

# Basic Four/S80

## MANAGEMENT SUMMARY

Basic Four Corporation was founded in 1971 as a subsidiary of Management Assistance Inc. (MAI) and is one of the leaders in the small business computer field. As it has in the past, the Basic Four division is continuing its philosophy of providing information processing products to small businesses, placing heavy emphasis on applications-oriented systems and software. The company has shipped over 13,000 systems, with 83 field marketing offices (dealers and direct sales) throughout the United States. Affiliates and their distributors market Basic Four systems in more than 69 foreign locations.

Initially a systems house using Microdata CPUs, Basic Four began manufacturing its own CPU in September 1976, introducing it simultaneously with the then top-of-the-line System 700 business computer. In January 1977 the company expanded its manufacturing operations to include a video display terminal, and in September 1977 began manufacturing its own printer.

The S80 was introduced in October, 1980 as the Spectrum 80 Information System. It is Basic Four's entry level system and is aimed at key service-oriented vertical markets (such as CPA's, lawyers, personnel agencies, and medical clinics) which require systems capable of both data and word processing.

The Basic Four/S80 is a multiprocessor business computer utilizing up to five microprocessors. An S80 system includes a central File Management Computer (FMC) and from one to four InfoCenter workstations. Each FMC and InfoCenter includes one microprocessor. ➤

The Basic Four/S80 Information System is an entry-level business computer ranging in price from \$15,990 to about \$90,000. A division of Management Assistance, Inc., the Basic Four Information Systems Division manufactures its own CPUs, terminals, and printers. Another MAI division, the Sorbus Service Division, provides maintenance from locations in all 83 cities throughout the United States where Basic Four systems are sold.

**MAIN MEMORY:** 128K to 320K bytes. **Note:** 64K bytes reside in the File Management Computer (CPU) and 64K bytes reside in each workstation.

**DISK CAPACITY:** 2 million to 17 million bytes of fixed disk storage.

**WORKSTATIONS:** 1 to 4.

**PRINTERS:** 40 cps to 300 lpm.

## CHARACTERISTICS

**MANUFACTURER:** Management Assistance Inc., Basic Four Information Systems Division, 14101 Myford Road, Tustin, California 92680. Telephone (714) 731-5100.

Basic Four was established in 1971 as a subsidiary of Management Assistance, Inc. (MAI), in New York, NY. The Basic Four division is engaged in the manufacture and marketing of computer business systems and the development of applications software. Manufacturing is done at the ➤



The S80 Information System is Basic Four's entry-level, multiprocessor business computer, utilizing up to five microprocessors. The S80's base configuration includes: one File Management Computer with 64K bytes of system memory, a fixed-disk drive with user capacity of 2 megabytes and a 1.2 megabyte diskette drive; one Multifunctional Processing Computer with 64K bytes of memory; and one printer. DataWord II word processing hardware/software is available for all Basic Four systems.

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▷ The FMC-resident microprocessor is the CPU, controlling file management and printer resources for an entire S80 system. The microprocessors that reside in the InfoCenters (slaves) are dedicated to business programs, allowing the operator to choose either word processing or data processing without competing for resources from the CPU.

The S80 features the following four types of InfoCenters: Data Processing, Word Processing, Information Processing, and an Optional InfoCenter. Each of these includes a terminal called a Multifunctional Processing Computer (MPC), with a terminal-resident microprocessor (including 64K bytes of memory) and a printer.

The Data Processing InfoCenter consists of an MPC with a 12-inch video display and an 80 cps bi-directional printer. It is designed to handle general accounting functions such as inventory control, accounts payable, accounts receivable, general ledger, payroll, etc.

The Word Processing InfoCenter features an MPC with a 15-inch full-page display screen and a 45 cps letter quality printer. This workstation uses DataWord II, Basic Four's word processing hardware/software.

The terminal is an Information Processing InfoCenter that supports either data processing or word processing. This InfoCenter uses DataWord II hardware/software and includes an MPC with a 15-inch display and a 120 cps bidirectional printer.

