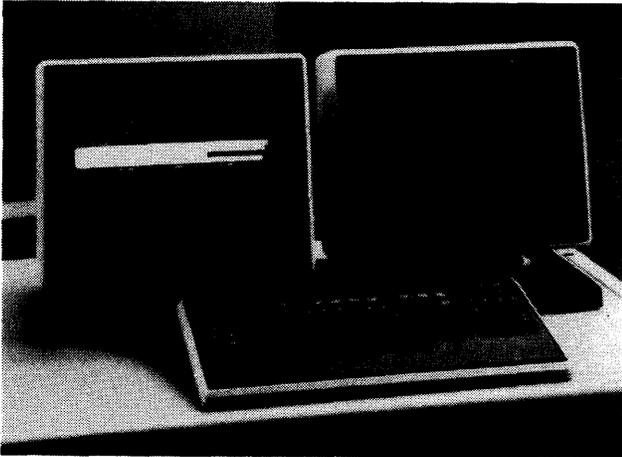


Burroughs B20



The B20 small business system is available in a variety of models and configurations. The B21 can control up to three other workstations while the B22 can handle up to 16 additional units.

BACKGROUND

Burroughs Corporation, Burroughs Place, Detroit, MI 48232. Telephone (313) 972-7000.

Burroughs Corporation, founded in 1886 manufactures a diverse line of business computer systems, minicomputers, and terminals. The computer system range from single microcomputer models to large scale multiprocessing networks. The B20 business microcomputer system, introduced in May 1982, is designed as a desktop workstation with upgradability for distributed intelligence. Burrough's latest modifications and enhancements has produced the new Turbo models, and is replacing most of the original B21 Series.

SYSTEM CHARACTERISTICS

The B20 family can operate as stand-alone systems, as distributed processing nodes connected to a central computer, or as clusters with multiple workstations. Two major series are available, the B21 and the B22. Within the B21 Series there are six new T (for Turbo) models—the B21-1T, B21-2T, B21-3T, B21-4T, B21-5T and B21-6T. Orders for the previously released B21-1 will continue to be accepted. However, orders for the previously released B21-3, B21-4, and B21-5 will no longer be accepted. The B22 model can be configured with various options.

Each workstation consists of an Intel 16-bit microprocessor, RAM, keyboard, video display unit, one RS-422 port, and BTOS operating systems, available in different versions and bundled with one language. All B21 Models except for the B21-1/B21-1T include a display of 80 characters x 28 lines, two RS-232-C serial communications port, offer mass storage options, and allow for printing capability through a centronics parallel interface. Additionally, all models except for the B21-1, which is equipped with

Current models: B21-1T, B21-2T, B21-3T, B21-4T, B21-5T, B21-6T, B22.

Memory: B21—128KB-512KB RAM; B22—256KB-640KB RAM.

Storage capacity: B21—630KB-1.2MB diskette, 5MB-12.6MB hard disk; B22—500KB diskette, 8.4MB-60.MB hard disk.

Workstations: B21—up to three; B22—up to 16.

Base list price: All models include CPU, CRT, 256KB RAM, keyboard, operating system, one language, one RS-422 port; B21-1T—\$3,795; B21-2T—\$5,195, including 1MB diskette, two RS-232 ports, one parallel port; B21-3T—\$6,295, including 128KB RAM, dual 1MB diskette, two RS-232 ports, one parallel port; B21-4T—\$9,195, including 1MB diskette, 6.4MB hard disk, two RS-232 ports, one parallel port; B21-5T—\$10,795, including 10MB hard disk, two RS-232 ports, one parallel port; B21-6T—\$12,495, including 256KB RAM, 16.8 hard disk, two RS-232 ports, one parallel port; B22—\$7,995, including one parallel port, one RS-232 port, two multibus slots.

Typical list prices: \$9,545, including B21-3T stand-alone system and 35 cps daisywheel printer; \$20,771, including one B22 workstation w/384KB RAM, 230 cps dot matrix printer, and a 8.4MB hard disk unit; \$31,375, including three B21 workstations attached to Master B21-4T system, 8.4MB hard disk, and 20 cps letter quality printer.

Popular options: from Burroughs—add-on memory, printers, extra disks.

Principal programming languages: Cobol, Fortran, Basic, Pascal.

