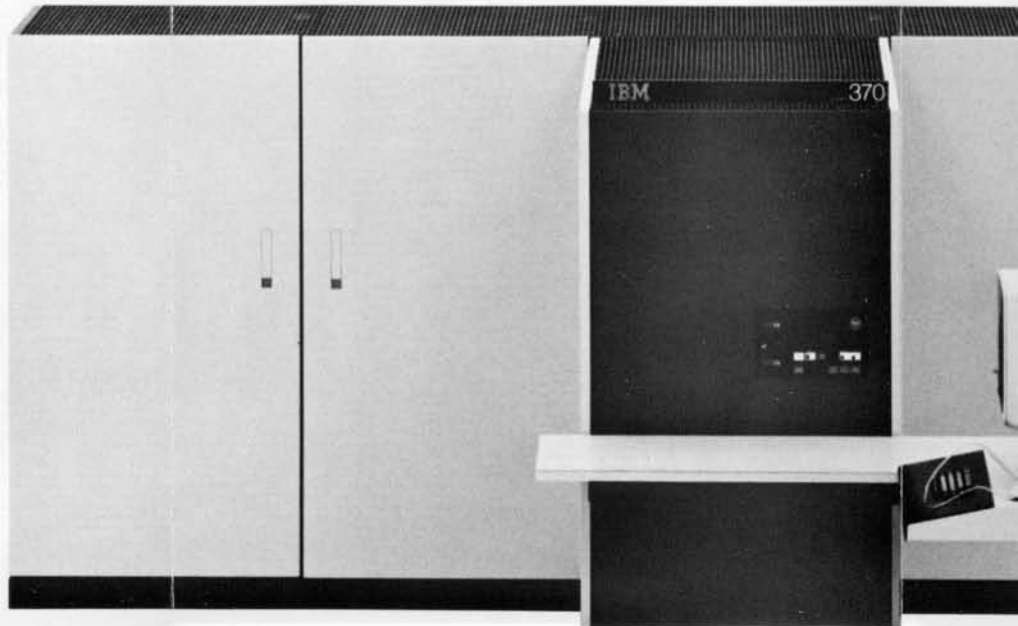


**370**  
**158**

## IBM System /370 Model 158



### Description

System/370 Model 158 is a medium-scale computer designed for both commercial and scientific applications which includes the Dynamic Address Translation (DAT) facility, all-monolithic Processor Storage and a dual direct access storage control unit.

The Dynamic Address Translation facility provides for expanded address storage of up to 16 million bytes without the expansion of Processor Storage.

Real and Virtual Processor Storage is segmented into parts called "pages". The Virtual Storage pages are stored in direct access storage devices and, when needed, are brought into Processor Storage under program control.

Communication with the system is accomplished via the Display Console. Console operation is performed by using a CRT (cathode ray tube), light pen or keyboard. An optional 85-character per second console printer adapter is also available.

### Compatibility:

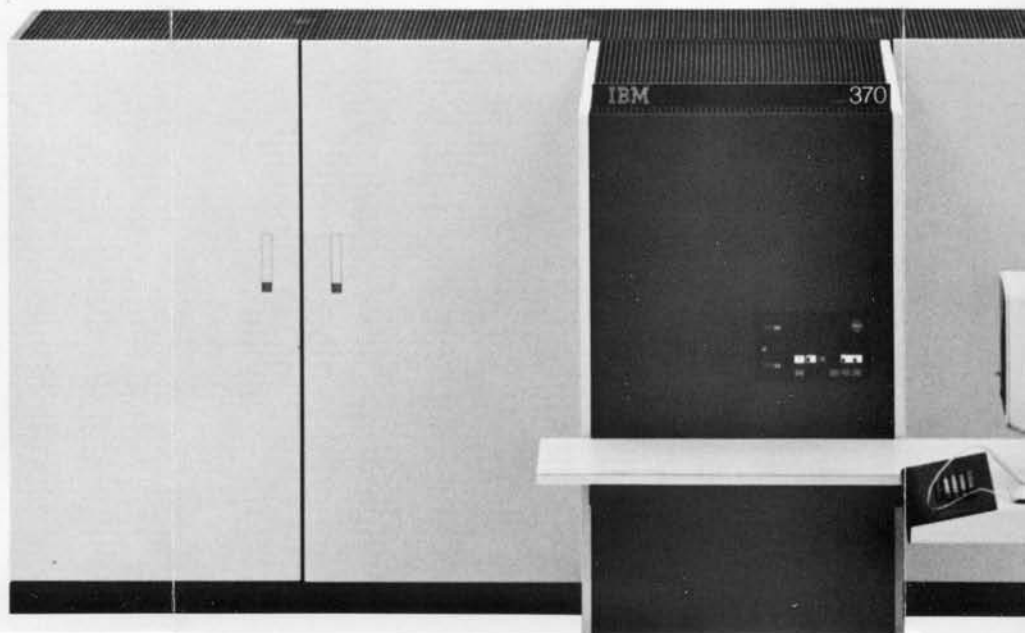
The 158 is upward program compatible with current System 360 and 370 and can run in BC mode (Basic Control) without extensive reprogramming. (Exclude Model and time dependent programs.)

