

## Macintosh II

## Features

## Benefits

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|---|--|
| <ul style="list-style-type: none"><li>▶ Internal SCSI connector</li></ul>   | <ul style="list-style-type: none"><li>▶ Permits connection of internal SCSI devices without compromising desk space.</li></ul>   |
| <hr/>   |  |
| <ul style="list-style-type: none"><li>▶ SCSI transfer rate up to 1 megabyte/second</li></ul>  | <ul style="list-style-type: none"><li>▶ Allows fast loading and saving of applications and documents.</li></ul>  |
| <hr/>   |  |
| <ul style="list-style-type: none"><li>▶ Two standard configurations:<ul style="list-style-type: none"><li>—800K built-in disk drive</li><li>—800K drive, plus internal 40-megabyte SCSI hard-disk drive</li><li>—A second internal 800K drive can be added to both configurations</li></ul></li></ul> | <ul style="list-style-type: none"><li>▶ Gives you a choice of storage.</li><li>▶ Uses standard 800K disks.</li><li>▶ Requires no desk space for disk drives.</li><li>▶ Lets you add storage capacity as your requirements expand.</li></ul>                          |
| <hr/>   |  |
| <ul style="list-style-type: none"><li>▶ Macintosh user interface: mouse, icons, windows, and pull down menus</li></ul>  | <ul style="list-style-type: none"><li>▶ Makes applications easy to learn and intuitive.</li><li>▶ Provides a consistent interface across applications.</li><li>▶ Reduces training and support costs in a corporate environment.</li></ul>                            |
| <hr/>   |  |
| <ul style="list-style-type: none"><li>▶ Macintosh software compatible</li></ul>   | <ul style="list-style-type: none"><li>▶ Runs most existing Macintosh software.</li></ul>   |
| <hr/>   |  |
| <ul style="list-style-type: none"><li>▶ Apple stereo sound chip</li></ul>   | <ul style="list-style-type: none"><li>▶ Provides high-quality digitized sound.</li><li>▶ Offers compatibility with most applications that use Macintosh sound.</li></ul>   |
| <hr/>   |  |
| <ul style="list-style-type: none"><li>▶ Optional 68851 PMMU memory management upgrade</li></ul>   | <ul style="list-style-type: none"><li>▶ Provides memory management necessary to run multitasking, multiuser operating systems such as UNIX®.</li></ul>   |
| <hr/>   |  |
| <ul style="list-style-type: none"><li>▶ Optional keyboards include:<ul style="list-style-type: none"><li>—Apple Keyboard</li><li>—Apple Extended Keyboard</li></ul></li></ul>   | <ul style="list-style-type: none"><li>▶ Lets you choose the keyboard that best suits your needs.</li><li>▶ Apple Extended Keyboard lets you work with alternate operating systems, terminal emulation programs, and other data communication applications.</li></ul> |
| <hr/>   |  |
| <ul style="list-style-type: none"><li>▶ Optional monitors include:<ul style="list-style-type: none"><li>—Apple High-Resolution Monochrome Monitor</li><li>—AppleColor™ High-Resolution RGB Monitor.</li></ul></li></ul>   | <ul style="list-style-type: none"><li>▶ Lets you choose the monitor that best fits your needs.</li></ul>   |

## Macintosh II Personal Computer



## Overview

The Macintosh II is the new high performance, open architecture member of the Macintosh family.

The Macintosh II is designed for advanced applications in business, desktop publishing, science and engineering. It comes standard with a full 32-bit 68020 microprocessor and a 68881 floating point coprocessor.

For maximum flexibility, Macintosh II makes room for more memory—up to eight megabytes of RAM—and includes six

built-in ports and six expansion slots that let you configure virtually any type of system you need. Using hardware and software options from Apple and third parties, Macintosh II can support other operating environments, including MS-DOS and AT&T UNIX™.

Macintosh II also lets you tailor the system with a choice of new monitors—including the Macintosh high-resolution color monitor—as well as keyboards and internal or external disk drives.

Compatible with most existing Macintosh software, the Macintosh II comes standard with one megabyte of RAM and is available in two configurations: 1) with a built-in 800K floppy-disk drive; or 2) with an 800K drive plus an internal 40-megabyte hard-disk drive.



