO  RM2  1976
VOLNAY              RM3  1976
#>>█
```

The ATOM DATABASE is a very versatile and efficient cassette or disk based database system. Possible applications include:

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Organising census data

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Database Commands:

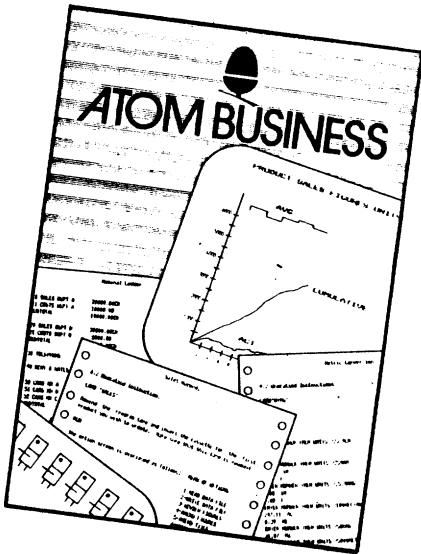
Give all values taken by field, edit database, leave program, list fieldnames, execute search, specify fields to be printed, switch printer on/off, renumber database, reset, specify search, sort database on any field, print current test, discard sort.

Test options:

AND, OR, >, <, >=, <=, <>, =, SUB, NSUB

Program 5K, graphics 1K.

ATOM BUSINESS



The book "ATOM Business", and its accompanying cassette, describe eleven business programs covering a wide range of different business applications:

ADDUP tallies a column of totals, and provides verification facilities.

LABEL prints multiple copies of labels from a typed address.

WTMS is a general-purpose conversion program, between metric and imperial units, and can be extended to deal with any desired conversions.

DCF calculates whether the best option in a particular situation is to lease or buy equipment, based on the discounted cash flows involved.

SALES maintains a file of sales data on cassette, and provides commands to update and edit it.

GRAPH will print a 'Z' curve of the sales figures from the SALES program, showing cumulative sales for the year to date, actual sales week by week, and a plot of the 3-week moving average.

NOM maintains a nominal ledger, using a printer for an audit roll.

BUDG performs the calculations necessary to divide a financial budget into the correct portions over a year.

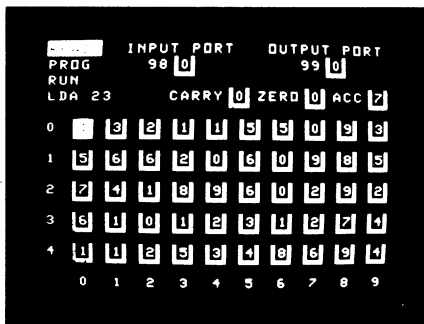
EXS calculates an expenses claim, keeping control of the VAT components of each expense.

STD gives the standard deviation for a set of data values.

QUE sets up a simulation of a queueing situation in a supermarket or shop, and gives a pictorial display of the state of the queues as a function of time.

The book and cassette are produced in conjunction with Phipps Associates.

PEEKO - COMPUTER



The PEEKO-Computer simulates the operation of a simplified microcomputer in order to teach the fundamentals of machine-code programming. The PEEKO-Computer has ten easily-learned instructions, and the display gives a visual analogy of the operation of a real microcomputer. Programs can be entered, single-stepped, or run, with the memory and register contents being displayed at every step. To aid comprehension each instruction mnemonic is displayed as it is encountered.

The PEEKO-Computer comes complete with a 16-page instruction manual which contains

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1350	Word Pack in ROM	30.00
1351	Word Pack for use with Econet (PROM)	50.00
1360	Forth Tape	10.00
1361	Forth Book	7.00

ATOM HARDWARE AND SOFTWARE UPDATE

Even as this catalogue was being compiled, more news came in about hardware and software extensions to the Atom. LISP and BBC-type BASIC are now ready and deliveries will start soon. Pascal, although announced earlier, has been deferred, and will not be available for some time.

Control Universal are manufacturing a 17K bytes DRAM card, which fills in the awkward gap in the memory map from 3C00 to 3FFF, and then provides user RAM from 4000 to 7FFF, a continuous text space of 22527 bytes.

Atomsoft have added another games pack, no 11, with "Missile Base", "Snooker" and "Dominoes".

