**128K memory
32-bit processor
Professional keyboard
Two Microdrives built in
High-resolution colour display
Software included: spreadsheet,
database, word-processing, business graphics**

Actual Size

The Sinclair QL

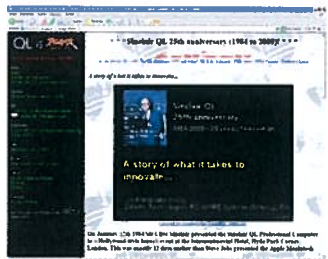## Sheer professional power in the special Sinclair style

sinclair

SINCLAIR QL Preservation Project (SQPP)

On January 12th 1984 Sir Clive Sinclair presented the Sinclair QL Professional Computer in a Hollywood-style launch event at the Intercontinental Hotel, Hyde Park Corner, London. This was exactly 12 days earlier than Steve Jobs presented the Apple Macintosh.

The QL still is a very good example of an innovative, stylish, powerful and underestimated product. On one hand it failed in the market in the long run but on the other it influenced many developments which ended in today's products.

In its 25th anniversary year 2009 every month a surprise will be unfold.

Jan 12th – Congratulation to the QL's 25th birthday. Message spread to VIP, community and media.
http://www.qlvsjaguar.homepage.bluewin.ch/SinclairQL_25th_anniversary_1984_to_2009.html

Check out this 25th anniversary presentation…
http://www.cowo.ch/downloads/SinclairQLis25-compressed.ppt

Try QPC, a virtual QL running under Windows...
http://www.cowo.ch/downloads/QPC_a_virtual_QL.zip

Feb 19th – Massive coverage (11 pages) of the QL in the April Issue of Personal Computer World (PCW) magazine.
http://www.pcw.co.uk

Mar 12th – SINCLAIR QL Preservation Project (SQPP) launched, starting with Documents/Publications from Sinclair Research Ltd and various computer magazines of the years 1984 to 1986.
http://www.qlvsjaguar.homepage.bluewin.ch/SinclairQLpreservationproject.html

Happy 25th anniversary and QL forever!

Urs König (aka cowo)
http://www.qlvsjaguar.homepage.bluewin.ch

QL – the Sinclair quantum leap

In 1980, Sinclair startled the world with a computer for less than £100.

It had 1K RAM. It had a black-and-white display. By today's standards, it was almost primitive. But it *worked* – and the ZX80 started Britain's computer revolution.

Four years – and three computers – later, Sinclair is introducing a product which is even *more* revolutionary than the ZX80: the Sinclair QL. It represents a quantum leap in personal micro capability.

The Sinclair QL offers an incredible 128K RAM – expandable to 640K.

It uses a 32-bit processor – the advanced Motorola 68008 chip.

It's supplied complete with a suite of four programs which outperform the software for *all* existing micros.

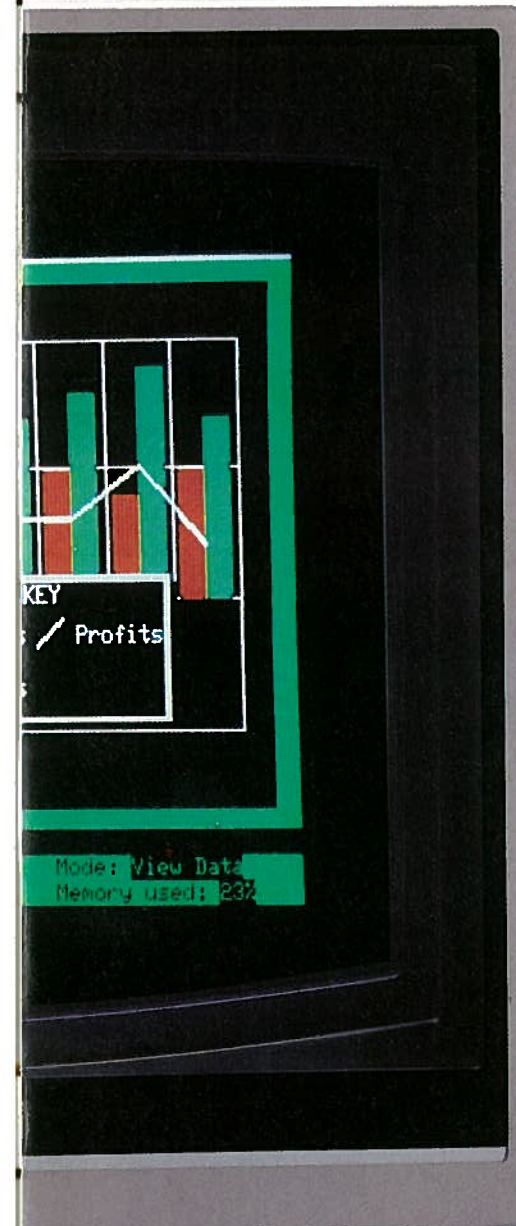It has two built-in Microdrives, each offering 100K of storage for programs and data.