The fourth type of InfoCenter is optionally available and is user-configured with either a 12-inch or 15-inch MPC display terminal and any printer, handling either data processing, word processing or both. A maximum of four InfoCenters may be included in an S80 system.

The base S80 configuration includes: one File Management Computer with 64K bytes of system memory, a fixed disk with user capacity of 2 megabytes and a 1.2 megabyte diskette drive; one Multifunctional Processing Computer with 64K bytes of memory; and one printer. Up to four MPCs, 17 megabytes of fixed-disk storage, an additional 1.2 megabyte flexible disk, and a maximum of one parallel and five serial printers can be configured with an FMC for a maximum S80 system.

Basic Four offers DataWord II for use on all systems. DataWord II is a hardware/software package that enables the system to perform data processing or word processing, using the same terminal and data base. DataWord II operates under BOSS and utilizes Multifunctional Processing Computers (MPCs) and letter quality printers. The S80 system supports up to four MPCs and up to four word processing printers.

DataWord II enables the user to insert or delete words, sentences, or paragraphs instantaneously, as well as perform other word processing functions such as readjusting margins or zooming in on text for better readability.

▶ company's facilities in Tustin, California, and by an affiliate in Holland. Basic Four products are sold in more than 80 cities throughout the United States and in more than 30 foreign countries in Europe, Asia, South America, and Canada through the company and affiliated sales offices and a dealer network.

**MODEL:** S80.

**DATE ANNOUNCED:** October, 1980.

**DATE OF FIRST DELIVERY:** December, 1980.

**NUMBER INSTALLED TO DATE:** Information not available.

### DATA FORMATS

**BASIC UNIT:** 8-bit byte.

**FIXED-POINT OPERANDS:** Two or four-byte words (16 or 32 bits) are used for standard and extended arithmetic operations.

**INSTRUCTIONS:** The S80 uses a Z-80A microprocessor. The Z-80A can execute 158 different instructions which can be broken down into the following groups:

- Load and Exchange
- Block Transfer and Search
- Arithmetic and Logical
- Rotate and Shift
- Bit Manipulation (set, reset, test)
- Jump, Call and return
- Input/Output
- Basic CPU Control.

Up to 64K bytes of main memory can be directly addressed.

**INTERNAL CODE:** ASCII.

### MAIN STORAGE

**STORAGE TYPE:** MOS main memory.

**CYCLE TIME:** 500 nanoseconds from main memory.

**CAPACITY:** 128K to 320K bytes in 64K increments. 64K memory is resident in the File Management Computer (FMC) and 64K memory is resident in each configured Multifunctional Processing Computer (MPC). System memory sizes are based on the total of memory resident in the FMC and each configured MPC; however, each MPC can only access its own 64K memory and the 64K memory resident in the FMC.

**CONTROL STORAGE:** The FMC includes 6K bytes of control storage; each InfoCenter includes 4K bytes of control storage.

**CENTRAL PROCESSOR:** The central processing unit for the S80 is housed within the File Management Computer (FMC).

**REGISTERS:** Two sets of six are available.

**ADDRESSING:** 64K bytes of directly addressable instruction words are available for the system.

**INSTRUCTION REPERTOIRE:** The S80 has 158 instructions.

**INTERRUPTS:** Vectored interrupts are standard.

**PHYSICAL SPECIFICATIONS:** The S80's FMC is 22.5 inches wide, 32 inches deep, 29 inches high, and weighs 200 pounds. FMC power requirements are 100/120/240 VAC +10%, 60 or 50Hz, 990 VA single phase.

