

IBM System/23 Datamaster

MANAGEMENT SUMMARY

The System/23 Datamaster from IBM is a business computer specifically designed to combine data processing and word processing. Designed for the first-time user, the system provides an integral Basic interpreter, and also replaces the earlier Basic models of the IBM 5120 Computing System. The APL models of the IBM 5120 are still available.

A System/23 Datamaster configuration can include up to four computer workstations. Each computer workstation has its own memory and diskette storage. Workstations function independently of each other, but can attach to a stand-alone diskette unit or disk storage unit and share their files.

The System/23 Datamaster's processing unit features single- or dual-integrated diskette drives. Diskette storage capacity is either 1.1 or 2.2 megabytes. The optional diskette unit expands storage to a maximum of 4.4 megabytes. The disk storage unit, another option, provides maximum storage capacity of 30.8 megabytes. The CRT displays up to 1920 characters on a 12-inch screen. Also included is a typewriter-style keyboard with a 10-key numeric pad. Model 5322 is a totally integrated system; Model 5324 is an ergonomically designed system that features three separate adjustable modules consisting of the keyboard, CRT display and processor.

In addition to the stand-alone diskette unit and disk storage unit, the System/23 offers a choice of four printer models and a magnetic card unit. Each computer workstation can include one or two printers in any combination.

Three of the printers available are bidirectional matrix printers and the fourth is a bidirectional daisywheel ➤

The System/23 Datamaster is a desktop business computer designed for first-time users. It features a four workstation/shared file architecture and a functionally enhanced Basic language that is highly compatible with System/34 Basic. A full-function data processing installation with one workstation and an 80-cps printer is priced at \$9,000.

MAIN MEMORY: 64K and 128K bytes.
DISKETTE CAPACITY: 1.1 to 6.6 megabytes.
DISK CAPACITY: 15.4 and 30.8 megabytes.
WORKSTATIONS: 1 per CPU; 4 workstations can share up to 30.8 megabytes of file storage.
PRINTERS: 40, 60, 80, 160 cps.
OTHER I/O: Magnetic card unit.

CHARACTERISTICS

MANUFACTURER: International Business Machines Corporation, Information System Group, 1133 Westchester Avenue, White Plains, New York 10604. Telephone: (914) 686-2363.

MODEL: System/23 Datamaster is currently available in 24 submodels according to their function, main memory size, and integrated diskette capacity.

DATE ANNOUNCED: July, 1981.

DATE OF FIRST DELIVERY: July, 1981.

DATA FORMATS

BASIC UNIT: 8-bit byte. ➤



Datamaster, IBM's low-cost small business computer system, features an optional four CPU/workstation configuration which utilizes a separate 15.4 or 30.8 megabyte disk storage unit for file sharing. Each computer workstation provides up to 128K bytes of main memory and up to 4.4 megabytes of on-line diskette storage.

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➤ printer. The 5241 Printer prints at 80 cps. The 5242 Printer is available in two models. Model 1 prints at 160 cps. Model 2 prints at the same speed, but also offers the ability to create high-density, high-quality matrix printing on cutforms at 40 cps. High-density printing is invoked by a program command and is created by making a second head pass over the same printed line. The 5217 bidirectional daisywheel printer is a compact, table-top unit capable of printing at 60 cps. The 5217 Printer features an optional automatic cut sheet feeding capability and continuous forms feed device.

The 5231 Mag Card Unit reads and records information using OPD 50 track magnetic cards. Reading is at the maximum rate of 20 seconds/card and recording is at the maximum rate of 30 seconds/card.

The System/23 is available in 24 models: 12 that are for the data processing alone, and 12 that also include word processing hardware and software. In addition to the word processing options, the models are distinguished by the size of main memory and the amount of diskette storage.

The System/23 Datamaster word processing option features integrated text and data processing. In a typical application, the system could draw upon its own data processing files to print individualized business letters for mass mailing to all customers, or to specified groups. The word processing program provides a training package to learn functions for basic document entry, editing, and standard letter personalization. It also supports functions which complete business documents, assembled from letter descriptions and data processing file data.

For text processing, the display scale line shows margins, tabs, paper edges, center point and shadow cursor. Vertical and horizontal segmenting allow the operator to review all parts of the stored page. Word processing can also be used to create, revise, delete, duplicate, print, store, and retrieve documents. Text manipulation is facilitated by block movement of text, stored formats, auto carrier return, line adjust, paginate functions, and an interactive find function. To add word processing, a user will need a computer workstation with at least 64K bytes of memory and 1.1 megabytes of diskette storage.

