

Apple IIe



The Apple IIe was designed as a replacement for the Apple II computer. It provides 64K bytes of RAM expandable to 128K, an upper and lower case alphabet, and an extensive array of software.

BACKGROUND INFORMATION

Apple Computer, Inc., 20525 Mariani Avenue, Cupertino, CA 95014. Telephone (408) 996-1010.

Apple Computer, Inc., was founded in 1976, and its first fully-assembled product, the Apple II, was introduced in 1977. The Apple II was the first fully-assembled computer of its kind. Unlike the "kits" offered by the competition, its performance did not depend upon the varying talents of its users to solder, wire, assemble components, and "debug" the finished product. Additionally, the Apple II was the first fully programmable computer of its size. Acceptance of the Apple II rapidly spread from hobbyists to business managers and other professionals. Over 750,000 Apple II and II Plus computers have been sold.

SYSTEM CHARACTERISTICS

An upgrade of the popular Apple II system, the Apple IIe (e for enhanced), features more memory than its predecessors, both upper and lower case characters, and an expanded keyboard. A comparison of the Apple II and IIe shows some technical differences. The 80 separate integrated circuits included in the II have been replaced with two large scale integrated (LSI) circuits; this reduces the number of chips from 109 to 31. A basic system comes equipped with the original 6502A microprocessor, 64K bytes of RAM, 16K bytes of ROM which includes Applesoft Basic, a typewriter-style keyboard, the original color graphics and sound capabilities, switching power supply, cassette interface, and D-9 style I/O connector for hand controls.

The system still has eight expansion slots but the slot 0 is gone since the Apple's language card, which formerly resid-

Current models: Apple IIe.
Memory: 64KB-238KB RAM.
Storage capacity: 140KB-840KB diskette.
Workstations: one local.
Base list price: \$1,395, including CPU, 64KB RAM, keyboard, Applesoft Basic.
Typical list prices: Starter system—\$1,995, including CPU, 64KB RAM, disk drive w/controller, monitor, keyboard, 80-column card, Applesoft Basic; \$2,215 w/same as starter system plus additional drive, dot matrix printer.
Popular options: from Apple—diskettes, printers, monitors, interface cards, joystick, graphics tablet.
Principal programming languages: Applesoft Basic, Pascal, Fortran, Assembler, Cobol, Pilot, Logo.
Principal applications software: accounting, graphics, education, entertainment, management service, payroll, stock market, word processing, communications, database management.
First shipment: Apple II—1977; Apple IIe—January 1983.
Number installed to date: new product.
Available through: more than 2000 dealers worldwide.

ed in slot 0, is now built-in. User's have access to slots 1 through 7 plus an auxiliary slot which is located in the center of the motherboard. The auxiliary slot can accommodate either of two 80-column text cards, one of which includes 64K bytes of additional RAM.

The major external change in the Apple IIe is in the keyboard which is a slightly-modified version of the Apple III's keyboard. Its 63 keys are in a typewriter-style layout and produce 128 ASCII characters, upper and lower case. The keyboard provides two programmable special function keys, cursor control keys, and auto-repeat on all keys.

The system does not come with either a display screen or a printer. A variety of printers are available directly from Apple or from independent sources. The user may select an optional Apple monitor or furnish his/her own display screen, often a color TV, permitting use of Apple's popular color graphics feature.

The Apple IIe will support a maximum of six drives, each with a 140K byte storage capacity. The first drive must be purchased with a controller; each controller will support two drives. A special Disk Operating System (DOS) comes with the disk drive system to keep track of files, save and restore information on a diskette, and perform various other functions.

According to Apple, all existing software for the Apple II series will run on the IIe. Apple is also introducing new software programs that have been designed to use all IIe enhancements, including the additional memory. These presently include the Apple Writer II word processing program, and Quick File II, an information management program.

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HARDWARE

PROCESSOR/MEMORY

Model: Synertek 6502A (8-bits, 1MHz)
 RAM: 64KB-128KB RAM (bank-switched)
 ROM: 16KB
 Processor options: additional memory—64KB RAM w/80 column card, \$295

DISPLAY

Model: Monitor III
 Screen size: 12-inch
 Chars./screen: 960, 40 characters x 24 lines; 1920, 80 characters x 24 lines w/opt 80 col. text card
 Char. type: 96 ASCII, upper/lower case, 5 x 7 dot matrix
 Attributes: normal, inverse, flashing
 Features: green phosphor
 Graphics: 16 colors—40 x 48 pixels or 40 x 40 pixels w/4 lines of text; 6 colors—280 x 192 pixels or 280 x 160 pixels w/4 lines of text
 Interface: integral cable plug
 Price: \$249

