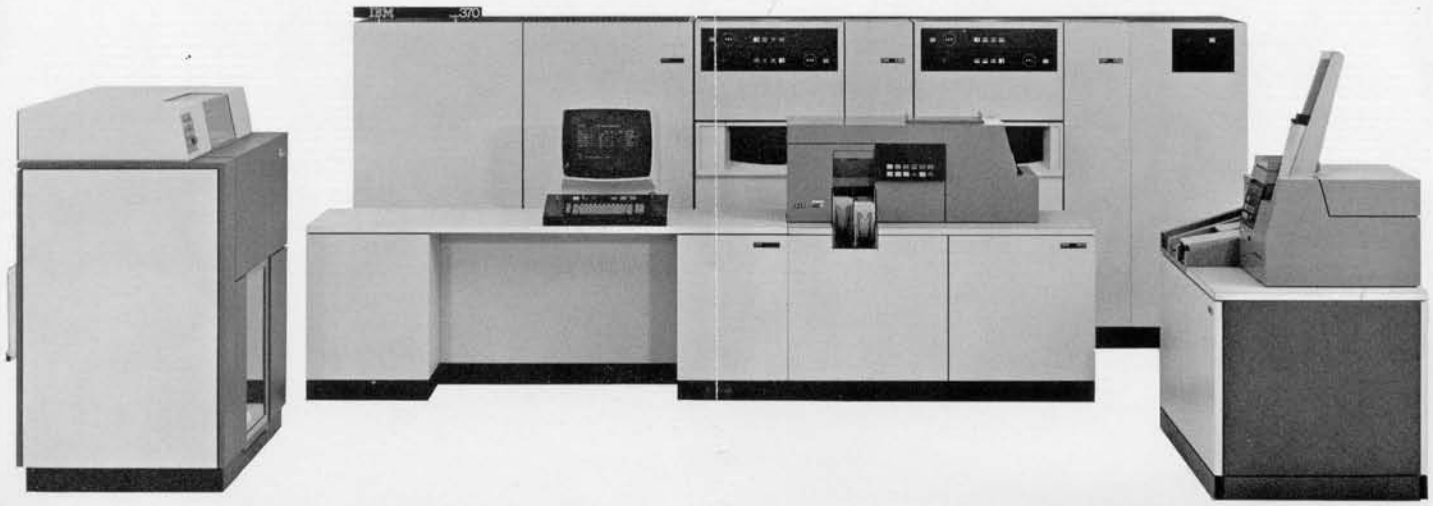
IMM

370

125

IBM System /370 Model 125



DESCRIPTION

The model 125 is a new powerful System /370 designed for use in commercial, scientific and teleprocessing applications.

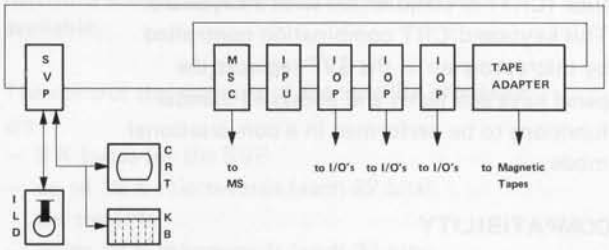
The internal performance is similar to 0,45 times that of System /360 Model 50.

The internal design of the model 125 deviates considerably from other systems. The model 125 has a decentralized design and consists of several independent processors.

These processors are:

- INSTRUCTION PROCESSING UNIT (IPU) analysis and executes machine language instructions.
- MAINSTORAGE CONTROLLER (MSC) regulates the access of the other processors to the MAINSTORAGE (MS) on a fixed priority base.
- INPUT/OUTPUT PROCESSORS (IOP's) execute I/O-commands and supervise data transfer between I/O devices and MSC.
- SERVICE PROCESSOR (SVP) loads the microprograms into all processors, provides a link between system and operator, logs error conditions for later analysis and actions as a service tool for system maintenance.

All processors (except MSC) are fully micro-program controlled and have their own control storages, local storages, work registers and arithmetic/logic units.



