



Technical Information

Specifications for Power Macintosh 4400 series computers

Technical Information

Main unit

Processor

A PowerPC™ 603e processor with the following features:

- 160 megahertz (MHz) processor clock
- built-in floating point unit (FPU)
- 40 MHz system bus
- 32 kilobytes (K) internal cache (16K data, 16K instruction)

Memory

- 16 megabytes (MB) of dynamic random-access memory (DRAM), expandable to a maximum of 96 MB. DRAM Dual Inline Memory Modules (DIMMs) installed later should be 64-bit wide, 168-pin 3.3-volt (V) unbuffered Extended Data Output (EDO) DRAM DIMMs, with 60-nanosecond (ns) RAM access time or faster, and either a 1K or 2K refresh count. The Single Inline Memory Modules (SIMMs) from older Macintosh computers are not compatible with your computer and should not be used. DIMMs that support a 4K refresh count also should not be used.
- 1 MB video EDO DRAM DIMM (video memory expandable to 2 or 4 MB)
- 4 MB of read-only memory (ROM)
- 8K of nonvolatile parameter memory (PRAM)
- Optional connector for a 256K level 2 cache DIMM

Internal disk drives

The following drives have been installed in your computer at the factory:

- Apple SuperDrive 1.4 MB high-density floppy disk drive
- Apple 1.2 gigabyte (GB) AT Attachment (ATA) hard disk drive, also known as an enhanced Integrated Device Electronics (IDE) hard disk drive
- ATA Packet Interface (ATAPI) CD-ROM drive (8x-speed)

Video

Your computer can be connected to the monitors listed in the following table. Depending on the type and size of video DIMMs you install in your computer, these monitors can display images in 256, thousands, or millions of colors (bit depths of 8, 16, and 32, respectively). For example, if you have an Apple Multiple Scan 14 Display and you've installed 2 MB of EDO-type DIMMs, at a resolution of 640 x 480 your monitor can display images in millions of colors (an image depth of 32-bits).

Monitor	Resolution	EDO bit depth		SGRAM bit depth		Screen refresh rate	
		1 MB	2 MB	2 MB	4 MB	Vertical (Hz)	Horizontal (kHz)
Apple High Resolution RGB Monitor (13")	640 x 480	16	32	32	32	66.667	35.000
Macintosh Color Display (14")	640 x 480	16	32	32	32	66.667	35.000
Apple Basic Color Monitor (14")	640 x 480	16	32	32	32	66.667	35.000
Apple Color Plus 14" Display	640 x 480	16	32	32	32	66.667	35.000
Apple Multiple Scan 14 or Apple Multiple Scan 15 Displays	512 x 384	32	32	32	32	70.130	31.488
	640 x 480	16	32	32	32	59.940	31.469
	640 x 480	16	32	32	32	66.667	35.000
	640 x 480**†	16	32	32	32	72.809	37.861
	640 x 480**†	16	32	32	32	75.000	37.500
	800 x 600†	16	32	32	32	60.317	37.879
	800 x 600	16	32	32	32	72.188	48.077
	832 x 624	8	16	32	32	74.550	49.725
1024 x 768*	8	16	16	32	60.004	48.363	
1024 x 768*	8	16	16	16	70.069	56.476	
1024 x 768*	8	16	16	32	75.188	60.241	
Apple 16" Display	832 x 624	8	16	32	32	74.550	49.725

*Not supported by the Multiple Scan 14 Display.

†Not supported by the Multiple Scan 15 Display, but can be used by adjusting the front panel controls.

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Monitor	Resolution	EDO bit depth		SGRAM bit depth		Screen refresh rate	
		1 MB	2 MB	2 MB	4 MB	Vertical (Hz)	Horizontal (kHz)
Apple Multiple Scan 17 Display or Apple Multiple Scan 1705 Display	512 x 384	32	32	32	32	70.130	31.488
	640 x 480	16	32	32	32	59.940	31.469
	640 x 480	16	32	32	32	66.667	35.000
	640 x 480 [†]	16	32	32	32	72.809	37.861
	640 x 480	16	32	32	32	75.000	37.500
	800 x 600	16	32	32	32	60.317	37.879
	800 x 600 [†]	16	32	32	32	72.188	48.077
	800 x 600	16	32	32	32	75.000	46.875
	832 x 624	8	16	32	32	74.550	49.725
	1024 x 768 [†]	8	16	16	32	60.004	48.363
	1024 x 768 [†]	8	16	16	16	70.069	56.476
1024 x 768	8	16	16	16	75.029	60.023	
AppleVision 1710 Display	640 x 480	16	32	32	32	59.940	31.469
	640 x 480	16	32	32	32	66.667	35.000
	640 x 480 [†]	16	32	32	32	72.809	37.861
	640 x 480 [†]	16	32	32	32	75.000	37.500
	800 x 600	16	32	32	32	60.317	37.879
	800 x 600 [†]	16	32	32	32	72.188	48.077
	800 x 600	16	32	32	32	75.000	46.875
	832 x 624	8	16	32	32	74.550	49.725
	1024 x 768	8	16	16	32	60.004	48.363
	1024 x 768 [†]	8	16	16	16	70.069	56.476
	1024 x 768	8	16	16	16	75.029	60.023
	1152 x 870	8	16	16	16	75.062	68.681
	1280 x 960 [†]	n/a	8	8	16	75.000	75.000
1280 x 1024 [†]	n/a	8	8	16	60.020	63.981	
1280 x 1024	n/a	8	8	8	75.025	79.976	

