



Power Mac G4 Cube FAQ

Overview

Q. What are the key features of the Power Mac G4 Cube?

A. Apple's latest breakthrough computer packs the supercomputer performance of the Power Mac G4 into an eight-inch cube. It offers

- *Ingenious design.* The G4 Cube represents the perfect marriage of art and engineering. Not only is it designed for maximum visual impact, but its design features were carefully thought out to provide maximum benefit to the user. With its small footprint, quiet no-fan design, and tightly integrated components, the G4 Cube is a desktop computer users will be proud to have on their desks. It's complemented by three new Apple displays, Apple-designed Harman Kardon speakers, the new Apple Pro Keyboard, and the new Apple Pro Mouse.
- *Outstanding performance.* The G4 Cube is built around a PowerPC G4 processor with Velocity Engine, which brings to the desktop the same kind of parallel processing technology that was pioneered in multimillion-dollar supercomputers. It's just what users need to create high-end graphics, produce their own Desktop Movies, and play today's hottest games.

Q. How do I choose between the iMac, Power Mac G4 Cube, and Power Mac G4?

A. All of Apple's new desktop systems provide outstanding performance and flexibility for work or play, yet also support a wide range of customer needs. Choose the G4 Cube over iMac if you want G4 performance and a choice of innovative displays. Choose the G4 Cube over the Power Mac if you need a quiet work or play environment and a small desktop footprint, and if plug-and-play expandability through FireWire and USB will suit your needs without PCI capability. Choose the new Power Mac G4 over the G4 Cube if you need special PCI expansion cards, such as for audio or video processing, or if you require dual processor performance.

Elegant Design

Q. Is the G4 Cube really as small as it looks in the ads?

A. The G4 Cube takes up less desktop space than a standard piece of paper: It's only 7.7 inches on each side and 9.8 inches tall.

Q. How quiet is the G4 Cube?

A. The G4 Cube is quieter than a whisper, meaning that in a normal room, most people won't even hear it. Even with its hard drive running, it creates only 19 decibels of sound. At 15 feet away, a whisper creates 30 decibels. (Because decibels are measured on a logarithmic scale, a 30-decibel whisper actually sounds twice as loud as the G4 Cube.)



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We were able to make the computer so quiet by using a revolutionary cooling system in place of a fan. The G4 Cube is cooled by air entering the space below the core through a cutout in the base. Thermodynamic principles implemented in the computer's design pull the cool air through the system and let it exit out the top.

Q. Can I put the G4 Cube on top of things? Can I put things on top of it?

A. It's perfectly safe to put the G4 Cube on top of something else, as long as the object below it is flat and doesn't block the airflow through the base. Objects can also be placed against the sides of the computer if they do not obstruct the airflow. Don't put anything on top of the computer, because unobstructed vertical airflow is essential to keep the system from overheating.

Q. How do I turn the computer on?

A. The Apple Display Connector (ADC) integrates the computer's power functions, so you can turn it on, wake it, or put it in sleep mode by using the power switch on any of the new Apple displays. If you do not have an ADC display, use the power switch on top of the G4 Cube.

Q. Do I need to turn the computer off when I'm not using it?

A. It's better to put the G4 Cube to sleep than to turn it off, because in sleep mode your open programs and documents are retained, ready to use again immediately after you wake the system. The G4 Cube uses a very low amount of power when it's asleep (less than 4 watts). Touching the power switch on the computer or your new Apple display will put the system to sleep. If you do want to turn the computer off, go to the Special menu and select Shut Down.

Q. How do I access the computer's connection jacks and expansion ports?

A. All connections to the G4 Cube are made at the bottom of the computer's core. To reach them, first turn the computer upside down. (We recommend that you put a soft cloth under it to avoid scratching the top surface.) You can then attach the power cord, an ADC or VGA cable, a phone line, an Ethernet cable, and USB and FireWire peripherals. When you turn the computer upright, be sure that all cables exit through the cutout on the back of the computer.

