Technical Information

Main unit

Processor

A PowerPC™ 603e processor with the following features:

- 160 megahertz (MHz) or 180 MHz processor clock (Your megahertz processor speed will be one or the other depending on the computer you have.)
- built-in floating point unit (FPU)
- 40 MHz system bus
- 32 kilobytes (K) internal cache (16K data, 16K instructions)

Memory

- 16 megabytes (MB) of dynamic random-access memory (DRAM): 8 MB soldered to the main logic board plus 8 MB preinstalled in one of the Dual Inline Memory Module (DIMM) sockets. Each DIMM can accommodate up to 64 MB, for a maximum of 136 MB in two sockets (DRAM DIMMs installed later should be 64-bit wide, 168-pin fast-paged mode, with 70-nanosecond (ns) RAM access time or faster)
- 1 MB of built-in video RAM
- 4 MB of read-only memory (ROM)
- 8 kilobytes (K) of nonvolatile parameter memory
- one socket for an optional High Performance Module (256K Level 2 cache)

Internal disk drives

The following drives were installed in your computer at the factory:

- Apple SuperDrive 1.4 MB high-density floppy disk drive
- Apple ATA (AT Attachment) hard disk drive, also known as an Integrated Device Electronics (IDE) hard disk drive
- Tray-loading CD-ROM drive (5.25-inch, 1/2-height 8X-speed)

Video screen

- 15-inch cathode-ray tube (CRT)
- 0.28-mm dot pitch

CD-ROM specifications

- Disc diameter   120 millimeters (mm) (4.7 inches)
                                            and 80 mm (3.2 inches)

- Scanning velocity   1.2–1.4 meters per second (normal speed)

- Rotation speed (varies over radius):
  Normal speed   ~530 to 230 revolutions per minute (rpm)
  Double speed   ~1060 to 460 rpm
  Eight-times speed   ~4240 to 1840 rpm

- Average latency (varies over radius):
  Normal speed   ~55 to 130 milliseconds (ms)
  Double speed   ~27.5 to 65 ms
  Eight-times speed   ~6.88 to 16.25 ms

- Blocks per rotation   ~8.4 to 19.5 variable

- Average access time (typical):
  Normal speed   380 ms
  Double speed   270 ms
  Eight-times speed   160 ms

Data

- Data capacity   656 megabytes (MB), Mode 1
                                            748 MB, Mode 2

- Number of blocks per disc   336,150

- Data per block   2048 bytes, Mode 1
                                            2336 bytes, Mode 2

- Address description   Minutes, seconds, blocks

Audio capacity

- Playing time   74 minutes, 42 seconds

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

Data streaming and transfer rates

- Blocks per second:
Normal speed	75
Double speed	150
Eight-times speed	600

- User kilobytes (K) per second:

Normal speed	150KB, Mode 1
	171.1KB, Mode 2
Double speed	300KB, Mode 1
	342.2KB, Mode 2
Eight-times speed	1200KB, Mode 1
	1368.8KB, Mode 2

- SCSI bus burst rate (typical):
Asynchronous	5.0 MB per second
Synchronous	5.0 MB per second

Laser

- Type: Semiconductor GaAlAs laser

- Wavelength: 770 to 795 nanometers

- Output power: 0.2 to 0.6 milliwatts

- Beam divergence: 55°

Video

Graphics modes supported

Your computer can display the graphics modes listed in the following table. In addition, your computer can display video input on some of the modes.

Resolution	Color depth	Vertical scan rate	Video input supported
640 x 480	16-bit	60 Hz and 67 Hz	yes
800 x 600	16-bit	60 Hz	yes, 8-bit or less color depth
800 x 600	8-bit	72 Hz	no
832 x 624	8-bit	75 Hz	yes

Video output

With the optional Apple External Video Connector kit, your computer can be connected to an Apple Presentation System. With an Apple External Video Connector installed, your Macintosh can also support video mirroring (connecting a second monitor for display purposes) on the following monitors at the resolutions indicated:

	640 x 480		800 x 600		832 x 624
	60 Hz	67 Hz	60 Hz	72 Hz	75 Hz
Apple Basic Color Monitor (14")	x				
Apple Color Plus 14" Display		x			
Apple High-Resolution RGB Monitor (13")		x			
Apple Multiple Scan 14 Display	x	x		x	x
Apple Multiple Scan 15 Display	x	x	x	x	x
Apple Multiple Scan 17 Display	x	x	x	x	x
Apple Multiple Scan 20 Display	x	x	x	x	x
Macintosh Color Display (14")		x			
SVGA monitors*	x		x	x	
VGA monitors*	x				

*A plug adapter may be required to connect an SVGA or VGA monitor.

Video input

With the optional video input card, you can view and record video from a video camera, VCR, or other video input equipment.

