



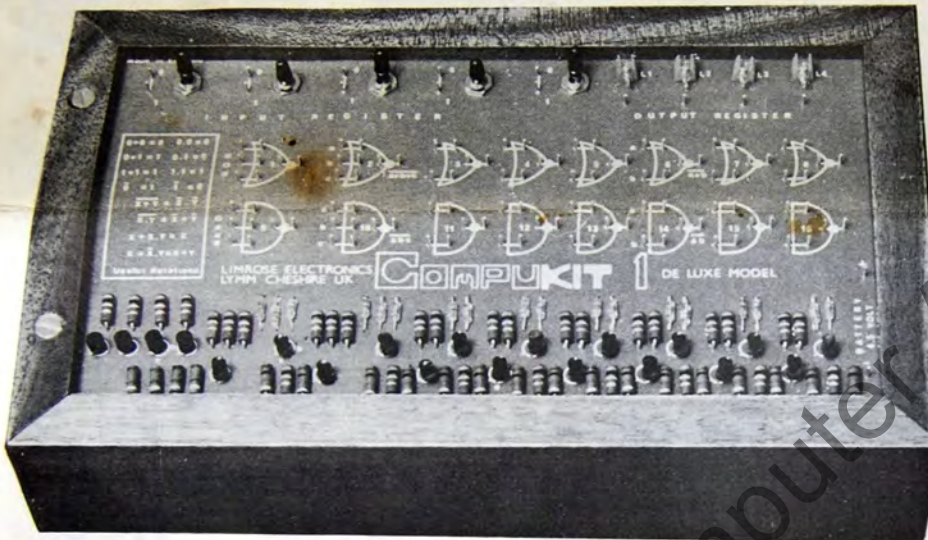
# COMPUKIT 1

Deluxe Model

## PRODUCT INFORMATION

Teaching Aid for Computer Electronics,  
Digital Logic and Boolean Algebra.

Specially designed for Schools, Technical Colleges, Universities and  
Industrial Training Organisations



- **LOW COST**
- **STUDENT-PROOF** electronics
- **WIRED-OR LOGIC**
- **HIGH FAN OUT**
- **PORTABLE**
- **ABSOLUTELY SAFE**
- **EXPANDABLE**
- **ACCESSORIES**

Now... at very low-cost you can buy these handsomely finished instruments for use in teaching laboratories in your school, college or training organisation. At a fraction of the cost of similar instruments on the market at present, you can now afford to equip an entire teaching laboratory so that each student can have his own logic tutor.

These instruments are supplied ready for use and no calibration or additional equipment such as power supplies or meters are required. Although gates with only two and three inputs have been provided, the wired-or facility permits realisation of gates with up to eight or more inputs readily while retaining the flexibility of separate gates. The task sheets show the layout of the gates and input and output registers and can be used by students to plan circuits. The transparency for overhead projection can be similarly used by the teacher to explain their construction.

CompuKit 1 Deluxe Model Type CK1/DS, complete with  
24 solderless patch leads, battery and instruction book

**£20.70**

Same as above, but with gold-plated pins, Type CK1/DG

**£22.00**

24 Patch Leads, assorted colours, PL/24A £ 2.75

Battery Type 126, 4½ Volts. £ 0.20

Transparency for overhead projectors £ 0.65

Task sheets, per 100 £ 1.00

Instruction Book (extra copies) £ 0.40

Prices and specifications subject to change without notice.

**LIMROSE ELECTRONICS LYMM CHESHIRE ENGLAND**

Tel LYMM 3019 (092 575 3019)



Lymm, Cheshire. Tel Lymm 3019.  
Exhibits: Limrose Electronics are exhibiting their Compukit range of Computer Education Aids. These inexpensive products can be supplied in kit form, or ready assembled and teaching how computers work.

## Low cost for of computer

LOW COST is one of the points being Electronics for their new logic simulation aid, the Compukit 1 de-luxe model.

Logic circuits are constructed using a multi-coloured solderless patch lead system, and the electronics are described as "student proof." The 16 NAND/NOR gates have been designed so that they cannot be damaged by accidental incorrect patching.

