# **Main Unit**

# Processor

A PowerPC<sup>™</sup> G3 processor at one of the following speeds:

Processor speed	L2 cache	System bus speed
275 megahertz (MHz)	1 MB 2:1	61.111 MHz
300 MHz	1 MB 2:1	60 MHz

# Memory

### **Dynamic Random-Access Memory**

The computer comes with a minimum of 64 megabytes (MB) of EDO Dynamic Random-Access Memory (DRAM), supplied in removable Dual Inline Memory Modules (DIMMs). The main logic board has 12 expansion slots that accept DIMMs that meet these specifications:

- 8, 16, 32, 64, or 128 MB
- 64-bit wide, 168-pin
- extended data output (EDO)
- 60-nanosecond (ns) RAM access time or faster
- 1K, 2K, or 4K refresh rate
- 3.3 volts unbuffered
- maximum height of 38.1 mm (1.5 in.)

**Important** Power Macintosh G3 tower computers use EDO DRAM DIMMs. DIMMs from older Macintosh computers are not compatible with your computer and should not be used even if they fit into the DRAM DIMM slots.

For more information and instructions on expanding your DRAM, see the setup manual that came with your computer.

# **Other Memory**

- 5 MB of read-only memory (ROM)
- 8 kilobytes (K) of nonvolatile parameter memory

# **Internal Disk Drives**

The following drives come factory-installed in your computer:

- Apple SuperDrive 1.4 MB high-density floppy disk drive
- 4 GB Ultra Wide SCSI (SCSI-3 Fast-20) hard disk drive
- 2x-speed ATA DVD-ROM drive (maximum of 20x-speed for CD-ROM discs)

### Interfaces

- One ADB port supporting up to three ADB input devices (such as a keyboard, mouse, or trackball) daisy-chained through a low-speed serial bus
- Monitor port supporting color and grayscale monitors of various sizes and resolutions (See "Apple IX3D Graphics Accelerator Card" later in this booklet.)
- Two internal ATA cables—one supporting the built-in DVD-ROM drive, one available for expansion in the hard disk bay, expansion bay 3, or expansion bay 4
  *Note:* Slave mode is not supported.
- Six internal expansion card slots supporting PCI expansion cards (two already filled by the Apple 10/100 Fast Ethernet and Apple IX3D Graphics Accelerator cards). Install only expansion cards that come with Macintosh drivers and are compliant with the PCI 2.1 standard. NuBus<sup>™</sup> cards cannot be used in these expansion slots.
- One printer port and one modem port. Both ports are RS-232/RS-422 serial ports, 230.4 kilobit (Kbit) per second maximum (up to 2.048 megabit [Mbit] per second if clocked externally).
- One built-in 10Base-T Ethernet RJ-45 connector for direct connection to 10Base-T networks
- One 10/100Base-T Ethernet RJ-45 connector supplied by Apple 10/100 Fast Ethernet card, for direct connection to 10Base-T or 100Base-T networks
- One 3.5-mm sound output port for headphones or amplified speakers
- 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. The sound input port also supports a standard stereo (miniplug-to-RCA) cable adapter for connecting stereo equipment to your computer.

The sound input port does not support the omnidirectional microphone (the round microphone shipped with some earlier models of Macintosh) or the attenuated RCA adapter provided with some Macintosh models.

### **SCSI Interfaces**

Your computer has two SCSI buses:

- an external standard SCSI bus, capable of transferring data at up to 5 MB per second
- an internal Ultra Wide SCSI (SCSI-3 Fast-20) bus, capable of transferring data at up to 40 MB per second

The Ultra Wide SCSI bus supports the internal hard disk. You can connect up to two additional internal Ultra Wide SCSI devices, for a total of three.

The standard SCSI bus supports the computer's external SCSI-2 style (high-density 50-pin) connector on the back panel, and up to three internal SCSI devices. You can attach a total of six SCSI devices to the standard SCSI bus.

For information on installing internal SCSI devices or connecting external SCSI devices to your Macintosh, see the setup manual that came with your computer.

**Important** Some older SCSI devices 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.

### **Clock/Calendar**

CMOS custom circuitry with long-life battery

**Warning** Do not attempt to replace the clock battery yourself. If the clock begins to lose accuracy, have an Apple-authorized service provider replace the battery. The service provider will dispose of the battery according to the local environmental guidelines.