Emulation for the 1401, 1440, 1460, 1410, 7010, 7070, 7074 and DOS are special no cost features.

### Technology:

The 158 uses MST, Phase 21, FET, and CRT (Cathode Ray Tube) with light pen.

## IBM System /370 Model 158



### Availability:

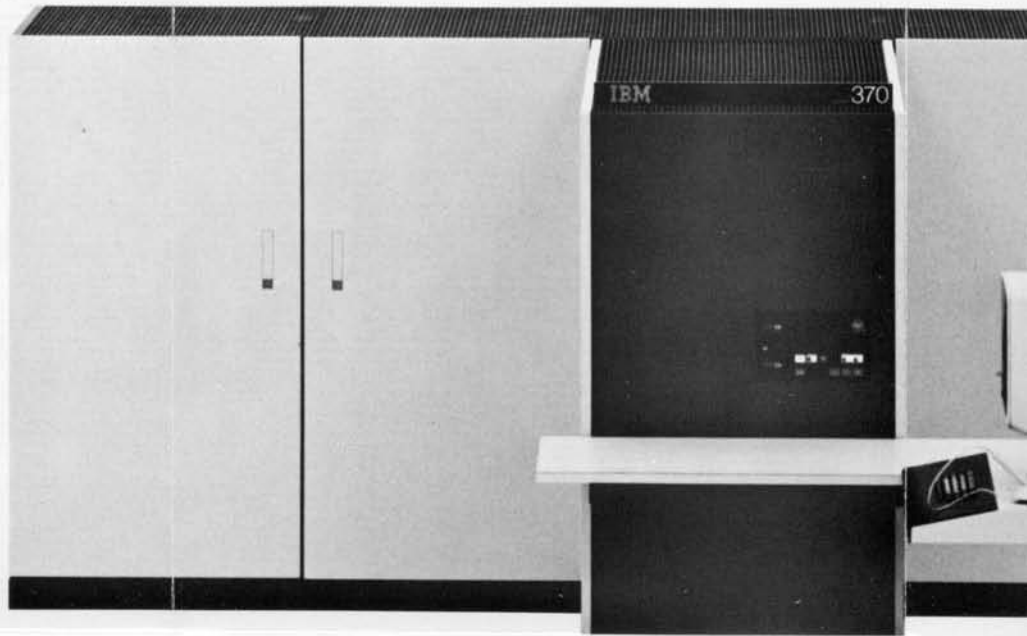
High availability of the 158 is achieved through the use of several techniques which enable deferred maintenance.

- Single bit processor storage errors are corrected without interruption of the system.
- Multiple bit processor storage errors can be deferred by Software recovery using Page refresh or deletion.
- Instruction and channel retry. Error conditions automatically initiate a complete instruction retry procedure. (Except for Diagnose, Read Direct, Write Direct, Test and Set and Reset Reference Bit.) Channel Retry may require additional software depending on when an error occurs.
- Recovery Management Support (RMS) will be provided by OS, OS/VS and DOS to supplement hardware retry procedures. RMS assesses software damage and may either repair the damage or selectively terminate the task.
- Automatic Failure Bypass. Areas of the high-speed buffer storage which are failing will be removed from use, resulting in continued customer operation.

