



3270

Information
Display System



IBM 3270 Information Display System

Product Description:

The IBM 3270 Information Display System is a family of display terminals and control units designed to provide the user with improved functional performance in the fields of Inquiry, Data Entry and Operator Consoles. The system consists of several physical units and many feature combinations. Local configurations can be directly attached to either a Selector Channel, Multiplexor Channel or a Block Multiplexor Channel of a System/360 Model 25 to 195 or a System/370. Remote configurations can be attached to any of the previously mentioned System/360-System/370 models via data sets, the Integrated Communication Adapter of the Mod 25, an IBM 2701 Data Adapter Unit, or an IBM 2703 Transmission Control Unit. Remote 3270's use Binary-Synchronous Communications (BSC) at speeds of 1200, 2400 or 4800 baud (bits per second).

The 3270 Information Display System may be configured as a stand-alone (combined Control Unit and Display Station) or as a clustered (Control Unit with attached Display Stations and Printers) system.

The system processor initiates 3270 System operations by issuing instructions via a System Channel. The System channel issues instructions by providing addressing, command, order and other control communications to the Display System via the standard I/O interface. In the case where the system channel communicates with a remote

3270 system, the basic communications are supplemented by communication line control procedures.

System Components:

- *Control Units* provide storage buffering, logical control of data, interface for (from 1 to 32) other 3270 System Units. The four Control Units differ in storage buffer size and type of I/O interface as follows:
 1. The 3271 Model 1 provides a 480 character storage buffer and a remote I/O interface.
 2. The 3271 Model 2 provides a 1920 character storage buffer and a remote I/O interface.
 3. The 3272 Model 1 provides a 480 character storage buffer and a local I/O interface
 4. The 3272 Model 2 provides a 1920 character storage buffer and a local I/O interface.
- *Display Stations* provide image display (via a cathode ray tube) image regeneration buffering, logical control and operator input capability. The four Display Stations differ as follows:
 1. The 3277 Model 1 provides a 480 character display image (12 lines of 40 characters each) and may interface with a Data Processing System via any of the four Control Units.



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2. The 3277 Model 2 provides a 1920 character display image (24 lines of 80 characters each) and may interface with a Data Processing System via a 3271 Model 2 or 3272 Model 2.
 3. The 3275 Model I is functionally equivalent to a remote control unit with one Display attached. A keyboard feature must be installed on each station. The Model I provides a 480 character display image.
 4. The 3275 Model 2 is identical to the Model I but provides a 1920 character display image.
- *The Printers* provide Logical Control, I/O Interface and Storage Buffering. Printers are available in five models.
 1. The 3284 Model I provides a 480 character storage buffer and prints at a speed of 40 CPS characters per second. It interfaces to a Data Processing System via any of the four Control Units.
 2. The 3284 Model II provides a 1920 character storage buffer and prints at 40 CPS. It interfaces to a Data Processing System via a 3271 Model II or 3272 Model II.
 3. The 3284 Model III does not provide a storage buffer, prints at a speed of 40 CPS and attaches only to a 3275 Model I or II.

4. The 3286 Model I is similar to a 3284 Model I but prints at a speed of 66 CPS.
5. The 3286 Model II is similar to a 3284 Model II but prints at a speed of 66 CPS.

Optional Features:

- *Keyboards*— Are available for use as operator input devices. Installation of a keyboard feature is optional on a 3277 but mandatory on a 3275.
- *Selector Pen* — Provides a cable-connected lightsensitive selector pen and the hardware required to make it operable. The selector pen permits the operator to select program defined detectable fields in a displayed image. Available on 3275 and 3277.
- *Audible Alarm*—Available for both 3275 and 3277; can be sounded by system control to provide a unique system-to-operator communication. Indicates overflow at end of screen.
- *Security Key Lock*—Prevents unauthorized use of the 3275 or 3277.

Maintenance Features:

- *Fail Soft*—Built in retry facilities and multiple character generators provide a fail soft capability which will minimize the impact of certain types of failure on Customer operation.



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- *Trouble-Shooting Manuals (FETM)*—Define fault isolation repair, and verification procedures to be used to accomplish both on-line and off-line repairs.
- *Diagnostic Program Aids*—Diagnostic write and read commands are provided to improve the fault isolation capabilities of the diagnostic programs.
- *Indicator Switch Unit*—This unit is used by the Customer Engineer to manually exercise the 3270 configuration via its I/O interface. The indicators on this unit are light-emitting diodes which provide significantly better reliability and much smaller size than conventional lamps.
- *Data Set Simulator*—A portable automatic testing device which is used in conjunction with the Indicator Switch Unit. This unit contains a monolithic read-only storage and provides a quick means of exercising a remote 3270 configuration.
- *Buffer Print and Pattern Generator Facility*—Allows the Customer Engineer to exercise a printer off-line to the system by use of an OLT generated pattern or an internally generated pattern.
- *On-Line Tests (OLT)*—Provides on-line card

calling capability, functional testing and special test patterns.

Technology:

The logic of the 3270 is implemented in TTL (Transistor Transistor Logic) which provides high density packaging and excellent reliability. As an example of the packaging density of TTL, the 3277 Model 1 contains only 9 logic cards.

The buffer storages used throughout the system consist of field-effect-transistor (FET) modules. The packaging density of these modules allows a 480 character buffer and its control logic to be mounted on one card measuring approximately 4.5" by 3.5" (11.5 cms by 9 cms).

To simplify the cabling requirements for the system all connections between the 3277 or 3284 and their control units are made via a single coaxial cable.

Career Path:

All units of the 3270 System are assigned to the Data Recording Career Path with the exception of the 3272 Models 1 and 2 which are assigned to General Systems.



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