

INTRODUCTION

The design goal for the NORD-10 has been to make the most powerful 16-bit computer on the market. In addition to being a very good general purpose computer, the NORD-10 has many features which make it a superb computer for real time applications. Special emphasis has been placed on reliability and ease of maintenance. The computer is very modular and may easily be expanded to handle very large applications.

The NORD-10 has built-in diagnostic microprograms, residing in Read Only Memory, with which all vital parts of the machine may be checked out. All NORD-10 instructions are executed under the control of a powerful microprocessor.

Notable features of the NORD-10 are a very powerful I/O system, a sophisticated hardware paging system which provides virtual memory and extensive memory protection, an extremely responsive interrupt system and a very high instruction execution rate.

Main NORD-10 characteristics:

- 16-bit word length with full addressing space of up to 64K words and a physical memory size of up to 256K words.
- 137 instructions plus 16 instructions reserved for the individual user's specification.
- only one word of storage for each instruction.
- 128 general programmable registers, 8 for each of 16 main interrupt levels.
- 256 external hardware priority interrupt levels for input/output devices.
- 16 internal hardware priority levels for program use, each with its own complete set of 8 registers.
- context switching from one interrupt level to another in 1.5 microseconds.
- 8 different addressing modes providing for relative addressing, index and base registers with pre and post indexing and indirection.
- complete set of fixed point arithmetic instructions including fixed point multiply and divide and bit instructions.
- hardware floating point instructions standard.

NORD-10 can efficiently utilize all software which has been developed for the very successful NORD-1 computer. Several operating systems are available including the general purpose NORD Timesharing System which can run any mix of programs in interactive mode, the SINTRAN II real time multiprogramming operating system, and the NORD-OPS batch operating system. Other system software available includes FORTRAN IV, BASIC, NODAL interpretive control language, file systems, QED interactive text editor, and MAC which is a powerful integrated assembler/debugger.

The NORD-10 computer has been designed and is being produced by A/S Norsk Data-Elektronikk, Oslo, Norway. The company introduced its first computer, the NORD-1, in 1963. More than 120 installations are in operation today and are spread over the whole world. In the highly competitive computer business, the company has specialized in delivering complete tailor made systems. A/S Norsk Data-Elektronikk has obtained a substantial part of the world's shipboard computer control market with more than 50 computers running on board merchant ships around the world.

NORD computers are also widely used in education, computer science, medical research and process control.

Other NORD products include the following:

NORD-20 minicomputer

The NORD-20 was introduced in 1971. This computer provides very fast interrupt handling and is very well suited for data communications, multi-computer applications and process control.

NORD-5 compute module

The NORD-5 was first delivered in 1972 and is a general purpose 32 bit high speed compute module designed to be attached to a general purpose NORD computer system or to computers from other manufacturers. The NORD-5 can perform a 64 bit floating point multiplication, for example, in 900 nanoseconds and is thus very suitable for such compute bound tasks as are found in meteorology and nuclear research.

NORD-50 array processor

The NORD-50, which was introduced in 1973, is a special purpose compute unit which performs convolution vector element sum operations, scaling, multiplexing and demultiplexing operations. The NORD-50 array processor will be used in seismic surveying and performs more than one million floating point multiplications plus more than one million floating point additions in one second.

NORDCOM color graphic display system

NORDCOM is a four color graphic and character display system which uses standard color television sets. Standard video signals may be mixed with computer generated information.

NORD IDT Remote Job Entry Terminals

The NORD IDT terminals simulate standard terminals to Honeywell 6030/6060, Univac 1106/1110, IBM 360/370 and CDC 3300/6600. The terminals may also be run as user tasks on the NORD Timesharing System.