### Maintainability:

- Maintenance of the Model 158 is enhanced through functional packaging of the circuit components and diagnostic programs.
- Console display frames and light pen operated functions are especially designed for CE use.
- CE Power Test Panel
- Extensive Error Checking
- A Device using a magnetic disk cartridge to load diagnostics via a dedicated data path.
- Internal microdiagnostics
- Fault locating microdiagnostics on magnetic disk cartridges
- The recording of logout data on a writable magnetic disk cartridge.
- Macro type storage diagnostics and the system test on magnetic disk cartridges.
- Auto-configuring system test.
- Fault locating Logout Analysis Program to assist in isolating intermittent CPU subsystem malfunctions concurrently.
- Many devices may be diagnosed concurrently through the use of the on Line Test Executive Program and OLTs.
- A Standalone Executive Program will be provided to run OLTs off-line.

## IBM System /370 Model 158



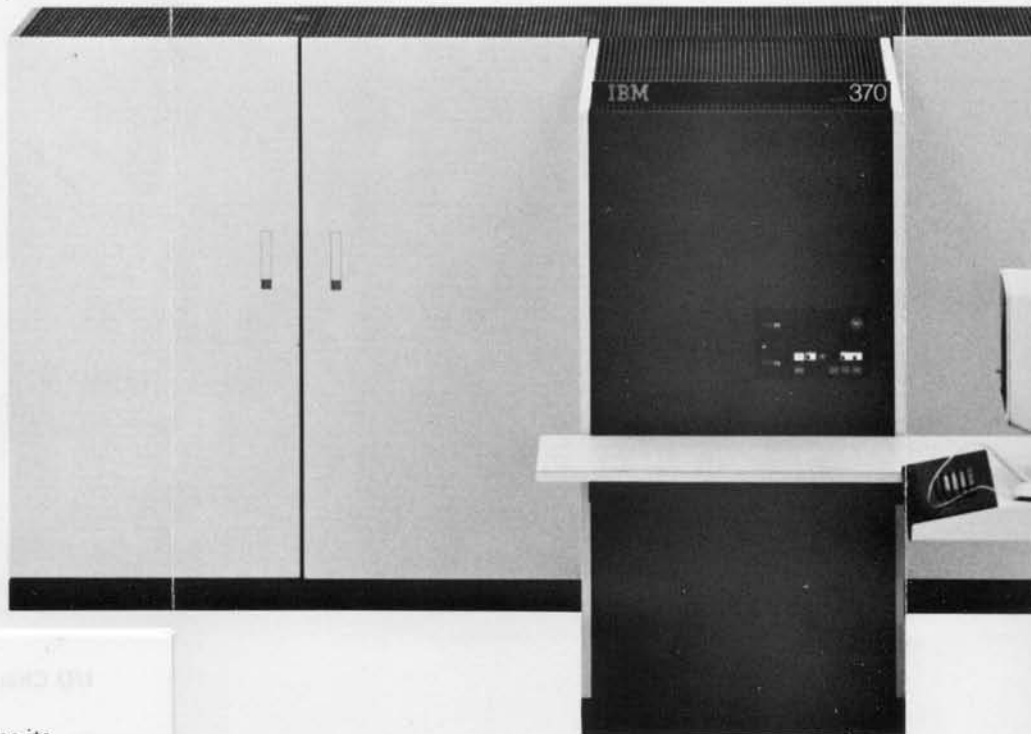
### Standard Hardware Features:

- 512 thousand bytes of integrated processor storage.
- Dynamic Address Translation
- Extended Precision Floating Point
- Decimal Arithmetic
- Store and Fetch Protect
- Time of Day Clock and Clock Comparator
- Interval Timer
- CPU Timer and Clock Comparator
- Byte Multiplexor Channel 0
- Block Multiplexor Channel 1 and 2
- Instruction Retry
- Channel Retry
- Error Checking and Correction
- Byte Boundary Alignment
- 8K Byte High Speed Buffer Storage
- PER ( Program Event Recording)
- TLB (Translation Lookaside Buffer)
- CRT Operator Communication Console and Maintenance Facility

### Special Features:

- Processor Storage extension up to 2.0 megabytes
- Block MPX Channels 3, 4 and 5
- Channel to Channel Adapter
- Direct Control
- Additional Byte Multiplexor Channel on Channel 4
- Integrated Storage Controls
- Two Channel Switch for ISC
- 14XX Emulator
- 707X Emulator
- DOS Emulator
- 5213 Adapter Unit

## IBM System /370 Model 158



### Display Console:

The Display Console used on this system contains its own ALU, Control Storage and a unique Instruction Set.

