

Small Business Computer Specifications—Addendum I

MANUFACTURER & MODEL	Burroughs B 801	Burroughs B 810/B 820	Hewlett-Packard Calculator Products Division 9896A	Hewlett-Packard Data Systems Division 1000 Model 20/21	Hewlett-Packard Data Systems Division 1000 Model 30/31
DATA FORMATS Word length, bits Decimal digits per word Bytes (characters) per word Operand length, words Instruction length, words	64 16 8 1 2,3,4,5 bytes	64 16 8 1 2,3,4,5 bytes	16 4 2 — 1	16 2 2 1.2 1,2,3	16 2 2 1.2 1,2,3
CPU Model Add time, microseconds No. of programmable registers No. of I/O ports on basic system and maximum	Burroughs B 800 — 20 7	Burroughs B 800 — 20 7	HP 9831A 470 (12 digits) No 3; 12	HP 21MX E 1.12 20 14-46	HP 21MX E 1.12 20 14-46
INTERNAL STORAGE Type Capacity of basic system, bytes Maximum capacity, bytes Increment size, bytes Cycle time, microseconds Access time, microseconds	MOS 32K 80K 8K 1 0.500	MOS 64K 131K 8K 1 0.500	MOS 7,162 31,738 7,162 1.83 —	MOS 64K 608K 32K 0.560 0.300	MOS 64K 608K 32K 0.560 0.300
MASS STORAGE CAPABILITIES* Floppy disk drive Cartridge disk drive Pack disk drive Fixed-head disk/drum	Opt.; 486K Opt.; 38.6 million No No	Opt.; 2 million Opt.; 38.6 million Opt.; 521 million No	Std.; 2M bytes Std.; 250K bytes No No	Opt.; 2M bytes No No No	Opt.; 2M bytes Std.; 120M bytes Opt.; 365M bytes No
KEYBOARD INPUT* Alpha-numeric (typewriter) keyboard 10-key numeric keyboard Full accounting keyboard	Standard Standard No	Standard Standard No	Standard Standard No	Optional No No	Optional No No
INPUT/OUTPUT DEVICES* Paper tape reader Paper tape punch Punched card reader Punched card punch Punched card reader/punch Serial printer Line printer Reel-to-reel tape drive Cassette tape drive Cartridge tape drive Magnetic ledger card device CRT	No No Opt.; 300 cpm No Opt.; 400 lpm Opt.; 10 KBS Opt.; 3 KBS No No Opt.; 256-1920 char.	No No Opt.; 300 cpm No Opt.; 750 lpm Opt.; 10 KBS Opt.; 3 KBS No No Opt.; 256-1920 char.	Opt.; 20 cps No Opt.; 300 cpm No No Std.; 30 cps Opt.; 250, 300 lpm No No Opt.; 2750 cps No Opt.; 24 x 80 char.	Opt.; 500 cps Opt.; 75 cps Opt.; 600 cpm No No Opt.; 10-120 cps Opt.; 200-1250 lpm Opt.; 72 KBS No Opt.; 960 cps No Std.; 24 x 80 char.	Opt.; 500 cps Opt.; 75 cps Opt.; 600 cpm No No Opt.; 10-120 cps Opt. Std.; 960 cps No Std.; 24 x 80 char.
COMMUNICATIONS CAPABILITIES* Maximum no. of lines Synchronous Asynchronous Protocols supported	4 Opt.; to 9600 bps Opt.; to 9600 bps 2780/3780, BDLC	4 Opt.; to 9600 bps Opt.; to 9600 bps 2780/3780, BDLC	None No No None	16 - See comments No No IBM 2780	16 - See comments Opt.; 9600 bps Opt.; 1800 bps IBM 2780, bisync
SOFTWARE SUPPORT COBOL RPG FORTRAN BASIC Assembler Other programming languages Multiprogramming Language implemented in firmware Operating system implemented in firmware General accounting packages Industry application areas Data base management system File access methods supported Software separately priced Technical help separately priced	Yes Yes No No No AEL, MPL, NDL Yes Fully Fully Yes All business acct'g. applications No Random, indexed seq., index random Yes Yes	Yes Yes No No No AEL, MPL, NDL Yes Fully Fully Yes All business acct'g. applications No Random, indexed seq., index random Yes Yes	No No No Yes No None No Fully Fully Yes Manufacturing, distribution No Direct Yes Yes	No No Yes Yes Yes ALGOL Yes No Partially No Manufacturing No Sequential, random Yes—See comments Yes	No No Yes Yes Yes ALGOL Yes No Partially No Manufacturing Yes Sequential, random Yes—See comments Yes
PRICING & AVAILABILITY Purchase price of basic system, \$ Monthly rental of basic system, \$ Date of first delivery Number installed in U.S. to date	\$32,400 \$880 April 1977 —	\$37,400 \$1,016 April 1977 —	\$18,700 \$500 March 1977 —	\$21,000 See comments May 1977 —	\$31,500 See comments December 1976 —
COMMENTS	See Report M11-112-401 for more details	See Report M11-112-401 for more details		HP recommends a maximum of four active terminals; operating system price is included in package price; third party lease only	HP recommends a maximum of four active terminals; operating system price is included in package price; third party lease only

