



Technical Information

For the Macintosh Performa 400 series

Specifications

Processor

Macintosh Performa 410

- MC68020, 32-bit architecture, 16 megahertz (MHz) clock frequency

Macintosh Performa 460, 466, and 467

- MC68030, 32-bit architecture, 33 megahertz (MHz) clock frequency and MC68882
- floating-point coprocessor, 33 MHz clock frequency, optional

Macintosh Performa 475 and 476

- 68LC040, 32-bit architecture, 25 megahertz (MHz) clock frequency

Memory

Macintosh Performa 410

- 4 megabytes (MB) of random-access memory (RAM), expandable to 10 MB
- 512K video RAM (VRAM), not expandable

Macintosh Performa 460, 466, and 467

- 4 megabytes (MB) of random-access memory (RAM), expandable to 36 MB
- 512K video RAM (VRAM), expandable to 768K

Macintosh Performa 475 and 476

- 4 megabytes (MB) of random-access memory (RAM), expandable to 36 MB
- 512K video RAM (VRAM), expandable to 1 MB

Video RAM (VRAM) and Monitors

The number of bits per pixel determines the maximum number of colors displayed on your monitor.

Bits per pixel	Number of colors
1	2
2	4
4	16
8	256
16	32,768

The following list shows the bits per pixel possible depending on the model of Macintosh Performa, the monitor display, and how much VRAM is installed.

Macintosh Performa 410

- *With 256K of VRAM:*
12", 14", and VGA displays up to 4 bits per pixel
- *With 512K of VRAM:*
12" displays up to 16 bits per pixel
14" and VGA displays up to 8 bits per pixel

Macintosh Performa 460, 466, and 467

- *With 512K of VRAM:*
12" displays up to 16 bits per pixel
14", 16", and VGA displays up to 8 bits per pixel
15" displays up to 4 bits per pixel
- *With 768K of VRAM:*
12", 14", and VGA displays up to 16 bits per pixel
15" and 16" displays up to 8 bits per pixel

Macintosh Performa 475 and 476

- *With 512K of VRAM:*
12" displays up to 16 bits per pixel
14", 16", and VGA displays up to 8 bits per pixel
15" and 21" displays up to 4 bits per pixel
- *With 1 MB of VRAM:*
12", 14", 16", and VGA displays up to 16 bits per pixel
15" and 21" displays up to 8 bits per pixel

Disk drives

Macintosh Performa 410 and 460

- Built-in Apple SuperDrive 1.4 MB high-density floppy disk drive
- Internal 80 MB SCSI hard disk drive
- Optional external SCSI hard disk drives (several capacities available)

Macintosh Performa 466, 467, and 475

- Built-in Apple SuperDrive 1.4 MB high-density floppy disk drive
- Internal 160 MB SCSI hard disk drive
- Optional external SCSI hard disk drives (several capacities available)

Macintosh Performa 476

- Built-in Apple SuperDrive 1.4 MB high-density floppy disk drive
- Internal 230 MB SCSI hard disk drive
- Optional external SCSI hard disk drives (several capacities available)

Sound generator

Macintosh Performa 410, 460, 466, and 467

- Custom sound chip
- Monophonic sound sampling generator capable of driving stereo miniature phone jack headphones or stereo equipment by sending the same output into each channel

Macintosh Performa 475 and 476

- Custom sound chip
- Monophonic sound input sampling
- Stereo sound output generation available through the headphone jack

Interfaces

Macintosh Performa 410, 460, 466, and 467

- One Apple Desktop Bus (ADB) port for a keyboard and a mouse or other devices daisy-chained through a low-speed, synchronous serial bus (maximum of three chained devices)
- Two RS-232/RS-422 serial ports, 230.4 kilobits (Kbits) per second maximum (up to 920 Kbits per second if clocked externally)
- SCSI interface
- Port for RGB and monochrome monitors of various sizes and resolutions
- Internal expansion slot for processor-direct expansion card
- Sound output port capable of delivering monophonic sound to both channels of a stereo drive
- Sound input port for monophonic sound input
- Internal socket for floating-point coprocessor

