

TECHNICAL INFORMATION

For Macintosh PowerBook Duo 210 and 230

Specifications

Processor

- PowerBook 230:
68030; 33 MHz clock frequency
- PowerBook 210:
68030; 25 MHz clock frequency

Memory

- 4 MB DRAM, expandable to 24 MB
1 MB ROM

Disk drive

- PowerBook 230:
Internal 80 or 120 MB hard disk drive
- PowerBook 210:
Internal 80 MB hard disk drive

Video display

- 640 x 400 backlit Supertwist (FSTN), 16 grays

Battery

- Nickel-metal-hydride rechargeable battery, provides
2 to 412 hours of operation

Interfaces

- 152-pin PDS connector for attaching a Duo Dock,
Duo MiniDock, PowerBook Duo Floppy Adapter, or other expansion devices
- One serial port for a printer, modem, or other serial device (RS-422)
- One internal modem telephone jack (RJ-11 in U.S.,
mini-DIN-8 elsewhere)

Sound generator

- 4-voice sound with 8-bit digital-analog conversion recording at 11 kHz or 22
kHz sample rate

Power adapter

- Input: AC 100-240 V, 1.0 A, 50/60 Hz
- Output: DC 24 V, 1.04 A

Note: Your PowerBook 210/230 can be used anywhere in the world with a plug adapter.

Clock/calendar

- CMOS custom chip with long-life, rechargeable lithium battery

Keyboard

- 2.5 mm travel keyboard
18 mm vertical pitch, 18 mm horizontal pitch

Trackball

- 19 mm diameter

Modem

- 14,400-bps data transmission, with 9600 bps fax send and receive capability
- Supports two error correction and data compression protocols: MNP classes 2 to 5 and CCITT standard V.42/V.42bis

Weight

- 1.9 kg (4.2 lb.)

Dimensions

- 277 mm x 216 mm x 36 mm (10.9" x 8.5" x 1.4")

Apple Desktop Bus power requirements

- Maximum current draw for all ADB devices is 100 mA (Duo MiniDock or PowerBook Floppy Adapter) or 500 mA (Duo Dock)

Note: The maximum number of ADB devices recommended in a daisy chain connected to the ADB port is three.

RAM configurations

All models ship with 4 MB of RAM. Additional RAM, up to 24 MB, can be installed by means of a memory expansion card. RAM chips must be rated at 70 ns access time or faster.

!! IMPORTANT: Don't attempt to install your own RAM card unless you are comfortable working with electronic equipment. Installation instructions are provided with Apple's RAM cards for people who want to install the card themselves. If you don't want to install your own card, any authorized Apple dealer or service provider can install it for you. !!

!! WARNING: Opening the computer's case for any purpose other than to install a RAM card will void your warranty. Do not modify any other components or attempt to repair the computer yourself. !!

Microphone/Sound

- The internal microphone is an electret type, omnidirectional microphone that is powered by the computer. Microphone output voltage is 4 mV peak to peak at normal speaking volume.

Note: You can also use adapters to input sound from audio equipment with line level outputs, but the line level signals must be attenuated before reaching the computer's sound input port. An attenuation of 500:1 is recommended when inputting line level signals. Appropriate attenuation cables and adapters are available from most electronics stores.

Environment

Operating temperature

- 10 C to 40 C (50 F to 104 F)

Storage temperature

- -25 C to 60 C (-13 F to 140 F)

Relative humidity

- 20% to 80% noncondensing

Altitude

- Operating: 3048 m (10,000 ft.) maximum
- Shipping (non-operating): 4572 m (15,000 ft.) maximum

Duo Dock Specifications

Coprocessor

- Optional 68882 math coprocessor

Memory

- 512K VRAM standard
- Optional 512K VRAM SIMM for improved video performance and 16-bit color on Macintosh 16" Color Display

Disk drives

- Built-in high-density (1.4 MB) floppy disk drive
- Bay for optional SCSI hard disk drive (1" high by 312" wide, any capacity that meets Apple's specifications)

Interfaces

- Two NuBus slots for cards that provide Ethernet, Token Ring, additional video, or other capabilities (two 15-W cards, or one each at 25 W and 5 W)
- One Apple Desktop Bus (ADB) port for keyboard, mouse, and other input devices using a low-speed, synchronous serial bus
- Two serial ports for printers, modems, and other serial devices (RS-422)
- One video port for most Apple monitors and VGA/SVGA monitors (DB-15 connector)
- Telephone jack (RJ-11 in U.S., mini-DIN-8 elsewhere) for pass-through connection to internal modem
- One SCSI port for hard disk drives, scanners, printers, and other devices (HDI-30 connector); does not provide SCSI disk mode support
- Sound output port for external audio amplifier
- Sound input port for monaural sound input

Weight

- 5.9 kg (13.0 lb.)

Dimensions

- 311 mm x 413 mm x 121 mm (12.3" x 16.3" x 4.8")

Duo MiniDock specifications

Interfaces

- One Apple Desktop Bus (ADB) port for keyboard, mouse, and other input devices using a low-speed, synchronous serial bus
- Two serial ports for printers, modems, and other serial devices (RS-422)
- One video port for most Apple monitors and VGA/SVGA monitors (DB-15 connector)
- Optional internal modem telephone jack (RJ-11 in U.S., mini-DIN-8 elsewhere)
- One SCSI port for hard disk drives, scanners, printers, and other devices (HDI-30 connector); provides SCSI disk mode support
- One port for an external high-density (1.4 MB) floppy disk drive (HDI-20 connector)
- Sound output port for external audio amplifier
- Sound input port for monaural sound input

Weight

- 0.57 kg (1.3 lb.)

Dimensions

- 272 mm x 82 mm x 54 mm (10.6" x 3.2" x 2.1")

PowerBook Duo Floppy Adapter Specifications

Interfaces

- One port for an external high-density (1.4 MB) floppy disk drive (HDI-20 connector)
- One Apple Desktop Bus (ADB) port for an external mouse or other input device using a low-speed, synchronous serial bus

Security slot

- One slot for securing the Macintosh PowerBook Duo to a desk

Weight

- 0.13 kg (0.28 lb)

Dimensions

- 126 mm x 67 mm x 29 mm (4.9" x 2.6" x 1.1")

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