Q. How do I add memory or an AirPort Card?

A. It's very easy to open the G4 Cube to install more memory or an AirPort wireless networking card. All you have to do is turn the computer upside down on a soft cloth and press on the handle. The handle will rise into its extended position. Grab it and gently pull the core from the shell. To reinstall the core, push it all the way back into the shell and press the handle down. An automatic latching mechanism locks the core into place so that it won't fall out when you turn it upright again. (See the user's manual for complete instructions to ensure your safety and that of the computer's components.)

Q. How can I secure the G4 Cube?

A. The Power Mac G4 Cube and its removable internal components can be protected with a Kensington Notebook MicroSaver security cable. The cable attaches to a security lock port on the bottom of the computer's core. The amplifier for the G4 Cube speakers also has a security lock port that works with the same type of Kensington cable.



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Q. What are the round circles on the sides of the G4 Cube?

A. They're antennas for the AirPort wireless networking system! They line up with AirPort circuitry on the core to create a complete AirPort system, ready to use as soon as an AirPort Card is added. The advanced ceramic patch technology used for these antennas eliminates the need for the wire antenna traditionally located near the external wall of wireless-ready computers. A wire antenna would have required a connection wire between the antenna on the shell and the AirPort circuitry in the core, tying the two parts of the computer together and making it more difficult to remove the core. Patch antennas provide a perfect solution for the Power Mac G4 Cube, simultaneously making it AirPort ready, beautiful, and easy to use.

Professional Power for Work or Play

Q. How does the Power Mac G4 Cube compare with Pentium III-based computers?

A. The PowerPC G4 processor brings supercomputer power to the desktop. Much of its performance benefit comes from the Velocity Engine, a vector processing unit with parallel processing technology that was pioneered in multimillion-dollar supercomputers. The Velocity Engine can greatly accelerate intensive calculations—whether they're for demanding scientific applications or immersive games.

Real-world performance depends not only on processor speed (expressed in megahertz), but also on how many instructions and how much data the processor can handle with each cycle. The processor speed is like the speed limit on a freeway, and instructions and data per cycle are like the number of lanes. The Velocity Engine works on a whole set of data simultaneously, rather than one data point at a time, so it's like having more lanes available to avoid bottlenecks. Therefore, it's no wonder that in Apple testing, a 450-megahertz G4 Cube took only 46.9 seconds to complete eight common Adobe Photoshop tasks, whereas a 1,000-megahertz Pentium III-based PC took 60 seconds.

Q. Can I get a G4 Cube with dual PowerPC G4 processors?

A. The Power Mac G4 Cube is a single processor system. The new Power Mac G4 is designed for customers who require dual processing.

Q. Does my existing Mac software work on the G4 Cube?

A. Yes, virtually all Mac OS-based applications will run on this system. Software that has been optimized for the Velocity Engine takes full advantage of the PowerPC G4. Many popular creative and technical applications have been rewritten for the Velocity Engine, including Adobe Photoshop, Apple's Final Cut Pro, MPEG Power from Heuris, Lightwave 6 from NewTek, Media Cleaner Pro from Terran Interactive, and SoundJam MP from Casady & Greene.

Q. How much RAM capacity does the Power Mac G4 Cube have?

A. The standard configuration of the computer is 64 megabytes of PC100 memory. You can expand the memory—either through build-to-order options when you purchase the computer or by adding more RAM later—to as much as 1.5 gigabytes (maximum 999 megabytes per application in Mac OS 9). The computer has three DIMM slots for RAM expansion. Note that RAM modules used in the G4 Cube must be no more than 1.38 inches high.



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Q. How much capacity does the computer's hard drive have?

A. The standard hard drive has 20 gigabytes of storage capacity.² That means it can hold more than an hour of DV footage, making it an excellent solution for multimedia and digital video production. If you expect your needs to exceed that capacity, 30- and 40-gigabyte internal drives are available as build-to-order options when you order a G4 Cube from the Apple Store. The Apple Store also sells third-party external drives that can be attached through one of the computer's two FireWire ports.

