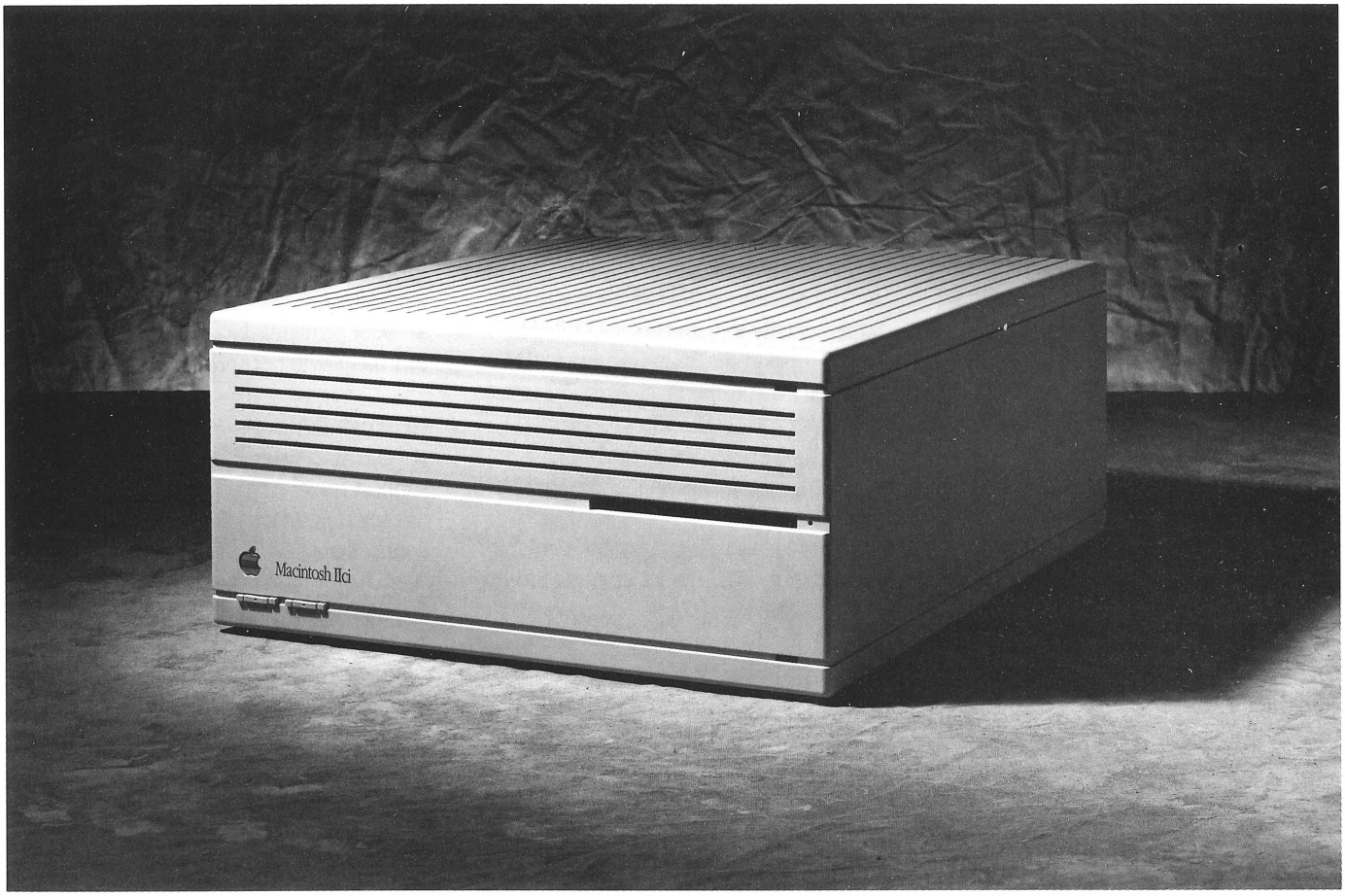
Macintosh IIci



Overview

The Macintosh® IIci personal computer offers high performance and enhanced functionality in a system with the same small footprint and flexible design as the Macintosh IIcx. People who require high-speed program execution for large spreadsheets, databases, and graphically intensive applications will appreciate the performance delivered by the Macintosh IIci.

A 25-megahertz 68030 microprocessor makes the most significant contribution to the dramatic performance improvement offered by the Macintosh IIci. Increasing the clock speed of the 68030 enables the system to perform up to 45 percent faster than the Macintosh IIcx and Macintosh IIx computers. To speed the processing of complex mathematical functions, a 68882 math coprocessor comes standard with the Macintosh IIci.

By installing an optional cache memory card, users can improve system performance by an additional 20 percent to 30 percent, for an overall performance improvement of up to 75 percent over that of the Macintosh IIx and IIcx.