The provision of input/output for four men which will circuit

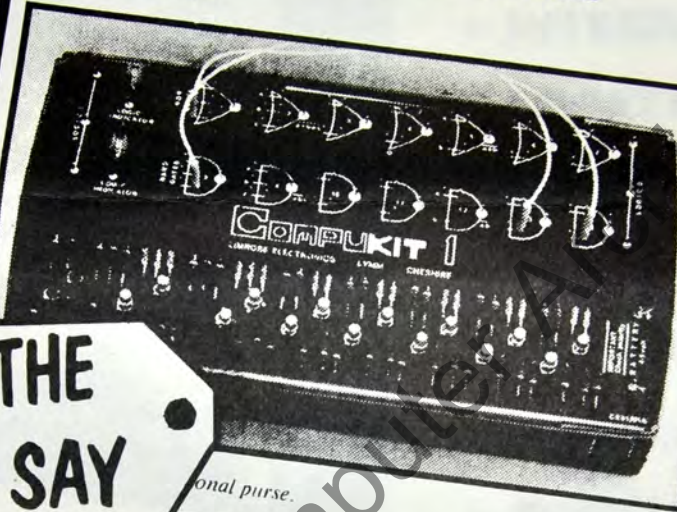
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## THE TIMES Educational Supplement

FRIDAY SEPTEMBER 11 1970

## Cheap, quick and clean

by Leigh Salter



## WHAT THE PRESS SAY

Two versions of a computer educational aid have been tested with pleasure and satisfaction. To be frank, there is no longer much novelty in this concept of miniature logic simulators for school or college use.

The criteria, therefore, are whether a kit can be readily assembled, whether it functions to fulfil an educational programme, and whether its price is acceptable to an educational purse. The Limrose products are clear winners on all counts.

The cheaper version, in kit form, is intended for the individual who wants to find out how computers work, or for use in the laboratory to illustrate a computer appreciation course. It is based on a printed circuit board designed so that one face shows clearly marked logic symbols together with the associated discrete components.

This is an attractive feature where an understanding of the electronics as well as the logic operation of the circuits is required. As a teaching aid for the introduction of the elements of binary arithmetic and logic it is good value for money.

Several kits connected together may form the basis of more advanced experiments.

When assembled the kit provides three input logic levels (0-4.5V), a two-bit output indicator, one three-fold and five two-fold NOR gates, one three-fold and five two-fold NAND gates. Patch leads enable the operator to interconnect these as required.

The de luxe model, at a slightly higher price, is still good value. This comes in made-up form to give a slightly larger range of circuits consisting of a five bit input register, a four bit output indicator, two three-fold and six two-fold NOR gates, two three-fold and six two-fold NAND gates.

The circuit board is mounted in a varnished wooden box frame which holds the battery power supply. Access to the battery requires the removal of two wood screws. In the model provided, however, it was necessary to remove the bottom of the box before the battery could be removed.

This apart, there is no criticism whatever to offer of the design or quality of the equipment. The prices quoted are quite low but it may be worth mentioning that during September they are a pound or two less.

It is also possible to purchase the unassembled kit in a pack including soldering iron, cutting pliers and wire stripper and cutter.

## EDUCATIONAL KIT CLARIFIES THE 'HOW?' OF THE COMPUTER

### Logic kit

For those interested in learning the fundamentals of logic, Boolean algebra and digital computers, the educational kit shown here teaches in a straightforward manner the elements of logic. Boolean algebra and fundamentals of digital computers. Logic circuits are formed in the kit use transistors, diodes and gates.

## Engineering 17 April 1970

MACHINE

April 1970

TRAINING OFFICER  
CHRONICLE

DO-IT-YOURSELF  
LOGIC KIT

Computer Weekly

23 MARCH 70

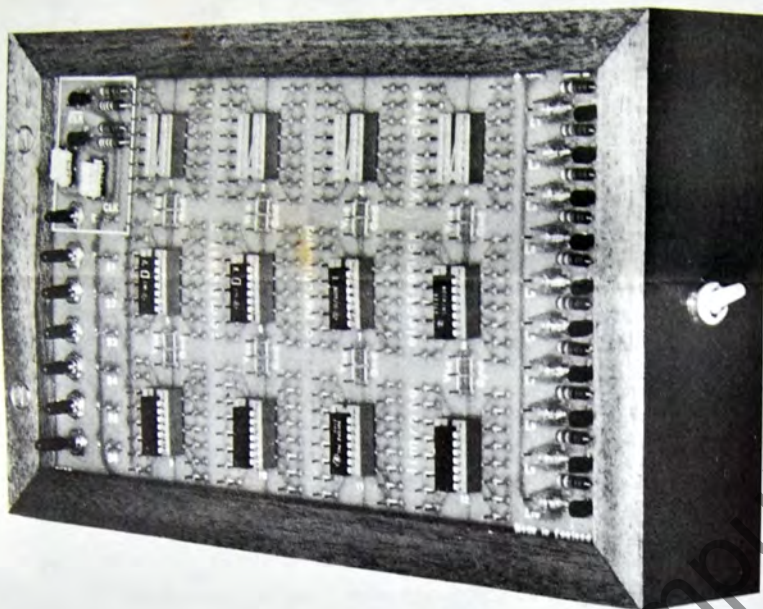




## COMPUKIT 2

# I.C. PATCHBOARD

PRODUCT INFORMATION



- **LOW COST**
- **INTEGRAL CLOCK**
- **LOGIC INDICATORS**
- **INPUT SWITCHES**
- **14 or 16 PIN D.I.L.**
- **SOLDERLESS**
- **RELIABLE**
- **PORTABLE**

This instrument is invaluable to schools and colleges for teaching advanced logic theory and to development engineers in industry for rapidly simulating complex digital and analogue systems. It will cut design time, reduce engineering errors and check your printed circuit designs at very low cost. It can also be used as a temporary test facility and will provide effective system demonstrations.

