



Macintosh PowerBook Duo 230



Now you don't need to buy two computers to get the best of both notebook and desktop computing worlds. The Apple Macintosh PowerBook Duo 230 notebook computer delivers the full power and ease of Macintosh computing in a 4-pound package that you can take anywhere—and can become part of a complete desktop Macintosh system when you bring it back to your desk.

The newest member of one of the world's most widely acclaimed lines of notebook computers, the Macintosh PowerBook Duo 230 packs tremendous computing power in a package just 1.4 inches thick. It features a 33-MHz 68030 microprocessor, 4 MB of memory (expandable to 24), and an 80 or 120 MB hard disk.

And like all other PowerBooks, the Macintosh PowerBook Duo 230 is comfortable to use. Its ergonomic design includes a standard-size

keyboard, palm rest, built-in trackball, and easy-to-read, bright, 16-gray-level display.

But the best news is how easily the PowerBook Duo 230 can be transformed into a desktop Macintosh. Simply insert the PowerBook Duo into a Macintosh Duo Dock (optional)—it's as easy as slipping a tape into your VCR. You can work with a large color display, full-size keyboard, printers, and network servers—as well as having specialized capabilities provided by expansion cards.

Apple's new PowerLatch docking technology assures easy, automatic docking. There's no need to plug and unplug cables or reconfigure the system every time you connect your PowerBook Duo to the Duo Dock.

With your PowerBook Duo and the portable Macintosh Duo MiniDock, you even have access to many desktop peripherals while you work at home or at a client's office.

Macintosh PowerBook Duo 230 Features

Processor and memory

- ▶ 33-MHz 68030 microprocessor
- ▶ 4 MB of RAM, expandable to 24

Size and weight

- ▶ 1.4 in. (3.6 cm) thick, 4.2 lb. (1.9 kg)

Expansion

- ▶ Slots for internal modem and RAM
- ▶ Docking connector

Display

- ▶ 9-in. diagonal, Supertwist gray scale display

Battery

- ▶ EverWatch Battery Saver technology
- ▶ Nickel hydride batteries for 2 to 4.5 hours of usage

Features Built Into Every Macintosh

Usability

- ▶ Runs thousands of Macintosh applications
- ▶ Easy to set up, learn, and use

System software

- ▶ System 7, with multitasking, file sharing, QuickTime, and TrueType fonts

Networking

- ▶ Built-in AppleTalk networking
- ▶ File sharing without a dedicated server

Compatibility

- ▶ Macintosh, MS-DOS, OS/2, and ProDOS floppy disk formats

Macintosh PowerBook Duo 230

Technical Specifications

Microprocessor

- ▶ 68030, running at 33 MHz

Memory

- ▶ Comes with 4 MB low-power DRAM on the logic board
- ▶ Expands to up to 24 MB of RAM by installing Macintosh PowerBook Duo 4MB or 8MB Memory Expansion Kits or larger-capacity third-party memory expansion cards in the expansion slots

Size and weight

- ▶ Height: 8.5 in. (21.6 cm)
- ▶ Width: 10.9 in. (27.7 cm)
- ▶ Thickness: 1.4 in. (3.6 cm)
- ▶ Weight: 4.2 lb. (1.9 kg)

Disk storage

- ▶ One internal 80 or 120 MB hard disk with 19 ms access time

Display

- ▶ 9 in. (229 mm) diagonal
- ▶ Bright backlit Supertwist liquid crystal display
- ▶ 16-level gray scale, 640 by 400 pixels

Battery

- ▶ EverWatch Battery Saver technology
- ▶ User-replaceable nickel hydride provides from 2 to 4.5 hours of usage before recharging is necessary

Keyboard

- ▶ Built-in keyboard with standard Macintosh layout
- ▶ Two-level tilt adjustment
- ▶ LED light when caps lock key is engaged

Trackball

- ▶ 19-mm-diameter, dual-button trackball

Interfaces

- ▶ One power adapter port
- ▶ One 152-pin PDS connector for attaching a Macintosh Duo Dock, Macintosh Duo MiniDock, Macintosh PowerBook Duo Floppy Adapter, or other expansion devices
- ▶ One RS-422 serial port for printer, modem, or other serial device
- ▶ Port for optional modem

File transfer options

- ▶ LocalTalk cables and System 7 file sharing
- ▶ Serial cable and System 7 file sharing
- ▶ Fax/data modem and AppleTalk Remote Access software
- ▶ Using Duo MiniDock: External Apple SuperDrive, SCSI Disk Adapter, and HDI-30 SCSI System Cable for external hard drives
- ▶ Using Duo Dock: Internal Apple SuperDrive, optional internal hard drive, and HDI-30 SCSI System Cable for external hard drive