[†]Not preset at the factory—you must use the front panel controls for this setting.



Monitor	Resolution	EDO bit depth		SGRAM bit depth		Screen refresh rate	
		1 MB	2 MB	2 MB	4 MB	Vertical (Hz)	Horizontal (kHz)
Apple Multiple Scan 20 Display	512 x 384	32	32	32	32	70.130	31.488
	640 x 480	16	32	32	32	59.940	31.469
	640 x 480	16	32	32	32	66.667	35.000
	640 x 480	16	32	32	32	72.809	37.861
	640 x 480	16	32	32	32	75.000	37.500
	800 x 600	16	32	32	32	60.317	37.879
	800 x 600	16	32	32	32	72.188	48.077
	800 x 600	16	32	32	32	75.000	46.875
	832 x 624	8	16	32	32	74.550	49.725
	1024 x 768	8	16	16	32	60.004	48.363
	1024 x 768	8	16	16	16	70.069	56.476
	1024 x 768	8	16	16	16	75.029	60.023
	1152 x 870	8	16	16	16	75.062	68.681
	1280 x 960	n/a	8	8	16	75.000	75.000
1280 x 1024	n/a	8	8	16	60.020	63.981	
.....							
Apple 21" Color Display (two-page display)	1152 x 870	8	16	16	16	75.062	68.681
.....							
VGA (a plug adapter may be required)	512 x 384	32	32	32	32	70.130	31.488
	640 x 480	16	32	32	32	59.940	31.469
	640 x 480	16	32	32	32	66.667	35.000
	640 x 480	16	32	32	32	72.809	37.861
	640 x 480	16	32	32	32	75.000	37.500
	800 x 600	16	32	32	32	60.317	37.879
	800 x 600	16	32	32	32	72.188	48.077
	800 x 600	16	32	32	32	75.000	46.875
	832 x 624	8	16	32	32	74.550	49.725
	1024 x 768	8	16	16	32	60.004	48.363
	1024 x 768	8	16	16	16	70.069	56.476
	1024 x 768	8	16	16	16	75.029	60.023
	1152 x 870	8	16	16	16	75.062	68.681
	1280 x 960	n/a	8	8	6	75.000	75.000
1280 x 1024	n/a	8	8	16	60.020	63.981	
1280 x 1024	n/a	8	8	8	75.025	79.976	

The case of the computer is sturdy enough for you to place on top of it any monitor that is 15 inches or smaller.

Clock/calendar

CMOS custom circuitry with long-life battery.

WARNING If the clock begins to lose accuracy, see your Apple-authorized dealer or service provider for a battery replacement. Do not attempt to replace the clock battery yourself.

Keyboard

Supports all Apple Desktop Bus (ADB) keyboards.

Mouse

Supports all models of the ADB mouse.

Interfaces

- One ADB port supporting up to three ADB input devices (such as a trackball, keyboard, or mouse) daisy-chained through a synchronous serial bus.
- Monitor port supporting color and grayscale monitors of various sizes and resolutions.
- One internal expansion slot supporting a full-size 12.28-inch peripheral component interconnect (PCI) expansion card. Install only expansion cards that come with Macintosh drivers and are compliant with the PCI 2.0 standard. NuBus™ cards cannot be used in this expansion slot.
- Two internal expansion slots supporting 6.88-inch PCI expansion cards. Install only expansion cards that come with Macintosh drivers and are compliant with the PCI 2.0 standard. NuBus cards cannot be used in these expansion slots.
- Two RS-232/RS-422 serial GeoPort-compatible ports.
- One 3.5-mm sound output port for line-level devices such as powered loudspeakers.

- One 3.5-mm sound input port for stereo sound input. The sound input port supports the Apple PlainTalk Microphone. In addition, the sound input port supports a standard stereo (miniplug-to-RCA) cable adapter for connecting stereo equipment to your computer. It does not support the Apple Omni microphone (the round microphone shipped with some earlier models of Macintosh) or the attenuated RCA adapter provided with some models of Macintosh.
- One external standard SCSI port that supports up to seven external SCSI devices.

