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PowerBook 500: PCMCIA Expansn Module Q&A & Tech Specs

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TOPIC -----

This article provides information on the PCMCIA Expansion Module for the PowerBook 500 series computer.

The PCMCIA Expansion Module for the PowerBook 500 series computer was discontinued in September 1996.

DISCUSSION -----

Question: What is PCMCIA?

Answer: The Personal Computer Memory Card International Association (PCMCIA) was formed in 1989 to create a standard technology for very small memory cards, to be used in lightweight, mobile computing devices. A card that uses PCMCIA-standard technology is referred to by the PCMCIA as a PC Card, and is about the size of a credit card.

To date, PC Card technology has been used primarily in personal digital assistant (PDA) devices. For example, Apple integrates this technology in its Newton MessagePad communications assistants. But PC Card technology is quickly migrating to personal computers (it is becoming a standard feature in DOS and Windows software-based portable computers), and it will eventually be incorporated in peripheral devices such as printers. The PowerBook 500 series computers are now integrating this capability, and they offer distinct advantages over competitive personal computer systems that use PC Cards.

Question: What can PC Cards do for me?

Answer: As mobile computing and telecommuting become more common, and as smaller, more portable computer systems become available, solutions for providing lightweight, high-capacity media will increase in popularity.

PC Cards offer four key benefits:

- Flexibility in expanding your computer's capabilities. PC Cards provide the easiest way for you to extend the capabilities of your PowerBook 500 series computer. You can install everything yourself in a matter of seconds. There is

no complex system configuration required, and the hardware component plugs directly into an expansion slot. Just insert PC Cards into your PowerBook to add storage capacity, applications, fax/data modem capability, cellular capability, or networking capability.

- Thousands of computing solutions. Cellular modems, fax/data modems, paging, storage, local area and wide area networks, global positioning systems, digital video capture, data collection, and data encryption. These solutions and thousands more are possible through PC Cards. For example, you can have remote access to your desktop computer, electronic mail, the Internet, servers, and networks by inserting a cellular modem PC Card into your PowerBook, launching Apple Remote Access software, and dialing your cellular telephone.

- Lightweight, compact, and portable media. PC Cards provide a simple, lightweight expansion solution. Portable devices such as PowerBook computers and Newton MessagePad units require expansion media that won't add significant weight. Because PC Cards are so small and convenient to carry, they are perfectly suited for use with portable computers and PDAs.

- Low energy consumption. PC Cards consume less power than traditional floppy disk technology. By running an application off a PC Card instead of the hard disk in your PowerBook, you will use less battery power—an obvious advantage when using your PowerBook on the road.

Question: How do I use PC Cards in my PowerBook 500 series computer?

Answer: You need an accessory product called the PowerBook PCMCIA Expansion Module and its accompanying software. Adding it to your PowerBook is as easy as inserting a battery: The PowerBook 500 series computers have a processor-direct slot in the left battery compartment, and you just slide the PCMCIA Expansion Module into the slot. Then insert PC Cards into the module, just as you would insert floppy disks into a floppy disk drive. It is that simple.

The PowerBook PCMCIA Expansion Module weighs only four ounces, making it a particularly attractive accessory for your PowerBook computer.

Question: How is Apple's implementation of PC Card technology in PowerBook computers better than what's offered on other computing platforms?

Answer: Apple's implementation of PC Card technology provides several unique advantages:

- Seamless integration of hardware and software. The advantage of true "plug-and-play" capability is perhaps the most important. Unlike in the DOS and Windows environments, where a variety of conflicting PCMCIA implementations abound, the PowerBook environment uses only one PCMCIA implementation. As a result, there are no compatibility conflicts, and you don't need to perform any complex system reconfigurations before using PC Cards— you just insert a PC Card into the PowerBook PCMCIA Expansion Module and you're ready to work. The integration of hardware and software makes PowerBook the only computer line to deliver the ease of use promised by this new technology.

- Immediate, flexible card recognition. The PowerBook PCMCIA Expansion Module accepts two Type I or Type II PC Cards, or one Type III PC Card. Through Apple's hardware and software integration, the module can even simultaneously accept Type I and Type II PC Cards that provide different functionality—such as a cellular modem card and a storage card.

- No disruptions to your work. You can remove and switch PC Cards in your PowerBook 500 series computer without restarting your system. Icons for PC Cards appear on the screen in the same way that floppy disk icons do. To eject a PC Card, simply click the Quick Eject module on the Control Strip shown on the screen. These features make using PC Cards in a PowerBook 500 series computer exceptionally convenient and easy.

- A structured implementation plan. Apple will introduce PCMCIA for PowerBook 500 series computers in two phases. The initial release of the PowerBook PCMCIA Expansion Module will include basic driver software that enables PowerBook 500 series computers to accommodate PC Cards that provide the three most popular capabilities—storage capacity, modem capability, and cellular functionality. Soon afterward, the PowerBook PCMCIA Expansion Module will be able to accept third-party software drivers and cards, for an even wider range of capabilities. In addition, Apple is investigating the integration of PC Card technology into its desktop computers and printers.

Question: Will PC Cards developed for other platforms work in PowerBook 500 series computers?

Answer: Most modem and storage PC Cards that are available for other operating systems, such as DOS or Windows, and that conform to PCMCIA standards will work with the PowerBook PCMCIA Expansion Module. The Newton Fax Modem Card also works in the PowerBook PCMCIA Expansion Module. Other PC Cards require software drivers provided by the developer (these drivers are typically system extensions, which you simply drag into the System Folder). For a list of currently available cards, call the number below, or contact the card manufacturer directly for compatibility information.

For more information.

To receive a list of currently available PC Cards via fax, call 1-800-462-4396 in the United States, or 1-800-263-3394 in Canada. Request document number 10307.

PowerBook PCMCIA Expansion Module Technical Specifications:

PCMCIA standard

- PCMCIA Release 2.1 compliant
- PC Card Manager: Apple implementation of Card and Socket Services
- Apple-proprietary PCMCIA host adapter ASIC Standard device drivers (clients)
- Modem and ATA drivers stored in flash ROM on Expansion Module (software upgradable)

PC Card connector

- Two slots support two Type I or Type II cards or one Type III card
- Software-activated PC Card ejection mechanism
- Processor-direct slot (16-bit data, 15.7-MHz bus)

Power requirements

- In idle mode (no cards inserted): 8 mA at 5 volts
- With cards inserted: 13 mA plus the card requirement
- Maximum current available: 600 mA between both card slots

Size and weight

- Height: 0.96 in. (24.3 mm) at bezel; 0.79 in. (20 mm) at top and bottom of case
- Length: 4.76 in. (120.7 mm)
- Width: 3.35 in. (85 mm) at bezel; 3.05 in. (77.4 mm) at top and bottom of case
- Weight: 3.8 ounces (113 grams)

Environmental requirements

- Operating temperature: 50 degrees F to 104 degrees F (10 degrees C to 40 degrees C)
- Storage temperature: -13 degrees F to 140 degrees F (-25 degrees C to 60 degrees C)
- Relative humidity: 20 percent to 80 percent noncondensing
- Operating altitude: 0 to 10,000 ft. (0 to 3,048 m)
- Maximum storage altitude: 15,000 ft. (4,722 m)

Order number

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Article Change History:

- 11 Sep 1996 - Added information about discontinued date.
- 31 May 1996 - Updated part number.
- 03 Apr 1995 - Reviewed for technical accuracy.

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