IBM Word Processing II for Datamaster is designed for operation on models 5322 or 5324 Computers with word processing, 128K bytes of user storage, and 1.1MB of diskette or the 5247 Disk Unit. IBM recommends that a minimum of two diskette drives be configured for Word Processing II. The new word processing program provides a spelling verification and English language dictionary for 130,000 words. In addition, the program provides room for a list of approximately 500 user-defined terms. An automatic hyphenation function employs the dictionary used for spelling verification and assistance. The program also provides synonym assistance with an IBM-supplied thesaurus of English language words. The words are organized by their use (i.e., noun, verb, adjective, etc.) and displayed to the user in lists. This function may be initiated during document creation or editing only.

➤ **INSTRUCTIONS:** IBM has not released details on the format of individual System/23 Datamaster machine instructions, the number of instructions in the instruction set, or the classification of individual instructions.

INTERNAL CODE: EBCDIC.

MAIN STORAGE

TYPE: MOSFET (metal-oxide semiconductor field-effect transistor).

CYCLE TIME: 975 nanoseconds per 1-byte access.

CAPACITY: 32,768 bytes to 131,072 bytes.

CHECKING: Internal parity checking.

STORAGE PROTECTION: In conjunction with programming support, System/23 Datamaster offers built-in characteristics to assist the users to achieve a level of protection to suit their needs. These characteristics include:

- Language facilities to prevent inadvertent modification of data and programs
- Programs can be locked to be run, but not listed
- Programming techniques are available which prevent critical data from appearing on the CRT screen or the printer
- Station Address and Terminal Identification is provided for systems which operate in certain communications environments
- Block checking is performed on all data transmitted or received over BSC communications channels

RESERVED STORAGE: 12K bytes are permanently allocated for use by the Basic language interpreter.

CENTRAL PROCESSOR

The IBM 5322 Computer contains main storage, arithmetic and logical processing circuits, control functions for I/O units, and the keyboard/CRT. Most models have integrated diskette drives. The 5324 Computer is a separate unit which contains the processor logic and memory, power supply, integrated diskettes (optional), and space for optional features. The keyboard/CRT are separate modules. Up to two 5322 or 5324 Computers can be included in a configuration by attachment to a shared function model of the 5246 Diskette Unit (Models 21 or 22); up to four 5322 or 5324 Computers can be configured by attachment to the 5247 fixed Disk Storage Unit.

INPUT/OUTPUT CONTROL

I/O CHANNELS: A direct memory access channel is a standard feature. One printer attachment is standard and two special feature slots are available on the data processing models.

SIMULTANEOUS OPERATIONS: Transparent data file sharing between up to four 5322 or 5324 workstations is managed in the Read Only Storage (ROS) of each computer. Application transparency will also allow programs written for a multiple workstation system to operate on a single 5322 or 5324 with no modification required.

CONFIGURATION RULES

Each System/23 Datamaster includes either a 5322 or 5324 Computer with 64K or 128K bytes of main memory. The 5322 is a desktop unit with a 1920-character display and keyboard, a secondary storage attachment, a communication feature, an additional printer attachment, and an integral interpretive language (Basic). The 5324 Computer contains the same

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PERIPHERALS/TERMINALS

| MODEL | DESCRIPTION & SPEED |
|--------------------|---|
| 5322 Display | 12-inch CRT screen displays 1,920 characters in 24 lines of 80 characters each; displays upper and lower case; dual intensity, reverse image, blinking, underlining, non-display for security, audible alarm |
| 5324 Display | Same as 5322 except cable-connected to 5324 Computer. May be tilted for operator convenience |
| 5322 Keyboard | Alphanumeric typewriter-style with a separate numeric pad; two operator keys provide arithmetic functions; insert, delete, and scroll capabilities |
| 5324 Keyboard | Same as 5322 except mounted in adjustable base and is cable-connected to 5324 Computer. Palm rest and space above keys for keyboard aids is provided. |
| DISKETTE DRIVES | See "Mass Storage" section of this report |
| PRINTERS | |
| 5217 Model CO2 | Bidirectional daisywheel printer; printwheels available in 10, 12, 15 pitch or proportional spacing; program selectable vertical spacing from 4 lines/inch to 24 lines/inch; second Printer Attachment (6350) required to attach printer to a 5322 or 5324; multiple typestyles available; optional automatic cut sheet feeding capability and continuous forms feed device; 60 characters/second |
| 5241 Model 1 | Bidirectional matrix printer; 132 print positions at 10 characters/inch, 198 print positions at 12 characters/inch, program-selectable vertical line spacing from 1 line/inch to 12 lines/inch; handles fan-folded paper from 3 to 14 inches, up to four-part forms; 80 characters/second |
| 5242 Model 1 | Bidirectional matrix printer; 132 print positions at 10 characters/inch, 198 print positions at 15 characters/inch, program selectable vertical line spacing from 1 line/inch to 12 lines/inch; handles fan-folded paper from 3 to 14 inches, up to four-part forms; 160 characters/second |
| 5242 Model 2 | Model 2 has the same characteristics as Model 1 when operating in matrix print mode at 160 characters/second. Also offers the ability to create high-density, high quality matrix impact printing on cut forms through a second pass over the same printed line. High-density printing is involved by a program command and will operate at 40 characters/second with a character spacing of 10 characters/inch |
| MAGNETIC CARD UNIT | |
| 5321 | Reads and records data using OPD 50 track magnetic cards. Reading is at the maximum rate of 20 seconds/card. Recording is at the maximum rate of 30 seconds/card |

