# Power Macintosh 9500 120 & 132: Technical Specifications (9/96)

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TOPIC -----

This article gives the technical specifications for the Power Macintosh 9500 Series of computers.

DISCUSSION -----

Upgradable Microprocessor

- PowerPC 604 RISC microprocessor running at 132 MHz*
  (*Only available on the Power Macintosh 9500/132.)
- PowerPC 604 RISC microprocessor running at 120 MHz*
  (*Only available on the Power Macintosh 9500/120.)
- Processor upgradable to 250 MHz
- Integrated floating-point unit and 32K cache
- 40 MHz system bus for 120 MHz configurations
- 44 MHz system bus for 132 MHz configurations

Memory

- 16 MB of RAM standard, expandable to 768 MB of RAM
  (Note: There is no RAM soldered to the logic board. There are a total of 12 DIMM slots; consisting of six A slots and six B slots. Configuration of memory installed at the factory will vary by market.)
- Uses 168-pin, 64-bit, 70ns DRAM DIMMs
- 4 MB of read-only memory (ROM)
- 8 K of nonvolatile parameter memory
- 512K Level 2 cache (soldered to the logic board, not upgradeable)

Disk Drives

- Includes one built-in Apple SuperDrive 1.4 MB floppy disk drive that uses high-density floppy disks and reads, writes, and formats Macintosh, Windows, MS-DOS, OS/2, and ProDOS disks
- Includes one internal SCSI hard disk (1 GB and 2 GB options available)
- Includes one AppleCD 600i quadruple-speed

Optional Display Support (using accelerated graphics card)

• All Apple displays, except the Macintosh 12-in. RGB display***
• Third-party displays including VGA and SVGA monitors
  (Only available on the Power Macintosh 9500/120.*)

Video Support (using accelerated graphics card)
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• 2MB of VRAM, expandable to 4MB
  (Only available on the Power Macintosh 9500/120.*)

Begin_Table

Color depth support for the Power Macintosh 9500/120

| Display Resolution | Power Macintosh 9500/120* with 2 MB VRAM | Power Macintosh 9500/120** with 4 MB VRAM |
|---|---|---|
| 640x480 | 16.7 million colors | 16.7 million colors |
| 832x624 | 16.7 million colors | 16.7 million colors |
| 1,024x768 | 32,768 colors | 16.7 million colors |
| 1,152x870 | 32,768 colors | 16.7 million colors |
| 1,280x1,024 | 256 colors | 32,768 colors |

End_Table

*With Apple Accelerated Graphics Card
**With Apple Accelerated Graphics Card and 2 MB VRAM upgrade card
***The Macintosh 12-inch RGB display cannot be used with the Power Macintosh 9500 series. NOTE: This monitor is incorrectly listed as compatible in the booklet included with each unit titled "Technical Information: Specifications for Power Macintosh 9500 series computers."

Interfaces
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• One Apple Desktop Bus (ADB) port for a keyboard, mouse, and other ADB device; supports up to 3 ADB input devices daisy-chained through a low-speed, synchronous serial bus
• One 10Base-T Ethernet connector (NOTE: If both 10BASE-T and AAUI connectors are plugged in, the computer uses the 10BASE-T connector by default.)
• One AAUI-15 Ethernet connector
• Two DMA serial (RS-232/RS-422) ports compatible with LocalTalk and GeoPort cables, 230.4 Kbits per second maximum (up to 2.048 Mbits per second if clocked externally).
• One Dual-channel asynchronous SCSI interface: external channel

supports up to seven SCSI devices (5 MB/sec); internal channel supports a hard disk array (10 MB/sec). There are three internal bays for SCSI devices (and one for the floppy drive).

- One sound output port for stereo compact disc audio and stereo computer-generated sound.
- One 3.5mm, line-level sound input port for 16 bit stereo sound input. The sound input port supports the Apple PlainTalk microphone. The sound input port also supports a standard stereo (miniplug-to-RCA) cable adapter for connecting stereo equipment to your computer. It does not support the omnidirectional microphone (the round microphone shipped with some earlier models of Macintosh computers) or the attenuated RCA adapter provided with some other Macintosh computers.
- One DB-15 video port for display on optional accelerated graphics card* (*This option is available on the Power Macintosh 9500/120 only.)
- Six high-performance PCI expansion slots compatible with all PCI 2.0 specification-compliant cards* (*These slots are not NuBus-compatible)

## Audio System

- Custom sound circuitry, including 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)
- Input line level: 2.8 volts peak-to-peak nominal, into 6.5-klohm impedance
- Output line level: 3.0 Vpp (volts peak-to-peak nominal), into 1-klohm impedance
- Input SNR (signal-to-noise ratio): less than 74 decibels (dB)
. non-weighted with no audible discrete tones
- Output SNR: less than 82 dB non-weighted with no audible discrete tones
- Bandwidth/Frequency Response: 20 Hz-17 kHz (+/- 0.8 dB) at 44.100 kHz sample rate; 20 Hz-19 kHz (+/- 2.0 dB) at 44.100 kHz sample rate
- THD+N (Total harmonic distortion plus noise): Less than 0.05 percent; measured 20 Hz-20kHz with a 2.5 Vpp sine wave input