## Macintosh II

### Ordering Information

### Macintosh II CPU

Order No. M5300

- With your order, you'll receive:
- ▶ Macintosh II personal computer with a built-in 800-kilobyte disk drive
  - ▶ Mouse
  - ▶ Owner's guide
  - ▶ System Tools disk and backup
  - ▶ Training disks (2)
  - ▶ Limited warranty statement
  - ▶ Utilities disk and manual

### Macintosh II Hard Disk 40 CPU

Order No. M5400

- With your order, you'll receive:
- ▶ Macintosh II personal computer with a built-in 800 kilobyte disk drive and an internal 40-megabyte SCSI hard disk drive
  - ▶ Mouse
  - ▶ Owner's guide
  - ▶ System Tools disk and backup
  - ▶ Training disks (2)
  - ▶ Limited warranty statement

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July 1987. Product specifications are subject to change without notice.  
M2227

# Macintosh II

## Features

► Full 32-bit, 68020 Microprocessor operating at 15.7 megahertz

► 68881 floating point coprocessor

► One megabyte of RAM, expandable to 8 megabytes

► 256K ROM, a superset of the Macintosh Plus 128K ROM, includes:  
—Hierarchical File System  
—Drivers for Macintosh hard disk drives, NuBus expansion slots, Apple Desktop Bus, 68881 floating point coprocessor, SCSI, and AppleTalk® network  
—Color QuickDraw graphics

► 6 NuBus expansion slots  
—Any card can be installed in any slot without setting DIP switches  
—Any card can take control of the system from the main logic board

► Six built-in ports: 2 serial, 2 Apple Desktop Bus, 1 SCSI, 1 sound

► Apple Desktop Bus (ADB) Interface

## Benefits

► Provides increased speed, power, and performance.  
► Performs launch, run, and execute instructions up to four times faster than Apple's previous 68000-based computers.

► Performs arithmetic calculations up to 200 times faster than previous systems.

► Lets you run the most powerful, sophisticated software available  
► Accommodates large models, documents, and data bases.  
► Provides the flexibility to grow with the need for additional memory.  
► Requires no DIP switches for memory expansion.

► The Hierarchical File System creates organized storage for documents and allows easy access to files.  
► The SCSI interface supports high-performance peripherals.  
► Provides a consistent interface throughout the Macintosh family.  
► Provides a consistent interface for black and white, and color applications.

► Lets you configure a system to meet specific needs.  
► Permits easy installation.  
► Provides flexibility for expansion as requirements change and new technology becomes available.  
► Lets you work within other operating environments.

► Lets you expand your system with commonly used peripherals without using expansion slots.  
► Provides access to AppleTalk Network which allows you to connect your Macintosh II to other computers and the LaserWriter® and LaserWriter Plus printers through the AppleTalk network.  
► Provides connection for Apple Desktop Bus devices.  
► Supports high-speed SCSI peripherals.

► Allows daisy-chaining of up to 16 ADB peripheral devices.

## Product Details

### System Configuration

► Two systems are available:  
—The Macintosh II CPU includes the CPU, 68881 floating point coprocessor, 1 megabyte of RAM, 1 800K 3.5-inch floppy disk drive, and mouse.

—The Macintosh II Hard Disk 40 CPU includes the Macintosh II CPU plus an internal 40 megabyte SCSI hard disk drive.  
► Keyboard, monitors and other peripheral devices are packaged and sold separately.

### NuBus Expansion Slots

► NuBus provides a full 32 bit single address bus and data bus on a 96-pin connector.  
► NuBus is self-configuring. Cards can be plugged into any slot and the system will automatically identify and configure each card, without any dip switches, jumper wires, etc.

### Performance 68020

► The Macintosh II is equipped with the 32 bit 68020 processor running at 15.7 Megahertz. Overall, the performance of Macintosh II is four times (or more) faster

than previous Macintosh systems like the Macintosh Plus.  
► The 32-bit wide address bus provides a total addressable space of 4 Gigabytes.

### RAM

► RAM can be upgraded to 2 megabytes with the 1MB RAM Expansion Kit or it can be upgraded to 4, 5, or 8 megabytes with the 2MB RAM Expansion Kit.

### 68881

► Macintosh II performance is further enhanced by the 68881 Floating Point Math Coprocessor (Standard with every system).  
► Macintosh programs that utilize the Standard Apple Numerics Environment (SANE) will be accelerated 3 to 30 times for floating point computations.  
► Programs that make direct use of the 68881 will have floating point computations accelerated by up to 200 times

### Stereo Sound

► The Apple Sound Chip supports stereo sound at a sampling rate up to 44.1 kilohertz.