Modem

- ▶ Optional internal Macintosh PowerBook Express Modem; 14,400 bits per second (bps) data with fax send and receive at 9600 bps; includes Express Fax software
- ▶ Hardware supports V.32bis, CCITT, and Bell standards
- ▶ Software supports CCITT standard V.42 and V.42bis (for up to 57,000 bps effective throughput), MNP 2-5
- ▶ Supports standard Hayes AT command set

Magnesium subframe

- ▶ Provides structural rigidity and heat sink
- ▶ Provides foundation for keeping PowerBook Duo light

Microphone (built-in)

- ▶ Internal electret, omnidirectional

Sound generator

- ▶ Built-in speaker
- ▶ Monophonic 8-bit sound, capable of supplying the same signal to both channels of stereo headphones or other stereo equipment through the sound jack

Sound output

- ▶ 8-bit sound, sampled at 11 or 22 kHz

Disability access

- ▶ CloseView, Easy Access, and visible beep are included with system software. These built-in solutions and third-party options provide alternative input and output devices for people with disabilities.

Electrical requirements

- ▶ Line voltage: 85 to 270 V
- ▶ Frequency: 47 to 63 Hz

Environmental requirements

- ▶ Operating temperature: 50° F to 104° F (10° C to 40° C)
- ▶ Storage temperature: -40° F to 116° F (-40° C to 47° C)
- ▶ Relative humidity: 20% to 95% noncondensing
- ▶ Altitude: 0 to 15,000 ft. (0 to 4722 m)
- ▶ Operating altitude: 0 to 10,000 ft. (0 to 3048 m)

Ordering Information

Macintosh PowerBook Duo 230 4/80*

Order No. M4195LL/A

- ▶ Macintosh PowerBook Duo 230 personal computer with 4 MB of RAM and one 80 MB internal hard disk
- ▶ Battery, AC adapter, power cable
- ▶ System 7.1 software with QuickTime
- ▶ Wall mount plug (U.S.)
- ▶ Complete setup, learning, and reference documentation for the Macintosh PowerBook Duo 230, Macintosh Duo Dock, Macintosh Duo MiniDock, and Macintosh PowerBook Duo Floppy Adapter
- ▶ Limited warranty statement

Macintosh PowerBook Duo 230 4/120*

Order No. M4196LL/A

- ▶ Macintosh PowerBook Duo 230 personal computer with 4 MB of RAM and one 120 MB internal hard disk
- ▶ All accessories and software included with the Macintosh PowerBook Duo 230 4/80 above

Macintosh Duo Dock*

Order No. M4179LL/A

Macintosh Duo MiniDock*

Order No. M4181LL/A

Macintosh PowerBook Duo Floppy Adapter*

Order No. M4180LL/A

Macintosh PowerBook Duo 4MB Memory Expansion Kit

Order No. M4184LL/A

Macintosh PowerBook Duo 8MB Memory Expansion Kit

Order No. M4185LL/A

Macintosh HDI-20 External 1.4MB Floppy Disk Drive

Order No. M8061LL/A

Apple HDI-30 SCSI System Cable

Order No. M2538LL/A

Apple HDI-30 SCSI Disk Adapter

Order No. M2539LL/A

Macintosh PowerBook Express Modem

Order No. M4186LL/A

Macintosh PowerBook Duo Rechargeable Battery

Order No. M4176LL/A

Macintosh PowerBook Duo AC Adapter

Order No. M4174LL/B

Macintosh PowerBook Duo Battery Recharger

Order No. M4178LL/A

**These devices have not been approved by the Federal Communications Commission. These devices are not, and may not be, offered for sale or lease, or sold or leased, until approval of the FCC has been obtained.*

Apple Computer, Inc.

20525 Mariani Avenue
Cupertino, CA 95014
(408) 996-1010
TLX 171-576

© 1992 Apple Computer, Inc. Apple, the Apple logo, AppleTalk, Macintosh, and ProDOS are trademarks of Apple Computer, Inc., registered in the U.S. and other countries. EverWatch, Macintosh Duo, PowerBook, PowerBook Duo, PowerLatch, QuickTime, System 7, and TrueType are trademarks of Apple Computer, Inc. Hayes is a trademark of Hayes Microcomputer Products, Inc. MNP is a trademark of Microcom, Inc. MS-DOS is a registered trademark of Microsoft Corporation. OS/2 is a trademark of International Business Machines Corporation. Mention of non-Apple products is for informational purposes, and constitutes neither an endorsement nor a recommendation. Apple assumes no responsibility with regard to the selection, performance, or use of these products.

September 1992. Product specifications are subject to change without notice. Printed in U.S.A.
10339LL/A