*"Std." means the device is included in the price of the "basic system" as listed here.

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MANUFACTURER & MODEL	Hewlett-Packard Data Systems Division 1000 Model 80/81	Hewlett-Packard General Systems Division 3000/II Model 6	Hewlett-Packard General Systems Division 3000/II Model 8	NCR 8250	Prime 400
DATA FORMATS Word length, bits Decimal digits per word Bytes (characters) per word Operand length, words Instruction length, words	16 2 2 1,2 1,2,3	16 2 2 1,2,4 ½,1	16 2 2 1,2,4 ½,1	16 4 2 1 1,2,3	16 + 2 or + 5 2 2 1-4 1,2,3
CPU Model Add time, microseconds No. of programmable registers No. of I/O ports on basic system and maximum	HP 21MX E 1.12 20 14-46	HP 3000 1.225 (10 digits) 20 16; 27	HP 3000 1.225 (10 digits) 20 16; 40	NCR 6080 2.4 (8 digits) 0 8	Prime 400 0.56 14 64
INTERNAL STORAGE Type Capacity of basic systems, bytes Maximum capacity, bytes Increment size, bytes Cycle time, microseconds Access time, microseconds	MOS 128K 608K 32K 0.560 0.300	MOS 128K 256K 64K 0.70 0.35	MOS 320K 512K 64K 0.70 0.35	MOS 48K 128K 16K 0.8 —	MOS 128K 8 million 128K, 256K 0.76 0.600
MASS STORAGE CAPABILITIES* Floppy disk drive Cartridge disk drive Pack disk drive Fixed-head disk/drum	Opt.; 2M bytes Std.; 120M bytes Opt.; 365M bytes No	No Opt.; 120M bytes Std.; 400M bytes No	No Opt.; 120M bytes Std.; 400M bytes No	Opt.; 250K bytes No Std.; 80M bytes No	Opt.; 2.4M bytes Opt.; 48M bytes Opt.; 2400M bytes Opt.; 8 million
KEYBOARD INPUT* Alphanumeric (typewriter) keyboard 10-key numeric keyboard Full accounting keyboard	Optional No No	Standard Standard No	Standard Standard No	Standard Standard No	Standard No No
INPUT/OUTPUT DEVICES* Paper tape reader Paper tape punch Punched card reader Punched card punch Punched card reader/punch Serial printer Line printer Reel-to-reel tape drive Cassette tape drive Cartridge tape drive Magnetic ledger card device CRT	Opt.; 500 cps Opt.; 75 cps Opt.; 600 cpm No No Opt.; 10-120 cps Std.; 200 lpm Std.; 36 KBS No Std.; 960 cps No Std.; 24 x 80 char.	Opt.; 500 cps Opt.; 75 cps Opt.; 600 cpm No Opt.; 200/75 cpm Opt.; 30-120 cps Opt.; 200-1250 lpm Opt.; 72 KBS No Opt.; 960 cps No Std.; 24 x 80 char.	Opt.; 500 cps Opt.; 75 cps Opt.; 600 cpm No Opt.; 200/75 cpm Opt.; 30-120 cps Opt.; 200-1250 lpm Opt.; 72 KBS No Opt.; 960 cps No Std.; 24 x 80 char.	No No Opt.; 300 cpm No No Std.; 173 cps Opt.; 125-600 lpm Opt.; 10/20 KBS Std.; 750 cps No No No Std.; 24 x 80 char.	Opt.; 200 cps Opt.; 75 cps Opt.; 285 cpm No Opt.; 300 cpm Opt.; 165 cps Opt.; 1220 lpm Opt.; 120 KBS No No No Opt.; 24 x 80 char.
COMMUNICATIONS CAPABILITIES* Maximum no. of lines Synchronous Asynchronous Protocols supported	16—see comments Opt.; 9600 bps Opt.; 1800 bps IBM 2780, bisync	31 Opt.; 9600 bps Opt.; 2400 bps IBM 2780/3780	63 Opt.; 9600 bps Opt.; 2400 bps IBM 2780/3780	7 Opt.; to 9600 bps Std.; to 1800 bps IBM 2780/3780	64 Opt.; 20K bps Opt.; 19.2K bps 2780, HASP
SOFTWARE SUPPORT COBOL RPG FORTRAN BASIC Assembler Other programming languages Multiprogramming Language implemented in firmware Operating system implemented in firmware General accounting packages Industry application areas Data base management system File access methods supported Software separately priced Technical help separately priced	No No Yes Yes Yes ALGOL Yes No Partially No Manufacturing	Yes Yes Yes Yes Yes APL Yes Partially Partially No Manufacturing, education	Yes Yes Yes Yes Yes APL Yes Partially Partially No Manufacturing, education	Yes No No No Yes No Yes No Yes Wholesale dist., medical, educ., man.	Yes Yes Yes Yes Yes Forms Yes, 64 Partially Partially No Graphics, Statistics
PRICING & AVAILABILITY Purchase price of basic system, \$ Monthly rental of basic system, \$ Date of first U.S. delivery Number installed in U.S. to date	\$61,700 See comments December 1976 —	\$110,000 \$2,297 (5-yr. lease) March 1977 —	\$140,000 \$2,923 (5-yr. lease) March 1977 —	\$42,420 \$1,205 March 1977 —	\$69,600 \$1,524 2nd. qtr. 1976 —
COMMENTS	HP recommends a maximum of four active terminals; operating system price is included in package price; third party lease only				Each user has 512 million bytes of virtual address space