The following I/O's will be natively attached:

Card Read	3504 Mod A1; A2;
Card Punch	3525 Mod P1; P2; P3;
Console Printer	5213-1
Disk	3333 Mod 1; 3330 Mod 1; Mod 2;
Magnetic Tape	3410/3411 Model 1; 2; 3
MFCM	2560 Mod A 1;
MFCU	5425 Mod A 1; A 2;
Printer	1403 Mod N1; 2; 7;

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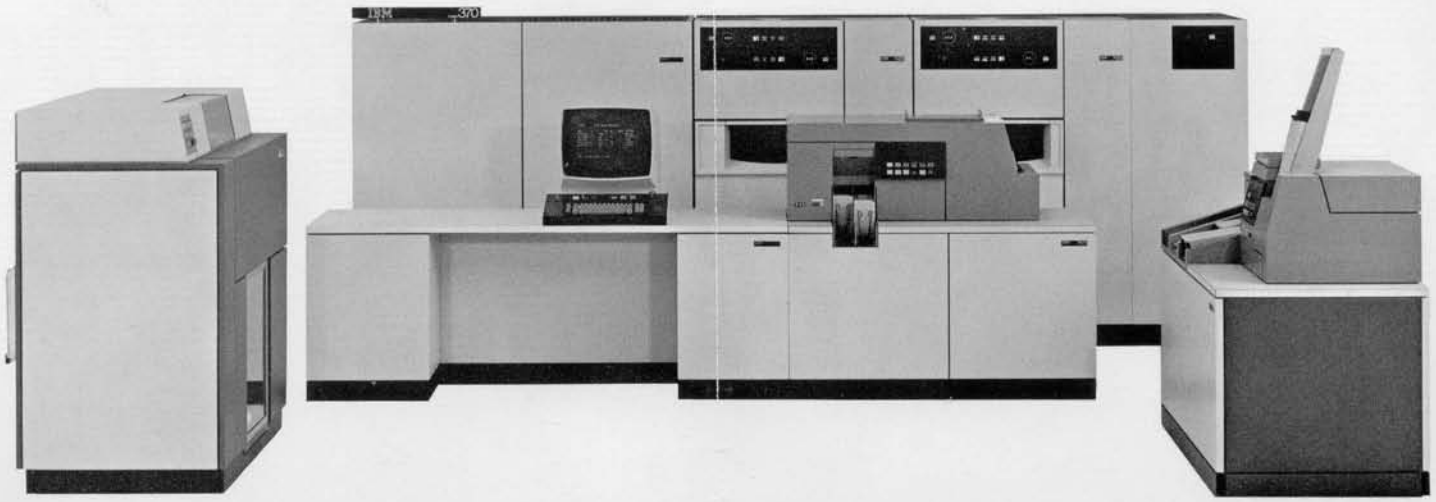


CONSOLE SYSTEM

Instead of a hardware console like other systems the model 125 uses a cathode ray tube (CRT) in conjunction with a keyboard. This keyboard/CRT combination controlled by microprogram in the SVP replaces the panel keys and lights and allows all manual functions to be performed in a conversational mode.

COMPATIBILITY

The model 125 is the low entry point to System /370. It is program compatible with System /360 programs (except time or model dependent programs). Emulation for 1401 and 2020 is available as feature.

TECHNOLOGY

Monolithic System Technology (MST-1) is used for all logic circuits. The Main Storage and the control storages are of the field effect transistor type (FET). All local storages consist of high density buffer (HDB) modules.

Power supplies are of the 20 kHz switched regulator type and of the conventional type.

STORAGES

The mainstorage is a non-destructive readout storage and operates on a cycle time of 480 ns per halfword access. 96 K bytes and 128 k bytes are available.

The control storage sizes of the satellite processor are

- 8 K bytes for the SVP
- up to 16 K microwords (each 22 bits) for the IPU
- up to 16 K microwords (each 22 bits) for the IOP's

MAINTENANCE FEATURES

* SERVICE PROCESSOR
The SVP has independent access to the hardware of all other processors. Therefore it is an excellent service tool to test and check the hardware functions of the other satellite processors. The SVP itself is hardware checked extensively. So a well functioning processor is used to verify and locate troubles in the rest of the system. The results of the tests and checks are displayed on the CRT.
During normal System operation the SVP monitors the whole system and collects — in case of errors — the error data to be used in a later analysis.
Initial checking after power on and loading of the other processors is also done by the SVP.