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## PERIPHERALS/TERMINALS

DEVICE	DESCRIPTION AND SPEED
<b>PRINTERS</b>	
MN001AA	Word processing printer, serial I/O, 40 cps, 10/12 cpi
MA001AA	Word processing printer, serial I/O, 45 cps, 10/12 cpi
MA021AA	132-position, 96-character matrix printer, serial I/O, 80 cps
MJ001AA	132-position, 96-character matrix printer, serial I/O, 120 cps
MJ037AA	132-position, 96-character matrix printer, parallel I/O, 150 lpm, for File Management Computer (FMC) only
	132-position, 96-character, matrix printer, parallel I/O, 300 lpm, for File Management Computer (FMC) only
<b>TERMINALS</b>	
JJ002AA	Multifunctional Processing Computer (MPC) with 12-inch screen, 64K-bytes of system memory, extended ASCII character set, 1920 characters (24 lines of 80 characters), standard keyboard plus special function keys; for Data Processing or Optional InfoCenters
JK002AA	Multifunctional Processing Computer (MPC) with 15-inch screen, 64K bytes of system memory, extended ASCII character set, 5120 characters (64 lines of 80 characters), standard keyboard plus special function keys; for Word Processing, Information Processing or Optional InfoCenters

➤ In May 1981, the DataWord II software was enhanced for Basic Four systems with a level 5 operating system; 19 features were added to the software.

Maintenance of the Basic Four systems is handled by MAI's Sorbus Service Division through an extensive network of offices in 160 cities all over the U.S.

**USER REACTION**

Datapro received no responses from S80 users for the 1981 Computer Users' Survey, possibly due to the newness of the system. □

➤ **INPUT/OUTPUT CONTROL**

A DMA system handles I/O data transfer.

**CONFIGURATION RULES**

**WORKSTATIONS:** Up to four workstations, called InfoCenters are supported by the S80 File Management Computer (FMC).

**DISK STORAGE:** One 14-inch fixed-disk drive and up to two diskette drives are supported by the FMC.

**MAGNETIC TAPE UNITS:** None.

**PRINTERS:** Up to six printers are supported by the S80. Each FMC can have two printers attached (one serial and one parallel), and each InfoCenter can include one serial printer. Thus, a maximum configuration of one FMC with four InfoCenters could support six printers (five serial and one parallel).

**DATA COMMUNICATIONS:** A full modem control, full-duplex asynchronous interface is available on each MPC. Thus, a total of four independent channels are supported. All communication parameters are user-selectable programmatically, including baud rates up to 9600 bits per second.

A high-speed serial link for internal communications (ICOM) is used to connect system components to a maximum length of 1000 feet.

**MASS STORAGE**

**FIXED-DISK DRIVE:** Provides from 2 million to 17 million bytes of on-line fixed-disk storage. Average access time is 72.5 milliseconds, and the data transfer rate is 960K bytes per second. Sector capacity is 512 bytes and disk rotational speed is 2,400 rpm.

**DISKETTE DRIVE:** Provides 1.2 million bytes, user capacity, of removable diskette storage. Average access time is 174.3 milliseconds, and the data transfer rate is 500K bits per second. Sector capacity is 512 bytes and disk rotational speed is 360 rpm. One additional diskette drive may be added to the system for total user storage of 2.4 million bytes.

**INPUT/OUTPUT UNITS**

See Peripherals/Terminals table.

**SOFTWARE**

**OPERATING SYSTEM:** All systems use BFC's Basic Operating System Software (BOSS), the operating system initially introduced with the Basic Four systems. Operating system functions are memory-resident, stored in 48K bytes of protected read/write memory on all systems. Most BOSS levels comprise five special purpose modular components: (1) the EXECUTOR, which regulates execution of programs, schedules I/O operation, and keeps track of data storage allocation; (2) the INTERPRETER, which translates words into action via the concurrent compiler, the program processor, and the decompiler; (3) the SPOOLER, which streamlines throughput to printer operations; (4) the CONFIGURATOR, containing the OS modules unique to each system; and (5) the DISK SUBSYSTEM, containing the many features of BOSS.

Features of BOSS include: compiler/lister, program security/system security, execution scheduling, file management/disk control, disk sector caching, and job control/memory management.