**"Std." means the device is included in the price of the "basic system" as listed here.

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MANUFACTURER & MODEL	Prime 500	Sperry Univac BC/7	Sycor 340	Sycor 350	Sycor 410
DATA FORMATS					
Word length, bits	16 + 5	8-bit byte	8	8	8
Decimal digits per word	2	2	2	2	2
Bytes (characters) per word	2	1	1	1	1
Operand length, words	1-4	Variable	1	1	1-3
Instruction length, words	1,2,3	Variable	1-2	1-2	1-3
CPU					
Model	Prime 500	—	Sycor 340	Sycor 350	Sycor 410
Add time, microseconds	0.56	—	1.25 MSEC	1.25 MSEC	2.0 MSEC
No. of programmable registers	14	6	16	16	8
No. of I/O ports on basic system and maximum	64	4	16	16	256
INTERNAL STORAGE					
Type	MOS	MOS	MOS	MOS	MOS
Capacity of basic system, bytes	256K	32K	16K	16K	40K
Maximum capacity, bytes	8 million	64K	16K	16K	40K
Increment size, bytes	128K, 256K	16K	—	—	—
Cycle time, microseconds	0.760	1.0	1.250	1.250	0.500
Access time, microseconds	0.600	0.5	0.700	0.700	0.400
MASS STORAGE CAPABILITIES*					
Floppy disk drive	Opt.; 2.4M bytes	Std.; 2M bytes	Std.; 500K bytes	Std.; 1M byte	Opt.; 242K bytes
Cartridge disk drive	Opt.; 48M bytes	Opt.; 40M bytes	No	No	Std.; 5M bytes
Pack disk drive	Opt.; 2400M bytes	No	No	No	No
Fixed-head disk/drum	Opt.; 8 million	No	No	No	No
KEYBOARD INPUT*					
Alphanumeric (typewriter) keyboard	Standard	Standard	Standard	Standard	Standard
10-key numeric keyboard	No	Standard	Standard	Standard	Standard
Full accounting keyboard	No	No	No	No	No
INPUT/OUTPUT DEVICES*					
Paper tape reader	Opt.; 200 cps	No	No	No	No
Paper tape punch	Opt.; 75 cps	No	No	No	No
Punched card reader	Opt.; 285 cpm	No	Opt.; 250 cpm	Opt.; 250 cpm	Opt.; 250 cpm
Punched card punch	No	No	No	No	No
Punched card reader/punch	Opt.; 300 cpm	No	No	No	No
Serial printer	Opt.; 165 cps	Opt.; 200 cps	No	Opt.; 60-180 cps	Opt.; 60-180 cps
Line printer	Opt.; 1220 lpm	Opt.; 250 lpm	Opt.; 300-600 lpm	Opt.; 300-600 lpm	Opt.; 300-600 lpm
Reel-to-reel tape drive	Opt.; 120 KBS	Opt.; 20/40 KBS	Opt.; 10/20 KBS	Opt.; 10/20 KBS	Opt.; 10/20 KBS
Cassette tape drive	No	No	Standard	No	Standard
