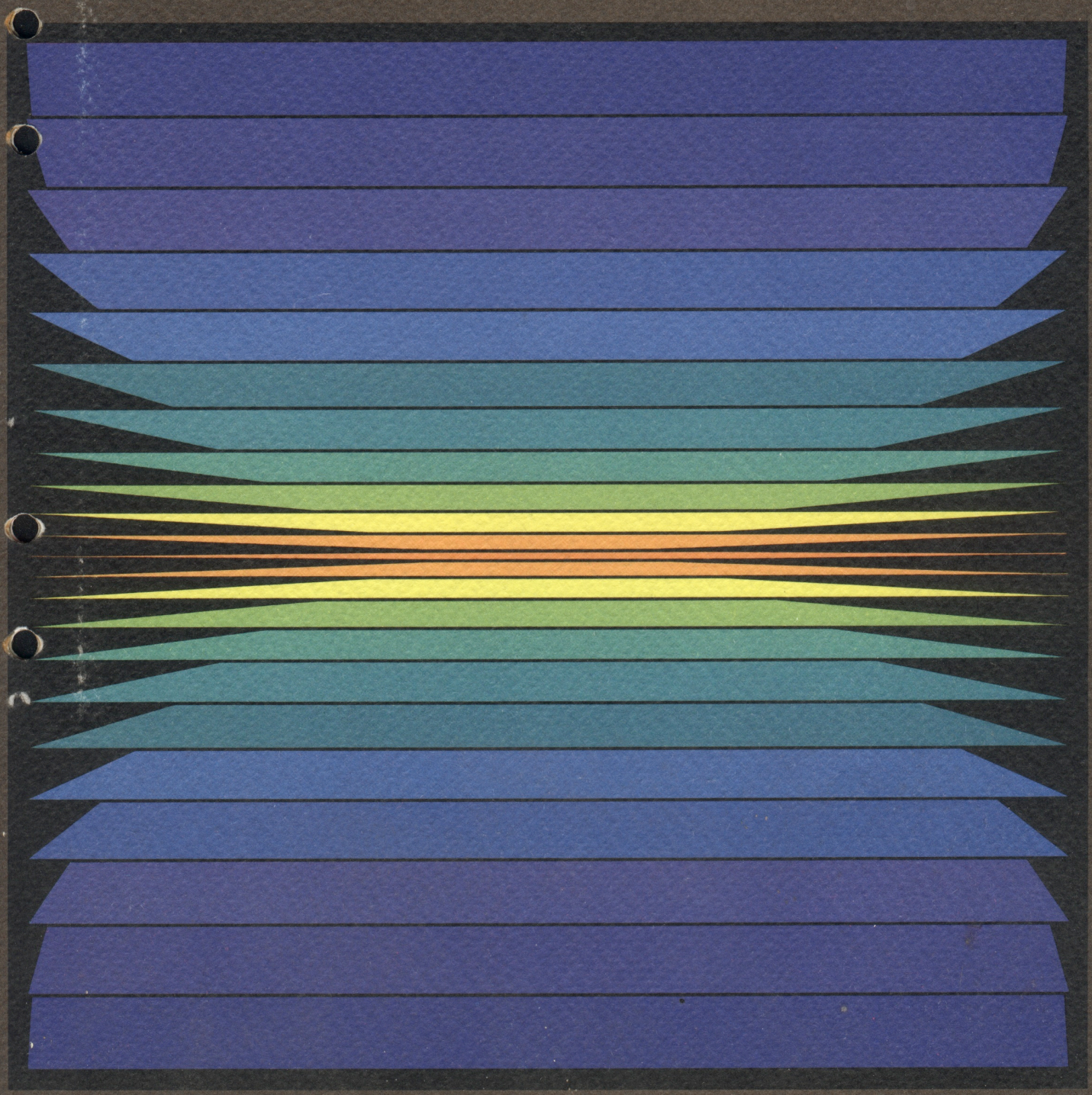
the ultimate office machine



Q1

From Q1 Corporation, the first to develop and market microcomputer systems....

The new Q1/Lite System

Providing faster response. Faster even than most medium-scale computers. And at a fraction of the cost.

The **Q1/Lite**....A multi-purpose system. Replacing a wide variety of data-processing equipment – including accounting machines, data-entry equipment, desk-top programmable calculators, terminals and word-processing machines.