➤ IBM Word Processing II has the same functions of the previously announced Word Processing program. However, additional capabilities have been added to enhance stand-alone word processing, word/data processing, and multi-page document preparation. Many functions also include an additional operator ease-of-use capability. Text that has been processed and stored on diskette by the IBM Datamaster Word Processing program can be used by the new program. Users may also upgrade their existing programs to IBM Word Processing II.

The Basic computer language used by the System/23 is highly compatible with the Basic available on IBM's System/34. According to IBM, most System/23 Basic language statements are upward compatible with System/34 Basic. Typically, with some small amount of modification, System/23 programs can be migrated to System/34. Modifications may be more extensive in programs where file sharing and error recovery logic are heavily used.

The IBM Basic Conversion Aid licensed program is also available for the System/23. This program is designed to assist the experienced 5110/5120 Basic application ➤

➤ features as the 5322 except that it is ergonomically designed and is divided into three separate adjustable modules.

WORKSTATIONS: Two 5322 or 5324 Computers can share a 5246 Model 21 or 22 Diskette Unit to form what IBM calls a dual workstation/shared-file architecture system. Each workstation functions as a total system and operates independently of the other, but can share the files stored on the 5246 Model 21 or 22. Up to four 5322 or 5324 Computers, in any combination, can share the files of the 5247 Disk Storage Unit.

DISKETTE STORAGE: Each desktop unit can house one or two diskette drives, each with a capacity of 1.1 megabytes, thus affording a maximum of 2.2 megabytes of integrated diskette storage. In addition, a free-standing unit with the same capacities can be added, thus providing a maximum diskette storage capacity of 4.4 megabytes per desktop unit. Only one free-standing unit can be included in a dual-CPU/workstation configuration and can be shared by both units if it is a shared function diskette model.

MAGNETIC TAPE UNITS: None currently available from IBM.

PRINTERS: Up to two 5217, 5241 or 5242 printers can be attached to each desktop unit. ➤

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► programmer in converting existing 5110/5120 Basic application programs to System/23 Basic. This program can reduce, but not totally eliminate, the need to recode Basic application programs.

BRADS III, also a licensed program, provides the facility for a non-programmer to define, create, and maintain files and to build file inquiries and create reports from the file data. BRADS III is an IBM-enhanced version of the field-developed BRADS II program used on the IBM 5110/5120.

IBM also offers the System/23 Binary Synchronous Communications licensed programs. Using the Binary Synchronous Communications protocol, the System/23 can transmit batch data, receive batch data, and inquire into a host system and receive batch data. Using IBM 3741 protocol, the System/23 can communicate with another System/23, and the following IBM systems: System/3 Model 15D, System/34, System/38, 5280, 5265, 5110, 5120, and the Series/1.

Using the Asynchronous Communications Program, the System/23 can communicate with System/370 Models 135-168, 3031, 3032, 3033, 3081, 4331, and 4341 via VM/370, Series/1 systems, and System/23. The program consists of communications access method support, a set of communications customer support functions, and a facility for user-written communications programs using System/23 Basic.

The Business Management Accounting System for Diskette is one set of application packages licensed with the System/23 Datamaster. The application packages, which are multi-industry programs for performing business accounting, include billing, inventory accounting, accounts receivable, accounts payable, and general ledger. Datamaster allows users to automatically update information between application programs.

