

# Hardware Review

## Second option

**Hardware 68K/OS operating system Micro QL Price £144.85 (68K/OS board, £99.95; bundled software, £39.95; manuals, £4.95) Supplier GST Computing Systems, 91 High Street, Longstanton, Cambridge**

**T**he 68K/OS operating system for the QL is the operating system for the machine that was written by Cambridge-based GST for Sinclair and developed in parallel with Sinclair's own QDOS written by Tony Tebby.

In fact the GST QL operating system was the one demonstrated at the launch of the QL in January — Sinclair's own QDOS had then still to be completed (as became rather obvious when the QL became first delayed, and then began appearing with an Eprom appendage in the Rom cartridge port). Following Sinclair's decision to adopt QDOS in preference to GST's 68K/OS, GST has continued to develop 68K/OS and will soon begin selling it as an add-on for the QL.

The board connects to the left-hand expansion port of the QL, once the blanking plate has been removed. When this is done only a switch can be seen and this allows you to choose between QDOS or 68K/OS when the computer is turned on or reset. On start-up 68K/OS gives you five screen options asking you about the number of characters per line you want — the choices are 85, 80, 60, 42 and 40 characters per line. After making your choice the command program is booted from Rom. This gives you information on programs running and stores the microdrive maps for use by other programs. As well as this you can access the operating system itself, allowing you to re-allocate the screen and suspend/kill programs which you no longer need.

The 68K/OS board has space for up to four 16K Eproms, only two of which are used by the operating system and the command program.

Also with the board are supplied two microdrive cartridges which hold accompanying software including a machine-code assembler and a file editor for the system.

Why then is 68K/OS better than QDOS — and what makes it worth having both?

First, unlike QDOS, it multi-tasks all programs loaded into the system with any programs already held. Unfortunately, at the moment, there is no commercial software available under 68K/OS, so you have to write your own. Without a high-level language, you will also need to know 68000 machine-code.

Again, unlike QDOS, any text overwritten by a different screen window will be saved allowing you to scroll it back on to the screen at a later date. This is seen when you are using a program as well as the command program. When a program is

loaded the command program's screen space is cut to one line, and the new program takes up the rest of the screen.

The system to control microdrive files is far better on 68K/OS than QDOS as you can access a file by giving the name of the tape and file name — in QDOS you must use a fixed drive. Also 68K/OS does not allow you to replace a tape with another tape while a file is still open.

The editor supplied with the operating system will edit any text file or may be used as a simple word processor which is faster and easier to use than *Quill*. The assembler is capable of assembling a text file produced by any other program.

Both these programs can be held in Ram at the same time and so may be used together, though a text file has to be placed on to a microdrive before the assembler can use it. Under 68K/OS the operation of the QL's two microdrives has also been greatly improved — both in speed and reliability. The microdrive system formats the tape with 1K blocks instead of the 0.5K blocks used by QDOS. This means that only half the number of blocks need to be found when loading a file. To improve reliability, a maximum of 100K is stored on each tape.

Other programs supplied with 68K/OS — apart from the editor and assembler — are a draw program, a terminal emulator, and programs to format and copy microdrives and print to an Epson FX-80 printer.

More titles which are planned to be launched later this year are Fortran, Pascal and a more sophisticated assembler package.

Programs to be launched next year will include Basic and a C compiler. These

programs may be supplied on Eproms — to plug into the unused sockets on the board — and so will use little of the Ram. To go with these GST plans to sell a range of programs similar to the Psion titles which will work under 68K/OS. GST also plans a disc drive which will run under both 68K/OS and QDOS.

Four manuals cover the areas of the assembler, user manual, application software and programmer's information. The information held in these manuals is well set out though it is not designed for the first time user. Then, in all honesty the OS system is itself highly complex and also not really intended for the first time computer user.

The Programmer's Manual gives information on all the system calls and makes up most of the documentation while the user manual is much smaller and unfortunately gives little information to help the user.

On the whole, Sinclair may have made the right decision in going for QDOS rather than 68K/OS, but only because of the latter system's inaccessibility to a new computer user. Otherwise the 68K/OS offers superior performance.

Instead, the idea of up-grading to it when you want more power and control is far better. A QL and 68K/OS is very good value for anyone who wants a system which can display the idea of multi-tasking and run a language like Fortran all for under £600.

Sadly though, the majority of QL owners are unlikely to consider the added benefits of the 68K/OS worth the £145 price tag.

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