Principal applications software: accounting, word processing, database management, electronic spreadsheet, government, manufacturing, payroll, education, sales, graphics, construction.

First shipment: June 1982.

Number installed to date: information not available.

Available through: Burroughs direct sales force, selected third-party dealers and distributors.

128KB RAM memory, and utilizes Intel's 8088 5MHz processor, utilize the 8086 processor with a 8MHz processor and is equipped with 256KB RAM, expandable to 512KB RAM. Because each workstation has its own processor and memory, the user can have access to and transfer files among a distributive environment.

The B22 Model offers one parallel printer port, and two multibus card slots for attachment of custom devices. Also, in addition to having a RS-232 channel, the system has the option of configuring the second serial channel in either RS-232 or RS-422 modes and can add up to two additional RS-232 interfaces. The memory of a B22 unit can be expanded to 640KB RAM and the 8086 processor operates at 5MHz clock speed. Another difference between the two series is the display—the B22 series offers either 80 characters x 30 lines or 132 characters x 34 lines, with a 10 x 15 dot matrix characters.

The video unit implemented in all models has the ability to display in six different languages other than English. The system employs a 15-inch high resolution green phosphor video display with full tilt and swivel capabilities and a

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▷ movable keyboard. Both B21 and B22 utilize identical keyboards—a 98-key keyboard typewriter-style that has a sculptured surface, contoured keycaps and a palm rest. It provides a 14-key numeric pad, an 8-key status/control function pad, a 6-key cursor control pad, a 4-key page control pad, and 10 user-definable function keys. The keyboard also provides software controllable LED indicators on 8-keys.

The B21-1/1-T and B21-2T can function as cluster stations only, while the B21-3T can be either a stand-alone or cluster unit. The remaining models can serve as either a cluster, stand-alone, or master system. Up to three cluster stations can be connected to a B21 master station, which requires a minimum of 384KB RAM memory, while up to 16 cluster stations can be configured to a B22 master station. A high speed local network connects the individual unit to a master station through RS-422 communications channels.

The B21 series offer a variety of mass storage devices ranging from a 5¼-inch double sided/double-density diskette with 1MB unformatted/630KB formatted capacity to 5¼-inch Winchester disks with 12.6MB formatted capacity. The first model in the series offering storage options, the B21-2T, is configured with one 5¼-inch diskette, followed by the B21-3T with two diskettes and a total formatted capacity of 1.26MB; the B21-4T equipped with one diskette and a hard disk offering formatted storage of 5MB; the B21-5T, also with one diskette and one 8.4MB formatted Winchester; and last in the series, the B21-6T configured with one diskette and 15MB unformatted/12.6MB formatted hard drive. Each controller, which can accommodate up to two diskettes and one Winchester disk, is housed in lecturn, which also handles other electronics.

The B22 system has a mass storage unit, which is housed in a 7½-inch floor-standing enclosure, comprised of one 8-inch diskette with a 500KB formatted capacity and one Winchester fixed disk offering either 18.4MB or 16.8MB unformatted capacity. There is a mass storage expansion unit for additional disk capacity available in 21MB or 42MB unformatted size, 16.8MB/32.6MB formatted respectively. The optional mass storage expansion unit is also contained in a 7½-inch floor-standing enclosure and is controlled by the controller in the mass storage expansion box. A controller can handle a maximum of three Winchester disks.

The B22 system can be upgraded for graphics by inserting a graphics board into the multibus slot. The graphics board comes with a dedicated 8MHz 8086 graphics processor, 128KB display memory, and 16KB firmware in ROM. The 128KB of local RAM provides a 1024 x 1024 display memory with two 1024 x 512 display planes. Both vector and raster graphics modes are offered simultaneous overlap of text and graphics display.

Burroughs is offering a variety of printers including three table top, dot matrix printers, at 230, 150 or 120 cps with varying line and character densities; three bidirectional

letter quality printers with changeable print wheels and proportional spacing, featuring a speed of 35 or 20 cps; and a high speed 370/270 lpm line printer.