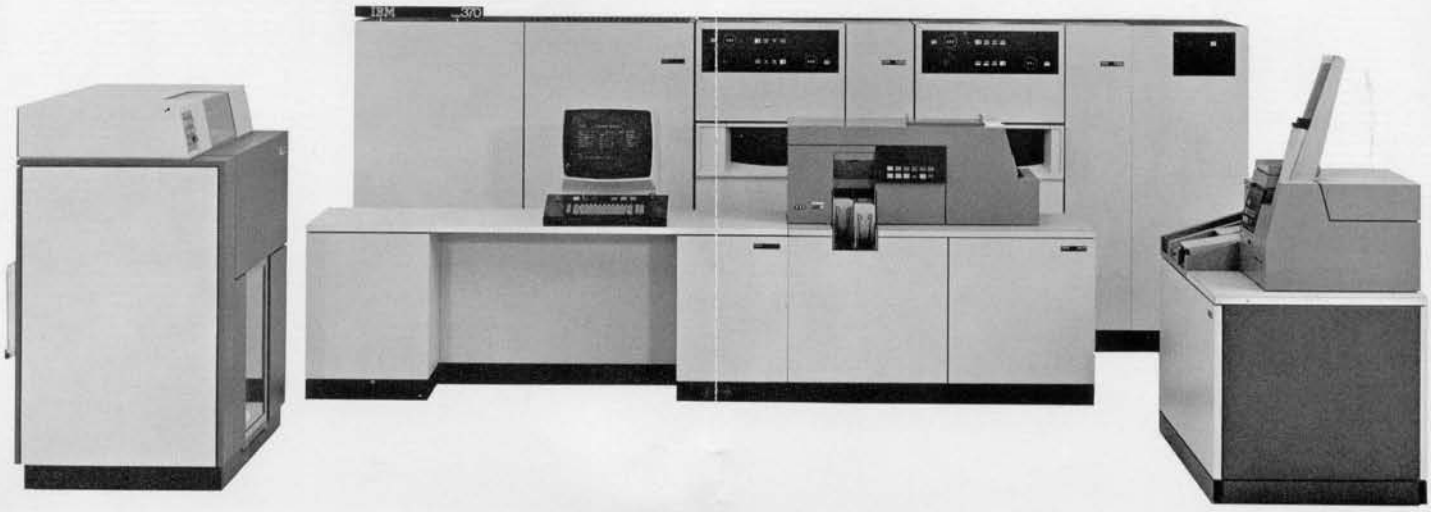
* DATA STORED ON THE INTERNAL LOADING DEVICE
Besides the micro control programs for the SVP, IPU and IOP's, the diskette in the internal loading device stores micro programs for manual operations, diagnostic programs, log analysis programs and the log data.

* INCORPORATED MICRO TESTS
are part of the IOP control program and monitor marginal conditions of the card I/O's during normal customer operations. The conditions are logged if an error occurs.

* ERROR CORRECTION CODE (ECC)
The main storage of the model 125 has error detection circuits which detect and correct single bit errors without time reduction. Double and some multiple bit errors are detected but not corrected. ECC reduces the amount of no trouble found calls for intermittend memory errors.

* CHANNEL COMMAND RETRY
All information required to retry a channel operation is made available to the operating system.

* MICRO INSTRUCTION RETRY
Errors during an IPU-micro instruction execution are signaled to the SVP which saves the error information and restarts the IPU to retry the erroneous micro instruction.



* LOG ANALYSIS PROGRAMS
These programs analyse the log data stored on the internal loading device and either indicate an action to be taken (e.g. adjustment) or point to failing parts.

* MICRO DIAGNOSTIC PROGRAMS
These test programs exercise the hardware and diagnose errors. Results are displayed on the CRT in form of an action to be taken or parts to be replaced.