BOSS is an integral part of each microprocessor's operation, with the S80's FMC controlling the interaction of the various components of the system. BOSS consists of a disk-oriented, real-time executive and an interpreter for executing the high-level Business BASIC programming language. Each InfoCenter configured with the S80 contains its own BASIC interpreter and EXECUTOR. The file manager contains the resource control and file access mechanism. ➤

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► **LANGUAGES:** All models utilize Business BASIC, an enhanced version of the BASIC language, supported by system-oriented I/O control, formatted I/O, data file management, and decimal arithmetic facilities.

File and error handling are improved and extensively changed from the original version of Business BASIC. The time required to create a DIRECT file and do DIRECT file key searches has been reduced. All files, whether DIRECT or INDEXED, may be blocked to a fixed, predetermined record size. Records may range in size from 0 to 32,768 characters.

**WORD PROCESSING:** Basic Four's DataWord II is a hardware/software package which enables data processing or word processing to function, using the same data base. DataWord II operates under special levels of BOSS and utilizes Multifunctional Processing Computers (MPCs) and letter quality printers. DataWord II is available for all Basic Four systems, with all systems supporting up to four MPCs and up to four word processing printers.

Some of DataWord II's word processing features are: paragraph assembly, horizontal and vertical scrolling, letter generation, global search and replace, and automatic repaging.

**UTILITIES:** Supplied with BOSS are a number of utilities written in Business BASIC. Included are file copy, disk copy, list programs, cross reference programs, file dictionary display, and file to file data communications transfer utility.

**APPLICATIONS SOFTWARE:** Basic Four information systems are designed to be used with a wide variety of business software applications for specialized functions and industries. Applications software is available from both independent software vendors and a network of authorized software distributors licensed by MAI Applications Software Corporation (ASC). ASC licensed software applications packages include: the Membership Management System, the Comprehensive Business System (CBS III), the Job Cost Management System, the Property Management System, and the Client Accounting System.

The Membership Management System is an application software package aimed at membership organizations. It is designed to handle a wide range of membership and employee accounting tasks. The package provides modules to handle:

- Membership Accounts Receivable
- Server Commissions
- Payroll
- Accounts Payable
- General Ledger
- Inventory Control
- Food/Beverage Sales Analysis.

CBS III is the third generation of Basic Four's Comprehensive Business System. The CBS III application package is designed to meet general accounting requirements common to most industries. It contains nine modules for the following areas:

- General Ledger
- Order Processing
- Accounts Receivable
- Sales Analysis
- Inventory Control
- Purchase Order Processing
- Accounts Payable
- Payroll
- Fixed Assets.

The Job Cost Management System is designed to accommodate the accounting and internal control require-

ments of construction and service contract firms. All costing information is captured automatically from transactions generated from accounts payable, accounts receivable, general ledger, and payroll to produce a full range of reports reflecting cost-to-date, budget, and variance information. The six-part system consists of:

- Standard Accounting Applications
- Job Cost
- Job Cost Receivables
- Job Estimating
- Job Cost Loan Disbursement
- Equipment costing.

The Property Management System is designed for users who manage commercial and residential property, combining the CBS III standard accounting applications, and supporting residential/commercial income property audit and reporting requirements. This package provides all current information on rents, deposits, delinquencies, vacancies, and trust fund accounting.

The Client Accounting System was developed for businesses which bill clients for time, such as law firms and public accounting firms. This package summarizes overhead, does timekeeping and time analysis of billable versus non-billable time.

Dealer-developed packages are available for general business applications; for the construction, manufacturing, transportation, printing and publishing, wholesale and retail trade industries; for finance, insurance, and real estate activities; and for various service organizations, utilities; and other industries.

The Exception Analysis System II (EASY II) is an interactive and self-guiding system used to produce a wide variety of special reports. The user needs only to respond to easy-to-understand questions in order to create new reports. EASY II analyzes the information files and formats reports automatically. Output is displayed either on the printer or MPC. EASY II also remembers the organization of reports that have been run. Once a report has been produced, the report name is all that is required to call out a new report reflecting information from the most recent data on file.