Available for the IBM Datamaster Disk is the Business Management Accounting System which includes general ledger, accounts payable, accounts receivable, inventory accounting and billing. These multi-industry licensed programs support the IBM Datamaster with the 5247 Disk Storage Unit attached. These programs are an extension of the Business Management Accounting System for Datamaster Diskette. Both programs feature identical accounting functions and consistent user interfaces. □

► MASS STORAGE

INTEGRATED DISKETTE: Each desktop unit can include one or two diskette drives using IBM type 1, 2, or 2D diskettes. The formats for these diskettes are as follows:

Diskette 1

| Format | Bytes/Sector | Capacity |
|--------|--------------|----------|
| 1 | 128 | 243KB |
| 2 | 512 | 303KB |

Diskette 2

| Format | Bytes/Sector | Capacity |
|--------|--------------|----------|
| 3 | 128 | 486KB |
| 4 | 512 | 606KB |

Diskette 2D

| Format | Bytes/Sector | Capacity |
|--------|--------------|----------|
| 5 | 256 | 985KB |
| 6 | 512 | 1136KB |

The System/23 uses the 512-byte format as standard, but other formats may be selected for data interchange purposes. The data transfer rate using IBM diskettes 1 or 2 is 31.2K bytes per second; for diskette 2D, 62.5K bytes per second. Rotational speed for both types of drives is 360 RPM.

5246 DISKETTE UNIT: This is a free-standing diskette unit with the same capabilities and characteristics as the integrated unit. The 5246 is available in four models. Models 11 and 12 have capacities of 1.1 and 2.2 megabytes, respectively, and are dedicated to one System/23 unit. Models 21 and 22 also store 1.1 and 2.2 megabytes of data, respectively, but are shared by both desktop units in a dual-CPU/workstation configuration. Desktop units that use the 5246 must have a 5246 Diskette Unit Controller or an Extended 5246 Controller installed.

5247 DISK STORAGE UNIT: This is a floor-standing, high performance fixed disk unit. The 5247 is available in two models. Model 011 has a storage capacity of 15.4 megabytes; Model 012 has a storage capacity of 30.8 megabytes. Average access time is 40 ms. Standard 5247 Models 11 and 12 may attach to one or two Datamasters. An adapter expansion (#3700) allows a third and fourth System/23 computer to be attached to the 5247. Three Datamasters may be located up to 1000 feet in distance; one computer must remain adjacent to the 5247 for servicing use. The 5247 is file format compatible with System/23 Datamaster diskettes.

INPUT/OUTPUT UNITS

See the Peripheral/Terminals table on the third page of this report.

COMMUNICATIONS CONTROL

COMMUNICATIONS ADAPTER FEATURE: Includes communications interface hardware and licensed programs that enable the System/23 to communicate using either asynchronous or binary synchronous protocol. The physical interface for asynchronous communications is EIA RS-232-C/CCITT V24-V28 and transfer of data is via ASCII code. The physical interface for binary synchronous communication is EIA RS-232-C/CCITT V24-V28 with clocking supplied by the modem. Transfer of data is in EBCDIC and EBCDIC transparency modes at speeds up to 4800 bps. One of the IBM modems, 3863 (2400 bps), 3864 (4800 bps), 3872 (2400 bps), or 3874 (4800 bps) can be attached to the Communications Adapter Feature.

For more information on the communication capabilities of the System/23 see the Communications Software section.

SOFTWARE

OPERATING SYSTEM: The System/23 Datamaster does not have an operating system in the usual sense. Its system control functions are integrated into the 112K bytes of read-only storage (ROS). System control functions are primarily concerned with coordinating the interface between the user programs, the Basic language interpreter, the Word Processing licensed program, and the peripheral devices. ►

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► **PROGRAMMING LANGUAGES:** The only language currently available for the System/23 is Basic. The System/23 Basic interpreter is highly compatible with the Basic available on IBM's System/34. According to IBM, most System/23 Basic language statements are upward compatible with System/34 Basic. Typically, with some small amount of modification, System/23 Datamaster programs can be migrated to System/34. Modifications may be more extensive in programs where file sharing and error recovery logic are heavily used.

Coding and logic enhancements for System/23 Basic include 8-character variable names, program lines up to 255 characters, comments on lines, line labels, page control, time and date variables, IF-THEN-ELSE logic, full-screen processing, and nested procedures. Improved string and text functions include generalized substrings referencing, replacement of text within a string, and array search. I/O enhancements include a simple unformatted mode; full format input/output to the display screen, both printer ports, diskette files and communication features; eleven graphic symbols for line drawing and screen printer report formats; screen highlights; varied data representation; access of file records sequentially by relative record number of separate file index/ sequence; sequential file buffering up to 7680 bytes; and support for Basic interchange and H-exchange file formats permitting file transfer to and from most IBM diskette-based products.

UTILITY PROGRAMS: A diskette sort is optionally available with the System/23 that features full record sorting or record address sorting, a sort key that can contain up to ten sort fields, the ability to store control statements on diskette or enter them from the keyboard via prompting messages, and a record select/omit feature.

