Earlier this year I started building a small computer system based on a Motorola MC68010 microprocessor. I developed a similar system for an A-level electronics project many years ago and – I reluctantly admit – I’ve been something of a fan of the 680x0 architecture ever since.

The MC68000 is a 16-/32-bit microprocessor launched in 1979. It is a CISC design like its principal rival, the Intel 8086. Unlike the 8086, though, the 68000 has sixteen 32-bit general-purpose(-ish) registers.

The system is quite minimal. It consists of an MC68010, clocked at 10MHz, with 1MiB of static RAM (two AS6C4008 512KiB x 8 static RAM ICs) and 1MiB of ROM (two A29040B 512KiB x 8 flash ROM ICs) on a 16-bit bus. I added a MC68681 DUART (dual universal asynchronous receiver/transmitter) IC: this provides two RS232-compliant serial ports, a counter/timer circuit and some input and output port pins. I intend to add ATA and Ethernet interfaces once the system is running.