KEYBOARD

Type: typewriter-style
 No. of keys: 63 total, includes 128 ASCII set, 2 programmable function keys, auto-repeat on all keys; numeric keypad, \$160
 Interface: integral

DIRECT ACCESS STORAGE

Model: Apple Disk II
 Type: 5¼" diskette
 Capacity/drive: 140KB; 137KB available with Pascal, 124KB available under DOS
 Drives/system: 2 drives/controller, 6 drives max.
 Avg. access time: 600 milliseconds
 Transfer rate: 156KBS
 Interface: 1 slot/controller
 Price: \$395 (drive only), \$545 (drive and controller)

PRINTER

Model:	Silentype	Apple Dot Matrix	Apple Letter Quality
Type:	matrix, thermal	dot matrix	letter quality
Paper:	thermal, roll, 8.5"	cut sheets or tractor feed; up to 8½"	cut sheets or continuous forms; up to 14½"
Char. set:	96	—	includes 6 foreign char.sets
Chars./line:	80	varies	varies
Speed:	40 cps	120 cps bi-directional	40 cps bi-directional
Interface:	1 slot	parallel	serial
Price:	\$395	\$695	\$2,195

DATA COMMUNICATIONS

Model:	Modem IIB (103A type)	Super Serial card
Trans. mode:	half- or full-duplex, async	half-duplex, sync
Protocol:	—	—
Speed:	110, 300 bps	75-19.2K bps
Lines:	1	1
Interface:	1 slot	1 slot
Price:	\$199	\$195

OTHER I/O

Cassette: cassette interface, included w/system
 Game controls: joysticks, \$60; hand controllers, \$35
 Graphic Tablet: w/interface, see dealers for price
 Loudspeaker: built into cabinet
 Interface and Expansion Cards: 80 column card, \$125; extended-80

column card, \$295; IEEE 488 card, \$450; parallel interface card, \$165; Smarterm 80 column board, \$379; Thunderclock card, \$149; Thunderclock Date, \$33; Mountain Computer clock calendar card, \$120

I/O ELECTRONICS

Structure: 8 integral peripheral board connectors, buffered, with Direct Memory Access (DMA)

SOFTWARE

LANGUAGES

Basic: Applesoft Basic, included in ROM; Integer Basic ROM card, \$200
 Cobol: CIS Cobol w/Forms-2, \$950
 Logo: Apple Logo, \$175
 Pascal: Apple Pascal, \$200
 Fortran: ANSI X3.9-1978 standard, \$200
 Assembler: 6502 version in ROM
 Pilot: Pilot, \$100; Super Pilot, \$200, Co-Pilot, \$35

OPERATING SYSTEM

Name: DOS 3.3 Disk Operating System, included with Disk II
 Concurrent tasks: 1
 Other functions: permits both sequential and random access; capability to save, load, run, rename, delete and verify files through housekeeping commands; back-up on single drive

UTILITIES

Sort: PSort, \$85
 Text editor: Apple Writer II, \$195
 Other: DOS Took Kit, \$75

DATA/DATABASE MANAGEMENT SYSTEMS

Name: Quick File II, \$100
 Functions: information management system

COMMUNICATIONS SUPPORT

Name: VT-100 Emulator, \$75; Comm-Pac, \$85; Micro Courier, \$150; Micro Telegram, \$150
 Functions: Comm-Pac—used w/modem to access outside sources; Micro Courier—electronic mail; Micro Telegram—used w/modem to access Western Union services

APPLICATIONS PROGRAMS

Accounting: The Controller 1.1 (including general ledger, accounts payable, accounts receivable), \$625; BPI Accounts Receivable, \$395; BPI General Ledger, \$395
 Graphics: Apple II Business Graphics, \$175; Applegraphics II, \$75; Apple Plot, \$70
 Education: various packages, \$30-\$100
 Entertainment: various packages
 Management Science: APM, \$235; Senior Analyst, \$225; The Analyzer, \$575; Time Manager, \$150
 Payroll: BPI Payroll, \$395
 Stock Market: Dow Jones News and Quotes Reporter, \$135; Dow Jones Portfolio Evaluator, \$150
 Word Processing: Applewriter II, \$195; Apple Post mailing list, \$50; Script II, \$100

SUPPORT SERVICES

DOCUMENTATION

Range: owner's manual and a tutorial on disk explaining fundamental Apple concepts included w/system; guide to accommodate Apple II and II Plus software; Disk II Manual, \$10; DOS Manual, \$10

SUPPORT

Training & education: product training pack available from Apple through dealers and distributors; training sessions available after sale from Apple
 Maintenance: dealers and service centers, factory direct, third-party through RCA; Apple-Care Carry-In Service
 Other: hotline

TERMS AND CONDITIONS

Discounts: none officially available at retail level
 Warranties: 90 days, parts and labor ■