The Processor microprogram, system tests, and most of the diagnostic facilities can be loaded by two Maintenance files which have read/write capability. Dynamic error recording of logout data is also a function of these maintenance files.

A keyboard is provided for data entry, function selection and screen management. Start, Stop and Interrupt functions are also invoked from the keyboard.

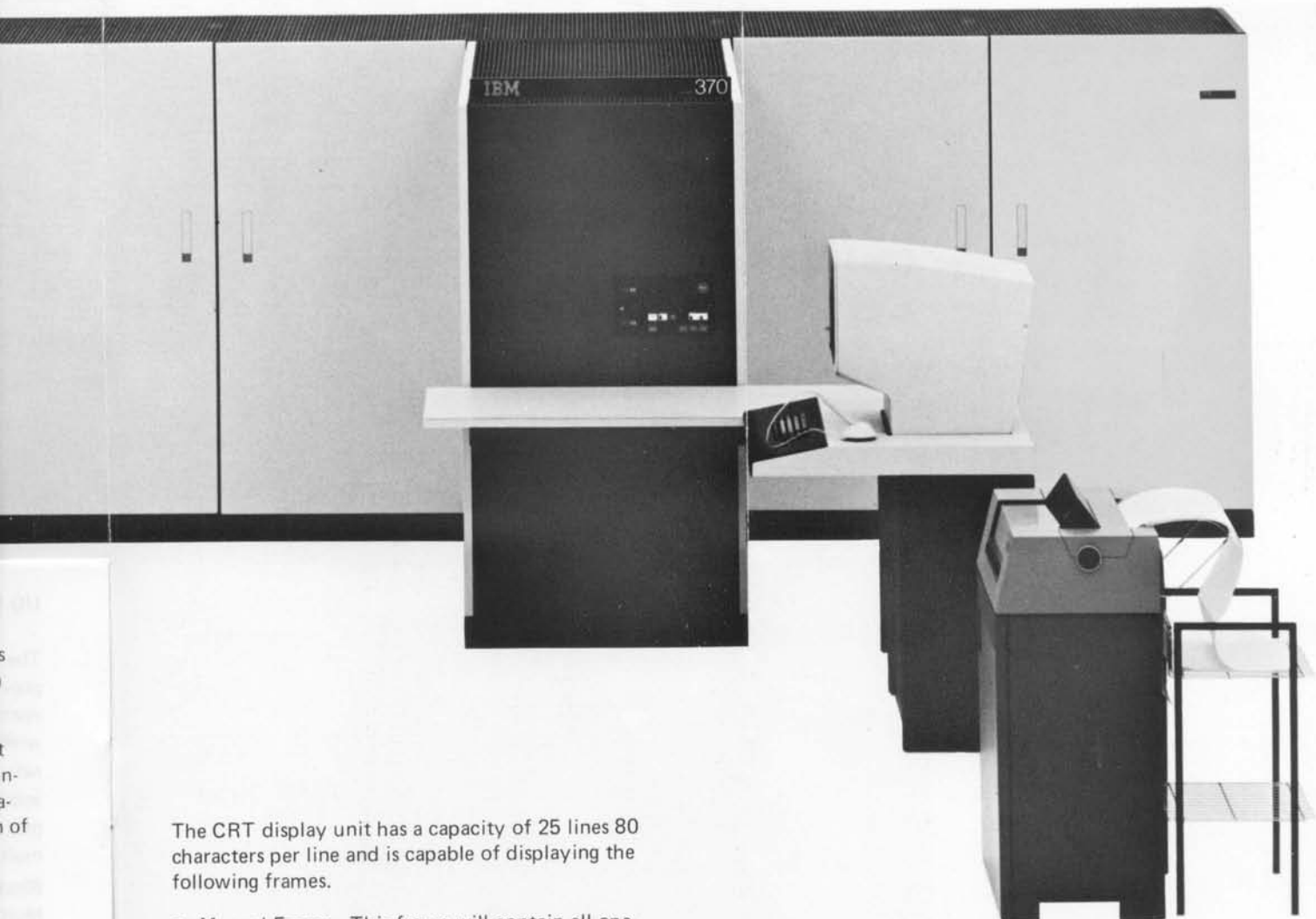
An optional printer available for hardcopy of operating system messages and alter/display activity is a wire matrix printer, which operates at 85 characters per second.

