

ABSTRACT

The Development of a Dual Processor
Multiprocessor System

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This report describes a project undertaken to develop a dual microprocessor multiprocessor system. Two fully functional microprocessor systems based on the MC 6809 microprocessor chip, and complete with operating software were used as the processors. Communication between the processors was achieved via common memory. There was also a means for one processor to signal or interrupt the other.

Two programmes were executed on the multiprocessor system. In both of these programmes parallel or concurrent processing was involved. The two programmes were a producer-consumer data exchange problem using a cyclic buffer, and a fourth-order digital high pass filter.

The performance of the multiprocessor system was evaluated. This was done by executing a given task on the multiprocessor system, and on a uniprocessor system, and comparing the execution times for the task.