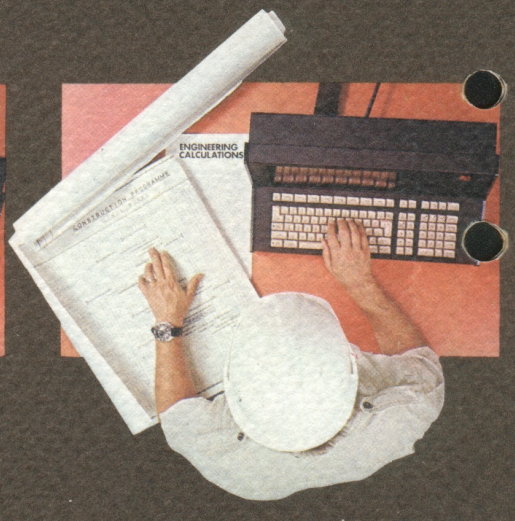
Discover for yourself why the **Q1/Lite** has been termed "The Ultimate Office Machine".

COMPUTER TERMINAL:

Q1 provides your mainframe with clear and error-free data for processing. Not only does this cut unproductive turn-around time for error correction, it reduces the load on the mainframe.

DATA ENTRY:

Q1 provides the operator with lead-through questions, while executing extensive checks at the time of entry. An audio signal "BEEP" will alert the operator if an error is made. Operator productivity and efficiency are thus greatly improved.



ENGINEERING CALCULATIONS:

Q1 (PL/1) the most advanced programming language is now right at your fingertips. Complex calculations involving mathematical functions are performed with ease. Interactive programming allows unlimited flexibility in program development and modification.

the ultimate office machine

WORD PROCESSING:
Q1 immediately improves the productivity of your secretary by 200 to 300 per cent. Instead of doing repetitive typing, the secretary is now free to devote more of her time to the work for which she has been trained.

INVESTMENT ANALYSIS:
Q1 allows you to evaluate all possibilities of a given problem, even allowing you to answer "what if..." questions whenever they occur. Thus you have a much better feel of a problem before you make that vital decision.

STAND-ALONE PROCESSING:
Q1 gives you immediate information on each aspect of your business such as:

- Production Planning
- Inventory Control
- Pay Roll Computation and
- Accounting Applications

Not only does this enable you to make quick and effective decisions, it frees your executives from routine work which can be handled by the Q1/Lite.

Q1/Lite Single Station

1 THE Q1 INDEPENDENT WORK STATION (IWS)

The new Q1/Lite is able to support 64 Independent Work Stations, each with its own computer and memory. With a full typewriter keyboard, a calculator keyboard and 31 special function keys, the Q1/Lite can execute any program....irrespective of what each of the other IWS is programmed to do.

And the Q1/Lite's IWS is unique, featuring a compact, flat, non-flickering digital display. A truly significant factor in making the system portable.

2 THE Q1 PRINTER/COMPOSER

The Q1/Lite Printer/Composer is a serial impact printer capable of printing 45 characters per second. Its print quality is far superior to all other standard computers and office typewriters.

A printer capable of generating characters at a speed of 200 characters per second in a 7 x 9 dot matrix is optionally available.

3 Q1 DISK MODULES

The Q1/Lite features a unique Flexible Disk Module system. Specifically designed to handle all multi-purpose requirements, these diskettes replace the magnetic cards used with word-processing machines and the tape cartridges used with desk-top programmable calculators. They also supercede the cumbersome punch cards and paper tape used with other computer systems.

The immediate advantages of the Q1 Disk Modules is that they provide direct-access external storage, offer an efficient scratchpad area, and provides feasible processing of one or many transactions....without the delays of batch processing.

The Q1/Lite is designed to accommodate as many as four disk drives.....either a double density of 600,000 8 bit bytes, or a double-sided double density of 1,200,000 8 bit bytes.

In addition, the unit contains a disk multiplexor which co-ordinates the flow from the IWS to the data base.

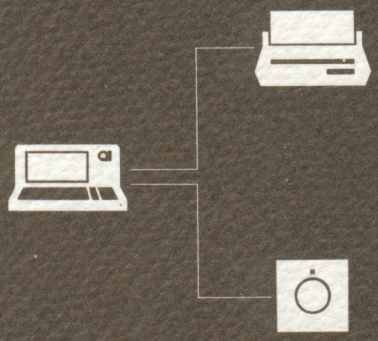
RELIABILITY AND MAINTENANCE

Q1 Corporation is a pioneer. We were the first company to manufacture microcomputer systems. Quite naturally, this has served to distinguish us as the industry leader in the field of microcomputer systems technology....with the reputation for the longest experience in the field-installation of microcomputer systems. Our name and our reputation is synonmous with reliability.

