



HITAC 10

Introduction

HITAC 10 is a general purpose digital computer designed mainly as a systems computer dedicated to real-time data acquisition, reduction and analysis, etc. Also, HITAC 10 is designed as a stand-alone, personal computer for scientific engineering.

HITAC 10 provides low cost and high

performance, portable compact size, flexibility and ease of application.

Input/output facility of HITAC 10 is very flexible, accommodating a wide range of peripheral equipment.

Over 50 instruction repertory and software systems are useful and powerful for general data processing applications.



Features

General

16-bit plus parity, single address, fixed word length.
Fully parallel, two's complement arithmetic.
Basic 4,096 words core memory expandable to 32,768 words (4,096/8,192 words in basic console).
1.4 microseconds memory cycle time.
Desk-top and rack mountable.
TTL integrated circuit.
Over 50 powerful instructions.
Power failure protection.
Page addressing (512 words per page).
Single-level indirect addressing and optional indexing.
Hardware multiply and divide option.
Double-precision arithmetic option.

Input/Output

Up to 64 channels for program controlled I/O bus facility.
Direct memory access standard with one-cycle and three-cycle data break facility.
Program interrupt facility.
Wide range of peripheral devices.

Software

Assemblers and Utility Package
FORTRAN
Calculator
Diagnostics

Specifications

Memory

Memory size : 4,096 words (8,192 words optional in single console) expandable to 32,768 words.
Word length : 16-bit plus parity bit
Cycle time : 1.4 microseconds.

Arithmetic

Parallel, two's complement binary.

Compute speed

Add/Subtract : 2.8 microseconds
Load/Store : 2.8 microseconds
Branch : 1.4 microseconds
Indirect address : 1.4 microseconds

Instruction

Over 50 instructions; Multiply, divide, double-length arithmetic, and index operation are optional.

Input/output capability

Maximum optional multiplexed I/O devices: 64

Standard I/O device

H-9331 Data Typewriter, 10 char/sec.

Physical Specifications

Dimensions*

Height : 11.8 inches (300 mm)
Width : 17.7 inches (450 mm)
Depth : 25.6 inches (650 mm)

Weight*

108 pounds (49 Kg)

Power requirements

Source : 115V \pm 10%, 50 to 60 Hz, single phase
Consumption : 640W

Environmental conditions

Temperature : Operating 5 to 35°C
Humidity : Operating 35 to 85%

Applicable to basic console with all options excluding I/O device.

* Includes Power Supply

Options and Peripherals

HITAC 10 can be connected to various types of input/output equipment and optional features

Options

H-P1610-11 Extended Instruction Option
H-P1610-2 Peripheral Expansion Mount
H-P1610-21 Memory Expansion
H-P1610-23 Power Failure Option
H-P1610-25 Tape Reader Controller
H-P1610-26 Tape Punch Controller

Peripherals

H-8226-2 High-speed Photo Tape Reader (500 cps)
H-8227-2 High-speed Tape Punch (110 cps)
H-1613-1, 2, 3, 4 On-line Analog Data Processing Equipment.
8 or 16-channel analog inputs, 1-channel AD converter, up to 2-channel DA converter, up to 2-channel digital inputs, and 1, 2 or 4-channel digital outputs

External mass memories and other peripherals are under development.

Software

HITAC 10 is supported by a software package designed for system applications Basic and MACRO Assemblers; FORTRAN, FAP (Floating Arithmetic Package), Subroutines, Debugging Utility, EHS (Extended Hardware Interpreter System), and Calculator. Also these softwares are very useful for general data processing applications.

Basic Assembler (ASSY)

The Basic Assembler is a one-pass assembler which translates symbolic language into standard machine language.

MACRO Assembler (MASS)

The MACRO Assembler is a two-pass, more advanced assembler with the same functions as the Basic Assembler and a capacity to process MACRO instructions specified by users.

FORTRAN

The FORTRAN allows problem descriptions in a mathematical language with a basic 4K core memory.

FAP (Floating Arithmetic Package)

The FAP performs floating point arithmetic operations without specified hardware.

Mathematical Subroutine (single and double precision)

* Multiplication, Division
* Fixed point square root, sine, cosine, arctangent
* Binary to decimal conversion
* Decimal to binary conversion

Debugging Utility

The Debugging Utility offers a set of routines such as memory dump, trace, symbolic editor, etc., useful for debugging programs.

EHS (Extended Hardware Interpreter System)

The EHS is a routine providing the same functions as extended hardware which has instruction options.

Calculator

The Calculator is a conversational desk calculator-type language.

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