# IBM System/3

## New Product Announcement

The IBM System/3 Model 4, announced on January 14, 1976, represents a major departure from IBM's previous approaches. For the first time, IBM is supporting the multi-user, multi-task approach to small business data processing.

A System/3 Model 4 consists of:

- A 5404 processor with 64K bytes of MOSFET main memory, non-expandable;
- 5 or 10 megabytes of fixed/removable disk storage using 5440 disk cartridges in new 5447 disk units;
- A 115-cps 5213 matrix printer;
- A 3277 Model 1 CRT display for logging operating system messages;
- One to five local workstations, which may be 480- or 1920-character CRT/keyboard displays or 40-cps, 66-cps, or 120-lpm printers; and
- One optional Bisync adapter that can accommodate remote workstations or permit communications with a host computer. 8-32

The 5404 keyboard console is identical with that of the System/3 Model 6 (5406). The basic processor includes provisions for attaching up to two local workstations; the Display Increment feature is required to attach additional workstations. The Enhanced Print Rate Attachment feature is required to attach the 5213 printer. If 1920-character 3277 Model 2 display workstations are desired, a 3270 Model 2 Attachment feature is required. In addition, a Serial I/O Channel is available for the Model 4, just as with other System/3 models, for attachment of low-speed, non-IBM peripherals.

Two models of the new 5447 Disk Storage units are available. Model A1 can store up to 2.5 megabytes of information on each of two 5440 cartridges for a total capacity of 5.0 megabytes. The arrangement is familiar—one fixed and one removable cartridge mounted on the same spindle with a common access mechanism. Model A2 adds a completely independent module of two fixed cartridges in the same enclosure for a total storage capacity of 10.0 megabytes. Formats are completely compatible with those of other System/3 models. Minimum head positioning time is 28 milliseconds, average is 126 milliseconds, and maximum is 255 milliseconds; average rotational delay is 20 milliseconds; and data transfer rate is 199K bytes per second. These are the same performance parameters as those of the 5444 Models A2 and A3.

Local workstations can be located up to 2000 feet from the Model 4 processor. The 3277 Model 1 provides 480 display positions arranged in 12 lines of 40 characters. The 3277 Model 2 provides 1920 display positions arranged in 24 lines of 80 characters. A separately priced, separable keyboard is available for each. The 3284 and 3286 matrix printers are both available as a Model 1 that includes a 480-character buffer or as a Model 2 that includes a 1920-character buffer. The 3284 operates at 40 characters per second; the 3286, at 66 characters per second. Characters are formed by a 4-by-7 dot matrix. The 3288 Model 2 operates at a nominal speed of 120 lines per minute and has a 1920-character buffer. The print mechanism uses an engraved metal belt. All displays and printers use a 64-character set. Each display or printer counts as one of the five possible local workstations.

The disk enclosure, which houses either an A1 or A2 model, provides space on top for the 5213 printer, operator keyboard console, and 3277 system display.

Software support for the System/3 Model 4 consists of a new Communications Control Program (CCP) that is functionally equivalent to CCP for the System/3 Model 10 and a subset of the software support for the System/3 Model 6. The only programming language supported is RPG II.

CCP provides control of the multi-user environment. Previously compiled RPG II programs are initiated from a workstation. Up to four tasks can be active simultaneously, and multiple workstations can be operating under the same task. One of the tasks can involve a remote workstation connected through the Bisync adapter. The basic supervisor occupies 3.25K bytes of memory. Two pre-generated versions of CCP are available. The minimum version cccupies 25K bytes and supports only 3270-family display and printer remote workstations. The maximum version occupies 31.5K bytes and supports the full array of remote workstation types. All active

tasks are co-resident in main memory. If insufficient memory space is available, a task cannot be initiated; i.e., no swapping facility is implemented. The workspace allocated to a task, however, need not be as large as the complete task itself. If the task is larger than the workspace available, the task will be automatically segmented. A new disk sort routine ($15 per month), requiring 12K bytes, can be run as a task CCP. User tasks need not require user interaction on the CRT display or other peripheral devices; such "batch" tasks on multi-user systems are frequently referred to by other vendors as "phantom tasks." Access to the system is controlled via a password arrangement.

