370 155

Announcing:
IBM System/370
Model 155

The Model 155 is a powerful new System/370 designed to provide customers with a wide range of price/performance improvements, as well as an easy upgrade from IBM System/360 Models 40, 44, and 50.

Growth:

The Model 155 is a growth system.

- Storage expandable to 2 million bytes.
- Up to 5 Block Multiplexor Channels.
- New channel speeds and capabilities.
- Up to 2 Byte Multiplexor Channels, each capable of 256 Subchannels (maximum number of channels is 6).
- Handles new and faster 1/O devices.

Flexibility:

The Model 155 efficiently supports customer commercial, scientific, and communications applications.

Compatibility:

The Model 155 is upward program compatible to current System/360 and can be installed without expensive reprogramming. (Excludes model or time dependent programs.)

Performance:

The Model 155 has an internal processing speed that is about 3.8 times the IBM System/360 Model 50.

- Single Block Multiplexor channel data rate of approximately twice that of the System/360 Model 50.
- Aggregate Block Multiplexor Channel data rate of 4 times the System/360 Model 50.

Reliability:

The reliability of the Model 155 is enhanced through the use of inherently reliable MST components and through design by thorough consideration of circuit delays, tolerances, temperature, power line disturbances, and environmental conditions.

Availability:

High availability for the Modell 155 is achieved through the use of several techniques which enable deferred maintenance.

- Error correction capabilities for the storages which detect and correct single bit errors in addition to detecting double bit errors.
- Instruction and channel retry. Error conditions automatically initiate a complete instruction retry procedure. (Except for Diagnose, Read Direct, Write Direct, Test and Set.) Channel Retry requires additional software support.
- Recovery Management Support (RMS) will be provided by OS and DOS to supplement hardware retry procedures. RMS assesses software damage and may either repair the damage or selectively terminate the task.
- Degraded Operation. Areas of the high-speed buffer storage which are failing will be removed from use, resulting in continued customer operation with slight system degradation.

Maintainability:

Maintenance of the Model 155 is enhanced through functional packaging of the circuit components and new diagnostic program techniques.

- CE Console Maintenance Test Panel.
- CE Power Test Panel.
- Keyboard Alter/Display functions.
- Extensive Error Checking and Indicators.
- 512 Bytes of CPU SubSystem Logout Data.
- Logout Buffer Displayable during System Operation.
- New FE ALD System provides higher level diagrams and a reduction in page quantity.
- New Microprogram List System (MLS) provides documentation which utilizes program listing format.
- A device using a magnetic disk cartridge to load diagnostics via the service adapter, and a dedicated data path.
- Internal microdiagnostics.
- Fault locating microdiagnostics on magnetic disk cartridges.
- Macro type storage diagnostics and the system test on magnetic disk cartridges.
- Auto-configurating system test.
- Fault locating Logout Analysis Program to assist in isolating intermittent CPU subsystem malfunctions concurrently.
- A Standalone Executive Program will be provided to run on-line diagnostics, off-line. In addition, many devices may be diagnosed concurrently through use of new On Line Test Executive Program and OLT's.

Standard Hardware Features:

- Floating Point.
- Decimal Arithmetic.
- Storage and Fetch Protect.
- Time-Of-Day Clock.
- Interval Timer (3.3ms).
- New Instructions.
- Byte Multiplexor Channel O.
- Block Multiplexor Channel 1 and 2.
- Instruction Retry.
- Channel Retry.
- Error Checking and Correction.
- Byte Boundary Alignment.
- 8K Byte High-Speed Buffer Storage.

Optional Hardware Features:

- Extended Precision Floating Point.
- Block Multiplexor Channels 3, 4, and 5.
- Channel-to-Channel Adapter.
- Direct Control.
- Second Byte Multiplexor Channel (Exclusive with Block Multiplexor Channel 4) on Models IH, J, JI and K.
- 1401/1440/1460/1410/7010 Emulation.
- Remote Console Printer Keyboard (15CPS).

Selective Hardware Features:

One of the following is required.

- 3215 Console Printer (85CPS).
- Console Printer Keyboard (15CPS).

Storage:

IBM storage for the Model 155 consists of M9A core array frames. The M9A storage units are available from 256K bytes to 2 million bytes: 256K, 384K, 512K, 768K, 1024K, 1536K, 2048K. The data transfer between main storage and the storage adapter is 16 bytes (four words).

Storage Adapter:

The Storage Adapter generates and applies the Error Correction Code (ECC) to the data entering and leaving the storage units. Parity bits are used on the data transferred between the Storage Adapter and the BCU. The Storage Adapter data transfer to the BCU is 8 bytes (2 words).

