

If you would like us to try to answer a question about the QL for you, please email your question to [helpline@quanta.org.uk](mailto:helpline@quanta.org.uk) – obviously we can't guarantee to be able to answer every such question but will do our best to either answer directly or put you in touch with someone else who may be able to help.

Often such questions form the basis of articles in our Helpline pages. We do not publish the name of the person asking the question (unless you want us to) and may edit the question for length. We hope that searching out the answer to such questions will be of help to our readership too.

The following is one such example, received back in February.

Q. Several years ago I had a QL, now I hope to start using one again. I am particularly interested in tinkering with a bit of 68000 assembler once more, which I did back in those days but can't remember what tools I used or where to get them. Can you help? I'm actually using the excellent QEmulator from Daniele Terdina.

A. Probably the best assembler program to use for QL at the moment is George Gwilt's GWASS or GWASL macro-assembler programs.

GWASL (or GWASS Lite) is an easy to use 68008 and 68000 assembler. This ought to work fine on Q-emuLator.

GWASS is a more advanced system, which adds the ability to assemble extended opcodes for later Motorola processors such as 68020 and later ones. Have never tried this one on Q-emuLator – I'm not 100% sure if it will run on a pre-68020 system or emulation.

The reason I recommend these is that George Gwilt still updates this software on a regular basis. He also releases the sources to these programs, which are available to download freely.

Both can be downloaded either from my website at <http://www.dilwyn.me.uk/asm/index.html> or from George's website at <http://gwiltprogs.info/page2.htm>

There are various other assemblers, disassemblers and monitors on that page of mine too (of various ages!).

Personally I still use the old Computer One Assembler and Editor from time to time, as well as GWASL. Amazing that this Computer One program which was written in the 1980s still works on modern QL systems and emulators.

Looking back there were various assembler programs back then, such as the GST Q-Mac (still available in updated form from Quanta on two-disk library set UG30), the Hisoft Devpac, Talent Assembler Workbench (modified version from Quanta on library disk UG22), QLASM, plus of course various machine code monitors such as QMON (Tony Tebby/QJump), C1 Monitor, Digital Precision super monitor program, and probably many more.

If you download the Gwass Extras file from my website it contains two reference documents with lists of programming instructions etc. to refresh your knowledge of 68008 assembler.

From the Documents section of my website, you can download various documents and articles about assembler on the QL.

<http://www.dilwyn.me.uk/docs/asm/index.html>

As for books, for my own QL assembly language information and reference I still use the Andrew Pennell "Assembly Language Programming on the Sinclair QL" published by Sunshine. It is out of print now of course, but can be bought occasionally from auction sites such as SellMyRetro.com and eBay, or occasionally second hand from traders like Rich Mellor at RWAP Software.

I'm not 100% sure of the legality of this, some QL books like this have been scanned by a Spanish website and available as PDF files from Javier Guerra's website at

<http://www.speccy.org/sinclairql/archivo/docs/docs.htm> – if you scroll down to the Libros/Books section you can get this book as a PDF (along with many others!).

There's also a CD of the complete Quanta Software Library you can get from the Librarian. Using Q-Emulator you can read this type of QXL.WIN CD by attaching the QXL.WIN to one of the 8 drive slots in Q-emuLator. We are working on putting the complete Quanta library online in a Members Section for members to download, but I don't know how far away this is at present.