It has networking capability; a full-size QWERTY keyboard; its own operating system – QDOS – which accommodates multi-tasking.

It drives colour and monochrome monitors and TV, incorporates RS-232-C serial interfaces, accepts joystick cursor control…
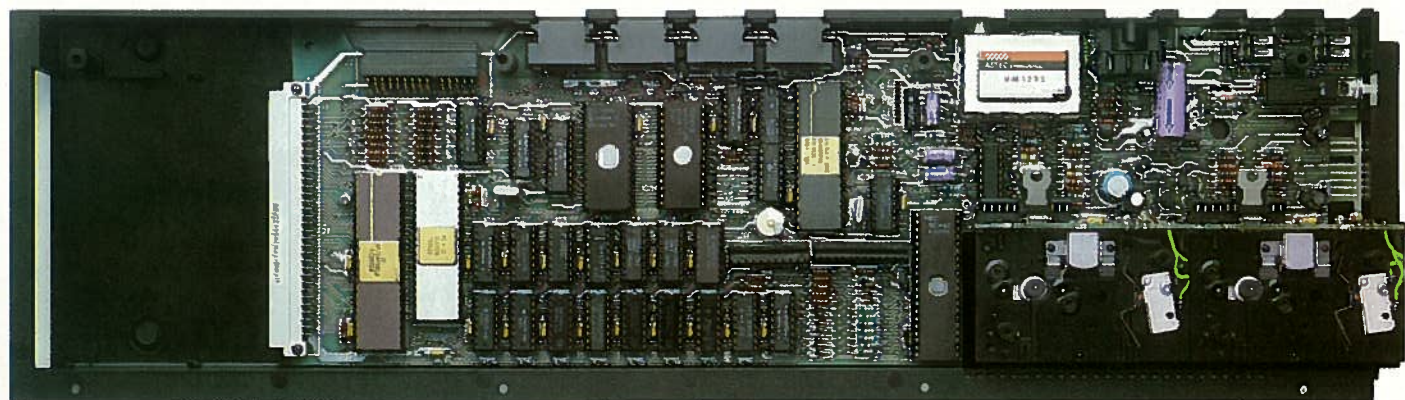
It allows you to do *more* than any other micro available today. It tackles business routines with confidence. It plays games of altogether exceptional sophistication. It makes the most complex programs simpler and faster to write or run. And because it's so powerful, it's uniquely user-friendly – gentle and helpful with beginners, flexible and responsive to advanced programmers.

In fact, the Sinclair QL matches and surpasses the performance of machines costing thousands of pounds.

Yet it costs only £399 to make the Sinclair quantum leap!

Throughput

Processors

The Sinclair QL contains two processors, and two custom-designed control chips.

The main processor is a member of the 32-bit Motorola 68000 family – the 68008 – widely regarded as the most powerful micro-processors available.

Users of the Sinclair QL will immediately appreciate the architecture and instruction set the 32-bit processor offers. And its power and speed offer dramatic opportunities for the design of spectacular software, so you can confidently expect a flood of outstanding applications software to become available. You can also be sure that the QL will not become outdated. 32-bit architecture is future-proof.

Almost all computers costing under £1000 today use 8-bit processors. Even the new generation of business computers, such as the IBM PC, are only now beginning to use 16-bit processors. Any computer already using a Motorola 68000 chip costs over £2,500 – yet with the Sinclair QL, the 32-bit Motorola 68008 is available for less than £400.

