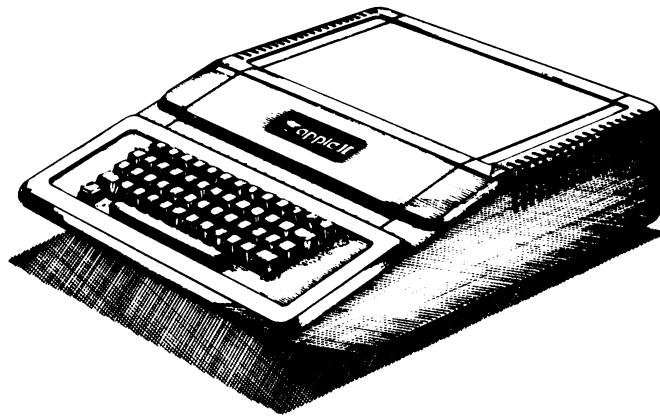


🍏 Apple II Family Historical Documents 🍏



# Apple II Historical Documents

Charlie Anderson

[http://www.scruz.net/~canderso/my\\_apple\\_shrine.htm](http://www.scruz.net/~canderso/my_apple_shrine.htm)

[charlie@charlieanderson.com](mailto:charlie@charlieanderson.com)

15 September 2000

Letter from Steve Jobs:

APPLE COMPUTER, INC  
770 Welch Road  
Palo Alto, CA 94304  
(415) 326-4248

11 January 1977

Richard Hernland  
Electro-Tex  
PO Box 66907  
Huston, TX 77006

Richard Hernland,

Here is the information you requested. Enclosed are the manuals for both the main board and the Cassette Interface board. As per our conversation, the wholesale prices for quantities 10-24 are listed below. We offer these discounts to first time dealers for quantities of 5 or more.

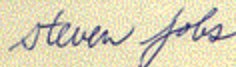
	Retail	Wholesale	% discount
Apple-I with 4k RAM	\$666.66	500.00	25%
Cassette Interface	75.00	56.25	25%
Additional 4k RAM	120.00	80.00	33.33%

We pay shipping UPS. Delivery is usually off-the-shelf, although sometimes stretches out to a week ARO.

We request payment in advance for our first dealings, and for subsequent sales can offer first limited credit extending in time to NET 30 days.

I look forward to hearing from you soon.