In addition, IBM customer support functions include providing a loader for machine updates, diskette preparation, alternative collating sequence, diskette-to-diskette copy, diskette recovery, index file generation, and label display.

WORD PROCESSING: The System/23 Datamaster word processing option features integrated text and data processing. The word processing models consist of hardware and a licensed program to support the additional functions. Word processing requires a minimum of 64K bytes of main storage and 1.1 megabytes of diskette storage.

The functions supported by the word processing hardware and licensed program to create, edit, print, etc., are as follows:

- Input—Create document, formats, automatic word wrap.
- Edit—Delete, find, indent, block operations, word underscore, page delete/restore.
- Print—Page align, text align, page number control.
- Merge—DP/WP merge, stop code (interactive).
- Pagination—Character and line count, syllable hyphen control, required page and control.
- Document services—Copy document, delete document, change document profile, list drive contents.

The IBM Word Processing II program is designed for word processing models of 5322 and 5324 Computers with 128K bytes of user storage and 1.1 megabytes of diskette storage or a 5247 Disk Unit. Word Processing II provides a 130,000 word spelling verification and English language dictionary. Users may also define 500 terms which are unique to their specific applications. An automatic hyphenation function uses the spelling dictionary for spelling verification and assistance. The program also provides synonym assistance with an IBM-supplied thesaurus of English language words.

IBM Word Processing II has the same features as the original word processing program in addition to the following enhancements:

- Word Processing—clear/set tabs, multiple save areas with
- append, decimal/center/right tabs, sub/superscript, page number increments, page GOTO, overstrike, phrase glossary, prompted hyphenation during edit.
- DP/WP—WP execution from a procedure file, Basic during Merge File/Text, DP file record selection, get/include display file.
- Document Assembly—get/include page, page split.
- Paginate—widow line control, keep, include page from document, auto search, auto replace.
- Document Control—sign-on menu, recover document, operator profiles, document owner specified access restrictions.

COMMUNICATIONS SOFTWARE: Two licensed programs, Asynchronous Communications and Binary Synchronous Communications, allow the System/23 to communicate with selected IBM systems and devices.

The Asynchronous Communications Program consists of communications access method support, a set of communications customer support functions, and a facility for user-written communications programs using System/23 Basic. In conjunction with the communications access method, the Asynchronous Communications Terminals customer support function provides the user with an interactive interface to perform asynchronous communications.

Features of the Asynchronous Communications Program include:

- A data transfer function which gives System/23 Datamaster functional characteristics commonly referred to as TTY-compatible. This function uses start-stop discipline and permits the user to transfer data using the ASCII translate table and the Asynchronous Communication Terminal function of the licensed program.
- A code translation table is provided to convert Datamaster internal EBCDIC code to/from ASCII code. Other tables may be built by the user.
- Provides the operator with an ease-of-use interactive function that leads the user through a step-by-step procedure using prompts and responses for defining and establishing communications and for performing other TTY functions.
- The input/output devices supported are the keyboard/display and printer.
- Provides a facility for the execution of Basic language user-written programs to perform data transfers.

This support can be used to communicate with the following IBM systems:

- System/370, Models 135-168, 3031, 3032, 3033, 3081, 4331, and 4341 via VM/370 (full duplex, switched facilities)
- Series/1 (EDX, RPS) (half duplex, switched facilities)
- Datamaster (full and half duplex, switched and non-switched)

The IBM System/23 Binary Synchronous Communications licensed program consists of communications access method support, a set of communications customer support functions, and a facility for user-written communications programs using the System/23 Basic language. In conjunction with the communications access method, the communications customer support functions can perform the following data transfer functions using the Binary Synchronous Communications protocol:

- Transmit batch data
- Receive batch data
- Inquire into a host system and receive batch data

Features of the Binary Synchronous Communications include: ►

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- • Datamaster uses the line protocol of the IBM 3741 to communicate with a variety of IBM systems.
- Includes a data transfer function which performs batch data transfers (both attended and unattended).
- The input/output devices supported are the keyboard/display, printers, and diskette.
- Provides a facility for BASIC language user-written programs to perform data transfers.
- Code translation tables are provided to convert Datamaster's internal Multilingual Character Set to/from the National Language Version. Other tables may be built by the user.
- Provides an operator an ease-of-use interactive function that leads the user through a step-by-step procedure using prompts and responses for defining and establishing communication and batch data transfer functions.