Alongside the 68008, a second processor, an Intel 8049, controls the keyboard, generates the sound, and acts as an RS-232-C receiver. None of the power of the 68008 processor is wasted on these functions.

The two custom chips are unique to Sinclair. Like all Sinclair-designed chips they are both elegant and powerful. One controls display and memory; the other controls the Microdrives, the real-time clock, local area network, and RS-232-C transmission.

Memory

To get the most out of a powerful processor, powerful programs are needed, often working on large amounts of data. Both call for plenty of memory – and the Sinclair QL has it.

Most users will find the QL's 128K of internal RAM provides more than enough capacity for their largest program, and cuts out the bogey of running out of bytes. It handles the very advanced software supplied with the machine, which simply could not run with less memory.

For users with altogether exceptional amounts of data or very large programs to manage, a RAM expansion board will be available to expand the 128K to 640K simply and inexpensively.
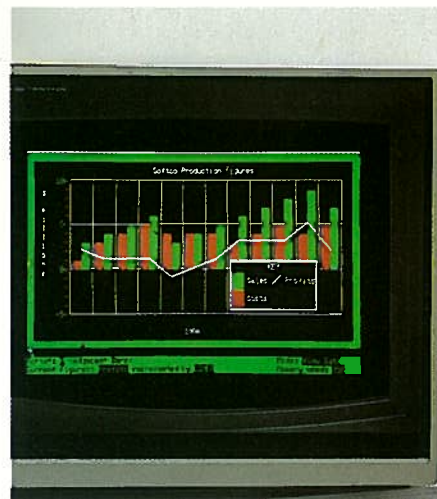
Revolutionary QDOS operating system

The QL's 32K ROM contains a new operating system (QDOS) specially developed for the QL.

QDOS is unique to Sinclair, and a key element in the QL's performance. No existing operating system was remotely capable of capitalising on the full power of the 32-bit processor. QDOS sets a new standard in operating systems for the 68000 family of processors, and may well become the industry standard.

QDOS is a single-user, multi-tasking, time-sliced system using Sinclair SuperBASIC as a command language.

One of its most significant features is a very powerful multi-tasking capability. Multi-tasking is the ability to use several programs individually and simultaneously. The QL also displays the results simultaneously in different portions of the screen. Each program running can be scrolled within its window independently. This feature is not normally available on computers costing less than £7,000.

QDOS has fully device-independent input/output. A program can be written without reference to the type of device to be used, which can be specified when the program is run; and the QL can sense the type of peripheral devices connected to its expansion port and organise their input/output.

Input

Sinclair SuperBASIC

Sinclair BASIC is the world's most popular language – for the QL, it has been made even more powerful.

The new Sinclair SuperBASIC presents no problems to anyone used to Sinclair BASIC. It simply combines the familiarity of BASIC with a number of major developments which allow the QL's full capability to be exploited. It handles strings, for example, in the same neat way – but it also handles arrays just as neatly.

Its three major advantages over conventional BASIC are that it's fully procedure structured; it's extendable; and its execution speed is independent of program size.

Anyone writing large programs will appreciate the procedure facility, which allows code to be written in clearly defined blocks.

Its extendability allows new procedures to be added by the user which will work in exactly the same way as the command procedures built into the ROM.

And because of its constant execution speed, SuperBASIC does not get slower as programs get larger. Long programs run much faster than with other BASICs.

Over the years, BASIC has come in for a good deal of criticism. Sinclair SuperBASIC puts right what has been described as 'wrong' about BASIC.

Keyboard

The QL keyboard is designed for fast, accurate input of data and programs.

It is a full-size QWERTY keyboard, with 65 keys, including a space bar; left - and right-hand shift keys; five function keys; and four separate cursor-control keys. All keys are full-travel, ergonomically shaped, and two-shot moulded so that the characters never wear off.

Key action is positive and precise. The keyboard is quiet, with an audible click to indicate that the key has made contact, without the need to watch the screen.

A membrane beneath the keyboard protects the machine from dust (and coffee!).