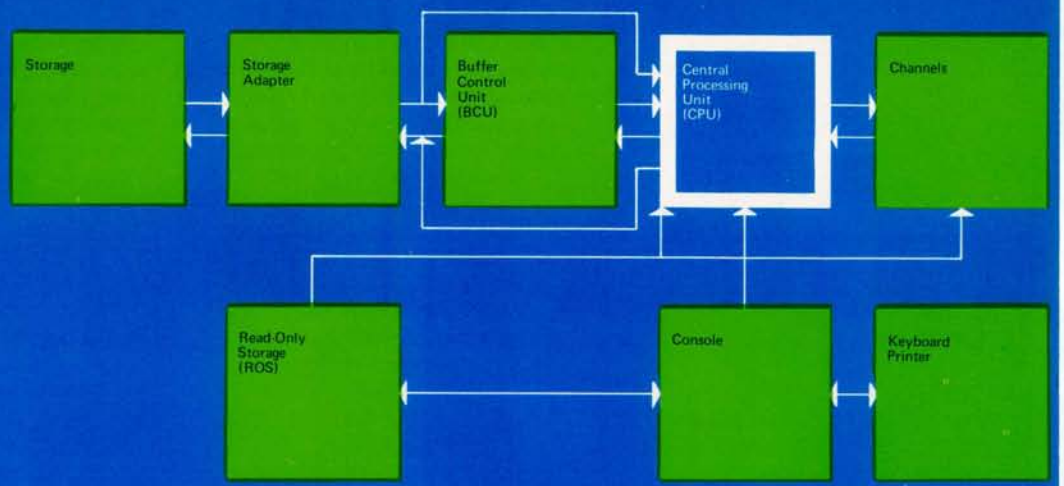
Buffer Control Unit:

The primary element of the BCU is an 8K byte high-speed monolithic buffer storage. The buffer stores frequently used blocks of data from the main storage and reduces the CPU fetch time for a four-byte word.

Central Processing Unit:

The execution of all instructions is initiated and terminated in the CPU under microprogram control. Primary data paths in and through the CPU are four-bytes wide. These four-byte data paths are also shared by the channels when transferring data to or from storage. The CPU has a 115 nanosecond machine cycle.

System Components:



Read-Only Storage (ROS):

The Model 155 uses a capacitor Read-Only Storage device for its Control Storage. The Control Storage is housed in the CPU frame and its planes provide up to six thousand 72-bit control words to handle the microporgrammed system functions.

I/O Channels:

The Model 155 contains integrated channels that provide the data and control interfaces to the I/O control units. In addition to their compatibility with the System/360 channels the Model 155 channels provide increased data handling capabilities to accommodate new I/O devices. Up to 512 byte Multiplexor Subchannels are obtained through two byte Multiplexor Channels.

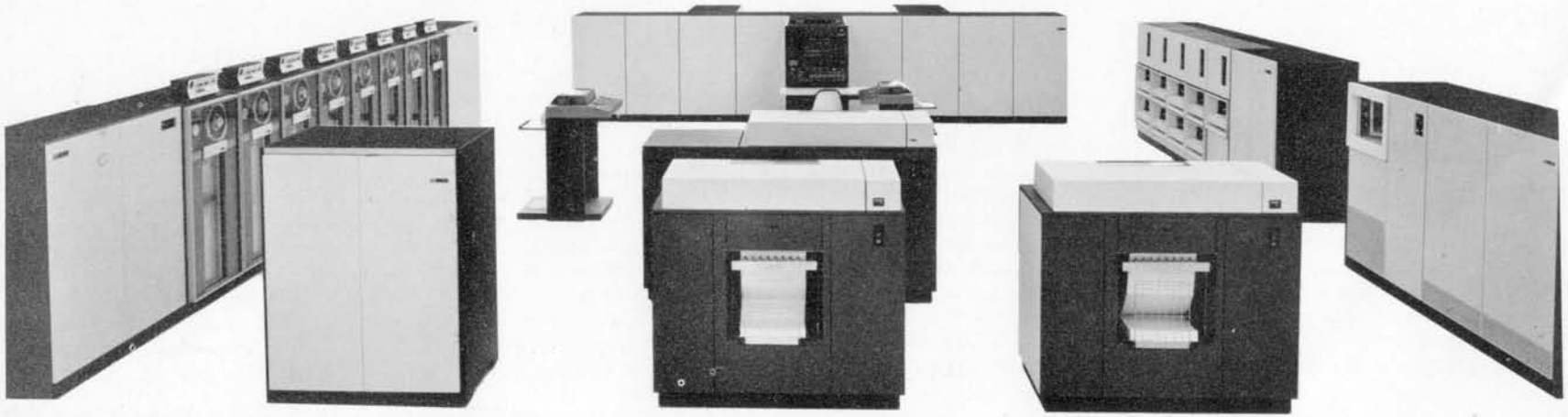
Block Multiplexor Channels 1 to 5 include a Block Multiplexing or Disconnected Command Chaining (DCC) feature. In DCC mode, the channel disconnects at Channel End time during Command Chaining to allow another device to start up or to complete a previously started operation.

Console:

The Model 155 console consists of the maintenance console and a logic gate with its own maintenance test panel. The maintenance console contains approximately 2400 display points which indicate the CPU subsystem status. The logic gate contains new concepts and functions unique to the Model 155 such as a logout buffer and serialized data input to the indicators. A 512-byte monolithic storage unit is used for the logout buffer. This buffer can be displayed during customer operation. Data from all areas of the CPU are serialized and sent to the console where they are deserialized and distributed to the various indicators and the logout buffer.

A device is provided for the CE to use as an input unit to enter microdiagnostics, storage tests, and system test. The information is read from a prerecorded magnetc disk cartridge that is manually inserted into the device.

This is an CE Career Path „General Systems" product.



IBM World Trade Corporation
DP Customer Engineering
821 United Nations Plaza
New York, N.Y. 10017 U.S.A.

IBM