* IN LINE TESTS
can be loaded together with the normal micro control program. They test I/O's concurrent to customer operations. In line tests are available for natively attached disks and ICA-lines working with under cover modems.

* ON LINE TESTS
Devices attached via control units and certain remote TP terminals are supported by OLTs, which are to be stored on the customer's system residence.

* ASCP
The Automatic System Checkout Program is a selfconfigurating system test. It is used to test the overall function of the system.

SYSTEM DIAGNOSTIC SUPPORT

Like other systems /370 the model 125 offers a wide range of diagnostic support programs for system diagnosis

- OLT's (On Line Tests)
- OLTEP (On Line Test Executive Program)
- OLTSEP (On Line Test Standalone Executive Program)
- EREP (Environment Recording Edited Print)
- ASCP (Automatic System Checkout Program)
- SOSP (Standalone On Line Test Support Processor)

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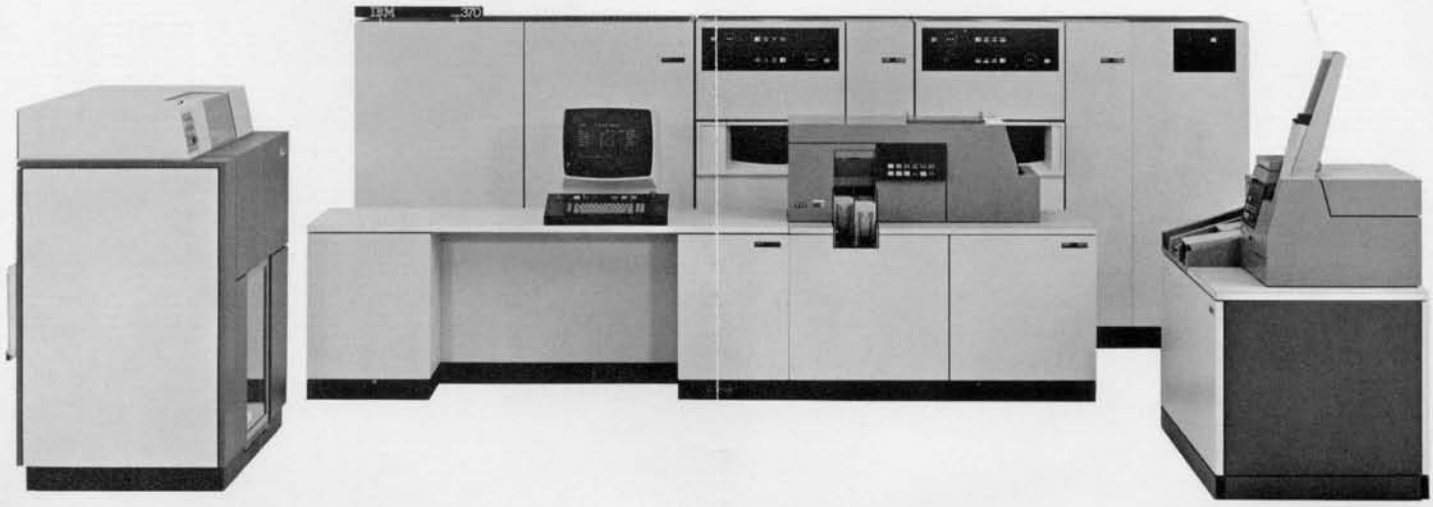

STANDARD FEATURES

Standard Instruction Set
Decimal
Store/Fetch Protection
High Resolution Timer
Byte Oriented Operands
Decimal Shifting
Instruction Set Enhancement
Time of Day Clock
CPU/Channel Identification
Control Registers
CPU Error Recovery Enhancement
Extended External Masking
Program Event Recording
PSW-Restart
Monitor Call
Extended Control
Set System Mask Supprecion
Dynamic Address Translation (Relocate)
Indirect Address List
System Mask Instructions
Halt Extension
Limited Channel Log Out
Command Retry (Disk)
I/O Error Alert

OPTIONAL FEATURES

Floating Point
External Signals
Extended Precision Floating Point

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821 United Nations Plaza
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