ATOMPLUS 17K BYTES DRAM CARD FOR ATOM

This new card is manufactured by Control Universal and offers a solution to the problem of adding memory to the Atom without leaving a gap. The 17K memory consists of 1k of static RAM from hex 3C00 to 3FFF and 16K of dynamic RAM from 4000 to 7FFF. This then provides continuous text space from hex 2800 to 7FFF (22527 bytes).

Power requirements are low - can be expected to be within 300 mA.

The recommended method of connection to the Atom bus is to fill the inner of the two bus connectors with vertical pins, and use a 64 way ribbon cable from those pins to the ATOMPLUS. (Both these items are on page 13.1). The ATOMPLUS is then bolted to the floor of the Atom case where it fits without interference with the Atom pcb.

ATOMPLUS is completely compatible with all CUBE and Acorn rack mounting systems, and can be used to provide 16k RAM memory from hex 4000 to hex 7FFF.

570 ATOMPLUS with 17k RAM memory, assembled and tested 69.00

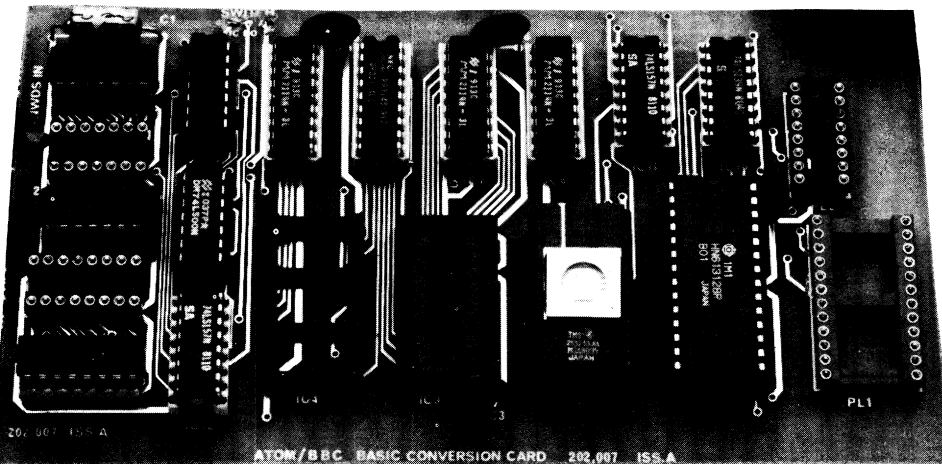
578 ATOMPLUS pcb only with manual and circuit 25.00

WORDPACK 3000 - EXTENDED BUFFER SIZE VERSION

With the availability of the memory extensions for the Atom, it becomes interesting to enlarge the size of the change buffer. This has the advantage of allowing longer text entries without interruption, and much more convenient text manipulations, as blocks of 2048 characters can be handled, compared with 448 characters in the standard version. Disk files are then stored as starting from hex 3000, and become compatible with the the screen EDIT software offered for systems 3, 4, and 10. Note that some text processor commands differ between wordpack and Screen EDIT, and must be amended when changing systems.

1362 Atom Wordpack 3000 50.00

BBC - TYPE BASIC FOR ACORN ATOM



Available now, a 20K BBC ROM conversion module which can be added inside an Atom. It will support the full set of BBC-type BASIC commands. The BASIC syntax is identical so all programs that don't rely on the BBC hardware can be run on the Atom without any modification.

The module is fitted in parallel with Atom BASIC and may be selected by a switch or from the keyboard if certain modifications are made. It consists of 16K BASIC ROM, a 4K operating system ROM and an additional 2K RAM that can be used by the Atom as well.

Complete with manual

A comprehensive BBC-type BASIC manual is supplied with every set giving full operating and fitting instructions.

How it works:

The BBC-type BASIC conversion board uses the same 16K BASIC ROM as used in the BBC Microcomputer. The board includes a 4K MOS ROM to provide the correct machine environment on the Atom. The board also includes logic to alter the memory map so that RAM is available from 0000 upwards, and so that the 16K BASIC ROM can reside at 8000 to C000.

The BBC-BASIC TIME function is implemented by means of interrupts, generated by the Atom's 6522 timer (which must therefore be fitted).

The BBC-type BASIC board is simply fitted by removing four integrated circuits from the Atom and inserting these in sockets

on the BBC-type BASIC board. The board is then plugged into the empty sockets on the Atom.

