



The Power Macintosh G3 Series: Innovative Product Design for Affordable High Performance

A little background

Two decades ago, Apple made its name by bringing advanced technology to mainstream users through extraordinarily easy-to-use products. In particular, we gained a reputation for success in pioneering the educational use of computers and championing the advancement of multimedia technology.

Although that reputation has remained remarkably unchanged through the years—Apple is still regarded as the industry leader in both education and multimedia—the technology behind it has been altered practically beyond recognition, as have customer expectations. Today's mainstream computer users want affordable high-performance systems that provide outstanding communications and multimedia capabilities. The Power Macintosh G3 series was developed to satisfy that need—and to exceed customer expectations about price/performance value.

The Power Macintosh G3 series product design

When you talk about overall system design, you are really talking about a number of things—from the processor to the physical enclosure to the system software to the logic board—whose interrelationships are central to the user experience. The Power Macintosh G3 products were designed to meet the needs of our customers for performance, flexibility, and expandability through a streamlined development process in which a single logic board design provides a variety of capabilities. This approach simplifies testing, speeding development and increasing system reliability. In addition, the use of greater numbers of industry-standard parts than in previous Apple systems makes Power Macintosh G3 computers even more affordable.

Logic board. A computer's logic board design is the ultimate determinant of its functionality, involving such key features as processor, memory setup (controller and expansion capabilities), graphics support, and storage capabilities. The Power Macintosh G3 series systems use a mini-ATX board, which features, among other innovations, a faster system bus (66 megahertz as opposed to 50 megahertz, with room for further growth as processor speeds continue to increase) to support higher performance. This relatively tiny board, roughly the size of this fact sheet, allows for outstanding expandability—for example, by permitting the hard disk drive to fit within the base of the desktop model, so that it can also easily accommodate a Zip drive. In addition, it features an easy-to-access audio/video card slot that gives Apple the flexibility of offering a single product that provides a range of communications and multimedia capabilities to meet the varying needs of our users. For example, the Power Macintosh G3 is currently available in two versions: one system with stereo-quality audio capabilities and the other a full-featured, multimedia-optimized computer that also provides video-input/output capabilities and is suitable for content authoring.

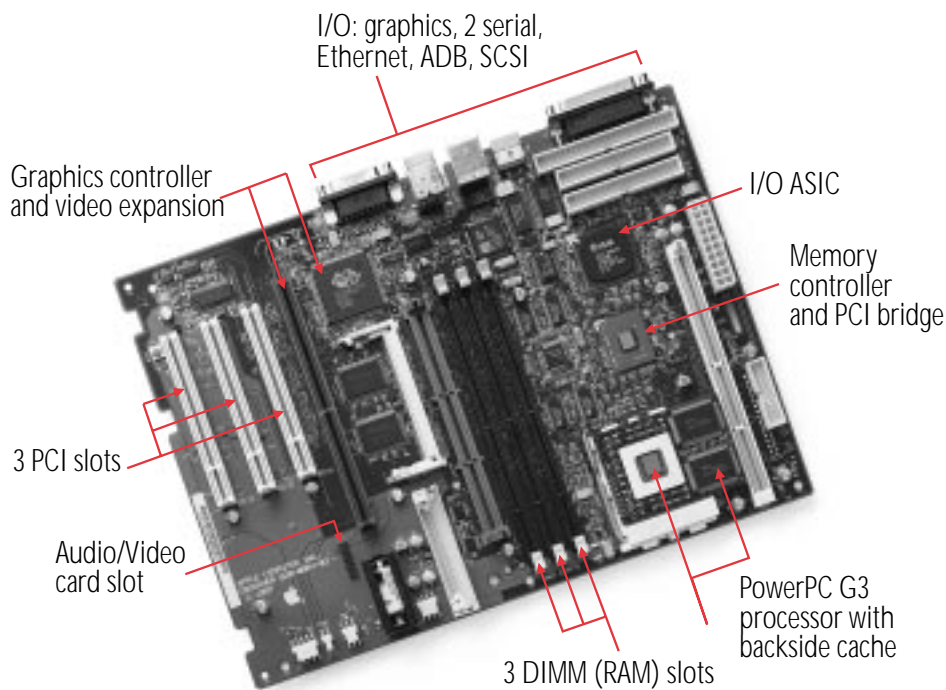
Enclosure. The board's efficient use of space is also the key to our ability to use the same logic board in two very different physical enclosures. The Power Macintosh G3 series is currently available in a sleek, low-lying desktop model and a convenient, space-saving minitower. Both enclosures reflect Apple's tradition of user-centered design—offering exceptionally easy access to the board for expansion and servicing.

System software. These systems run Apple's latest and already outstandingly successful system software: Mac OS 8. Providing significant enhancements in the areas of user interface (including true multitasking and virtual memory capabilities) and Internet access and publishing (including integrated support for Java, and software tools that let users easily publish information on the Internet or a local intranet), Mac OS 8 has quickly gained a reputation for providing the industry's best overall user experience.

<http://www.apple.com>

In addition, the logic board design of the Power Macintosh G3 systems exhibits the following characteristics in these vital areas:

Processor. These computers use the innovative, next-generation PowerPC G3 processor, which was designed specifically to provide increased power at affordable cost. It does so through three major innovations: a state-of-the-art 0.25-micron manufacturing process, optimization for the Mac OS, and a new, more efficient approach to level 2 cache known as backside cache. Backside cache boosts performance far above the performance of earlier systems—even those with higher clock speeds—by positioning the cache directly on the processor module and making it directly accessible through a faster, dedicated bus. This bus can run at varying speeds in proportion to the processor speed. So, for example, the Power Macintosh G3 system based on a 266-megahertz PowerPC G3 processor features a 133-megahertz dedicated backside bus—more than twice the speed of the system bus.



Memory. The memory controller and PCI bridge support the Power Macintosh G3 systems' three memory slots and three PCI expansion slots. These systems make use of a faster, industry-standard memory, SDRAM, which adds to both their economy and their availability.

Graphics controller. The Power Macintosh G3 series systems incorporate an ATI RAGE II + graphics controller, which not only provides outstanding performance, but also enables far greater expandability (2MB to 6MB) than was previously available, so users can choose the level of graphics performance that meets their needs.

I/O ASIC. This component provides support for the input and output of all standard Macintosh

graphics functionality and Apple Desktop Bus (ADB), serial, and SCSI connections. It also efficiently incorporates 10BASE-T Ethernet, to meet users' growing demands for easy and immediate access to high-performance networking capabilities.

The "why"

The motivation behind this innovative product design is the same simple idea that drives all of Apple's efforts: bringing truly outstanding computing performance to our users more and more easily and economically. So when you're looking for the computer that's just right for you, don't just look at the numbers (things such as processor speed and hard disk capacity). Because today, it's more important than ever to consider *overall* product design.

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