Cartridge tape drive	No	No	No	No	No
Magnetic ledger card device	No	No	No	No	No
CRT	Opt.; 24 x 80 char.	Std.; 24 x 80 char.	Std./ 64 x 8 char.	Std.; 64 x 8 char.	Std.; 64 x 8 char.
COMMUNICATIONS CAPABILITIES*					
Maximum no. of lines	64	2	1	1	1
Synchronous	Opt.; 20K bps	Opt.; 2000-9600 bps	Opt.; to 4800 bps	Opt.; to 4800 bps	Std.; to 4800 bps
Asynchronous	Opt.; 192K bps	No	Opt.; to 1200 bps	Opt.; to 1200 bps	Opt.; to 1200 bps
Protocols supported	2780, HASP	See comments	IBM 2770/2780/ 3780, TTY	IBM 2770/2780/ 3780, TTY	IBM 2770/2780/ 3780, HASP
SOFTWARE SUPPORT					
COBOL	Yes	No	No	No	Yes
RPG	Yes	Yes	No	No	No
FORTRAN	Yes	No	No	No	No
BASIC	Yes	No	No	No	No
Assembler	Yes	No	No	No	No
Other programming languages	Forms	ESCORT	TAL II	TAL II	TAL II
Multiprogramming	Yes, 64	Yes; 2 partitions	No	No	Yes; 2
Language implemented in firmware	Partial	No	No	No	No
Operating system implemented in firmware	Partial	No	No	No	No
General accounting packages	No	Yes	No	No	No
Industry application areas	Graphics, statistics	Whlsl., distribution, manufacturing	—	—	Transportation
Data base management system	Yes	No	No	No	No
File access methods supported	Sequential, random, indexed sequential	Sequential, direct, indexed	Sequential, random, indexed sequential	Sequential, random, indexed sequential	Sequential, random, indexed sequential
Software separately priced	Yes	Yes	No	No	No
Technical help separately priced	Yes	Yes	No	No	No
PRICING & AVAILABILITY					
Purchase price of basic system, \$	\$130,000	\$17,283	\$12,000	\$9,600	\$21,500
Monthly rental of basic system, \$	\$2,847	\$385 (5-yr. lease)	\$234 (2-yr. lease)	\$186 (2-yr. lease)	\$386 (3-yr. lease)
Date of first U.S. delivery	2nd qtr. 1977	April 1977	Nov. 1969	July 1975	Jan. 1976
Number installed in U.S. to date	—	—	Over 12,000	Over 3,000	250
COMMENTS	Each user has 512 million bytes of virtual address space; includes fast floating-point hardware	BC/7 to BC/7 communication only; see report M11-877-401 for more details			

*"Std." means the device is included in the price of the "basic system" as listed here.