### SCSI (Small Computer Systems Interface)

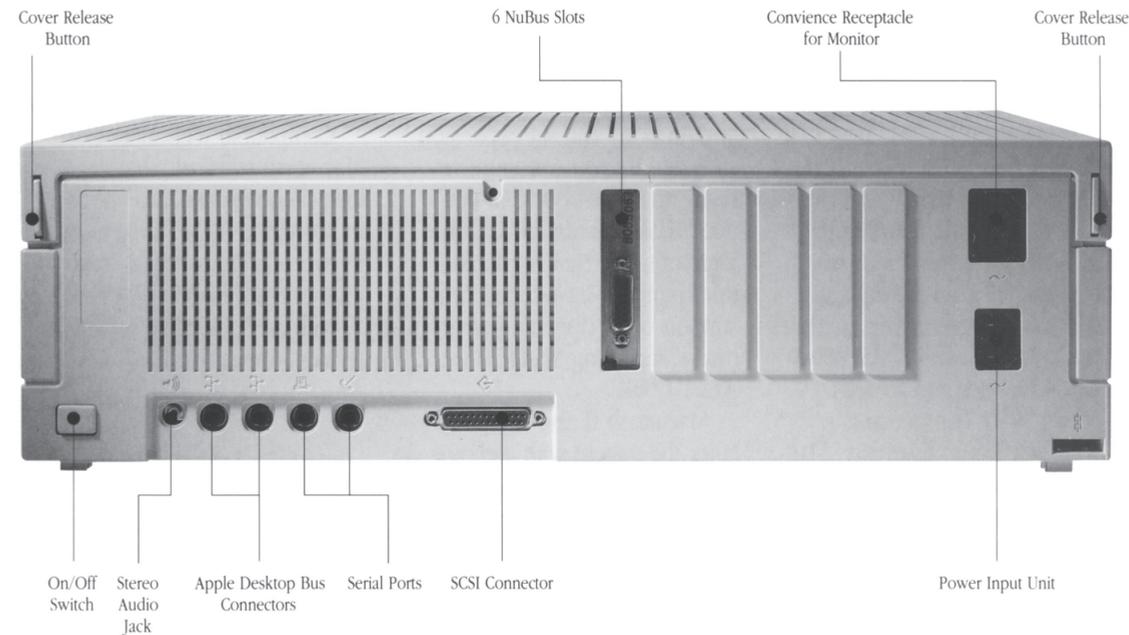
► SCSI is a high performance connection to hard disk and other mass storage peripherals.  
► SCSI performance on the Macintosh II is rated at up to one Megabyte per second (Up to four times faster than a Macintosh Plus.)  
► Up to seven (including internal hard disk ) SCSI peripherals can be daisy-chain connected to the Macintosh II.

### Network Support

► The Macintosh II serial ports include full support for AppleTalk network connections.

### Operating System Software

► Macintosh II should be used with Macintosh System version 4.1 or higher and Finder version 5.5 or higher.



## Technical Specifications

### Processor

MC68020, 32-bit internal architecture 15.7-megahertz clock speed

### Coprocessor

► 68881 floating point device (IEEE standard)

### Memory

► 1 megabyte RAM, expandable to 8 megabytes on board  
► 256K ROM standard

### Memory management

► Optional 68851 PMMU

### Disk storage

► Two standard configurations Built-in double sided drive; uses 3.5-inch hard-case floppy disks with 800K capacity 800K internal drive, plus internal 40-megabyte SCSI hard disk drive  
► Options include 20-, 40-, and 80-megabyte internal SCSI hard-disk drive

### Monitors options include:

► Apple High-Resolution Monochrome Monitor: an analog monitor with a 12-inch diagonal screen, 640 by 480 pixels  
► AppleColor High-Resolution RGB Monitor: an analog RGB monitor with 13-inch diagonal screen, 640 by 480 pixels

### Video card

► Apple Custom Frame Buffer chip.  
► Macintosh II Video Card: 1 to 4 bits per pixel—up to 16 colors or shades of gray  
► Macintosh II Video Card Expansion Kit: 8 bits per pixel—up to 256 colors or shades of gray  
► Palette with 16 million colors

### Keyboard

Detachable keyboard options:  
► Apple Keyboard: 81 keys, including numeric keypad and cursor keys  
► Apple Extended Keyboard: 105 keys, including 15 function keys, T-style cursor pad, 10-key numeric keypad, and Apple Desktop Bus connectors

### Mouse

► Mechanical tracking: optical shaft encoding at 3.54 pulses per mm (90 pulses per inch) of travel

### Interfaces

► Two Mini-8 serial (RS-232/RS-422) ports  
► SCSI interface; uses a 50-pin connector (internal) and a DB-25 connector (external)  
► Two Apple Desktop Bus (ADB) ports  
► Six NuBus internal slots supporting full 32-bit address and data buses

### Sound generator

► Apple custom digital sound chip (ASC), including four-voice wave-table synthesis, stereo sampling generator. Capable of driving stereo headphones or other stereo equipment

### Electrical requirements

► Line voltage: 90 to 140 volts; 170-270 volts, automatically configured  
► Frequency: 48 to 62 Hz  
► Maximum power: 230 watts, not including monitor power

### Size and weight

Main Unit  
► Height: 5.51 in. (140 mm)  
► Width: 18.66 in. (474 mm)  
► Depth: 14.37 in. (365 mm)  
► Weight: 24 lbs. to 26 lbs.\*,  
10.9 Kg to 11.8 Kg

### Mouse

► Height: 1.11 in. (27.9 mm)  
► Width: 2.1 in. (53-3 mm)  
► Depth: 3.8 in. (96.5 mm)  
► Weight: 6 oz. (.17 kg)

\* Weight varies, depending on whether optional hard disk or second 3.5-inch disk has been installed.