All computers – whether medium or large-scale – contain expensive and bulky components which require on-site maintenance. By contrast, the sparsity of parts and use of optional peripherals in the Q1/Lite facilitates immediate and easy replacement by the operator. Its remarkable compactness and portability makes it possible to replace the work station, printer or disk drive simply by the immediate installation of a replacement unit.

With the Q1/Lite it is now possible to use a computer system in remote locations where trained maintenance personnel are not readily available.

Q1 Flexibility



VERSATILITY

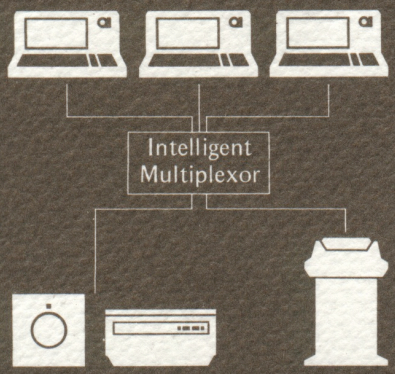
The new Q1/Lite System is available in either single or multi-station configuration.

The standard configuration of the Q1/Lite is a single station, consisting of an alphanumeric keyboard and display, processor and memory, printer and disk module.

As a single station system, it contains the Z80 processor, 6K bytes of Read-Only Memory (used for the resident operating system), and a minimum of 16K bytes of Read-Write Memory for the program and data.

This single station can be used as a stand-alone system. With the optional communication controller, it can be used to communicate with a large centralized computer system.

It can also contain a printer, an optional Magnetic Bubble Memory module, and a communication controller.



MULTI-STATION ADAPTABILITY

The trend toward distributed data-processing initially led to the use of the minicomputers to process data for a number of terminals, providing access to disk drives containing a common data-base.

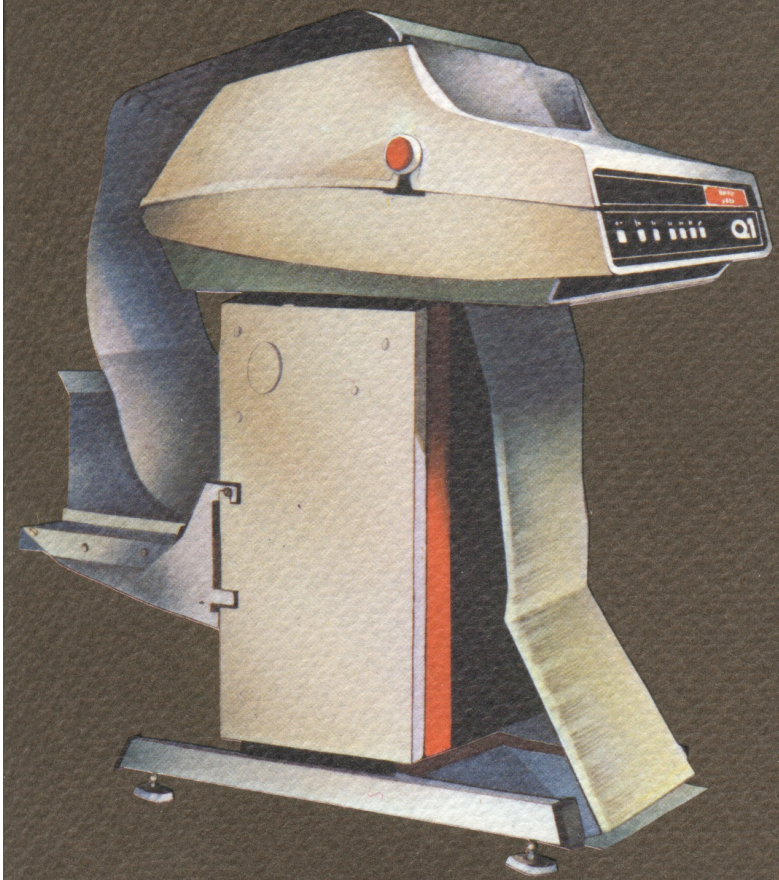
However, the increased power and extremely low cost of microcomputers has shifted the economics of processing data away from the shared-logic approach of minicomputers and towards the utilization of microcomputers at the point-of-use.

With the Q1/Lite Multi-Station configuration up to 64 independent work-stations may be connected to a standard system by the simple use of a multiplexor. This enables the system share a common data-base or printer.

Whether Single or Multi-Station, each independent work-station contains a keyboard, display, a central processing unit, Read-Write memory, and a resident operating system.

HIGH SPEED PRINTER

In addition, the Q1/Lite also provides the option of High Speed Printers. 300 and 600 lines per minute line printers are available.