A Control Panel containing switches for Power on IMPL (Initial Microprogram Load) etc. is located on the front of the system.

The CRT display unit has a capacity of 25 lines 80 characters per line and is capable of displaying the following frames.

- Manual Frame - This frame will contain all operator functions and Processor Control facilities.
- Program Frame - will display when the system is in run mode under the System Control Program.
- Alter/Display Frame will perform all standard A/D functions.
- CE Intervention and Maintenance frames for CPU Control Store, Channels, Storage facilities and Diagnostics are available. Lines from these frames may be selected displayed together using the compose function.
- Index Frame - contains a list of all frames available in the Display Console.

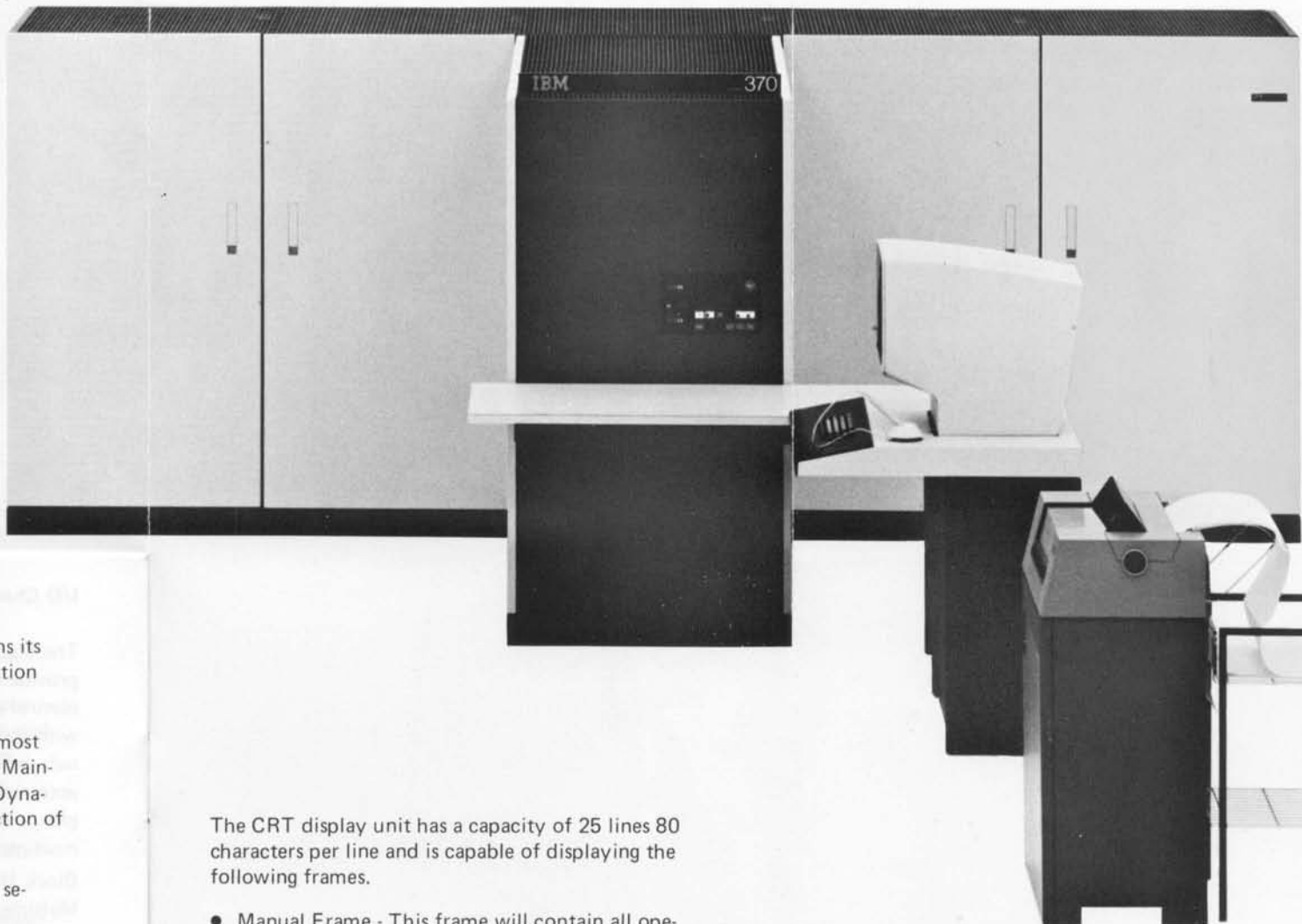
These functions are controlled via the light pen.



