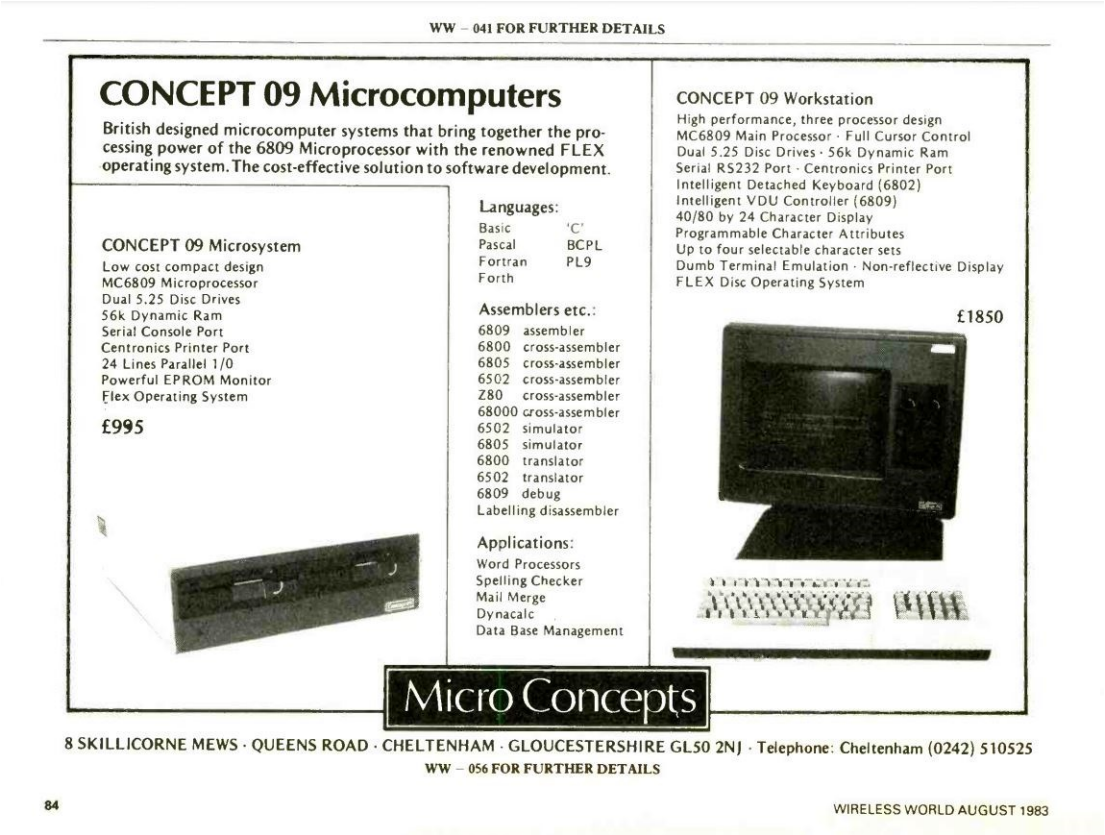
Concept 09 - Serial Number CS2025

1. General.

Working on my own as Cigol Controls Limited (exactly as I am now! (Feb 2022)), my first computer with disc drives was the Concept 09, serial number CS2025. I actually went down to Cheltenham to pick it up in September 1983.

2. Wireless World Advertisement.

I am indebted to David C. Wiens for finding this advertisment in Wireless World for the Concept 09. It was an identical advert to this that first caught my eye.



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CONCEPT 09 Microcomputers

British designed microcomputer systems that bring together the processing power of the 6809 Microprocessor with the renowned FLEX operating system. The cost-effective solution to software development.

CONCEPT 09 Microsystem
Low cost compact design
MC6809 Microprocessor
Dual 5.25 Disc Drives
56k Dynamic Ram
Serial Console Port
Centronics Printer Port
24 Lines Parallel 1/0
Powerful EPROM Monitor
Flex Operating System

£995

Languages:
Basic 'C'
Pascal BCPL
Fortran PL9
Forth

Assemblers etc.:
6809 assembler
6800 cross-assembler
6805 cross-assembler
6502 cross-assembler
Z80 cross-assembler
68000 cross-assembler
6502 simulator
6805 simulator
6800 translator
6502 translator
6809 debug
Labelling disassembler

Applications:
Word Processors
Spelling Checker
Mail Merge
Dynacalc
Data Base Management

CONCEPT 09 Workstation
High performance, three processor design
MC6809 Main Processor · Full Cursor Control
Dual 5.25 Disc Drives · 56k Dynamic Ram
Serial RS232 Port · Centronics Printer Port
Intelligent Detached Keyboard (6802)
Intelligent VDU Controller (6809)
40/80 by 24 Character Display
Programmable Character Attributes
Up to four selectable character sets
Dumb Terminal Emulation · Non-reflective Display
FLEX Disc Operating System