The computer can be raised slightly at the back by small detachable feet, for users who find an angled keyboard more comfortable.

Microdrives

The Microdrives for the Sinclair QL are identical in principle to the popular and proven ZX Micro-drives, but give increased capacity and a faster data-transfer rate. The cartridges are inexpensive and removable, and each holds at least 100K bytes. Typical access speed is 3.5 seconds, and programs or data can be loaded into the internal RAM at up to 15K bytes per second.

The Sinclair QL has two built-in Micro-drives. If required, a further six units can be connected. (These units should be QL Microdrives – ZX Microdrives are not suitable, though cartridges are interchangeable with appropriate formatting.) Four blank cartridges are supplied with the machine, and an order form is included to make further cartridges easy to obtain.

Both Microdrives and cartridges are exceedingly compact, and take up very little space within the machine or on a work-top.

ROM Cartridges

The Sinclair QL has a slot to accept a QL ROM cartridge as the more popular pieces of software become available in this form. Again, please note that ZX ROM cartridges are not suitable for use on the Sinclair QL.

32-bit architecture, 128K RAM and QDOS combine to give the QL the performance of a mini-computer for the price of a micro.

Output

In addition to the expansion slot and the Microdrive extension slot, the Sinclair QL has no fewer than 9 peripheral ports, neatly configured at the rear.

Reset button
This allows the computer to be cleared without disconnecting the power supply.

Microdrive extension slot

ROM cartridge slot
Accepts one QL ROM cartridge, which simply plugs in. Up to 32K ROM is possible.

Expansion slot for 0·5 Mb memory board and forthcoming peripherals.

Local area network: QLAN
A high-speed communications link for up to 64 Sinclair QL and ZX Spectrum computers. Data is passed over the network at 100K baud, and protocols ensure that relevant stations are ready before data is passed. Data may also be broadcast over the network to all computers listening.
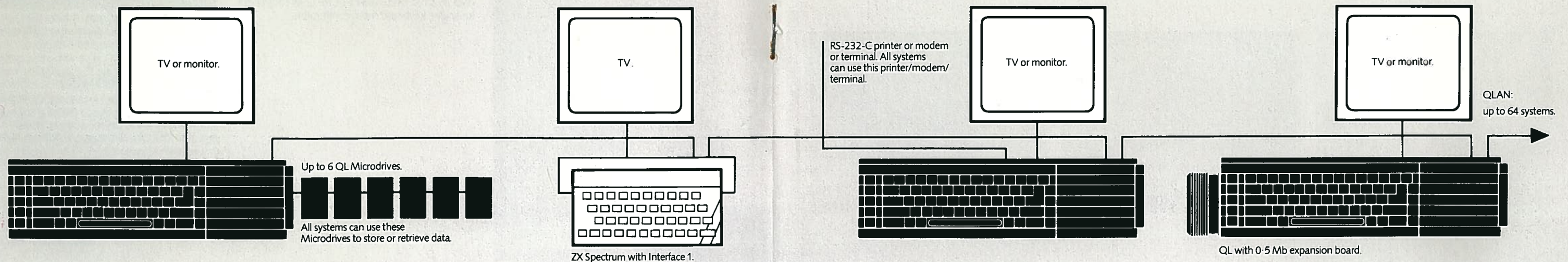
Monitor port
The Sinclair QL provides very high resolution when connected to a monitor. Two modes are available: 512 x 256 pixels, giving 4 colours – black, white, green, red (or 4 grey scales in monochrome) and 256 x 256 pixels, giving 8 colours (or 8 grey scales) and hardware flash.
The number of characters on the screen is determined by the number of pixels, but a choice of character sets is available. Normal format is 85 columns by 25 rows.
Both RGB (colour) and monochrome monitors may be used.

TV port
Display modes for TV are the same as those for a monitor, but normal format is 40 to 60 columns, depending on software.
Both colour and monochrome TVs may be used.

RS-232-C
Two standard communications interfaces for peripherals such as printers and modems. Allow transmission at rates from 75 baud up to 19,200 baud, or transmit/receive in full duplex at seven rates up to 9,600 baud. (A parallel printer interface will be available as an optional extra.)