Instead of running under CCP, the user can operate the System/3 as a Model 6 with the following support: RPG II compilation, RPG II execution including the Auto Report and Telecommunications features, Conversational Utilities (Keyboard Source Entry and Keyboard Data Entry), Overlay Linkage Editor, Disk Sort Program, and Multileaving Remote Job Entry Workstation (MRJE/WS). See the main report for descriptions of these software packages. Running under Model 6 software, only the 3.25K-byte resident supervisor detracts from user memory space. The Model 6 SCP must be Release 13 or later. Model 6 software not supported on the Model 4 includes FORTRAN, BASIC, and the 1255 MICR reader utility.

The Bisync adapter is capable of supporting communications at up to 50,000 bits per second over appropriate facilities. The minimum version of CCP can support as a remote workstation one point-to-point or multipoint line with 3270-family devices including clustered 3277 displays, stand-alone 3275 displays, and 3280 series printers.

The full version of CCP adds remote workstation support for point-to-point or multipoint connection over one line with a 3741 Data Station Model 2, 3741 Programmable Work Station Model 4, or 3735 Programmable Buffered Terminal Model 1. In addition, Bisync communication is supported between the System/3 Model 4 and another System/3, System/7, System/32, System/360, or System/370. The System/3 Model 4, however, cannot simultaneously communicate with a remote workstation and function as an RJE terminal.

Typically, remote workstations will operate in half-duplex mode at 2400, 4800, or 7200 bps. Using IBM modems, transmission at up to 4800 bps over the switched telephone network and at up to 7200 bps over a leased voice-grade line is supported. Higher transmission speeds require a wide-band facility. □

## EQUIPMENT PRICES

| | | Purchase | Monthly Maint. | Monthly Rental* |
|---|---|---|---|---|
| **PROCESSOR AND FEATURES**** | | | | |
| 5406 A18 | System/3 Model 4 processor with 64K bytes of memory | $19,150 | $145.00 | $600 |
| 3960 | 5213 Model 3 Printer Attachment | 4,155 | 23.00 | 137 |
| 4704 | Display Increment (for third through fifth workstation attachment) | 1,455 | 1.00 | 38 |
| 4705 | 3270 Model 2 Attachment | 831 | 3.50 | 21 |
| 7081 | Serial I/O Channel | 6,750 | 5.00 | 177 |
| 2074 | Binary Synchronous Communications Adapter | 10,630 | 71.50 | 303 |
| 1315 | Auto Call | 1,795 | 1.00 | 44 |
| 4703 | Internal Clock | 1,125 | 1.00 | 28 |
| 7477 | Station Selection | 893 | 1.00 | 21 |
| 7850 | Text Transparency | 893 | 1.00 | 21 |
| **MASS STORAGE** | | | | |
| 5447 A1 | 5 megabytes of disk storage | 10,270 | 81.00 | 405 |
| 5447 A2 | 10 megabytes of disk storage | 14,190 | 125.00 | 560 |
| **TERMINALS** | | | | |
| 3277 | CRT display— | | | |
| | Model 1; 480-character display | 2,940 | 8.00 | 84 |
| | Model 2; 1920-character display | 3,810 | 17.50 | 123 |
| | Keyboard for either model | 520 | 3.00 | 16 |
| 3284 | Matrix printer; 40 cps— | | | |
| | Model 1; 480-character buffer | 5,065 | 33.00 | 168 |
| | Model 2; 1920-character buffer | 5,685 | 33.00 | 179 |
| 3286 | Matrix printer; 66 cps— | | | |
| | Model 1; 480-character buffer | 6,775 | 33.00 | 201 |
| | Model 2; 1920-character buffer | 7,505 | 33.00 | 213 |
| 3288 | Line printer; 120 lpm | 12,500 | 87.00 | 427*** |

* Includes monthly maintenance.

** Processor and features are available under IBM's Term Availability Plan (TAP) at a discount of about 5 percent.

***Disk units and 3288 Printer are available under the Extended Term Plan (ETP) at a discount of about 15 percent.