- Format: composite or S-video
- Transmission format: industry standard NTSC/PAL/SECAM
- Polarity: sync negative
- Level: .8 volts peak-to-peak (Vpp) minimum to 2.0 Vpp maximum ("S" chroma level 1.4 Vpp maximum)
- Impedance: 75 ohms (Ω) internally terminated
- DC offset: +/− 1.0 volts (V) maximum

Sound

- 16-bit stereo input
- 16-bit stereo output featuring **SRS**(●) 3D Surround Sound technology*
- Sample rates of 11.025, 22.05, and 44.1 kilohertz (kHz)

More information about the sound input and output ports on your computer is contained in the later section, "Interfaces."

* You can hear SRS 3D Surround Sound technology through the built-in speakers and the sound output port on the back of your computer but not through the headphone jack on the front of your computer.

Typical specifications

- Sound input connector line level: 2 Vpp maximum, into 10-kilohms (kΩ) impedance
- Sound output connector line level: 2 Vpp maximum, into 32 ohms (Ω) impedance
- Signal-to-noise ratio (SNR): 75 decibels (dB) minimum, 80 dB typical (A-weighted, 2 Vpp output, 1 kHz, digital record and playback, sound input port to sound output port, with **SRS**(●) turned off)
- Frequency response: 20 Hz–18kHz (-3 dB relative to 1 kHz uder the same conditions as the SNR measurement)

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 Apple Desktop Bus (ADB) port supporting up to three ADB input devices (such as a trackball, keyboard, or mouse) daisy-chained through a synchronous serial bus.

■ The optional Apple External Video Connector kit provides one monitor-out port. By connecting a second monitor, an LCD panel, or the Apple Presentation System to the port, you can simultaneously display on the attached device the images displayed on your computer's built-in monitor. (You cannot increase the size of your desktop by connecting a second monitor to this monitor-out port.) For a list of supported monitors, see "Video Output" earlier in this booklet.

■ One internal expansion slot supporting 6.88-inch long 15-watt PCI (peripheral component interconnect) 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 this expansion slot.

■ One internal expansion slot supporting communication cards, such as internal modem or Ethernet cards. (Depending on the configuration of your computer, a modem or card may already be installed in this slot.)

- One internal expansion slot supporting video input cards using NTSC, PAL and SECAM. (Depending on the configuration of your computer, a video input card may already be installed in this slot.)

- Port for optional internal TV tuner card. (Depending on the configuration of your computer, a tuner card may already be installed in this slot.)

- Two RS-232/RS-422 serial GeoPort-compatible ports.

- One 3.5-mm sound output port for line-level devices, such as powered (amplified) external speakers.

- One 3.5-mm headphone jack.

- One external standard SCSI port that supports up to 6 external SCSI devices.

- One 3.5-mm sound input port for stereo sound input. The sound input port supports the Apple PlainTalk Microphone that comes with some Macintosh computers. (You can also connect non-Apple microphones.) 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.

Additional features

- Built-in microphone
- Built-in stereo speakers
- Support for optional infrared remote control
- Front panel push-button controls for volume and picture
- Power on and off from keyboard and optional remote control (included with the optional TV tuner card)

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

- 5 percent to 95 percent noncondensing

Altitude

- Works below 3048 m (10,000 ft.)

Weight

- Main unit: 21.15 kg (47 lbs.)*
- Mouse: 0.11 kg (4 oz.)
- * Weight varies depending on type of hard disk and any optional equipment.

Dimensions

- Main unit: 445 mm x 383 mm x 406 mm (17.5" x 15.1" x 16")
- Mouse: 33 mm x 61 mm x 107 mm (1.3" x 2.4" x 4.2")

Power

AC line input

- Line voltage: 90–264 volts (V) alternating current (AC), RMS single phase, automatically configured
- Frequency: 47–63 Hz
- Power: 220 watts (W) maximum continuous (60 W maximum during sleep mode)

DC power

- Continuous output: 73 watts

Current type	Maximum current*
+5 V	10.7 A[†]
+5 V (trickle)	0.1 A
+3.3 V	5 A[†]
+12 V	1.5 A
−12 V	0.1 A

*Total power output cannot exceed 98 W.
[†]Not more than 10.7 A total combined current on +5 V and +3.3 V outputs.

CD-ROM drive

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

Power consumption (typical)	
+5 V DC	300 milliamperes (mA)
+12 V DC	650 mA

Power requirements for devices you can connect

Apple Desktop Bus (ADB)

- 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	1 mA	5 mW
GeoPort Telecom Adapter & ADB devices	+5 V	500 mA	2.5 W
S-video input connector	+12 V	250 mA	3 W

Expansion cards and devices

If you add an expansion card to your computer, make sure the component's power requirements don't exceed the maximum power allowances allocated to it by the computer. Power allowances are presented in the following table.

Device	Voltage	Current	Power
PCI expansion card (15 watts)*	+3.3 V	2 A	6.6 W
	+5 V	3 A	15 W
	-12 V	500 mA	6 W
Communication expansion card[†]	+5 V	500 mA	2.5 W
	+12 V	100 mA	1.2 W
Video input expansion card[‡]	+5 V	200 mA	1 W
	+12 V	300 mA	3.6 W

*The PCI expansion card should not consume more than 15 watts of power total.
[†]The communication card should not consume more than 2.5 watts of power total.
[‡]The video input card should not consume more than 4.6 watts of power total.

Technical Information