Joysticks
Provision is made for the attachment of one or two joysticks for games or cursor control. Cursor control is also provided by four separate keys on the keyboard.

Typical QLAN configuration

TV or monitor.

Up to 6 QL Microdrives.
All systems can use these Microdrives to store or retrieve data.

TV.
ZX Spectrum with Interface 1.

RS-232-C printer or modem or terminal. All systems can use this printer/modem/ terminal.

TV or monitor.

TV or monitor.

QL with 0·5 Mb expansion board.

QLAN: up to 64 systems.

Included—superb professional software

The QL is a software-designer's dream. The software supplied with the Sinclair QL has been written by Psion Ltd, and completely outperforms existing software for micros. No other comparable machine could even run them. The power of the QL means that the software is both far more capable *and* infinitely more simple to use.

There are four programs in the suite – word-processing, spreadsheet, business graphics, and database management.

They're written specially for the QL and incorporate many major developments beyond existing software packages. Each program is completely interactive: the results of your commands are instantly displayed, not stored invisibly till you run or print. A series of helpful prompts is *always* on display – no complex strings of commands to remember or look up in the manual. Because the suite was designed as an integrated whole, the programs are consistent in design and presentation – learn one, and you've learned them all. All of them use colour, and data is transportable from one to another. (For example, up-dated figures can be transferred from spreadsheet to graphics for an instant visual presentation.)

The accompanying manual is clear and simple – and, most important, a single-stroke HELP command displays a complete menu of appropriate options if you're ever stuck, and returns you to precisely the point you had reached in your operation.

Members of the Sinclair QLUB can also contact Psion at any time for further guidance or instructions on the operation of any of the four programs. Full QLUB details are on page 8.

Word-processing

Certain to set a new standard of excellence, QL Quill uses the power of the QL to show on the screen exactly what will be printed – what you see is what you get. No training is needed – a beginner can be using QL Quill for word-processing within minutes.

The display is in full colour for maximum clarity, and not even the fastest typist can beat the program's key-in speed.

QL Quill brings you *all* the facilities of a very advanced word-processing package. This program on its own is a justification for buying the Sinclair QL.
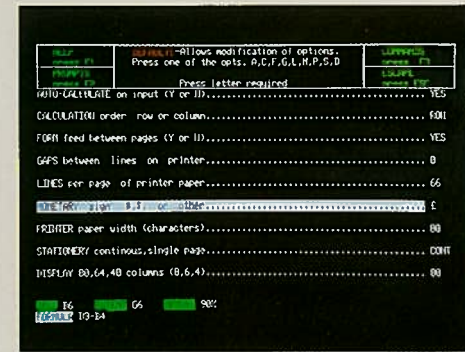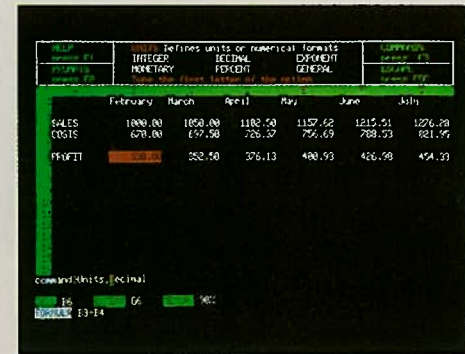
Spreadsheet

One of the most popular programs for a micro – and traditionally one of the hardest to come to grips with. Now, it's no problem.

QL Abacus makes simultaneous calculations and 'what if' model-construction easier than it has ever been. Sample applications are provided, including budget-planning and cash-flow analysis, but there's no limit to what you can do.

Unlike other spreadsheets, QL Abacus allows you to refer to rows, columns and cells by the names you assign to them. You don't have to use meaningless letters and numbers.

You can also assign function keys to change a variable and carry out a complete 'what if' calculation with a single key stroke.

Database management

QL Archive is a very powerful filing system which sets new standards, using a language even simpler than BASIC. It combines ease of use – for simple applications such as card indices – with huge power as a multi-file, open-ended data-processor. It includes a screen editor which allows you to design your own screen and format your reports. Procedures and programs may be written and saved for repeated use and a full editor is included.