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MANUFACTURER & MODEL	Sycor 440	Tealtronic 2500	Wang PCS-II	Wang WCS 25	Wang WCS 40
DATA FORMATS					
Word length, bits	8	8-bit byte	8-bit byte	8-bit byte	8-bit byte
Decimal digits per word	2	1 per byte	—	—	—
Bytes (characters) per word	1	—	1 per byte	1 per byte	1 per byte
Operand length, words	1-3	—	1 byte	1 byte	1 byte
Instruction length, words	1-3	4 bytes	1 byte	1 byte	1 byte
CPU					
Model	Sycor 440	Tealtronic 2500	Wang 2200T	Wang 2200T	Wang 2200 MVP
Add time, microseconds	2.0 ms	—	800 (13 digits)	800 (13 digits)	800 (13 digits)
No. of programmable registers	8	26	None	None	None
No. of I/O ports on basic system and maximum	256	32	4	3,9	3,9
INTERNAL STORAGE					
Type	MOS	MOS	MOS	MOS	MOS
Capacity of basic system, bytes	24K	20, 480	8K	24K	32K
Maximum capacity, bytes	64K	65,536	32K	32K	64K
Increment size, bytes	8K	4K, 8K, 16K	8K	8K	16K
Cycle time, microseconds	0.500	0.600	1.60	1.60	0.600
Access time, microseconds	0.400	—	—	—	0.500
MASS STORAGE CAPABILITIES*					
Floppy disk drive	Opt.: 242K bytes	Std.: 512K bytes	Std.: 178K bytes	Std.: 524K bytes	Std.: 262K bytes
Cartridge disk drive	Std.: 20M bytes	No	No	Opt.: 20M bytes	Std.: 10M bytes
Pack disk drive	No	No	No	No	No
Fixed-head disk/drum	No	No	No	No	No
KEYBOARD INPUT*					
Alphanumeric (typewriter) keyboard	Standard	Standard	Standard	Standard	Standard
10-key numeric keyboard	Standard	Standard	Standard	Standard	Standard
Full accounting keyboard	No	No	No	No	No
INPUT/OUTPUT DEVICES*					
Paper tape reader	No	No	No	Opt.: 300 cps	Opt.: 300 cps
Paper tape punch	No	No	No	No	No
Punched card reader	Std.: 250 cpm	No	No	Opt.: 300 cpm	Opt.: 300 cpm
Punched card punch	No	No	No	No	No
Punched card reader/punch	No	No	No	No	No
Serial printer	Opt.: 60-180 cps	Opt.: 45, 165 cps	Opt.: 200 cps	Std.: 120 cps	Opt.: 200 cps
Line printer	Opt.: 300-600 lpm	Opt.: 300 lpm	Opt.: 600 lpm	Opt.: 600 lpm	Std.: 240 lpm
Reel-to-reel tape drive	Opt.: 10/20 KBS	No	No	Opt.: 10 KBS	Opt.: 10 KBS
Cassette tape drive	Standard	No	No	Opt.: 326 cps	No
Cartridge tape drive	No	No	No	No	No
Magnetic ledger card device	No	No	No	No	No
CRT	Std.: 64 x 8 char.	Std.: 6 x 40 char.	Std.: 24 x 80 char.	Std.: 24 x 80 char.	Std.: 24 x 80 char.
COMMUNICATIONS CAPABILITIES*					
Maximum no. of lines	1	1	1	1 per port	1 per port
Synchronous	Opt.: to 4800 bps	Opt.: to 4800 bps	Opt.: 4800 bps	Opt.: 4800 bps	Opt.: 4800 bps
Asynchronous	Opt.: to 1200 bps	No	Opt.: 9600 bps	Opt.: 9600 bps	Opt.: 9600 bps
Protocols supported	IBM 2770/2780/3780, HASP	IBM 2780	2780/3780, 3741	2780/3780, 3741	2780/3780, 3741
SOFTWARE SUPPORT					
COBOL	Yes	No	No	No	No
RPG	No	No	No	No	No
FORTRAN	No	No	No	No	No
BASIC	No	No	Yes	Yes	Yes
Assembler	No	No	No	No	No
Other programming languages	TAL II	ACL	None	None	None
Multiprogramming	Yes; 2	No	No	No	Yes; 3
Language implemented in firmware	No	Partially	Fully	Fully	Fully
Operating system implemented in firmware	No	Partially	Fully	Fully	Partially
General accounting packages	No	Yes	Yes	Yes	Yes
Industry application areas	Transportation	—	—	—	—
Data base management system	No	No	No	No	No
File access methods supported	Sequential, random, index seq.	Sequential	Sequential, random, index seq.	Sequential, random, index seq.	Sequential, random, index seq.
Software separately priced	No	Free	Yes	Yes	Yes
Technical help separately priced	No	Yes	Yes	Yes	Yes
PRICING & AVAILABILITY					
Purchase price of basic system, \$	\$14,865	\$9,900	\$6,200	\$26,750	\$48,950
Monthly rental of basic system, \$	\$276 (3-yr. lease)	NA	\$152	\$655	\$1,199
Date of first U.S. delivery	Jan. 1976	2nd qtr. 1977	June 1977	June 1977	September 1977
Number installed in U.S. to date	250	—	—	—	—
COMMENTS					
		ACL is compatible with the IBM 3741; see Report M11-823-101 for more details	Uses "mini-diskettes," 1 standard, 2nd optional	4 terminals maximum	8 terminals maximum

**"Std." means the device is included in the price of the "basic system" as listed here.