The Macintosh IIci also comes with built-in video capability that enables the system to display up to 256 colors or shades of gray simultaneously on a variety of Apple® color and gray-scale monitors.

The Macintosh IIci includes three internal NuBus™ expansion slots, space for a 3.5-inch internal hard disk drive, seven standard external ports to accommodate peripherals, and the capability of expanding RAM to up to 8 megabytes. The Macintosh IIci uses the 1.4-megabyte Apple FDHD™ SuperDrive,™ which allows it to read from and write to 3.5-inch Macintosh floppy disks, as well as the 3.5-inch disks used by many other personal computers.

The Macintosh IIci is compatible with virtually all Macintosh applications, and comes standard with Apple's MultiFinder™ operating system and HyperCard,® a tool for custom software solutions.

Features	*Benefits*
▶ Full 32-bit 68030 microprocessor, running at 25 megahertz —Built-in Paged Memory Management Unit (PMMU) —Burst mode RAM access capability	▶ Offers superior processing speed, power, and performance. ▶ Supports multitasking operating systems (such as Apple's A/UX®) that require memory management capabilities in order to run. ▶ Allows instructions and data to be read in fewer clock cycles than in the normal access mode, improving overall system performance.
▶ 68882 floating-point math coprocessor	▶ Provides fast processing of complex mathematical functions.
▶ Cache connector	▶ With installation of a high-speed cache memory card, provides 20 percent to 30 percent improvement in overall system performance.
▶ Built-in video support for the following Apple monitors: —12-inch Apple High-Resolution Monochrome Monitor with up to 256 shades of gray —13-inch AppleColor™ High-Resolution RGB Monitor with up to 256 colors or shades of gray —15-inch Apple Macintosh Portrait Display with up to 16 shades of gray	▶ Provides the flexibility to choose among three of Apple's most popular monitors. ▶ Makes it easier to set up the system. ▶ Enhances system expandability by freeing up the NuBus slot usually occupied by the video card. ▶ Reduces system cost by eliminating the cost of a video card.
▶ Three NuBus expansion slots	▶ Lets you configure your system to meet specific needs. ▶ Makes it easy to add a variety of cards. (Cards are self-configuring—they require no DIP switches, and can be placed in any slot.)
▶ Unique industrial design —Small footprint —Locking power switch	▶ Can be used in either a horizontal or a vertical orientation. ▶ Takes up very little desktop space. ▶ Allows the system to restart automatically in the event of a power failure.
▶ Apple FDHD SuperDrive	▶ Provides 75 percent more storage capacity than 800K disk drives. ▶ Allows you to transfer data files conveniently between Macintosh, OS/2, MS-DOS, and Apple II systems on the same 3.5-inch disk, using the Apple File Exchange utility.
▶ Internal hard disk storage	▶ Accommodates a 3.5-inch hard disk drive (several capacities are available).

Features	*Benefits*
► Eight built-in ports: —Two serial ports —Two Apple Desktop Bus™ ports —One SCSI port —One DB-19 serial port (for an external floppy disk drive) —One DB-15 video port (for built-in video support) —One sound port	► Allows you to tailor your system to your needs with popular peripherals without using expansion slots. ► Provides access to LocalTalk™ networks, allowing you to connect your Macintosh IIci to other computers and to LaserWriter® printers through the AppleTalk® network system. ► Provides connection for Apple Desktop Bus devices such as a keyboard, mouse, trackball, or graphics tablet. ► Supports up to seven SCSI peripherals. ► Provides connection to built-in video. ► Supplies high-quality stereo sound to the stereo jack.
► 1 megabyte of on-board RAM, expandable to 8 megabytes	► Provides the flexibility to grow as you need additional memory. ► Enables you to open multiple applications concurrently under MultiFinder.
► Optional parity support	► With installation of optional parity RAM, provides memory-checking capability.
► 512K of ROM, including: —32-bit addressing —Hierarchical File System —32-bit Color QuickDraw™	► Enables future 32-bit versions of the Macintosh operating system to address up to 4 gigabytes of memory. ► Organizes document storage and allows easy access to files. ► Provides a consistent user interface throughout the Macintosh family and enables color systems to display up to 16 million colors simultaneously.
► Macintosh user interface, including mouse, icons, windows, and pull-down menus	► Makes most applications intuitive and easy to learn, reducing training and support costs. ► Provides a consistent user interface across applications.
► MultiFinder operating system	► Allows multiple applications to be opened concurrently. ► Lets you integrate information from multiple applications easily by cutting and pasting between them. ► Allows you to continue working with applications while performing certain tasks in the background.
► Software compatibility	► Allows you to run virtually all Macintosh software, including applications designed to take advantage of floating-point coprocessors.
► Apple Sound Chip	► Provides high-quality, four-voice digital sound. ► Is compatible with all applications that use Macintosh sound.