QL Archive includes two sample applications - 'card index' and 'cheque book'.
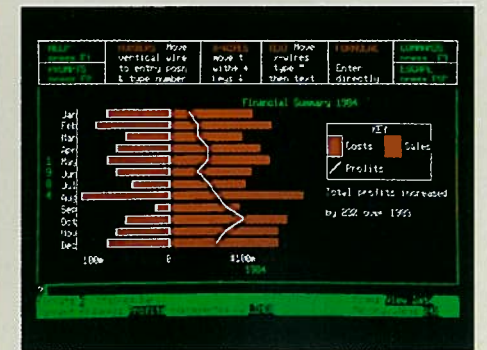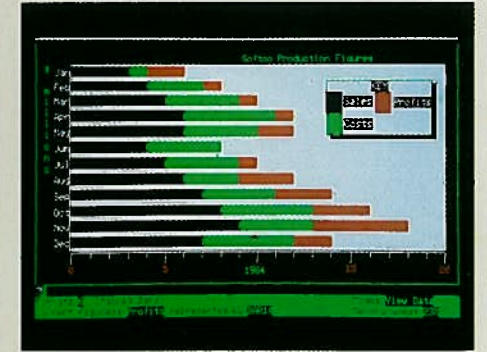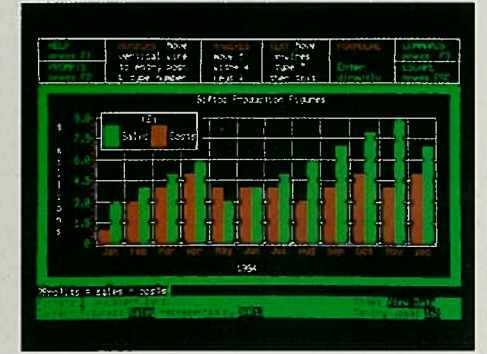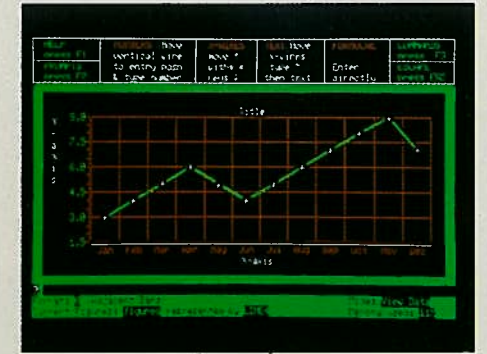
Business graphics

QL Easel is a high resolution colour program so easy to use you probably won't refer to the manual!

The program handles anything from lines, shaded curves or histograms to overlapping or stacked bars or pie charts.

QL Easel does not require you to format your display before entering data; it handles design and scaling automatically or under your control. Text can be added and altered as simply as data.

Unlocking the power of the Sinclair QL

The Sinclair QL provides performance in a class of its own. It is easy to learn, and easy to use.

The manual supplied with the machine is designed to ensure that users have immediate access to the QL's full power. It includes:

* a comprehensive description of the machine and how to use it
* learning to program in Sinclair SuperBASIC
* a Sinclair SuperBASIC reference manual
* a complete guide to QL Quill, Abacus, Archive and Easel

all in an A4 ring binder.

The manual also contains order forms for accessories and options, details of the comprehensive one-year QL guarantee, and servicing information.

The QL expansion programme

A vigorous and continuing programme of enhancements for the QL is under way.

Enhancements already under development include

* C compiler
* 68000 assembler
* terminal emulator
* 0·5 Mb memory expansion board
* analogue/digital converter
* hard disc (Winchester) interface
* modem
* parallel printer interface
* IEEE-488 interface

Details of these and other peripherals and software can be found inside the brochure flap.

Order forms for the 0·5Mb expansion board, QL Microdrives and blank Microdrive cartridges will be sent with your QL.

How to stay in touch with developments – the QLUB

The QLUB is the QL Users Bureau.

Membership is open to all QL owners; for an annual subscription of £35, QLUB members receive one free update to each of the four programs supplied with the QL, and six newsletters a year. These newsletters will provide technical tips and suggestions for applications of your QL software, and you can be sure that whenever any new hardware or software is expected you will be the first to hear about it and get a chance to order it.