£1850

Micro Concepts

8 SKILLICORNE MEWS · QUEENS ROAD · CHELTENHAM · GLOUCESTERSHIRE GL50 2NJ · Telephone: Cheltenham (0242) 510525

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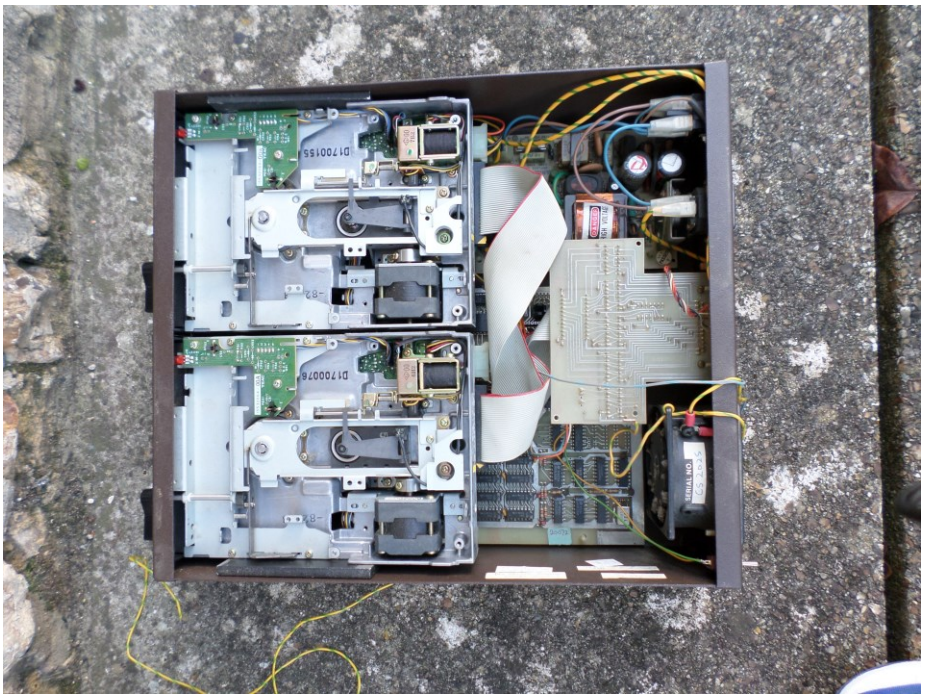
84 WIRELESS WORLD AUGUST 1983

3. Photographs.

The following photographs were taken in February 2022 (following use of the Concept 09 and PL9 to update some production testing software for one of my hardware products (FLM-101—which is a surface mount equivalent of the FLM-100)).


Concept 09



4. Modifications.

During its lifetime the only “repair” I’ve made to the Concept 09 was to replace both floppy disc drives with identical units (they are both single-sided double-density 5¼").

I fitted a toggle switch to force the 6809 into reset. This is mounted on the back of the unit and allowed a reset recovery after code I wrote had crashed out (very common with the assembler code I was writing before I got hold of PL9).

I added a buffered output of the A0 to A10 address lines and D0 to D7 data bus lines (bi-directional) along with R/*W, E, WT and an IO Enable signal that is valid for address range $E800 to $EFFF. You can see this board (my own design) upside down on the 25way D connector inside the enclosure on the “top view” photograph above.

I used to arrange my hardware products such that all the I/O was in a 2K address space and had a board of my own design that allowed these buffered lines to connect to a 6809 (or later a 6309) socket on my target board with the IO Enable signal generating the correct high order address lines to gain access to the the appropriate target I/O 2K address space. This was configured using DIL switches mounted on the board.

This just about worked! I did need to make sure earthing / 0Vdc lines were well connected (hence the yellow/green wires in the photographs).

Later I added an IRQ connection (the blue/grey wire in the photograph).

Using this along with PL9 I delivered many good hardware products using my own hardware designs (in those days laid out using black sticky tape on clear plastic - took forever and was never re-usable).

I also delivered several control systems software based on the Motorola MM17 Micromodule as the CPU (based on the 6809) and various other Micromodules providing digital and analogue I/O.

I successfully used this approach from 1983 through to the mid 1990’s, before gradually moving to using processors from the HC11 series with two different C compilers for smaller control systems and using Motorol VME systems with code written in Graham Trott’s “Plus” (PL9 for the MC68000) developed under OS9/68K but running on bare metal direct from EPROMs.

5. Before the Concept 09.

My very first Motorola Micromodule project was actually an MC6800 based system running from EPROMs with all the code originally entered manually as hex through the keyboard of my development system, a Motorola D2 system extended with additional RAM, additional PIAs and additional EPROM store for my own utilities and a 2516 Texas EPROM programmer that I designed to plug into the PIA sockets. But that’s another story (and one without images—the extended D2 kit has finally gone to heaven (or perhaps hell?)).

My programming development is quite neatly traced by the evolution of my vacuum pumping control systems.