EASY II works with all Basic Four program products, and will run on any Basic Four system, using the appropriate levels of BOSS. EASY II is available from Basic Four branches and dealers.

### PRICING

**POLICY:** Basic Four systems are available for purchase or on a third-party lease, with separate charges for maintenance. Unlimited usage of the system is permitted at no additional maintenance charge.

Maintenance is provided by more than 1200 service representatives located in more than 160 U.S. cities by MAI's Sorbus Service division. Maintenance contracts begin after the 90-day warranty period has expired.

**SOFTWARE:** The cost of both the operating system, Business BASIC, and DataWord II is included in the purchase price of the system, based on the hardware configuration ordered. All applications software is separately priced, and is available from MAI's Applications Software Corporation.

**EQUIPMENT:** The components and prices of the various packaged configurations of the Basic Four computer systems are listed in the Equipment Prices section that follows. ►

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EQUIPMENT PRICES

<u>Market Codes</u>		<u>Purchase Price</u>	<u>Monthly Maint.</u>
File Management Computer			
AA001AA	File Management Computer (FMC)*, includes the file management CPU, 64K bytes memory, a fixed disk drive (2M bytes user capacity) and one diskette drive (1.2M bytes user capacity)	\$6,790	\$90
InfoCenters			
CA002AA	Data Processing InfoCenter, includes JJ002AA Multifunctional Processing Computer (MPC) with 12-inch screen, 64K bytes memory; MA001AA printer, 80 cps	9,200	95
CB002AA	Word Processing InfoCenter,** includes JK002AA Multifunctional Processing Computer (MPC) with 15-inch screen, 64K bytes memory; MN001AA word processing printer, 45 cps, includes 25-foot cable	10,690	130
CC002AA	Information Processing InfoCenter** includes JK002AA Multifunctional Processing Computer (MPC) with 15-inch screen, 64K bytes memory; MA021AA printer, 120 cps	11,150	100
Optional Multifunctional Processing Computers for Optional InfoCenters			
JJ002AA	MPC includes 12-inch screen, 64K bytes memory	4,700	45
JK002AA	MPC includes 15-inch screen, 64K bytes memory	5,200	45
<b>DISK/DISKETTE OPTIONS</b>			
DR001AA	6M bytes user capacity increase, available on 2M byte system only	4,000	30
DR002AA	3M bytes user capacity increase, available on 8, 11, or 14M byte systems	3,000	15
DR003AA	3M bytes user capacity increase, available on systems below 8M bytes	2,000	15
AP001AA	Second diskette drive, 1.2M bytes user capacity (field installed)	3,000	20
7A006AA	Diskettes (1 box of 10)	130	
<b>SERIAL PRINTERS</b>			
	Word Processing Printer, 40 cps, 10/12 cpi	7,500	50
MN001AA	Word processing printer, 45 cps, 10/12 cpi, (add-on)	5,490	50
MA001AA	Printer, 80 cps (add-on)	5,500	50
MA021AA	Printer, 120 cps	6,600	55
<b>LINE PRINTERS</b>			
MJ001AA	Printer, 150 lpm (add-on)	8,300	65
MJ037AA	Printer, 300 lpm (add-on)	12,500	85
<b>SOFTWARE</b>			<b>One-Time License Fee</b>
EASY II			\$800
APPLICATIONS SOFTWARE (from MAI's Applications Software Corporation) Fees are based on individual licensee's area and needs.			
CBS III			
Membership Management System			N/A
Job Cost Management System			N/A
Property Management System			N/A
Client Accounting System			N/A

\*The File Management Computer, AA001AA, is a prerequisite for an S80 system and can be configured only with an S80 system. A minimum S80 configuration must include the File Management Computer, one Multifunctional Processing Computer, and one printer.

\*\*Prerequisite, S-274, Dataword II word processing hardware/software package.■