Q. What kinds of expansion does the Power Mac G4 Cube support?

A. The G4 Cube supports both of the latest, fastest plug-and-play expansion technologies: FireWire (IEEE 1394) and Universal Serial Bus (USB). That means you can instantly connect DV camcorders, high-performance storage devices such as hard drives and CD-RW drives, and many other peripherals that take advantage of FireWire or USB capabilities.

Q. Does this computer have PCI expansion slots?

A. The G4 Cube supports both FireWire and USB for expansion, but does not have PCI slots. For computing applications that require PCI solutions, the Power Mac G4 supports three full-length, 32-bit, 66-megahertz PCI cards.

Q. Can I connect SCSI devices to the G4 Cube?

A. The G4 Cube does not have SCSI connectors. However, virtually everything that was popular on SCSI is now available in USB and FireWire versions, including printers, scanners, hard drives, removable drives, CD-RW and DVD-ROM drives, joysticks, video cameras, still cameras, MIDI devices, and more. These new peripherals are even easier to use over USB and FireWire, because they are fully hot pluggable, don't need IDs or termination, and even have longer, more flexible cables that allow you to put the units where you want them. Apple encourages Macintosh users to take advantage of the speed and ease-of-use benefits offered by FireWire and USB. Check www.apple.com/firewire and www.apple.com/usb for information on the growing list of peripherals available for these technologies.

Q. Can I use the system in an AirPort wireless network?

A. Yes. The G4 Cube comes with two built-in AirPort antennas, an AirPort Card slot, and AirPort software. Simply add an AirPort Card to the system, and it's ready to talk to an AirPort Base Station or another AirPort-enabled system.¹



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Speakers and Audio

Q. What are the benefits of the G4 Cube speakers?

A. Because the speakers are external, rather than being fixed in place internally, they deliver excellent sound, are power efficient, and give you a great deal of placement flexibility. The audio signal is completely digital from the computer to the amplifier to the Harman Kardon speaker cones, so the pure digital sound quality provided by CDs, DVDs, and the computer itself is retained along the entire path.

The digital amplifier used for the G4 Cube speakers is much smaller and cooler than a standard analog amplifier. It's also much more efficient, allowing the speakers to be powered directly from a USB port on the G4 Cube or one of the new Apple displays, instead of requiring an AC adapter.

Because the speakers are external, you get the best possible sound quality and maximum flexibility in where you place them. Each speaker has an 18-inch cable connecting it to the audio amplifier.

Q. Should I leave the speaker covers on or take them off?

A. In most cases, we recommend that you remove the plastic covers on the front of the speakers. This will allow the speaker cones to create their best possible performance. However, if the speakers are in an environment where the cones might be damaged, such as a household with young children, or if you're moving the speakers to another location, you might want to leave the covers on for greater protection.

Q. Where can I plug the speakers in?

A. The G4 Cube speakers are attached to a USB cable that carries both their power and audio in a single cable. They must be connected to the USB port either on the computer or on one of the new Apple displays with the ADC. They should not be plugged into a USB connector on the Apple Pro Keyboard or other USB ports.

Q. Can I use headphones with the system?

A. Yes. A minijack for headphones is built into the audio amplifier.

Q. Can I purchase these speakers separately for use with other computers?

A. The speakers are specifically designed for a Power Mac G4 Cube system. The USB ports on the G4 Cube and the new Apple displays with ADC provide additional power specifically for these speakers. If you were to attach the speakers to another system, the speaker volume would be low because there wouldn't be enough power on the USB connection.

If you'd like a speaker system that includes a subwoofer, Apple offers Harman Kardon SoundSticks through the Apple Store at www.apple.com/store; they work with all Macintosh computers that support USB.

Q. How can I input sound into a G4 Cube?

A. If you need sound input capability (for example, for voice recognition while using the Voiceprint Password capability), Apple plans to offer the Philips USB Digital Microphone in September 2000. Check the Apple Store at www.apple.com/store for availability.