Communication capabilities exist through a combination of the various I/O channels provided and the Operating System (BTOS) which provides several data communication protocols and emulators. Within the B22 series, when more than three cluster stations are connected to one master station, a Communications I/O Processor (COMM IOP) is needed. The COM IOP fits into a Multibus slot of the B22 master station. It consists of an Intel 8085 processor, 32K bytes of local RAM, and a serial I/O controller. It provides two multi-drop lines; each line runs at 307K baud and support up to four cluster stations. The COMM IOP handles all polling of and acknowledgements to the cluster stations. It accepts packets from the master station's CPU, transmits them to the cluster station, receives acknowledgements from the cluster stations, and posts completion notices. In the other direction, it polls the cluster stations, receives packets from the, acknowledges the packets, and presents the packets to the master station's CPU.

All of the B20 models are bundled with BTOS, a real-time, multitasking operating system, that will support both single-and multi-user configurations. BTOS provides file management facilities such as ISAM and sorting, and system utilities including initialization, backup, copy, disk maintenance, list files, file security and print spooling. The system will support Basic, Cobol, Pascal and Fortran, and the user may select one of these programming languages as part of the bundled software. Other languages are available as well as alternative utility packages, personal-productivity tools, graphics packages, application programs and communications programs.

Among the communication software products are Burroughs Poll/Select, which will allow a B20 to be interfaced to a Burroughs host; MT983 emulation; SNA and 3270 terminal emulator; async terminal emulator; and 2780/3780 RJE terminal emulator.

HARDWARE

PROCESSOR/MEMORY

Model: Intel 8086 (16-bits, 8MHz), B21-T series; Intel 8086 (16-bits, 5MHz), B22

RAM: B21-3T—128KB-512KB, B21-1T to 6T—256KB-512KB; B22—256KB-650KB; all in 128KB increments

ROM: 4KB

Processor options: memory add-ons: w/initial order for B21s—128KB, \$550; 256KB, \$1,075; 384KB, \$2,395; w/B21 field upgrades—128KB, \$3,500; 256KB, \$4,000; 384KB, \$3,500; w/initial order for B22—128KB, \$795; 384KB, \$2,195; w/B22 field upgrades—128KB, \$3,000; 384KB, \$5,000

DISPLAY

Model: integral

Screen size: 15-inch

Chars./screen: B21-80 characters x 28 lines; B22-80 characters by 34 lines or 132 characters by 34 lines (opt.)

Char. type: upper/lower case; B21 9 x 11 dot matrix; B22—10 x 15 dot matrix

Attributes: reverse video, highlight, blink, underline, half intensity
Features: green phosphor, vertical and horizontal scrolling, tilt, swivel

Graphics: B22 graphics board option, \$1,600

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► **Interface:** integral/multibus slot (opt.)
Price: included

KEYBOARD

Type: detached, sculptured, typewriter-style, palm rest
No. of keys: 98 total; includes 14-key numeric pad, 10 user-definable function keys, 8-key status/control function pad, 6-key cursor control pad, 4-key page control pad, software-controllable LED indicators on 8 keys
Interface: 5 foot coiled cable

DIRECT ACCESS STORAGE

Model:	B21 diskette	B22 diskette	B21 hard disk
Type:	5¼" double sided, double-density	8" double sided, double-density	5¼ Winchester
Capacity/drive:	1MB unformatted/630KB formatted	800KB unformatted 500KB formatted	5MB, 8.4MB, 12.6MB formatted
Drives/system:	2	1	1
Avg. access time:	158 milliseconds	260 milliseconds	95 milliseconds
Transfer rate:	256KBS	62.5KBS	5 megabits/sec.
Interface:	integral	built into hard disk	integral
Price:	one W/B21-2T, 4T, 5T, 6T; two W/B21-3T	one included w/B22	one 5MB w/B21-4T; one 8.4MB w/B21-5T one 12.6MB w/B21-6T

Model:	B22 hard disk	B22-Expansion disk unit
Type:	8" Winchester fixed	8" Winchester
Capacity/drive:	8.4MB, 16.8MB formatted	16.8MB, 33.6MB formatted
Drives/system:	1	1
Avg. access time:	70, 50 milliseconds	50 milliseconds
Transfer rate:	543.4KBS	543.4KBS
Interface:	integral	controller
Price:	one included w/B22; add'l 8.4MB unit, \$8,495; 16MB unit, \$10,000	16.8MB, \$11,500; 33.6MB, \$17,500