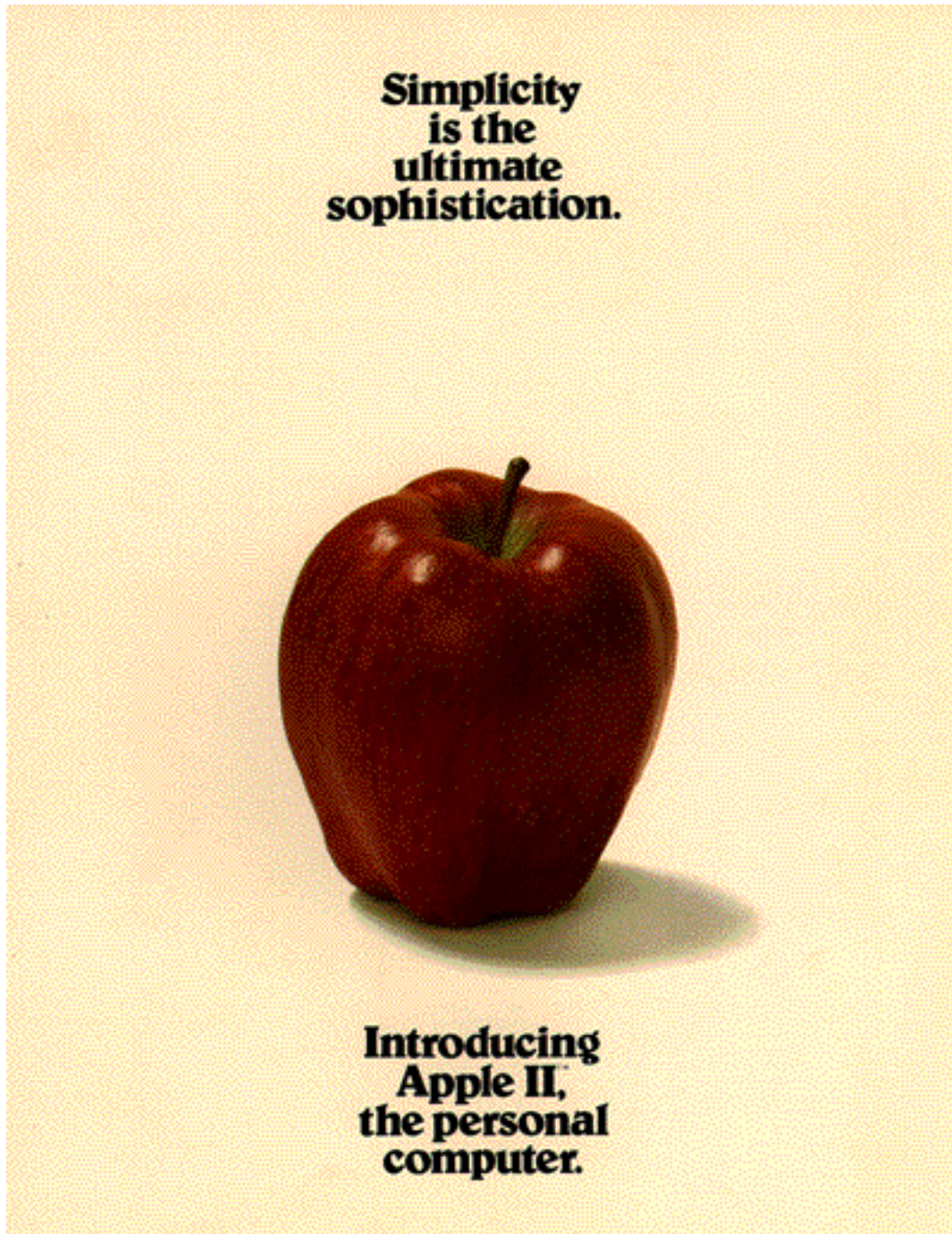
Respectfully yours,



Steven Jobs



Apple II ad -- page 1:



## Sophisticated design makes it simple.



Apple II will change the way you think about computers. Compared to first generation "hobby" computers, Apple II is easier to use, faster, smaller and more powerful. It brings a new level of simplicity through hardware and software sophistication. And Apple II can grow with you as your skill and experience with computers grows.

Sophisticated built-in features such as BASIC, the English-like programming language, advanced color graphics, and use of state-of-the-art high density memory components (16K ROMs and RAMs), set Apple II apart from all the others.

But you don't even need to know a ROM from a RAM to use and enjoy Apple II. Its beauty is in its simplicity. It's a complete, ready to use computer -- not a kit. Everything is included. Hook it up to your color TV\* and begin writing your own computer programs the very first evening. Even if you've had no

previous computer experience, you can invent your own color games, create artistic displays, or instruct Apple II to chart your home finances. Conversing with Apple II in BASIC is easy using its familiar typewriter-style keyboard.

Games have always been one of the most creatively challenging applications for the computer, and Apple II's sophistication shows through in the games it can help you create. Games like PONG or STAR TREK. Apple BASIC contains advanced unique commands for using color graphics (COLOR~, PLOT, HLINE, VLINE, SCREEN) which means creating dazzling color displays or writing your own

PONG type game becomes something even a beginner can master. Since text can be displayed along with graphics, your program can keep score, give and accept instructions and even comment on your ability as a player. Paddles and joysticks are interfaced easily using the built-in Apple GAME I/O connector. And a special BASIC command (PDL) automatically senses the position of the paddle. That simplifies writing action games. Apple II's built-in speaker sounds when the ball is hit, and when

a point is made or lost. In STAR TREK, you'll actually hear the phasers and photon torpedoes.

Apple II will do more than entertain you. Playing with it, you'll learn what a computer is all about and how rewarding it can be. You'll discover that it's easy to program your Apple II to do things like teach your kids arithmetic or spelling. (Yes, it's OK to let your kids use Apple II. It's ruggedly engineered and has a virtually unbreakable plastic case.) And you can save your programs on an ordinary cassette tape using the built-in cassette interface and your home cassette

recorder. Other sources of programs are the Apple software library and the Apple II owner's own block.

Increased memory can extend your horizons. For instance, with 12K or more memory, Apple II can generate a high-resolution (2800 x 1920) graphic display in 4 colors useful for scientific, medical or artistic applications. The user memory can be expanded up to 48K bytes by simply inserting more memory packages in the sockets provided.