# **Audio System**

- Custom sound circuitry, including a stereo generator (digital-to-analog converter, or DAC)—capable of driving stereo miniplug headphones or audio equipment—and stereo sampling hardware (analog-to-digital converter, or ADC) for recording stereo sound
- 16-bit stereo input and output
- Sample rates of 44.1 and 22.05 kilohertz (kHz)

### **Typical Specifications**

Sound input using the sound input port  $(\Psi)$ 

- Input impedance (preamp off): more than 80 kilohm (kΩ)
- Maximum input voltage (preamp off): 1 Volt (V<sub>rms</sub>) = 2.8 Volts peak-to-peak (V<sub>pp</sub>), nominal
- Input impedance (preamp on): more than  $5 k\Omega$
- Maximum input voltage (preamp on): 62 millivolts (mV<sub>rms</sub>) = 175 mV<sub>pp</sub>, nominal

Sound output using the sound output port (4))

- *Output impedance:* 33  $\Omega$ , nominal
- Maximum output voltage: 0.94 V<sub>rms</sub> = 2.65 V<sub>pp</sub>

Noise, distortion, and bandwidth

- Sound input signal-to-noise ratio (SNR): 85 decibels (dB) unweighted (add +8 dB to estimate A weighting)
- Total harmonic distortion: 0.05%
- **Bandwidth:** 20 Hz–20 kHz at 44.1-kHz sample rate (Other sample rates scale the upper cutoff frequency.)

# **Apple IX3D Graphics Accelerator Card**

- 300 megabytes (MB) per second sustained image scroll rate
- 5 gigabytes (GB) per second sustained color fill rate
- 1.2 million Gouraud shaded polygons per second
- 240 MHz RAM digital-to-analog converter (RAMDAC)
- 8 MB VRAM (*Note:* Additional VRAM cannot be added.)
- supports QuickDraw 3D and QuickDraw 3D RAVE
- QuickTime video playback (video scaling and color space conversion handled in software)

You can use the Monitors & Sound control panel or the Control Strip to set a display mode that is supported by both your monitor and the monitor card. See the manual that came with your monitor for a list of display modes that it supports. The monitor card supports the display modes listed in the following table.

Resolution	Color depths	Vertical refresh rate
512 x 384	256, Thousands, Millions	60 Hz
640 x 480	256, Thousands, Millions	60 Hz, 66 Hz
640 x 870	256, Thousands, Millions	75 Hz
800 x 600	256, Thousands, Millions	60 Hz, 72 Hz, 75 Hz, 85 Hz
832 x 624	256, Thousands, Millions	75 Hz
1024 x 768	256, Thousands, Millions	60 Hz, 70 Hz, 75 Hz, 85 Hz
1152 x 870	256, Thousands, Millions	75 Hz
1280 x 960	256, Thousands, Millions	60 Hz, 75 Hz, 85 Hz
$1280 \ge 1024$	256, Thousands, Millions	60 Hz, 75 Hz, 85 Hz
1600 x 1024	256, Thousands, Millions	76 Hz
1600 x 1200	256, Thousands, Millions	60 Hz, 65 Hz, 70 Hz, 75 Hz, and 85 Hz
1920 x 1080	256, Thousands, Millions	60 Hz, 72 Hz
1920 x 1200	256, Thousands	76 Hz

*Note:* On some monitors from manufacturers other than Apple, the connector pinout designates one pin for both green video and timing synchronization. These "sync on green" monitors are not compatible with Power Macintosh computers. If you're not sure what type of monitor you have, check with your dealer.

Peripheral component interconnect (PCI) expansion cards that can support other monitors and special video requirements are available from other manufacturers. See your Apple-authorized dealer for information.

# Apple 10/100 Fast Ethernet Card

- *Driver support:* Open Transport: Mac OS 7.5.2 or later, AppleShare, AppleTalk, NetWare for Macintosh, TCP/IP
- Connector: RJ-45 (for 10Base-T and 100Base-T)
- *Media, 10Base-T:* Cat 3, 4, or 5 UTP up to 100 meters
- Media, 100Base-T: Cat 5 UTP up to 100 meters
- **Bus interface:** PCI revision 2.0 and 2.1
- Channel speeds: IEEE Auto Negotiation of 10Base-T and 100Base-TX
- Communications: IEEE 802.3u 100Base-TX; IEEE 802.3i 10Base-T
- Controllers: DEC 21140, 32-bit internal processor per channel
- Power: 1.2A at 5V typical

# **AC Line Input**

- *Line voltage:* 100–120 volts (V) alternating current (AC) and 200–240 V AC, RMS, single phase (voltage must be set manually by voltage selector switch)
- Line frequency: 50-60 Hz
- Current: 8 amperes (A) at 100–120 V AC input; 4 A at 200–240V AC input
- Power (monitor excluded): 450 watts (W) maximum continuous; 570 W peak input

