MYRIAD II

Introduction

Extracted from the brochure dated 1967

The success of the first Marconi micro-miniature computer - Myriad I - is such that the company has extended the range with Myriad II. This is a high quality machine which is designed on a modular basis for applications where only part of the full performance capability of the original computer is required. The construction is such that the basic equipment may be extended with additional optional features to meet increased system requirements.

The basic computer consists of two cabinets; one contains a Central Processing Unit (C.P.U.) the other a store of 4096, 8192 or 16,384 words. These are controlled from a desk which contains the power supplies and supports the operator`s console.

Optional extensions to the basic machine, such as increased storage, local input output facilities etc. are available and, if included, are housed either in the existing equipment or in additional cabinets of similar design. Myriad II is a general purpose on-line computer using similar techniques to those of Myriad I. The latest machines are ideal for real time applications such as air traffic control and message switching and because they are designed on the 'Highway' principle a very large number of peripheral devices can be connected to the computer with the minimum of special equipment. A wide range of systems can be provided in conjunction with English Electric Computers Limited, and English Electric Automation. The machine is eminently suitable for plant monitoring and control functions, and a complete range of peripherals can be supplied to enable the computer to sample and control any process. Myriad ll is also suitable for commercial applications especially as a satellite computer to a larger machine; or for complex scientific calculation in Universities and Laboratories. It may be used on-line to a number of users and simultaneously control a simulator or experimental plant.

There are at present three languages available - Myriad User Code, Algol and a version of Coral; work is in progress on a Fortran compiler with segmentation facilities.

Brief technical description

Myriad II is a fully parallel computer using 24-bit words to represent data and machine instructions. Data is held as pure fixed-point Binary

Fractions in the range -1<x<+1, negative numbers being represented in 2`s complement form.  The computer obeys a single address instruction code in sequence, unless directed elsewhere by 'Jump' or `Link' instructions or 'Interrupt' signals.

The order code allows up to 64 variations, though not all are used in the standard machine. The orders are ideal for real-time data handling, but still ensure that the machine is truly general purpose. For data handling, modifier bits may be used in an instruction word to modify the action of that instruction. Two 24-bit registers (A and B) and an arithmetic unit are provided; a 48-bit register (AB) can be made by combining A and B.

Two basic storage modules are available. A 4096 word 24-bit coincident current ferrite store having one core per bit; its cycle time is 1.50 microseconds and data access time is 0.50 microseconds. The other offers 16,384 word storage also with a cycle time of 1.50 microseconds. Two modules of either kind can be accommodated giving a maximum storage capacity of 32,768 x 24 bits words.

Transfers of data and instructions are through a 'Memory` register, 'M. An 'Address' register holds the address of the location being used. All timing waveforms are produced by an internal system.

Normal transfer of information to and from peripheral equipment is via 12-bit or 24-bit 'Highways', completely controlled by the computer. A sophisticated interrupt system with up to eight priority levels allows the peripherals to initiate data transfer. Myriad I1 returns to its main program within 6.50 microseconds of such an interruption, without using the A and B registers.

Store protection, to prevent mutual interaction between multiple programs, is also available.

An extensive program library is available, including: check and fault location programs, a user-orientated symbolic address compiler, an interpretive Algol compiler and a version of Coral. A Fortran compiler with segmentation facilities is being developed. In the basic form a tele-typewriter with paper tape reader and punch attachments is used for reading in and punching out programs.