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Versatile Display Options

Q. What displays can I connect to the G4 Cube? How do I decide which is the right one to buy?

A. A computer as innovative as the G4 Cube demands monitors to match, so we've created three outstanding displays you can choose from:

- *Apple Studio Display (17-inch CRT; 16-inch viewable).* For creative users who want to view work projects, DVD movies, or games with sharpness and consistent color, the Apple Studio Display is the ideal complement to the G4 Cube. The 17-inch screen (16-inch viewable) uses Natural Flat Diamondtron technology to enhance image precision. The patented ColorSync internal calibration system provides consistent color—a key benefit when working with high-quality graphics. For a more realistic cinematic experience, the Apple Studio Display features the innovative Theater Mode, which automatically brightens the screen to enhance Desktop Movies, DVDs, and QuickTime clips played in full-screen mode. A two-port self-powered USB hub makes it easy to connect desktop peripherals; and easy software controls allow customers to adjust brightness, contrast, and other display attributes.
- *Apple Studio Display (15-inch digital flat panel).* This display uses the same elegant design as the award-winning Apple Cinema Display. It presents images with clarity and brilliance, providing twice the brightness, twice the sharpness, and twice the contrast of ordinary CRT monitors. Unlike other flat-panel monitors, the Apple Studio Display supports 16 million saturated colors, so it's ideal for demanding graphics applications. The active-matrix LCD screen delivers a flicker-free, distortion-free digital image at a resolution of 1024 by 768 pixels. This display also includes a two-port self-powered hub for easy connection of USB peripherals. With a 15-inch viewable area, the Apple Studio Display is a smart choice for anyone looking for quality in efficient dimensions.
- *Apple Cinema Display (22-inch digital flat panel).* This is the largest LCD ever brought to market, with a viewing area identical to that of a 24-inch flat CRT display. Using a pure digital interface, this state-of-the-art display delivers high-quality, distortion-free images. Color remains true at almost any viewing angle. Like a movie screen, it delivers images in letterbox format (1600 by 1024 pixels) with room to display DVD-Video content or an entire 11- by 17-inch image. The Apple Cinema Display includes a two-port self-powered USB hub for easy connection of desktop peripherals and a patented stand design that allows you to adjust the display to your needs.

All Apple displays deliver unprecedented ease of setup, thanks to the ingenious Apple Display Connector (ADC). Learn more about Apple displays at www.apple.com/displays.

Q. How does the Apple Display Connector, or ADC, work?

A. The ADC is an elegant solution for reducing cable clutter. A single cable runs from the ADC on the computer's graphics card to the Apple display. Effectively reducing the number of cables by two, this quick-latch cable carries USB, power, and either analog RGB or digital TMDS video signals, depending on whether you are connecting an Apple CRT display or flat-panel display. Because each display has a two-port self-powered USB hub, you can quickly and easily attach peripherals to the computer through it.

Q. Can I connect other types of displays to the computer?

A. Yes. In addition to the ADC, the ATI RAGE 128 Pro graphics card has an industry-standard VGA connector. This allows you to attach an older Apple display, a video projector, or any other VGA monitor.



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Q. Can I connect multiple displays?

A. No. The G4 Cube supports a single display. You cannot use two monitors simultaneously through the ADC and VGA connectors, or multiple displays from one connector. For multiple-display support, the Power Mac G4 supports up to four displays using RAGE 128 PCI graphics cards.

Keyboard and Mouse

Q. What are the benefits of the new Apple Pro Keyboard?

A. This new full-size keyboard features 15 function keys that you can program to launch specific applications or documents. The Apple Pro Keyboard also includes six full-height navigation keys, audio control keys that let you quickly adjust or mute the computer's sound, and a convenient media-eject key for removing discs from the optical drive.

Q. Why doesn't the Apple Pro Keyboard have a Power On button?

A. The G4 Cube system is designed for great convenience. The Apple Display Connector now integrates the computer's power functions, so you can turn on, put to sleep, or wake your G4 Cube using the power switch on the Apple display.

Q. What makes the Apple Pro Mouse unique?

A. Apple is the first computer manufacturer to extend optical tracking technology across our entire product line. The Apple Pro Mouse features a radical approach that redefines simplicity: You can click virtually anywhere on the top of the mouse. You can also adjust the click tension of the mouse button for added flexibility and performance.