# **AC Line Output**

• *Output receptacle:* 100–240 V AC, RMS; 3 A maximum (determined by actual input voltage)

# **DC** Power

- Continuous output: 300 W
- Peak output (for 12 seconds at startup): 389 W

Output voltage	Maximum current <sup>1</sup>
+5 V	36.5 A <sup>2</sup>
+3.3 V	32 A <sup>2</sup>
+12 V	8.7 A
-12 V	0.85 A
+5V (trickle)	0.1 A

1 Total continuous power output cannot exceed 300 W.

2 Not more than 40 A total combined current from the 3.3 V and 5 V output; each individual output rating must not exceed its rated output current.

# **Keyboard**

Supports all Apple Desktop Bus (ADB) keyboards

### Mouse

Supports all models of the ADB mouse

# **Power Requirements for Devices You Can Connect**

### Apple Desktop Bus (ADB)

- The mouse draws up to 10 milliamperes (mA).
- The keyboard draws 25–80 mA (varies with keyboard model used).
- The maximum current available for all ADB devices is 500 mA.

The ADB port can support up to three 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
A device connected to the printer port or modem port	+5 V	500 mA	2.5 W

# **Expansion Cards and Other Internal Devices**

If you add an expansion card or a storage device to your computer, make sure the component's power requirements don't exceed the maximum power allowances allocated to it by the computer.

The maximum power allowances for expansion cards in your computer can accommodate six 15-watt or four 25-watt cards (two in the upper three slots, two in the lower three slots). The computer already contains two 15-watt cards (the Apple 10/100 Fast Ethernet card and the Apple IX3D Graphics Accelerator card), which count toward the maximum power allowance.

Some detailed guidelines are presented in the following table.

Device	Voltage	Current	Power
Expansion card (15 watts) <sup>1</sup>	+5 V	3 A	15 W
	+12 V	0.500 A	6 W
	-12 V	0.100 A	1.2 W
	+3.3 V	2 A	6.6 W
Expansion card (25 watts) <sup>2</sup>	+5 V	5 A	25 W
	+12 V	0.500 A	6 W
	-12 V	0.100 A	1.2 W
	+3.3 V	2 A	6.6 W
Storage devices	+5 V	3 A	15 W
(such as a hard disk)	+12 V	2.3 A	27.6 W
. ,	+12 V	6.2 A peak <sup>3</sup>	_

1 15-watt expansion cards should not consume more than 15 watts of total power.

2 25-watt expansion cards should not consume more than 25 watts of total power.

 $\boldsymbol{3}$  Peak power is for startup only and must not occur in normal operation.

# **DVD-ROM Drive**

# **Disc Speed**

- *DVD:* 2x (2.7 MB/second)
- *CD:* maximum of 20x (3 MB/second)

# **Disc Diameters Supported**

- 120 mm (4.7 inches)
- 80 mm (3.2 inches)

# **Data Capacity**

CD-ROM:

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

# DVD-ROM:

- Single Side, Single Layer: 4.7 gigabytes (GB)
- Single Side, Dual Layer: 8.5 GB
- Double Side, Single Layer: 9.4 GB
- Double Side, Dual Layer: 17 GB

### **Modes Supported**

- DVD-ROM: single and double side, single and dual layer
- CD
- 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
- CD-R and CD-RW (CD-E)
- Photo CD: Single-session and multisession
- Video CD

### **DVD-ROM** Laser

- *Type:* Semiconductor GaAs laser
- Wavelength:  $658 \pm 8$  nanometers
- Output power: 0.95 milliwatts (typical)
- Beam divergence: 73.7°

# **CD-ROM Laser**

- Type: Semiconductor GaAlAs laser
- Wavelength: 790 ± 25 nanometers
- *Output power:* 0.2 milliwatts (typical)
- Beam divergence: 53.4°

# 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% to 90% (noncondensing)
- *Altitude:* 0 to 3048 m (0 to 10,000 ft.)

# **Size and Weight**

Weight	Height	Width	Depth
Main unit			
15.9 kg <sup>1</sup>	439 mm	246 mm	440 mm
35 lb. <sup>1</sup>	17.3 in.	9.7 in.	17.3 in.

1 Weight varies depending on type of hard disk and may be greater if optional devices are installed.

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# Technical Information

Specifications for Power Macintosh G3 tower computers