PRINTER

Model:	B9252	B9251-1	
Type:	dot matrix	dot matrix, bidirectional	
Paper:	13" continuous forms	15" continuous forms	
Char. set:	—	—	
Chars./line:	variable	variable	
Speed:	150 cps	230 cps	
Interface:	parallel	parallel	
Price:	\$1,995	\$3,486	
Model:	AP1302	AP1303	AP1300-20
Type:	letter quality, bidirectional	letter quality, bidirectional	Daisywheel
Paper:	continuous forms, single sheet	continuous forms, single sheet	continuous form, single sheet

Char. set:	daisywheel	daisywheel	daisywheel
Chars./line:	—	—	—
Speed:	35 cps	20 cps	35 cps
Interface:	RS-232-C	RS-232-C	RS-232-C
Price:	\$3,250 (basic)	\$2,300	\$4,568

Model:	B9253	B9249-31
Type:	9 x 9 dot matrix	line printer
Paper:	—	—
Char. set:	single forms, tractor feed, 8¼-inch wide	upper/lower case; 48, 64, 96 char. sets
Chars./line:	64, 80, 106, 132	—
Speed:	60, 120	215, 270 370 lpm
Interface:	parallel	parallel
Price:	\$895	\$9,800

DATA COMMUNICATIONS

Model:	serial channels	Communications I/O Processor
Trans. mode:	half- or full-duplex, sync., async.	half- or full-duplex, sync., async.
Protocol:	bisync., ADCCP SDLC, HDLC	—
Ports:	two	two
Speed:	B21—RS-232-C, 110 to 19.2K baud, RS-422—up to 410K baud; B22—RS-422 up to 615K baud	370K baud
Line configuration:	—	multidrop
Interface:	RS-232-C (one may be configured as RS-422)	Multibus slot
Price:	included w/system	\$1,500

OTHER I/O: none

I/O ELECTRONICS

Structure: B21-two printed circuit boards; B22-four printed circuit boards linked via high-speed bus plus, one or two Multibus-compatible boards

SOFTWARE

LANGUAGES: a choice of one program included w/system

Basic: \$750
 Cobol: \$750
 Fortran: \$750
 Pascal: \$750

OPERATING SYSTEM

Name: BTOS (included w/system); \$2,000 license fee for future upgrades
 Concurrent tasks: multitasking
 Other functions: file management; high-level programming; provides a set of terminal emulators and data communications protocols

UTILITIES

Sort: included w/BTOS
 Text editor: included w/Customizer, \$2,500
 Others: Customizer also includes debugger, merge, linker/librarian; Forms-screen manager, \$990

DATA/DATABASE MANAGEMENT SYSTEMS

Name: B20 Data Manager, \$1,200
 Functions: file creation, inquiry, updating, data entry

COMMUNICATIONS SUPPORT: Below set, \$2,500 or individually

Name: 3270 Emulator, \$750; X.25 Communications Manager, \$500; Asynchronous Terminal Emulator, \$500; 2780/3780 Emulator, \$750; Burroughs Poll/Select Software, \$500; MT983 Emulator, \$750

APPLICATIONS PROGRAMS

Accounting: Executive Accounting System (EASY), account payable, accounts receivable, general ledger

Government: budgetary accounting, payroll, utility billing

Construction: EASY accounts payable, accounts receivable, general ledger, purchase order, payroll, job costing

Education: payroll, utility billing, budgetary accounting

Word Processing: Write One, \$500

Manufacturing: EASY order entry, invoicing, inventory control, \$895 each

Payroll/Personnel: EASY payroll, \$895

Sales/Distribution: EASY order entry, invoicing, inventory control, \$895 each

Electronic Spreadsheet: Multiplan, \$200

Graphics: Business Graphics Package, \$750

SUPPORT SERVICES

DOCUMENTATION

Range: wide range from operator manuals to reference manuals and training aids

SUPPORT

Training & education: computer-aided instructions and self-paced workbooks provided to users

Maintenance: options for on-site or depot maintenance; annual contracts available

Other: series of hot-line telephone numbers provided to assist customers with any questions

TERMS AND CONDITIONS

Lease terms: through Compu-Lease

Discounts: multiple-unit purchase discounts are available

Warranties: 90 days on hardware and software with extension to one year available

Software terms: discounts on multiple units; one time license fees available for large accounts ■