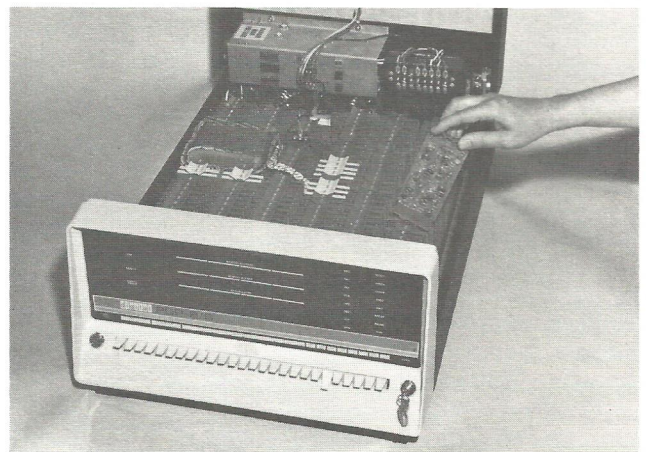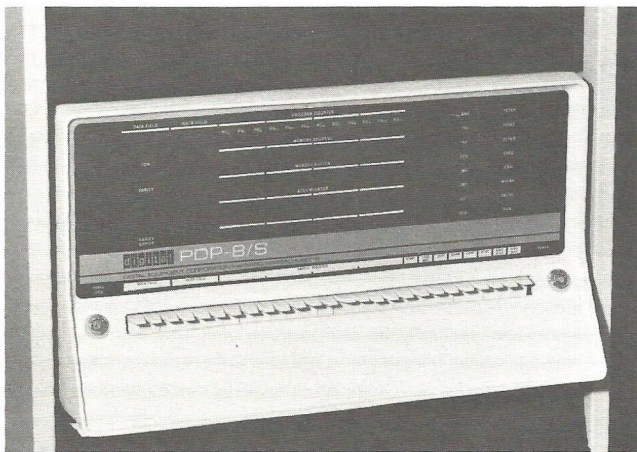AND NOW
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FEATURES

Digital Equipment Corporation's PDP-8/S, a small scale general-purpose computer is designed for use as an independent information handling facility in a larger computer system, or as a control element in a complex processing system. The PDP-8/S is a one-address, fixed word length, serial computer using a word length of 12-bits plus parity and two's complement arithmetic. Cycle time of the 4096-word random address magnetic core memory is 8 microseconds. Standard features of the system include indirect addressing and facilities for instruction skipping and program interruption as functions of input/output device conditions.

Addition is performed in 36 microseconds with one number in the accumulator. Subtraction is performed in 64 microseconds with the subtrahend in the accumulator. Multiplication is performed in approximately 5.35 milliseconds by a subroutine that operates on two signed 12-bit numbers that produce a 24-bit product, leaving the 12 most significant bits in the accumulator. Division of two signed 12-bit numbers is performed in approximately 7.38 milliseconds by a subroutine that produces a 12-bit remainder in core memory.

Flexible, high capacity, input/output capabilities of the computer operate a variety of peripheral equipment. In addition to standard teletype and perforated tape equipment, the system can operate in conjunction with all non-data break optional devices offered in the PDP-8 family line. Equipment of special design is easily adapted for connection into a PDP-8/S system. The computer is not modified with the addition of peripheral devices.

A single source of 115-volts, 60 cycle, single phase power operates the machine. An internal power supply produces all of the required operating voltages. Standard FLIP CHIP® Modules using hybrid silicon circuits insure reliable operation in ambient temperatures between 32 and 130 degrees Fahrenheit.

The PDP-8/S consists of a central processor, a memory unit, and input/output equipment and facilities. All arithmetic, logic, and system control operations of the standard PDP-8/S are performed by the processor. The central processor and memory are independent and asynchronous. The processor requests memory cycles only when required, each memory cycle consisting of a read followed by a write operation. Input and output addresses and data buffering for the core memory are performed by registers of the processor, and operation of the memory is under control of its own timing logic.

Interface circuits for the processor allow bussed connections to a variety of peripheral equipment. Each input/output device is responsible for detecting its own selection code and for providing any necessary input gating. Individually programmed data transfers between the processor and peripheral equipment take place through the processor accumulator. Standard features of the PDP-8/S also allow peripheral equipment to perform certain control functions such as instruction skipping, and a transfer of program control when initiated by a program interrupt.

Standard peripheral equipment provided with each PDP-8/S system consists of a Teletype Model 33 Automatic Send/Receive set and a Teletype control. The Teletype unit is a standard machine operating from serial 11 unit code characters at a rate of 10 characters per second. The teletype provides a means of supplying data to the computer from perforated tape or by the key board, and supplies data as an output from the computer in the form of perforated tapes or typed copy. The Teletype control serves as a serial-to-parallel converter for Teletype inputs to the computer, and serves as a parallel-to-serial converter for computer output signals to the Teletype unit. The Teletype control functions are perforated by two functional modules which are built from *monolithic* integrated circuits and mounted on two standard double size FLIP CHIP® cards.

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