RIGID DISK DRIVE

Further indication of the Q1/Lite's versatility is the comprehensive range of its main storage devices which are optionally available. These are:

- 3 megabytes fixed, plus 3 megabytes (removable)
- 6 megabytes fixed, plus 6 megabytes (removable)
- 6 megabytes fixed, plus 18 megabytes (removable)
- 27 megabytes (removable)
- 54 megabytes (removable)

Q1 Multi-purpose Approach

Each module of the Q1/Lite has been specifically designed to meet individual multi-purpose requirements.

One of the multi-purpose features of the Q1/Lite is its high-level programming language. The Q1/Lite is the first microcomputer system capable of compiling and executing programs written in PL/1. This is especially important considering that recent efforts by Intel and other companies indicate that PL/1 will soon emerge as the dominant language of microcomputers.

Unlike COBOL or FORTRAN, PL/1 is suitable for a wide variety of business, scientific, and text-processing applications. The use of PL/1 compared to the use of assembly language on the 8080 microprocessor, for example, results in a reduction of up to 90% in programming costs. This powerful programming language of the IBM 370 is available at the point-of-use with the Q1/Lite microcomputer system.

In addition to performing most of the functions of remote centralized computers, the Q1/Lite can perform accounting functions more efficiently than accounting machines. It is more effective than any other word-processing machine and more functional than all forms of data-entry equipment

Moreover, the Q1/Lite provides all these important functions at a far lower cost. This is made possible by the simplicity of its design, its utilization of advanced technology, and its unique applicability to diverse markets.

Advantages of the Q1 Multi-purpose Approach

FAIL-SOFT CAPABILITY

Unlike a variety of limited-function machines which cannot replace each other in the event of breakdown, the Q1/Lite system can temporarily perform the functions of another, thus providing fail-soft capability. When a locally-shared minicomputer breaks down, all of its connected terminals are instantly put out of service until the equipment can be repaired. By contrast, should a Q1/Lite independent work station malfunction, all other work stations will continue to operate.

LOWER APPLICATION PROGRAMMING COSTS

With the decline in hardware costs, the relative cost of programming is steadily increasing. Since the Q1/Lite reduces the diversity of data-processing equipment and programming languages, it allows for far-reaching reductions in the cost of training programmers, programming, and documentation.

LOWER SYSTEM SOFTWARE PROGRAMMING COSTS

Since each Q1/Lite independent work station contains its own processor, application program, and operating system, there is no need for the complex multi-tasking required by a remote central computer or a locally-shared minicomputer.

MODULAR GROWTH

The initial cost of a locally-shared minicomputer is excessively high when only a few terminals are required. Typically, a minicomputer cannot effectively process data for more than 16 terminals. The low-cost, point-of-use microcomputer is the obvious solution when only a single or a few work stations are required. Moreover, since each independent work station processes its own data, a computer used to control the access of the common data-base can be accessed by a greater number of users than is possible by a locally-shared minicomputer.

This approach and these features are only available in the Q1/Lite.

LOWER PURCHASING COSTS

There is a definite advantage to the smaller company in the use of the new Q1/Lite system. Not only will it eliminate the number of office machines generally required, it can do so at a substantially reduced cost.

The larger firm will find that the versatile new Q1/Lite is capable of replacing a variety of limited-purpose machines. Even though each department may use the Q1/Lite tailored to its specific needs, the resulting increase in volume discount can be up to 20%.

LOWER MAINTENANCE COSTS

Owing to the remarkable simplicity of its design, the Q1/Lite contains very few parts. This drastically reduces the cost of spare parts while at the same time greatly reducing the training time of maintenance technicians and documentation. The approximate reduction in overall maintenance costs is 25%. This reduction is even greater considering the variety of equipment the new Q1/Lite system is able to replace.

GREATER UNIFORMITY OF EXTERNAL STORAGE MEDIA

The Q1/Lite substantially eliminates the cost, time, and errors involved in converting machine-readable data from one external storage medium to another.

Fail-Soft Capability

Lower Application Programming Costs

Lower System Software Programming Costs

Modular Growth

Lower Purchasing Costs

Lower Maintenance Costs

Greater Uniformity of External Storage Media

= Lower Cost

Profitability

All these advantages translate into increased profitability. The introduction of the Q1/Lite microcomputer in your corporation means:

- Data-entry costs are significantly less.
- Data-processing capacity can be increased — without increasing costs.
- Software costs are significantly reduced.
- Down-time losses are drastically reduced.

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