CompuKit 2 I.C. Patchboard will accommodate twelve 14 or 16 pin dual-in-line integrated circuits, which are connected together using a reliable multicoloured solderless patch lead system and gold-plated terminal pins. Each output has two pins so that multiple connections to any particular point can easily be made. A six-bit input register, ten-bit output register and a 2-speed clock has been included as an integral part of the patchboard. The slow speed of the clock can be used for demonstration purposes and the high speed can be used for testing the system under actual working conditions. The patchboard is housed in a handsome cabinet which is fully portable and has no trailing wires when used with the internal  $4\frac{1}{2}$  volts battery power supply. It can also be used with external power supplies permitting use of analogue and digital modules simultaneously. Two or more units may be connected together for simulating larger systems.

An Educational Pack consisting of the patchboard, patch leads, a selection of integrated circuits and a logic instruction book is also available.

CompuKit 2 I.C. Patch Board, complete together with  
48 patch leads and two batteries type 126, CK2/S

**only £48**

CompuKit 2 I.C. Patch Board Educational Pack, CK2/E

**only £62**

24 Patch Leads, PL/24A £2. 15. 0. (£2.75)

Prices and specifications subject to change without notice.

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## Specifications

SOCKETS	16 pin dual-in-line integrated circuit sockets, with high quality heat treated Beryllium Copper contacts with 1 micron hard gold-plating.
PINS	Two per point, except for logic indicator lamps and CDK. Gold-plated on brass.
INPUT REGISTER	Six high quality switches, which provide logic 1 and logic 0 outputs. Can be used to set up any 6-bit binary pattern.
OUTPUT	Ten transistor-driven logic indicator lamps, turned on by logic 1. Can be directly driven by TTL integrated circuit outputs. Input impedance 10K Ohms nominal.
CLOCK	Two speed clock with square wave output at approximate frequencies of 0.5 Hz and 10KHz. Output may be grounded or connected to Vcc without damage when used with the internal power supply.
PATCH LEADS	Silver-plated socket ends, with plastic insulation. Available in three different lengths of 6", 8" and 10" nominal. Each length is colour coded. Standard pack of 24 patch leads, PL/24A.
EDUCATIONAL PACK	The educational pack consists of one Compukit 2 I.C. Patch Board, complete with logic indicators, clock unit, input switches, 48 solderless patch leads and two batteries type 126, 3 Quad 2-input Nand gates, 2 Triple 3-input Nand gates, 2 Dual 4-input Nand gates, 1 Hex Inverter, 2 Dual Master-slave J-K Flip-flops and one logic instruction book.
WEIGHT & SIZE	Approx. 3 lbs., 11" x 6 $\frac{1}{2}$ " x 2 $\frac{1}{4}$ " nominal