The BBC-type BASIC board includes the following components:

- 16K BASIC ROM
- 4K MOS ROM
- 2K of additional RAM
- Socket for utility ROM
- Socket for MOS extension ROM
- Decoding logic

The board can either be wired permanently in BBC-type BASIC mode, or, with the addition of two wires to the Atom keyboard, you can select between Atom or BBC-type BASIC by pressing CTRL-BREAK or SHIFT-BREAK respectively.

1363 BBC-type BASIC for Atom on module, assembled and tested 44.00

ATOMCALC

```
C8 V ATOMCALC
B8+. 15
←
```

EXPENSE	COST	VAT	TOTAL
FOOD	63.39	0.00	63.39
GAS	12.00	1.80	13.80
ELECT.	33.20	4.98	38.18
PHONE	7.10	1.06	8.16
RENT	95.85	14.37	110.22
PETROL	47.10	7.06	54.16
INSURE.	23.11	3.46	26.57
EXPENSES			314.50
INCOME			325.00
SPENDING			10.49

For: Planning, Projecting, Estimating, Scheduling, Calculating, Recalculating, Revising, Critical Path Analysis, Scientific tables, Teaching

What is it?

Atomcalc is an all-purpose planning and modelling program contained in a plug-in 4K ROM, which fits into the utility socket of a standard Atom. It is very easy to use; if you can use a calculator, you can use Atomcalc and no programming skill is needed.

Atomcalc creates a grid of up to 62 rows and up to 255 rows, like a ledger. Each position can contain a label, a number or a calculation.

What will it do?

You set up a series of automatic calculating functions like totalling or percentages. Then fill in the columns with your figures and the program produces the answers. If you want to change one figure in the calculation, it immediately changes the relationship of all the other figures involved. So, for example, you can see what effect on profit a 5% increase in sales might have or a 10% increase in production or a 3% drop in transport.

Applications can be stored on tape and printed out on an optional printer.

Users' Manual

Atomcalc comes complete with a 30-page Users' Guide, with financial and scientific examples.

ATOM LISP

The ATOM LISP interpreter consists of 5½ K of machine-code interpreter plus 3K of initialised LISP workspace containing LISP utilities and constants, which can be deleted to make extra space if not required. It is supplied on cassette and is designed to run on a 8+12K ATOM.

ATOM LISP is intended for:

- * Hobbyists who want to discover about the fundamental language of artificial-intelligence research.
- * University and school students who are learning LISP or carrying out research.
- * System designers who require more flexibility in data and control structures than is provided by traditional programming languages.

Also available is a 44-page guide to ATOM LISP, "LISP Theory and Practice".

Important features include:

- * Fully interactive with explicit EVALUATE and VALUE IS messages.
- * Automatic parenthesis count to help in typing complex expressions on the computer.
- * Built-in superprinter to format the printing of large expressions.
- * Editing by screen editing or built-in LISP editor.
- * All errors trapped and optional full traceback printed.

ATOM LISP includes a number of extensions to basic LISP, including:

- * PEEK, POKE, and CALL to control hardware and machine-code programs.
- * Functions can have optional arguments with default values.
- * Improved iterative control structures using LOOP, WHILE, and UNTIL functions.
- * Automatic access to COS or DOS commands with "***".
- * Cassette (or disk) input/output control functions.

The fast compacting garbage collector automatically finds space for numbers, lists, or character strings if there is any space at all remaining so that the programmer never need be concerned about the details of storage allocation.

LISP Functions

AND, APPLY, ATOM, BLANK, CALL, CAR, CDR, CAAR, CADR, CDAR, CDDR, CHARP, CHARS, CLOSE, COND, CONS, CR, DEFUN, DIFFERENCE, DOLLAR, EDIT, EQ, ERROR, ERRORSET, EVAL, F, FSUBRP, GET, GETCHAR, GREATERP, LAMBDA, LESSP, LIST, LISTP, LOAD, LOOP, LPAR, MESSOFF, MESSON, MINUS, NIL, NOT, NULL, NUMBERP, OBLIST, OPEN, OR, ORDINAL, PEEK, PERIOD, PLIST, PLUS, POKE, PRINO, PRINT, PROGN, PUT, QUOTE, QUOTIENT, READ, READLINE, RECLAIM, REMAINDER, REMPROP, RPAR, RPLACA, RPLACD, SAVE, SET, SETQ, SUBRP, SPRINT, T, TIMES, UNDEFINED, UNTIL, WHILE, WRITE, WRITE0, ZEROP.