Datamaster uses IBM 3741 protocol to communicate with the following IBM systems:

- System/3 Model 15D
- Datamaster
- System/34
- System/38
- 5280 Distributed Data Systems
- 5265 Point-of-Sale Terminal
- 5110 Computer
- 5120 Computing System
- Series/1 (EDX, RPS)

DATA MANAGEMENT: The System/23 Business Report/Application Development System III (BRADS III) is a data management system that enables users to develop and install applications, and expand the value of the System/23 Business Management Accounting System applications and applications written by third parties by querying the data bases and by developing new reports.

BRADS II is a field-developed program for the IBM 5120. BRADS III brings new, more powerful functions and, according to IBM, is easier to learn and use. The BRAD III program will be made available in two separate releases.

BRADS III may be used to:

- Create, maintain, and update files
- Create screen-driven data entry programs
- Retrieve data from the files using a simple query
- Create formatted reports using prompted report generation screens
- Develop complete applications using BRADS III in conjunction with System/23 Basic
- Create additional queries and reports for the Business Management Accounting System
- Obtain extensive documentation
- Produce forecasts showing expected revenue
- Investigate alternative plans using spread sheet data
- Produce reports that examine the differences (variances) between plans or between plans and actual performance
- Produce reports showing percentage relationships between rows or between columns
- Consolidate plans and evaluate performance of separate operating entities
- Combine historical and predictive data together

The spread sheet generator facility adds a powerful set of operations to the existing BRADS III capabilities to provide the user flexibility in addressing spread sheet-type applications.

IBM 5110/5120 BASIC TO SYSTEM/23 CONVERSION AID: A licensed program designed to assist the experienced 5110/5120 programmer in converting 5110/5120 Basic application programs to System/23 Basic. The conversion can be used to reduce, but not eliminate, the need to recode

Basic application programs. This program converts many 5110/5120 Basic statements to System/23 Basic, identifies 5110/5120 Basic statements that require evaluation or recoding, and provides listings of converted programs for documentation and debugging purposes.

Control and data files are not converted by the 5110/5120 Conversion Aid and must be converted manually by the user.

IBM SYSTEM/23 BUSINESS MANAGEMENT ACCOUNTING SYSTEM APPLICATIONS: IBM currently offers six cross-industry accounting application packages for the IBM System/23 Datamaster Diskette and six packages for the Datamaster Disk. Both sets of programs are identical in accounting functions and consistent user interfaces. The Datamaster accounting applications include general ledger, accounts payable, accounts receivable, payroll, inventory accounting, and billing. Highlights of these packages include:

- Applications feature either stand-alone or co-resident installation with other IBM System/23 Business Management Accounting Systems Applications.
- Built-in auditability and control characteristics through the use of familiar 5-column journals, inter-application data integrity and sequential journal numbering.
- Applications are interrelated through the passing of summarized transaction data between applications where appropriate and desired.
- Program documentation is designed to promote customer self-sufficiency during installation and operation.
- Ease-of-use enhanced through menu-driven task selection; consistent data entry programs and procedures for all applications; common file maintenance techniques including user defined field defaults; use of generally accepted accounting terminology; installation-time tailoring options that allow the user to select key functions and perform file sizing.
- An improved program update (PTD) procedure is provided to aid the operator in applying program fixes provided by IBM.
- BRADS III file definitions are provided with the applications for selected master files.
- Optional security code by application.
- Multiple-company support by installs on separate diskette(s).
- File sharing capability supporting concurrent operations when two IBM 5322s or 5324s are connected via a shared diskette unit (5246 Model 22).
- File sharing capability supporting concurrent operations if more than one Datamaster is attached to the 5247 Disk Storage Unit.

PRICING

POLICY: The System/23 Datamaster is a purchase-only system. The IBM Pilot Test Plan Agreement applies, allowing the customer to try the system prior to purchase. A separate maintenance contract is available. The Pilot Test Plan Agreement contract period is three months, with a three month extension period. Payment for the entire period is due at the commencement of the contract period or extension. Customers may purchase installed machines at any time during the contract period or extension period by executing the Agreement for Purchase. IBM maintenance coverage is included in the contract period unit charges and the extension unit charge. The plan carries a purchase option payment with 70 percent accrued monthly. No refund is given if the customer terminates the contract.

The standard 10 percent Educational Allowance applies to the System/23 Datamaster. It also qualifies for volume purchase discounts.

The System/23 is in IBM maintenance group D. Prime-shift maintenance is provided for any consecutive nine-hour period ►

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▶ between 7 a.m. and 6 p.m., Monday through Friday. The premium for extended maintenance coverage is expressed in the table below as a percentage of the prime-shift maintenance charges, which are shown in the accompanying price list.

| | Consecutive Hours | | | | |
|---|-------------------|-----|-----|-----|-----|
| | *9 | 12 | 16 | 20 | 24 |
| Monday-Friday (until 8 a.m., Saturday) | 10% | 12% | 14% | 16% | 18% |
| Saturday (until 8 a.m., Sunday) | 4% | 5% | 7% | 8% | 9% |
| Sunday (until 8 a.m., Monday) | 5% | 7% | 9% | 11% | 12% |

*For periods outside the basic 7 a.m. to 7 p.m. prime shift.

