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. Com-
munication between the processors was achieved via
common memory. There was also a means for one pro-
cessor to signal or interrupt the other.

Two programmes were executed on the multipro-
cessor system. In both of these programmes parallel
or concurrent processing was involved. The two pro-
grames were a producer-consumer data exchange prob-
lem 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 unipro-
cessor system, and comparing the execution times for
the task.