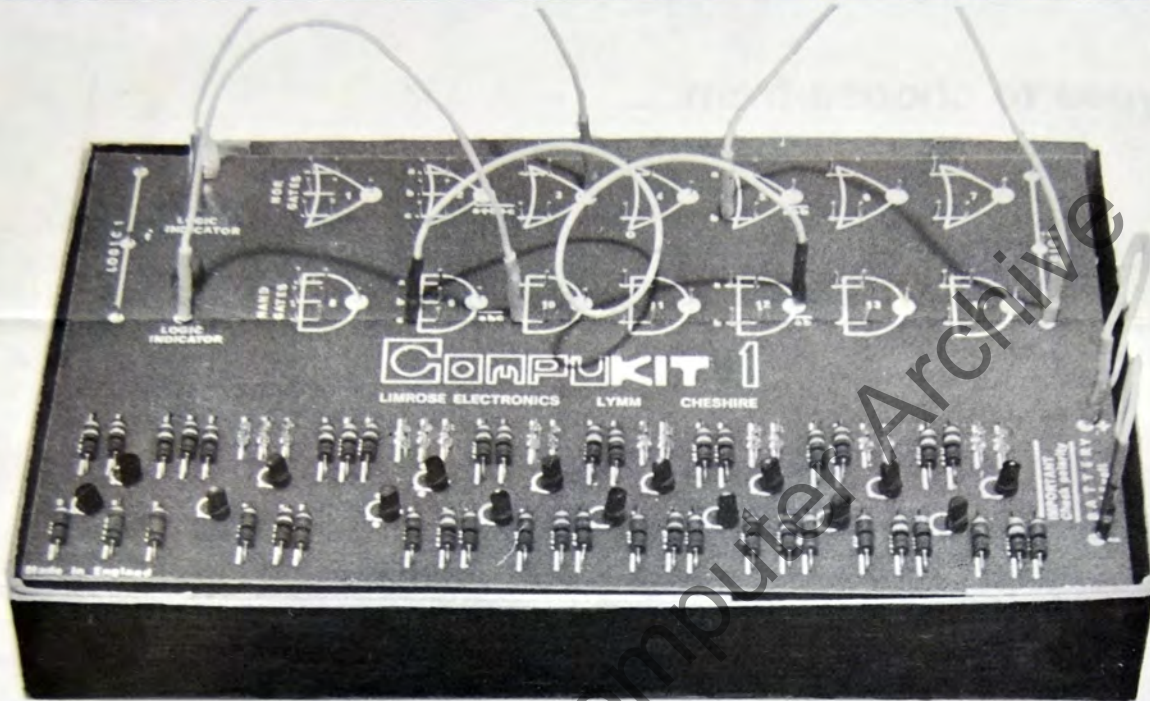




# COMPUKIT 1

Unique low cost teaching aid for  
logic and digital computers

## PRODUCT INFORMATION



CompuKit 1 is an educational aid to learning, and teaching, how digital computers work. The basic model is supplied in kit form ready to be assembled on a specially designed printed circuit board. The assembled kit consists of a selection of Nand and Nor gates (the 'building blocks' found in digital computers), input buses and output indicators. Logic circuits are made using multicoloured solderless patch leads. The board is powered by a battery included in the kit.

Accompanying the kit is a 44-page, illustrated, instruction book by a Fellow of the British Computer Society. Some of the many circuits included in the instruction book are binary half and full adder, two's complement arithmetic, logical comparator, exclusive-or, wired-or, decimal to binary converter, binary counter, flip-flop memory and polyflop.

CompuKit 1 is aimed at the serious amateur, junior professional, student, teacher, industrial training instructor, or indeed anyone else interested in learning or teaching the fundamentals of digital computers, logic and Boolean algebra.

"Cheap, quick and clean... clear winners on all counts... there is no criticism whatever to offer of the design or quality of the equipment" - Times Ed. Supplement, 11th September, 1970.

"Most students should find the simple exercise of building up the kit both interesting and rewarding. The risk of faulty connections or physical damage are minimal... The CompuKit is undoubtedly an extremely powerful aid to teaching elementary computer logic and should find its way into many schools and colleges and probably into many homes."

- Mathematics Teaching, No.54, 1971.

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## Six types to choose from ....

- CK1/U**  
£10.50
- This basic type of Compukit 1, supplied in kit form, consists of a specially designed  $9\frac{3}{4}" \times 5\frac{1}{2}"$  printed circuit board with clearly marked component locations and logic symbols, 16 high quality silicon transistors, 16 diodes, 42 carbon film resistors, 2 miniature indicator lamps and mounting clips, battery, terminal pins, solderless patch lead kit, solder and instruction book. The kit, once assembled, consists of 7 Nand and 7 Nor gates, two logic input buses, two logic output indicators and 24 solderless patch leads.
- It is useful to have some previous experience of soldering for the assembly of this kit. A pair of cutting pliers and a miniature soldering iron of about 15 watts are necessary for the assembly.
- CK1/P**  
£9.75
- This is the project version of Compukit 1 and a number of these connected together can be used for building many useful and instructional projects in physics, electronics, logic and digital computers. Supplied in kit form, this type is identical to the basic Compukit 1 type CK1/U, except that soldered connections are used to make the circuits and therefore wire is supplied in place of the patch lead kit. The instruction book contains a section on useful hints for project work.
- CK1/UP**  
£11.75
- This kit is the same as type CK1/U, except that the patch leads are supplied fully assembled. Particularly recommended for those with some experience of soldering, but wish to achieve the quality and appearance of professionally assembled kits.
- CK1/UT**  
£12.80
- Same as type CK1/U, with the cutting pliers and soldering iron required for assembly. The soldering iron is rated at 15 watts, 230 volts a.c. mains. Please specify supply voltage when ordering from abroad, if different.
- CK1/A**  
£13.25
- This is the fully assembled and tested kit type CK1/U, ready to use, as shown in the photograph on the other side of this leaflet. Includes 24 solderless patch leads, battery and instruction book. Being professionally assembled, the electronics in this kit is "student-proof" against accidental damage due to incorrect patching.
- CK1/AC**  
£15.50
- Same as type CK1/A, supplied assembled in a handsome cabinet with battery on/off switch. The cabinet houses the battery, protects the electronics and enhances the appearance and handling of the kit. Ideal for classroom use in school, colleges etc.