For users without a maintenance contract, the System/23 is maintained under per-call class 2. The per-call charge for

service regular hours is \$105 per hour, and during off hours the charge is \$123 per hour.

IBM's Atlanta-based Installation Support Center is staffed by systems and application specialists who will answer customer questions about all aspects of the System/23 Computing System and the System/23 Accounting Applications by means of a toll-free "hot line." The hot line hours are 8:30 a.m. to 5:00 p.m., Eastern Time, on Monday through Friday. After hours, customers may leave recorded messages which will be answered the next business day.

The hourly rate for IBM systems engineering services is \$57. SE services are offered on an "as available" basis.

IBM software for the System/23 is separately licensed and available for the monthly license fees or one-time charges listed in the "Software Prices" section that follows.

EQUIPMENT PRICES

| | | <u>Purchase Price</u> | <u>Monthly Maint.</u> |
|---|---|-----------------------|-----------------------|
| PROCESSORS | | | |
| 5322 | Computer; includes 1920-character CRT, keyboard, space for storage of up to two diskette units, secondary storage attachment, communication feature, additional printer attachment, an integral interpretive language (Basic), and main memory and diskette storage as detailed below. | | |
| The following units are data processing models. | | | |
| 120 | With 64K bytes of main memory | \$3,800 | \$38 |
| 123 | With 64K bytes of main memory and 1.1 megabytes of diskette storage | 5,350 | 51 |
| 124 | With 64K bytes of main memory and 2.2 megabytes of diskette storage | 6,900 | 64 |
| 140 | With 128K bytes of main memory | 4,800 | 44 |
| 143 | With 128K bytes of main memory and 1.1 megabytes of diskette storage | 6,350 | 57 |
| 144 | With 128K bytes of main memory and 2.2 megabytes of diskette storage | 7,900 | 57 |
| The following units are data processing and word processing models. | | | |
| 420 | With 64K bytes of main memory | 4,400 | 56 |
| 423 | With 64K bytes of main memory and 1.1 megabytes of diskette storage | 5,950 | 69 |
| 424 | With 64K bytes of main memory and 2.2 megabytes of diskette storage | 7,500 | 82 |
| 440 | With 128K bytes of main memory | 5,400 | 62 |
| 443 | With 128K bytes of main memory and 1.1 megabytes of diskette storage | 6,950 | 75 |
| 444 | With 128K bytes of main memory and 2.2 megabytes of diskette storage | 8,500 | 88 |
| 5324 | Computer; includes processor unit, 1920-character adjustable display module, keyboard module, space for storage of up to two diskette units, secondary storage attachment, communication feature, additional printer attachment, an integral interpretive language (Basic), and main memory and diskette storage as detailed below. | | |
| The following units are data processing models. | | | |
| 120 | With 64K byte of main memory | 3,375 | 24.50 |
| 123 | With 64K bytes of main memory and 1.1 megabytes of diskette storage | 4,925 | 37.50 |
| 124 | With 64K bytes of main memory and 2.2 megabytes of diskette storage | 6,475 | 50.50 |
| 140 | With 128K bytes of main memory | 4,375 | 30.50 |
| 143 | With 128K bytes of main memory and 1.1 megabytes of diskette storage | 5,925 | 43.50 |
| 144 | With 128K bytes of main memory and 2.2 megabytes of diskette storage | 7,475 | 56.50 |
| 1000 | Display Module | 725 | 9.00 |
| 1020 | Keyboard Module | 450 | 7.00 |
| The following units are data processing and word processing models. | | | |
| 420 | With 64K bytes of main memory | 3,975 | 42.50 |
| 423 | With 64K bytes of main memory and 1.1 megabytes of diskette storage | 5,525 | 55.50 |
| 424 | With 64K bytes of main memory and 2.2 megabytes of diskette storage | 7,075 | 68.50 |
| 440 | With 128K bytes of main memory | 4,975 | 48.50 |
| 443 | With 128K bytes of main memory and 1.1 megabytes of diskette storage | 6,525 | 61.50 |
| 444 | With 128K bytes of main memory and 2.2 megabytes of diskette storage | 8,075 | 74.50 |
| 1000 | Display Module | 725 | 9.00 |
| 1020 | Keyboard Module | 450 | 7.00 |