In addition, Sinclair has made exclusive arrangements for QLUB members to obtain software assistance from Psion. If you have any questions concerning the use or application of QL Quill, Abacus, Archive or Easel, all you have to do is to write to Psion direct, quoting your QLUB membership number. Psion will reply, usually within 48 hours.

The Sinclair QL – a quantum leap in personal computing

QL computer, power supply, manual, software and blank Microdrive cartridges – the most powerful professional personal computer ever produced. £399.

For £399, professional personal computing with the Sinclair QL
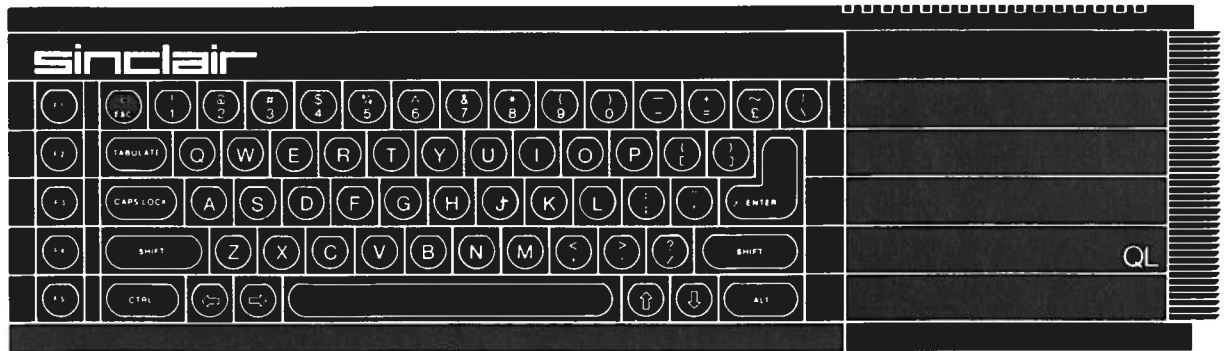
* **All the speed and power of 32-bit processor architecture.**
* **Capacity to spare – 128K RAM as standard, expandable to 640K.**
* **Two Microdrives built in, 100K per cartridge.**
* **Full networking capability – up to 64 Sinclair QL and ZX Spectrum computers, each with peripherals.**
* **RGB or monochrome monitor and TV display ports; RS-232-C; joystick ports.**
* **Multi-tasking facility with new QDOS operating system.**
* **New Sinclair SuperBASIC language.**
* **Outstanding new software included for word-processing, database, spreadsheet and business graphics.**

ORDER FORM

◆ LIFT FOR ORDER FORM

QL Order Form

To order by telephone
— Phone Camberley (0276) 685311. (Please do not use this number for other enquiries. The operators do not have general or technical information).
— Have your credit card number ready. (Access/Barclaycard/Trustcard only.)
   It may be possible to extend your existing credit limit.
   Please ask our telephone staff for more details.

To order by mail
— Complete the form and send it to the address below.
   For credit card purchasers it may be possible to extend your credit limit.
   Full details will be sent when we acknowledge your order.

Please allow 28 days from receipt of order for delivery. 14-day money-back option.

For general enquiries
— Phone Camberley (0276) 686100 or write to the address below.

Sinclair Research Ltd, FREEPOST, Camberley, Surrey, GU15 3BR.

- ✂ - - -

Send to: Sinclair Research Ltd, Computer Division, FREEPOST, Camberley, Surrey, GU15 3BR.

Qty	Item	Code	Item Price £	Total £
	Sinclair QL Computer	6000	399.00	
	QLUB membership (one year)	6100	35.00	
	Postage & packing (any order over £390)	6999	7.95	
			£ _____	

Tick the appropriate box

☐ I enclose a cheque made payable to Sinclair Research Ltd for £ _____

☐ Please charge my Access/Barclaycard/Trustcard account number ⌷⌷⌷⌷⌷⌷⌷⌷⌷⌷⌷⌷⌷⌷⌷⌷⌷⌷

Signature _____   PLEASE PRINT

Mr/Mrs/Miss _____

Address _____

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