Macintosh Performa 475 and 476

- One Apple Desktop Bus (ADB) port for a keyboard and a mouse or other devices daisy-chained through a low-speed, synchronous serial bus (maximum of three chained devices)
- Two RS-232/RS-422 serial ports, 230.4 kilobits (Kbits) per second maximum (up to 920 Kbits per second if clocked externally)
- SCSI interface
- Port for RGB and monochrome monitors of various sizes and resolutions
- Internal, LC-compatible expansion slot for Ethernet, video, or Apple IIe card
- Sound output port capable of delivering stereo output through the headphone jack
- Sound input port for monophonic sound input

Power Input

- Line voltage: 100–240 volts AC RMS single phase, automatically configured
- Frequency: 50–60 Hz \pm 3 Hz
- Power: 30 watts maximum, not including monitor power

Clock/Calendar

- CMOS custom chip with long-life lithium battery
- ▲ **Warning:** If the clock begins to lose accuracy, see your Apple-authorized service provider for a battery replacement. Do not attempt to replace the clock battery yourself. ▲

Keyboard

- Supports all Apple Desktop Bus (ADB) keyboards

Mouse

- ADB mouse: either mechanical tracking, optical shaft, or contact encoding

Apple Desktop Bus power requirements

- Maximum power draw for all ADB devices is 200 milliamperes (mA).
- Mouse draws 10 mA.
- Keyboard draws 25–80 mA (varies with keyboard model).
- ❖ *Note:* Up to three ADB devices can be daisy-chained to the ADB port. ❖

Size and weight

Weight	Height	Width	Depth
Main unit			
4.0 kg	81 mm	310 mm	382 mm
8.8 lb.	3.2 in.	12.2 in.	15.0 in.
Mouse			
0.10 kg	33 mm	61.7 mm	107.3 mm
4 oz.	1.3 in.	2.4 in.	4.2 in.
Keyboard			
1 kg	44 mm	418 mm	142 mm
2.2 lb.	1.8 in.	16.5 in.	5.6 in.

RAM configuration

Dynamic RAM (DRAM) in the Macintosh Performa computer is provided both on the logic board and in packages called Single Inline Memory Modules, or SIMMs. The SIMMs contain dynamic RAM chips on a single circuit board, with electrical “finger” contacts along one edge that plug into the SIMM socket on the computer’s logic board.

Macintosh Performa 410

- Works with 30-pin DRAM configurations only
- Can use only 1, 2, or 4 MB DRAM SIMMs

Macintosh Performa 460, 466, 467, 475, and 476

- Work with 72-pin DRAM configurations only
- Can use only 1, 2, 4, 8, 16, or 32 MB DRAM SIMMs (cannot use 256K SIMMs)

△ **Important:** SIMMs for the Macintosh Performa 410 should be fast-paged mode 100 nanoseconds (ns) RAM access time or faster. SIMMs for the Macintosh Performa 460, 466, 467, 475, and 476 should be fast-paged mode 80 nanoseconds (ns) RAM access time or faster. Do not purchase 256K SIMMs for use with the Macintosh Performa 410, 460, 466, 467, 475, and 476 computers. △

▲ **Warning:** To avoid damage to your computer, Apple recommends that only an Apple-certified technician install additional RAM. Consult the service and support information that came with your computer for instructions on how to contact an Apple-authorized service provider or Apple for service. If you attempt to install additional RAM yourself, any damage you cause to your equipment will not be covered by the limited warranty on your computer. See an Apple-authorized dealer or service provider for additional information about this or any other warranty question. ▲

Environment

Operating temperature

- 10° C to 40° C (50° F to 104° F)

Storage temperature

- -40° C to 47° C (-40° F to 116.6° F)

Relative humidity

- 20% to 95% (noncondensing)

Altitude

- 3,048 m (10,000 ft.) maximum

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030-4701-A
Printed in U.S.A.