IBM System/23 Datamaster

EQUIPMENT PRICES

| | | <u>Purchase Price</u> | <u>Monthly Maint.</u> |
|----------------------------|---|---------------------------|---------------------------|
| ▶ PROCESSOR OPTIONS | | | |
| 2550 | Communications adapter | 400 | 6 |
| 3770 | 5247 Disk Adapter | 435 | 3 |
| 3775 | 5246 Diskette controller | 500 | 1 |
| 3780 | Integrated diskette controller | 350 | 1 |
| 6300 | Diskette sort | 30 | 0 |
| 6350 | Second printer attachment | 345 | 1 |
| RPQ 8N5008 | Extended 5246 controller | 780 | 1 |
| MASS STORAGE | | | |
| 5246 011 | 1MB diskette unit | 2,715 | 16 |
| 5246 012 | 2MB diskette unit | 4,265 | 29 |
| 5246 021 | 1MB diskette unit, shared | 2,830 | 16 |
| 5246 022 | 2MB diskette unit, shared | 4,380 | 29 |
| RPQ 8N5009 | Extended distance controller, plant-installed | 300 | 1 |
| RPQ 8N5023 | Extended distance controller, field-installed | 450 | 1 |
| RPQ SW2901 | Cable assembly, 15-meter (50 feet) | 350 | 1 |
| RPQ SW2902 | Cable assembly, 30-meter (100 feet) | 630 | 1 |
| RPQ SW2903 | Cable assembly, 60-meter (200 feet) | 1,055 | 1 |
| 5247 011 | 15.4MB disk storage unit | 8,250 | 65 |
| 5247 012 | 30.8MB disk storage unit | 10,050 | 75 |
| 5247 3710 | Cable assembly, 4-meter | 120 | 1 |
| 5247 3715 | Cable assembly, 15-meter | 165 | 1 |
| 5247 3720 | Cable assembly, 30-meter | 220 | 1 |
| 5247 3725 | Cable assembly, 150-meter | 670 | 1 |
| 5247 3730 | Cable assembly, 300-meter | 1,340 | 1 |
| PRINTERS | | | |
| 5217 | Daisywheel Printer, 60 cps | 4,425 | 58.50 |
| 5600 | Switch and cable assembly | 250 | 1 |
| 7850 | Continuous Form Feed | 325 | 9 |
| 7860 | Cut Sheet Feed Device | 11,850 | 27.50 |
| 5241 | Matrix printer, 80 cps | 2,400 | 33 |
| 3250 | Document insertion device | 125 | .50 |
| 5600 | Switch and cable assembly | 250 | 1 |
| 4450 | Forms stand | 54 | 0 |
| 5242 001 | Matrix printer, 160 cps | 3,200 | 50 |
| 5242 002 | Matrix printer, 40/160 cps | 3,500 | 53 |
| 3250 | Document insertion device | 125 | .50 |
| 5600 | Switch and cable assembly | 250 | 1 |
| 4450 | Forms stand | 54 | 0 |

SOFTWARE PRICES

| | | <u>Purchase Price</u> |
|----------|--|---------------------------|
| 5715-AC1 | Asynchronous Communications | \$600 |
| 5715-BC1 | Binary Synchronous Communications | 850 |
| 5715-CV1 | 5110/5120 Basic to System/23 Conversion Aid | 875 |
| 5715-RG2 | System/23 BRADS III | 1,145 |
| 5715-WP1 | System/23 Word Processing | 500 |
| 5715-WP2 | System/23 Word Processing II | 850 |
| | Upgrade to Word Processing II | 400 |
| 5715-XX2 | General Ledger for Datamaster Diskette | 1,025 |
| 5715-XX3 | Accounts Payable for Datamaster Diskette | 1,025 |
| 5715-XX4 | Accounts Receivable for Datamaster Diskette | 1,025 |
| 5715-XX5 | Payroll for Datamaster Diskette | 1,025 |
| 5715-XX6 | Inventory Accounting for Datamaster Diskette | 1,025 |
| 5715-XX7 | Billing for Datamaster Diskette | 1,025 |
| 5715-XZ2 | General Ledger for Datamaster Disk | 1,630 |
| 5715-XZ3 | Accounts Payable for Datamaster Disk | 1,630 |
| 5715-XZ4 | Accounts Receivable for Datamaster Disk | 1,630 |
| 5715-XZ5 | Payroll for Datamaster Disk | 1,630 |
| 5715-XZ6 | Inventory Accounting for Datamaster Disk | 1,630 |
| 5715-XZ7 | Billing for Datamaster Disk | 1,630■ |