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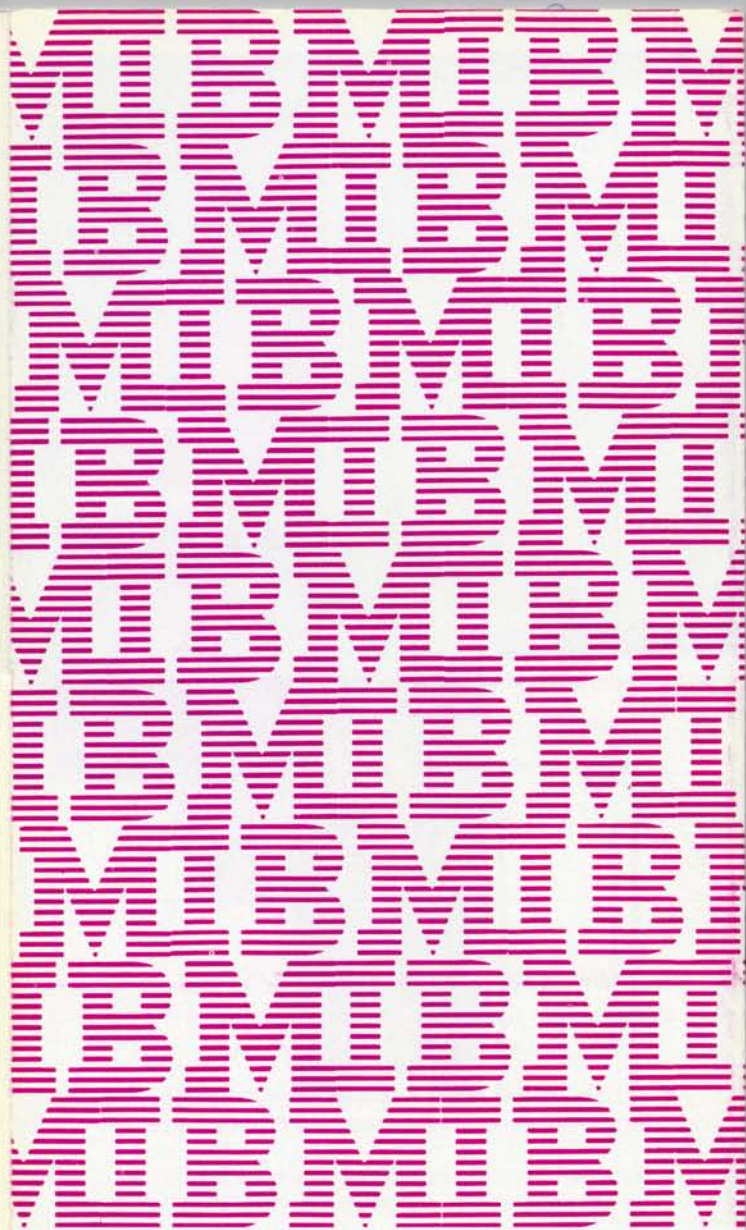
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