Q. How does the optical technology in the Apple Pro Mouse work? Why does it work on more surface types than a mechanical mouse?

A. The optical technology works by beaming a light on the surface beneath the Apple Pro Mouse and taking pictures of it. To ensure precise tracking even during fast movement, it takes 1,500 of these pictures per second. The pictures are analyzed by a high-performance digital signal processor to determine the direction and magnitude of movement, which is communicated back to your Mac for smooth cursor action onscreen. The best part of this technology is that the mouse doesn't clog, jam, or skip because of dust or other particles, and it doesn't wear out like a mechanical mouse.

Because the technology works by capturing light reflecting off a surface, the Apple Pro Mouse functions on more surface types than a traditional mechanical mouse. While a mechanical mouse's movement is only as smooth as the surface it rolls over, the Apple Pro Mouse is able to work on most any surface. However, it doesn't work well on mirrors and highly glossy surfaces or on surfaces with busy or repetitive patterns such as some printed photographs from magazines or newspapers. Note that the light source in the Apple Pro Mouse complies with international safety requirements.

Q. Can I purchase the new keyboard and mouse separately?

A. Yes. In early fall, Apple plans to offer both the Apple Pro Keyboard and the Apple Pro Mouse to customers with earlier USB-equipped Mac systems. Visit www.apple.com/store for availability. Note that the Apple Pro Keyboard requires Mac OS 9 or later.



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FireWire

Q. How can I use FireWire?

A. FireWire allows data transfer speeds between computer and peripheral that are unmatched by USB and SCSI connectors. Delivering fast 400-megabit-per-second performance, FireWire is ideal for connecting digital camcorders, mass storage devices, CD-RW drives, scanners, and speakers to your G4 Cube³. You can even start up your system from a FireWire hard drive. For more information on FireWire technology and devices, visit www.apple.com/firewire.

Q. Can I use FireWire to connect two Macintosh computers?

A. Yes. Using FireWire Target Disk Mode, you can connect any FireWire-equipped Mac to your G4 Cube. The second computer will appear on the desktop as an external hard disk, providing a convenient way to move large files from one system to another. To use Target Disk Mode, connect the computers using a FireWire cable and restart the second computer while holding down the "T" key on its keyboard.

DVD Drive

Q. How do I access the DVD drive?

A. The DVD drive is accessed through a slot at the top of the computer. Simply place a disc into the slot with the label facing you, and push down gently until the drive catches the disc and draws it in. (As with horizontal drives, be careful to keep your fingers on the edge of the disc, not its flat surfaces.) You can eject a disc by pressing the media-eject key on the Apple Pro Keyboard that comes with the G4 Cube, by using the Put Away command in the File menu, or by dragging the disc's icon to the Trash.

Q. Can I watch a DVD-Video movie using the DVD-ROM drive in the G4 Cube?

A. Yes. The Apple DVD Player application included with the computer lets you play DVD-Video titles using the DVD-ROM drive.

Q. How do I eject a CD or DVD that gets stuck in the drive?

A. If you are unable to eject a disc, hold down the mouse button while you restart the computer. When the computer restarts, the disc will be ejected.



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Build-to-Order Options

Q. What configuration options are available for the Power Mac G4 Cube?

A. Ordering a custom-configured system from your authorized Apple reseller or the online Apple Store allows you to select from the following options:

- 450- or 500-megahertz PowerPC G4 processor
- 64MB, 128MB, 256MB, 384MB, 512MB, 768MB, 1GB, or 1.5GB of RAM
- 5400-rpm 20GB, 7200-rpm 30GB, or 7200-rpm 40GB hard disk drive²
- AirPort wireless networking card

The availability of options can vary. Check for up-to-date information at www.apple.com/store.

¹ Wireless Internet access requires AirPort Base Station and Internet access (fees may apply). Some ISPs are not currently compatible with AirPort, including America Online. Range may vary with site conditions.

² For hard drive capacity measurements, 1GB = 1 billion bytes; actual formatted capacity less.

³ Actual rates will be less, depending on conditions.

For More Information

For more information about the Power Mac G4 Cube, visit www.apple.com/powermaccube.

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