## Networking

- Built-in Ethernet (10Base-T or AAUI-15)
- Two serial ports for LocalTalk, external modem, or other devices

## Keyboard and Mouse

- Supports all Apple ADB keyboards, including those with numeric keypads
- Includes ADB Mouse II

## Clock/Calendar

- CMOS custom integrated circuit with long-life lithium battery

## Electrical Requirements

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- AC Line Input
  - Line voltage: 100 to 240 volts (V) alternating current (AC), RMS single phase, automatically configured
  - Frequency: 50 to 60 Hz
  - Power: 340 watts (W) maximum continuous (not including display); 520 W peak input
- AC Line Output
  - Output receptacle: 100-120 V, 3 A AC, 220-240 V, 1.5 A AC RMS (determined by actual input voltage); 3 A maximum at 100 V
- DC Power
  - Continuous output: 225 W
  - Peak output (for 12 seconds at startup): 328 W

Begin_Table

| Current Type | Total* |
|---|---|
| +5 V | 35 A** |
| +12 V | 5 A |
| +3.3 V | 20 A** |
| -12 V | 0.75 A |

End_Table

*Overall system power consumption cannot exceed 225 watts.
**Total for +3.3 and +5 V current cannot exceed 35 A.

Power Requirements For Devices Which Can Be Connected

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- Apple Desktop Bus (ADB)
  - Mouse draws 10 milliamperes (mA)
  - Keyboard draws 25 to 80 mA (varies with keyboard model used)
  - Maximum current draw for all ADB devices: 500 mA (a maximum of three ADB devices is supported)
- Audio and Telecommunications Devices

Begin_Table

- Power allowances for external devices connected to ports:

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| Device | Voltage | Current | Power |
|---|---|---|---|
| Microphone | +5V | 20 mA | 100 mW |
| Serial ports/Geoport telecom adapter | +5V | 500 mA | 2.5 W |

- Expansion Cards and Devices:

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| Device | Voltage | Current | Power |
|---|---|---|---|

| | | | |
|---|---|---|---|
| Expansion Card (15 W)* | +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 W)* | +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 Device (such as CD-ROM drive) | +5 V | 9 A | 45 W |
| | +12 V | 3 A | 36 W |
| | +12 V | 7.5 A peak*** | |

End_Table

*15-watt expansion cards should not consume more than 15 W of power total.
**25-watt expansion cards shouldn't consume more than 25 W of power total.
***Peak power is for startup only and must not occur in normal operation.

Size and weight
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• Main Unit
  - Height: 16.90 inches (430 mm)
  - Width: 7.75 inches (196 mm)
  - Depth: 15.75 inches (400 mm)
  - Weight: 28 lb. (12.7 kg) (varies based on internal devices installed)
• Mouse
  - Height: 1.3 inches (33 mm)
  - Width: 2.4 inches (61 mm)
  - Depth: 4.2 inches (107 mm)
  - Weight: 4 ounces (0.11 kg)

Operating environment
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• Operating temperature: 50 degrees to 104 degrees F
  (10 degrees to 40 degrees C)
• Storage temperature: –40 degrees to 116.6 degrees F
  (–40 degrees to 47 degrees C)
• Relative humidity: 5 percent to 95 percent noncondensing
• Maximum altitude: 10,000 ft. (3,048 m)

System Software Requirements
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Requires System 7.5.2 for Power Macintosh or later and the accompanying System Enabler.

(Optional) 600i CD-ROM Drive Specifications
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NOTE:
The Technical Specifications Booklet that comes with the Power Macintosh 9500 series computers lists the CD-ROM Drive as optional. However, every Power Macintosh 9500 Series computer does come with an internal CD-ROM drive. In other

words, it is not optional.

- Supports a 3.5-inch half-height removable media device and two 3.5-inch half-height hard disk drives
- Disc diameter: 5.25 inches (120 mm) and 80 mm
- Scanning velocity: 1.2-1.4 meters per second
- Rotation speed (average): Varies over radius
  Normal speed: 530 to 230 revolutions per minute (rpm)
  Double speed: 1060 to 460 rpm
  Quadruple speed: 2120 to 920 rpm
- Latency (average): Varies over radius
  Normal speed: 55 to 130 milliseconds (ms)
  Double speed: 27.5 to 65 ms
  Quadruple speed: 13.75 to 32.5 ms
- Blocks per rotation (average): 8.4 to 19.5 variable
- Average access time (typical):
  Normal speed: 380 ms
  Double speed: 270 ms
  Quadruple speed: 200 ms
- Data
  - Data capacity: 656 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
  - Photo CD
  - Video CD
- Data Streaming and Transfer Rates
  - Blocks per second
    Normal speed: 75
    Double speed: 150
    Quadruple speed: 300
  - User kilobytes (K) per second
    Normal speed: 150K, Mode 1; 171.1K, Mode 2
    Double speed: 300K, Mode 1; 342.2K, Mode 2
    Quadruple speed: 600K, Mode 1; 684.4K, 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: 790 +/- 25 nanometers
  - Output power: 0.2 to 0.6 milliwatts
  - Beam divergence: 55 degrees

Article Change History:
19 Sep 1996 - Revised speed of processor card support.

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