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# Technical Information for the PowerBook Duo 280, and 280c

## General specifications

### Processor

68LC040; 66/33 MHz clock frequency

### Memory

4 MB RAM, expandable to 40 MB

1 MB ROM

*Note:* Some configurations may ship with an additional RAM card installed.

### Disk drive

Internal 200, 240, or 320 MB hard disk drive

*Note:* Some other hard drive configurations may be available.

### Video display

- *PowerBook Duo 280:*  
640 x 400 active matrix (TFT), 16 grays
- *PowerBook Duo 280c:*  
640 x 480 active matrix (TFT), 256 colors (also supports 640 x 400, thousands of colors)

## **Battery**

- *PowerBook Duo 280:*  
Type II nickel-metal-hydride rechargeable battery; provides 2 to 4 hours of operation, depending on battery-saving features used
- *PowerBook Duo 280c:*  
Type III nickel-metal-hydride rechargeable battery; provides 2 to 4 hours of operation, depending on battery-saving features used

## **Interfaces**

- 152-pin PDS connector for attaching a PowerBook Duo Dock, MiniDock, Floppy Adapter, or other expansion device
- One serial port for a printer, modem, AppleTalk network, or other serial device (RS-422 or mini-DIN8)
- One internal modem telephone jack (RJ-11 in U.S., mini-DIN-8 elsewhere) if optional modem is installed

## **Sound generator**

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

### **Power adapter**

- *PowerBook Duo 280:*  
Input: AC 100–240 V, 50/60 Hz  
Output: DC 24 V, 1.0 A, 25 W
- *PowerBook Duo 280c:*  
Input: AC 100–240 V, 50/60 Hz  
Output: DC 24 V, 1.5 A, 36 W

*Note:* Your PowerBook 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

### **Express Modem (optional on some configurations)**

- 14,400-bps data transmission, with 14,400-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**

- *PowerBook Duo 280:*  
1.9 kg (4.2 lb.)
- *PowerBook Duo 280c:*  
2.2 kg (4.8 lb.)

## **Dimensions**

- *PowerBook Duo 280:*  
277 mm x 216 mm x 36 mm (10.9 in. x 8.5 in. x 1.4 in.)
- *PowerBook Duo 280c:*  
277 mm x 216 mm x 38 mm (10.9 in. x 8.5 in. x 1.5 in.)

## **Apple Desktop Bus power requirements**

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

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

## **RAM configurations**

The Powerbook Duo 280 and 280c ship with 4, 8, or 12 MB of RAM, and can be expanded up to 40 MB by means of a memory expansion card.

Additional RAM must be installed by an Apple-authorized dealer. Memory expansion cards must use RAM chips rated at 70 ns access time or faster.

### **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 dock'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