Also, there are several peripheral boards scheduled for introduction soon which will plug into the expansion connectors -- Apple II has eight built-in expansion slots.

thesize music or talk to another computer over the phone. Many more interesting peripheral boards to expand your Apple II will be available this year.

As you become an expert, you'll grow to appreciate the sophistication in Apple II. Its 2K byte ROM monitor contains a mini-assembler, a disassembler, single-step and trace routines, floating point package, a software simulated 16-bit processor and more.

Apple II is an advanced personal computer that will continue to challenge you for years to come.

Simplify. Sophistication. Apple II.



 **apple computer inc.**

\*Apple II personal computer does not have built-in color graphics system. Add color kit, sold separately. ©1977 Apple Computer, Inc.



## Technical Overview




Apple II is a complete, self-contained, ready to use computer. Standard features include BASIC and Monitor in ROM (8K bytes), Color Graphics, up to 48K bytes RAM (4K included), cassette interface, Apple GAME I/O connector, typewriter style ASCII keyboard, high-efficiency switching power supply and plastic molded case. Also included as standard are: 1 demonstration cassette tape, two game paddle controllers and detailed operations manual.

**MICROPROCESSOR:**  
6502 operating at 1 MHz clock.

**VIDEO DISPLAY**  
The Apple II video-display section displays memory as either text, color graphics, or high-resolution graphics (completely transparent memory access). Both graphics modes can be selected to include 4 lines of text at the bottom of the display area. All display modes are software selectable. In addition, the user can select under software one of two memory blocks to be displayed.

**Text**

- 40 characters/line, 24 lines.
- 5 x 7 upper case characters.
- Normal, inverse or flashing characters.
- Extensive display control software in ROM.
- Full cursor control.
- Fast display -- 1000 cps.

**Color Graphics**

- 40h x 40v resolution or 40h x 40v with 4 lines text.
- 15 colors -- color generated digitally.
- BASIC commands to use graphics easily: COLOR<sup>m</sup>, PLOT x, y, BLIN, VLIN, SCRIN.

**High Resolution Graphics**

- 280h x 192v resolution or 280h x 150v with 4 lines text.
- 4 colors -- black, white, violet, green.
- Displays 8K bytes (requires 12K minimum RAM).

**MEMORY**  
RAM is organized into 3 increments. Each increment can be either 4K bytes using 4K chips or 16K bytes using advanced 16K chips. Memory may be easily increased by inserting an additional increment of chips. From 4K to 48K bytes of RAM can be obtained on the single board. 8K bytes of ROM are supplied which permanently store Apple BASIC (5K) and a powerful system monitor (3K). Two additional ROM sockets are provided for future Apple software.

- Up to 48K bytes on-board RAM -- no peripheral memory boards!
- Unique automatic RAM refresh system, completely transparent.
- Uses 4096, 2104 type 4K and 4126, 2126 type 16K RAMs.
- Fast memory -- 350ns access time.

**I/O**  
Apple II includes as standard an ASCII keyboard, audio-cassette interface, 8 peripheral board connectors, speaker, Apple GAME I/O connector and two game paddle controllers.

- Reliable typewriter-style keyboard.
- Fast cassette interface -- 1500 bps.
- Peripheral board connectors:
  - Fully buffered buses & timing
  - Delay-chained interrupt and DMA priority structure
- GAME I/O -- 4 paddle inputs, 3 TTL inputs and 4 TTL outputs.

**BASIC**  
Apple BASIC is an Integer BASIC supplied in 6K bytes of ROM and includes the following features (in addition to normal basic features):

- Apple BASIC is a fast translated BASIC.
- Any length variable names (ALPHA, BETA).
- Syntax and range errors indicated immediately when entered.
- Multiple statements on one line.
- Integers from -32767 to +32767.
- String arrays to 255 characters. Single dimension integer arrays.
- Graphics Commands: COLOR=expr, PLOT, HLIN (draw horizontal line), VLIN, SCRIN (x, y) (reads the screen color).
- Paddle read function: PDL (0-3).
- TEXT and Graphics Commands set display mode from BASIC.
- Immediate execution of most statements.
- Memory boundary adjust (does not destroy current program).
- Break and Continue program execution.
- Debug commands: line number trace and variable trace.
- Switchable I/O device assignments.
- Direct memory access: PEEK, POKE, CALL commands.
- Cassette SAVE and LOAD commands.
- Auto line number mode.
- RND, SUN, ASC, LEN and ABS functions.
- POP instruction pops the return stack one level.
- GOTO expr; GOSUB expr allowed.