Product Details

68030 Processor

► The 32-bit 68030 microprocessor runs at 25 megahertz.

► The 32-bit address bus provides a total addressable space of 4 gigabytes.

► Separate instruction and data caches provide significantly faster processing.

► Built-in PMMU supports virtual, shared, and protected memory in operating systems that have been designed for it.

► Burst mode RAM access enables groups of instructions or data to be read in fewer clock cycles than are required in normal access mode.

Built-in Video

► The built-in video capabilities of the Macintosh IIci are made possible through the addition of three components to the logic board: the RBV (RAM-Based Video) chip, which functions as the video controller; a digital-to-analog converter (DAC); and a DB-15 external connector. The screen image is stored in a screen buffer located in main memory.

Optional Parity Support

► When ordering the Macintosh IIci, users can request a parity system. The system will be configured with a parity controller and parity RAM.

ROM

► The Macintosh IIci comes standard with 512K of ROM. In addition, a ROM SIMM socket located on the logic board will facilitate the installation of future versions of ROM as they become available.

RAM

► The Macintosh IIci can be upgraded incrementally to 8 megabytes of RAM.

► To support the 25-megahertz 68030 microprocessor, the Macintosh IIci utilizes very high-speed (80-nanosecond) RAM. Users can increase system memory capacity with Macintosh IIci Memory Expansion Kits.

► When denser chips become available, the Macintosh IIci can be upgraded to up to 32 megabytes of RAM.

NuBus Expansion Slots

► NuBus provides a multiplexed 32-bit address bus and data bus on a single 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 DIP switches or jumper wires.

► The NuBus architecture supports data transfer rates of up to 37.5 megabytes per second.

SCSI (Small Computer Systems Interface)

► SCSI is a high-performance interface for connecting the Macintosh IIci to hard disks and other peripherals, such as the LaserWriter IIsc, Apple Scanner, AppleCD SC™ CD-ROM drive, and other devices. Up to seven SCSI peripherals (including an internal hard disk) can be connected.

► SCSI provides data transfer rates of up to 1 megabyte per second.

Network Support

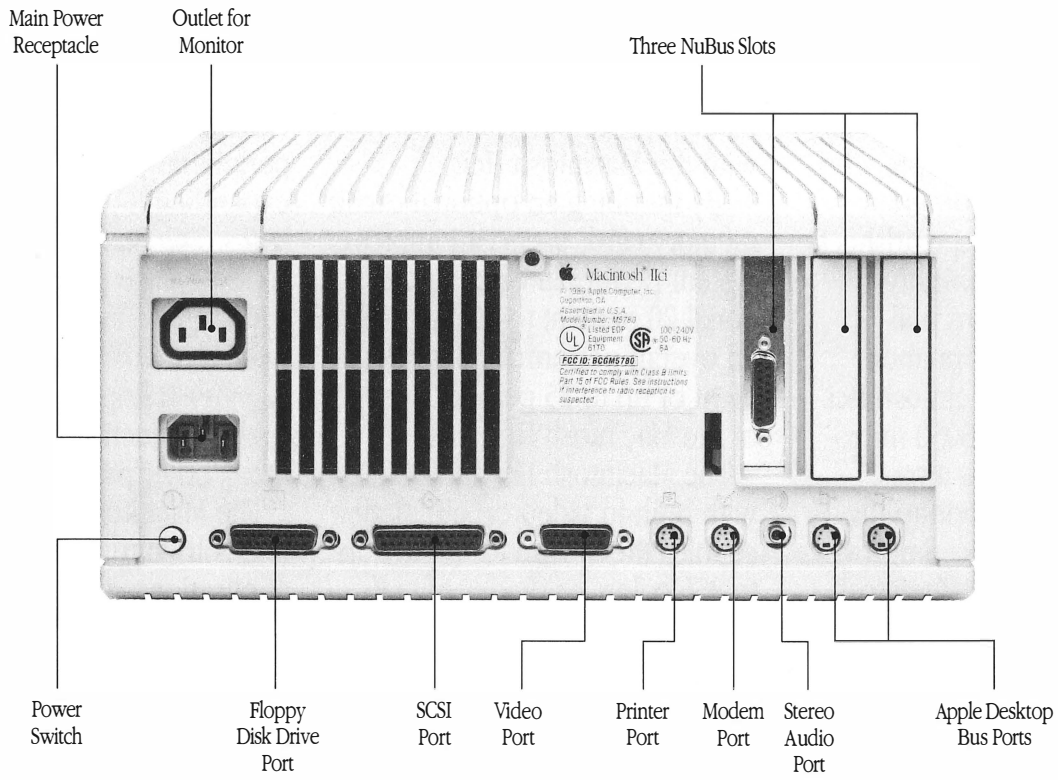
► The Macintosh IIci provides full ROM support for all AppleTalk protocols, and has serial ports for LocalTalk network connections.

