Bell & Howell Microcomputer System

The computer system shown above is primarily used for education. Interactive programming, color graphics, audio prompting, and scholastic record-keeping make it valuable for this purpose. General data handling, and the usual business and accounting functions increase the versatility of the system.

Current models: Bell & Howell Microcomputer System.
Memory: 16KB-64KB RAM; 132KB diskette.
Workstations: 1 local.
Base list price: $1,430-$1,630, including processor and memory.
Typical list prices: about $2,800, with 48KB RAM, dual disk drive, black and white monitor.
Primary uses: accounting, banking/finance, education, entertainment, government, insurance, manufacturing, medical/health care, payroll/personnel, transportation, training.
Popular options: from Bell & Howell — line printer, PASCAL language, graphic tablet.
Principal programming languages: BASIC, PASCAL.
Principal applications software: GENIS I courseware development language for educational and training.
First shipment: 1979.
Number installed to date: information not available.
Current shipment rate: about 250 per month.
Available through: 70 dealers across the nation, chiefly audio-visual suppliers.

BACKGROUND INFORMATION

Bell & Howell, Audio-Visual Products Division, 7100 North McCormick Road, Chicago, IL 60645. Telephone (312) 673-3300.

Bell & Howell, in its 73rd year as a maker of motion picture equipment, is now also well established as a producer of audio-visual, optical, video, and business and professional equipment and material. Its entry into the area of computer-assisted instruction (both hardware and software) was a natural development from its prior history. One division, Merill Educational Publishing Company, is a source of much material readily convertible to courseware for this computer system. The hardware is the result of cooperation between Bell & Howell, with experience in education, and Apple Computer, Inc., a leading microcomputer producer.

The company already had dealers nationwide for audio visual equipment. The present computer system is available largely through them; they generally can deliver from stock upon receipt of order. Almost 12,000 Bell & Howell employees at over 150 manufacturing and service locations, today work to provide business, education, government, and consumers with the means of solving information problems.

SYSTEM CHARACTERISTICS

The Bell & Howell Microcomputer System is a complete, self-contained, ready-to-use computer based on the Apple II Plus microcomputer. Standard features include float-ing-point BASIC in ROM; color graphics; up to 48KB RAM; cassette interface; simulation controls connector; typewriter-style ASCII keyboard; high-efficiency switching power supply; and rugged structural foam case.

It is a "turnkey" computer system (i.e., one that starts executing a particular program the instant it is turned on). It needs no special efforts or knowledge on the part of its user to perform a particular function. The monitor supplied by Bell & Howell is black and white, with a 9" screen. Other monitors, color or black and white, can be used. The system's primary, but not exclusive, use is for computer assisted instruction (CAI). A library of instruction programs is available from the company, or the user can prepare his own.

Several interfaces are available for use with printers, transmission lines (telephone), and other computing equipment. Programs and data can be saved on standard auto tape cassettes. A graphics tablet is available to permit manual entry into a graphics display. General business systems software is also available.

GENIS I (Generalized Instructional Systems) is a software system for computer assisted education and training applications. This software program enables teachers and industrial government training personnel without computer knowledge to turn on the microcomputer, insert a disk, and begin to develop courseware for computer assisted instruction. Instructors/teachers and students are able to communicate with the computer in English.

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HARDWARE/PACKAGING

PROCESSOR/MEMORY
Model: 6502, 8 bits
RAM: 16KB-62KB; 200 nanosecond cycle time
ROM: 12KB
System prices: 16KB ($1,295); 48KB ($1,495)

DISPLAY
Model: 078462 ($290)
Number: 1 local
Screen size: 9 inch
Chars./screen: 960 characters; 40 characters/line; 24 lines/screen
Char. type: upper case only 7 x 9 matrix; except that GENIS offers upper/lower case; 8 x 11 matrix
Features: normal, inverse, blinking, color letters, multiple size characters
Graphics: black and white standard; color optional
Interface: cable

KEYBOARD
Type: standard typewriter, ASCII
No. of keys: 65 keys total, basic ASCII set
Interface: built-in

DIRECT ACCESS STORAGE
Model: 0784169 Disk II floppy disk subsystem
Type: Shugart 5¼" floppy disk drive
Capacity/drive: 132KB/floppy disk
Drives/system: 16/system; 2 controller/system
Avg. access time: 600 milliseconds
Transfer rate: 155KBS
Interface: 1 controller occupies one of 8 available I/O ports
Price: $645 with controller card; $525 drive unit only

PRINTER

Model:	Centronics 737	Centronics 779	Centronics 730
Type:	5 x 7 dot matrix	5 x 7 dot matrix	7 x 7 dot matrix
Paper:	4¾" aluminum coated roll stock	9.8" tractor paper feed	9.8" tractor paper feed
Char. set:	96 ASCII, lower case only	64 ASCII, upper case only	96 ASCII, upper/lower case
Chars./line:	80	132	80
Speed:	150 lpm	60 cps	100 cps
Interface:	interface card	interface card	interface card
Price:	$1,195	$1,545	$995

DATA COMMUNICATIONS
Model: high-speed communications interface card ($225)
Trans. mode: half or full-duplex
Protocol: asynchronous
Lines: 1
Speed: 9600 bps
Interface: RS-232-C serial interface card

OTHER I/O
Magnetic tape: any audio cassette tape recorder

I/O ELECTRONICS
Structure: 50 — pin bus with 8 I/O slots

SOFTWARE

LANGUAGES
BASIC: Level IV extended Microsoft BASIC, included in system
Assembler: Level I Apple II, included in system
Others: PASCAL; MARK-PILOT; CDSI

OPERATING SYSTEM
Name: Disk Operating System (DOS), included in system
System requirements: 32KB, plus single diskette drive
Concurrent tasks: one

UTILITIES
Sort: none
Text editor: Applewriter ($75)

DATABASE MANAGEMENT SYSTEMS: none

COMMUNICATIONS SUPPORT
Name: Bell & Howell communications interface card

APPLICATIONS PROGRAMS
Accounting: General Business System ($625); Apple Post ($49.95)
Educational: GENIS 1 courseware development ($300)
Retail: Cashier ($250)

SUPPORT SERVICES

DOCUMENTATION
Range: approximately 15 manuals, from $2 to $5 each

SUPPORT
Training & education: provided by Bell & Howell and dealers
Maintenance: provided by Bell & Howell and dealers

TERMS AND CONDITIONS
Lease terms: none
Discounts: none
Warranties: 1 year parts; 90 days labor (hardware)
Software terms: outright sales ■