**MONITOR**

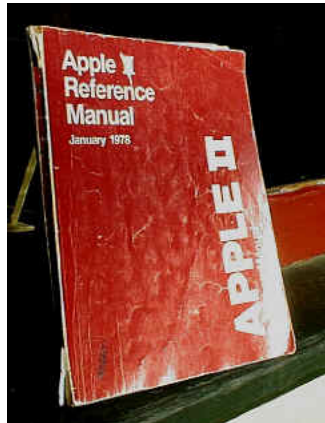
- 2K byte ROM monitor.
- Screen control (intelligent display routines). Full cursor control.
- Scrolling window adjustable (protected screen feature).
- Software simulated single-step and trace modes.
- Software simulated 16-bit processor.
- Dis-assembler and mini-assembler.
- Input/Output device assignment.
- Editing on keyboard entry.
- Floating point package.
- Breakpoint handling.
- Register examine/modify.
- Read/Write cassette routines.
- Inverse/Normal video selection.
- Hex add/subtract for relative branch calculations.



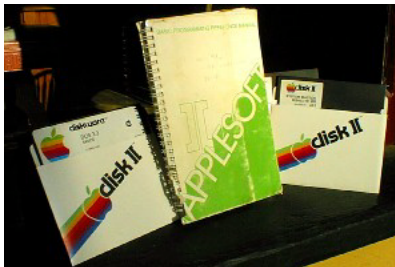
**apple computer inc.**  
20953 Stevens Creek Boulevard, B3-C  
Cupertino, California 95014

Due to our continuing program of product improvement, specifications are subject to change without notice. Printed in U.S.A. 4/77


Apple II early owner's manual ("red book"):



Apple II AppleSoft BASIC reference manual:



Apple II dealer price list:



20863 Stevens Creek Blvd. B 3-C  
Cupertino, California 95014  
(408) 996-1010

### Suggested Retail Price List

April 1977

**Order Code Legend:**

APPLE  
Computer  
Inc.

Model Number

1 = I  
2 = II

**A**

**2**

**S**

**Type**

S = System  
M = Module  
C = Component(s)  
B = Board  
T = Tape Cassette  
L = Literature

**000**

**Designator**

For products which include memory,  
indicates amount of memory in K bytes.

**X**

Reserved for future use

**Apple I™**

Apple I is a completely assembled and tested single board computer.

**Boards**

Single Board Computer (4K Bytes RAM)	A1B004X	\$ 475.00
Single Board Computer (8K Bytes RAM)	A1B008X	575.00
Cassette Interface Board	A1B001X	75.00

**Accessories**

"BASIC" Tape Cassette	A1T001X	5.00
"Mastermind" Tape Cassette	A1T002X	5.00
"Lunar Lander" Tape Cassette	A1T003X	5.00
"Blackjack" Tape Cassette	A1T004X	5.00
"Hamurabi" Tape Cassette	A1T005X	5.00
"Mini-Startrek" Tape Cassette	A1T006X	5.00
"16K-Startrek" Tape Cassette	A1T007X	5.00
"Dis-Assembler" Tape Cassette	A1T008X	5.00
"Extended Monitor" Tape Cassette	A1T009X	5.00
Operator's Manual	A1L001X	3.00

**Apple II™**

Apple II is a completely assembled and tested computer system. It includes 8K bytes of ROM, rugged plastic molded case, typewriter-style keyboard, high efficiency switching power supply, two game paddles, vinyl carrying case, all cords and cables, and a complete operator's manual.

**Systems**

Complete Computer — 4K Bytes RAM	A2S004X	\$1298.00
Complete Computer — 8K Bytes RAM	A2S008X	1398.00
Complete Computer — 12K Bytes RAM	A2S012X	1498.00
Complete Computer — 16K Bytes RAM	A2S016X	1678.00
Complete Computer — 20K Bytes RAM	A2S020X	1778.00
Complete Computer — 24K Bytes RAM	A2S024X	1878.00
Complete Computer — 32K Bytes RAM	A2S032X	2158.00
Complete Computer — 36K Bytes RAM	A2S036X	2258.00
Complete Computer — 48K Bytes RAM	A2S048X	2638.00

T H E E N D