Operating System Software

► Macintosh system software includes:
—System Tools Version 6.0.4 or greater (the Macintosh operating system)
—Printer disk (printer drivers for all Apple printers)
—Utilities disks (include utilities such as the Apple File Exchange, HD SC Setup, CloseView, Disk First Aid,™ and Font/DA Mover)

► HyperCard Version 1.2.3 (or greater) is included.

► A/UX Version 1.1.1 (or greater) is compatible with the Macintosh IIci.



Technical Specifications

Processor
- 68030; 32-bit internal Harvard architecture
- 25-megahertz clock speed
- Burst mode RAM access
- 256-byte instruction and data caches

Coprocessor
- 68882 floating-point coprocessor (IEEE standard—80 bits precision)

Cache connector
- 120-pin memory cache connector (for connection of optional high-speed memory cache card)

Built-in video support
- Supports 640- by 480-pixel screens (such as the 12-inch Apple High-Resolution Monochrome Monitor and 13-inch AppleColor High-Resolution RGB Monitor) at up to 256 colors or shades of gray (up to 8 bits per pixel)
- Supports 640- by 870-pixel screens (such as the 15-inch Apple Macintosh Portrait Display) at up to 16 shades of gray

Optional parity support
- Installation of parity generating chip and parity RAM converts the system to a parity system

Interfaces
- Three NuBus internal slots support full 32-bit address and data buses
- Two mini-8 serial (RS-232/RS-422) ports
- Two Apple Desktop Bus ports allow daisy-chaining of multiple peripheral devices
- SCSI interface: one 50-pin internal connector and one DB-25 external connector
- One DB-19 serial port for connecting external floppy disk drives
- One DB-15 video port for built-in video
- Stereo sound jack

Mouse
- Mechanical tracking: optical shaft encoding at 3.9 ± 0.39 pulses per millimeter (100 ± 10 pulses per inch) of travel

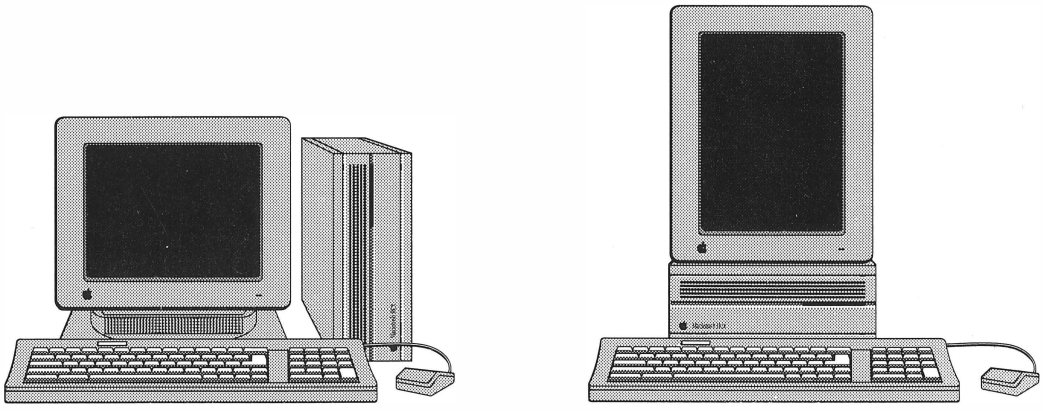
Sound generator
- Apple's custom digital sound chip provides 8-bit stereo sampling at 44.1 kilohertz, and includes four-voice wave-table synthesis—capable of driving stereo headphones or other stereo equipment through the sound jack

Electrical requirements
- Line voltage: 100 to 240 volts AC, automatically configured
- Frequency: 50 to 60 hertz, single phase
- Maximum power: 90 watts, not including monitor power

Size and weight

Main unit
- Height: 5.5 in. (14.0 cm)
- Width: 11.9 in. (30.2 cm)
- Depth: 14.4 in. (36.5 cm)
- Weight: 14 lb. (6.4 kg) with internal hard disk drive

Mouse
- Height: 1.1 in. (2.8 cm)
- Width: 2.1 in. (5.3 cm)
- Depth: 3.8 in. (9.7 cm)
- Weight: 6 oz. (.17 kg)



The versatile design of the Macintosh IIci allows it to be used in either vertical or horizontal orientation.

Macintosh IIci

Apple Computer, Inc.

20525 Mariani Avenue
Cupertino, CA 95014
(408) 996-1010
TLX: 171-576

Printed in U.S.A. September 1989.
M0338LL/A