IMPORTANT Some older SCSI devices or SCSI devices not manufactured by Apple may require updated drivers. (A “driver” is special software that is installed in your System Folder.) Contact the device manufacturer for information on obtaining driver software.

Size and weight

Weight	Height	Width	Depth
Main unit			
9.5 kg*	139 mm	385 mm	442 mm
24 lbs.*	5.43 in.	15.12 in.	17.37 in.
Mouse			
0.11 kg	33 mm	61 mm	107 mm
4 oz.	1.3 in.	2.4 in.	4.2 in.

*Weight varies depending on type of hard disk and any optional equipment.

Environment

- **Operating temperature** 10° C to 40° C (50° F to 104° F)
- **Transit temperature** -40° C to 65° C (-40° F to 149° F)
- **Storage temperature** -40° C to 47° C (-40° F to 116.6° F)
- **Relative humidity** 20% to 95% (noncondensing)
- **Altitude** Functional below 3048 m (10,000 ft.)

Power

AC line input

- **Line voltage** 90–135; 180–270 volts (V) alternating current, RMS single phase, manually switched
- **Frequency** 47–63 hertz (Hz)
- **Power** 285 watts (W) maximum continuous

DC power

Maximum continuous output: 200 W

Current type (V)	Maximum current (A)	Maximum power (W)*
+5	20.0 [†]	100.0 [†]
-5	0.4	2.0
+5 (trickle)	0.020	0.10
+3.3	20.0 [†]	66.0 [†]
+12	7.6	92.0
-12	0.5	6.0

*Total power output cannot exceed 200 W.

[†]Total combined power on +5 V and +3.3 V outputs should not be more than 100 W and should not exceed the individual power ratings.

CD-ROM drive

The following table shows typical power consumption for the internal CD-ROM drive.

Power consumption (typical)	
+5 V DC	700 milliamperes (mA) maximum
+12 V DC	600 mA maximum



Power requirements for devices you can connect

ADB devices

- Mouse draws up to 10 milliamperes (mA)
- Keyboard draws 25–80 mA (varies with keyboard model used)
- Maximum current available for all ADB devices and all serial devices: 500 mA

Note: The ADB port can support up to three daisy-chained ADB devices.

Audio and telecommunications devices

The following table shows power allowances for external devices connected to input ports.

Device	Voltage	Current	Power
Microphone	+5 V	20 mA	100 mW
GeoPort telecom adapter & ADB devices	+5 V	500 mA	2.5 W

PCI expansion cards

If you add a PCI expansion card to your computer, be sure the power requirements don't exceed the maximum power allowances allocated by the computer. The maximum combined power allowance for all three PCI expansion card slots is 45 watts (W). Your computer can accommodate either one 15-W card and one 25-W card, or three 15-W cards.

The following table displays example power allowances for 15-W and 25-W expansion cards. The combined power for +5-V and +3.3-V cards must not exceed the specified wattage of the PCI expansion slot (that is, 15 W or 25 W). The power consumed by the +5-V and +3.3-V cards can be consumed separately or in combination.

Example power allowances for PCI expansion cards

15-watt PCI cards*	Voltage (V)	Current (A)	Power (W)
Example A	+5.0	3.0	15.0
Example B	+3.3	4.5	15.0
Example C	+5.0	≈1.0	≈5.0
	+3.3	≈0.6	≈2.0
	+12.0	<0.5	6.0
	-12.0	<0.1	1.2

} ≈15.0 W

25-watt PCI cards†	Voltage (V)	Current (A)	Power (W)
Example A	+5.0	5.0	25.0
Example B	+3.3	7.5	25.0
Example C	+5.0	≈2.0	≈10.0
	+3.3	≈2.0	≈6.6
	+12.0	<0.5	6.0
	-12.0	<0.1	1.2

} ≈25.0 W

*15-watt expansion cards should not consume more than 15 watts of total power.

†25-watt expansion cards should not consume more than 25 watts of total power.

Specifications for CD-ROM drive

Disc speed

- 8x (eight-times speed)

Disc diameter

- 120 mm (4.7 in.)
- 80 mm (3.2 in.)

Data capacity

- 656 MB, Mode 1
- 748 MB, Mode 2

Modes supported

- Audio CD
- CD-ROM (Modes 1 and 2)
- CD-ROM XA (Mode 2, Forms 1 and 2)
- CD-I (Mode 2, Forms 1 and 2)
- Photo CD (Single-session and multisession)
- Video CD

Laser

- **Type** Semiconductor GaAlAs laser
- **Wavelength** 770–795 nanometers
- **Output power** 0.2 to 0.6 milliwatts
- **Beam divergence** 55°