Apple Displays FAQ

Q. What displays is Apple offering?

A. Apple is offering three new displays—each with the innovative Apple Display Connector that dramatically simplifies setup and reduces cable clutter when these displays are connected to the new Power Mac G4 Cube and Power Mac G4. The new displays include the 22-inch Apple Cinema Display, the largest flat-panel monitor available; the 15-inch flat-panel Apple Studio Display offering sharp, bright active-matrix LCD performance; and the 17-inch (16-inch viewable) Apple Studio Display featuring the Natural Flat Diamondtron CRT. Both flat-panel displays feature the same elegant styling as the award-winning Apple Cinema Display and incorporate a pure digital interface that delivers distortion-free images every time. The 17-inch Apple Studio Display is both visually appealing and full of leading-edge performance features that will appeal to consumers and professionals alike.

Q. What is the Apple Display Connector (ADC)? What is its benefit?

A. The ADC introduces an innovative connector and cable design that carries USB, power, and either analog RGB or digital TMDS, depending on whether you are connecting an Apple CRT display or an Apple LCD display. Because the ADC delivers power from the Power Mac G4 Cube and Power Mac G4 computer, the display does not need an additional power cord. Attaching the display to either Power Mac system is a snap with the quick-latch mechanism. And because each monitor has a two-port, self-powered USB hub, you can quickly and easily attach peripherals to your computers.

The Apple Display Connector and cable make your Power Mac G4 Cube and Power Mac G4 system easier to set up than ever before, and reduce the number of cables on your desktop. Without the two—or sometimes three—additional cables (USB, DC power, and AC power) connecting your display to your Power Mac G4 Cube or Power Mac G4, you can more easily add other desktop peripherals to your system.

Q. Can I use any of the new Apple displays on a Windows-based computer system or older Power Mac computer?

A. The new Apple displays were designed specifically for the new Power Mac G4 Cube and Power Mac G4 systems. With the new Apple Display Connector, setting up your Power Mac G4 Cube or Power Mac G4 system is nearly as easy as setting up the popular iMac computer. Yet, you gain the flexibility of a modular system—the ability to choose the display that best suits your needs.

Q. How do I connect an Apple Cinema Display or Apple Studio Display with a DVI connector to the new Power Mac G4 Cube or Power Mac G4?

A. You will need an adapter to connect an older Apple Cinema Display or Apple Studio Display with a DVI connector to the new Power Mac G4 or Power Mac G4 Cube. Apple plans to offer this adapter through the Apple Store. Check www.apple.com/store for availability.

Apple Flat-Panel Displays

Q. Is the Apple Cinema Display still the largest flat-panel display available on the market?

A. Yes it's still the largest panel commercially available, offering over 1.6 million pixels in a stunning 22-inch (diagonal) screen. It actually provides the same viewable area as a 24-inch CRT display. And as an all-digital display, the Apple Cinema Display delivers images that are twice as sharp, twice as bright, and have three times the contrast ratio of a traditional CRT-based display.

Q. How do the screen size and density of the Apple Cinema Display benefit creative professionals?

A. The Apple Cinema Display was designed from the ground up with the creative professional in mind. The key benefit of the large screen is the amount of information that can be displayed on the screen at one time. The display supports a resolution of 1600 by 1024 pixels—that's more than 1.6 million pixels appearing on the screen simultaneously, which are more pixels than are typically displayed on a 21-inch CRT. The Apple Cinema Display allows two full pages of text to be displayed side by side, with enough room for menus, toolbars, and palettes.

The wide format (16:10 aspect ratio) is also ideal for creative projects, such as two-page spreads and tabloid-size printed materials. But just as important, the Apple Cinema Display has been designed to display all 1.6 million pixels at a screen density that doesn't require users to squint at small, hard-to-read text. Other monitors that support a similar resolution with a smaller LCD panel produce images that are difficult to view day in and day out. The Apple Cinema Display is comfortable to use at its native 1600- by 1024-pixel resolution all the time.

Q. Why are the screen size and aspect ratio of the Apple Cinema Display important for video and film professionals?

A. With the Apple Cinema Display, video and film professionals who work with wide formats can fill the entire screen without distorting the image or shrinking it to fit. The HDTV standard is based on the 16:9 aspect ratio, and most films are shot in aspect ratios favoring a wide format. But even editors who work with the traditional 4:3 aspect ratio will have a distinct advantage, because the Apple Cinema Display provides plenty of room for both the video workspace and their tool palettes.

Q. What advantage does the digital graphics interface have over traditional display interfaces?

A. The digital graphics interface provides much sharper images and is far easier to use. Here's why: Cathode-ray tube (CRT) displays require an analog interface because they create light and color from an electron beam. To create an analog signal for the CRT display from the digital data in graphics memory, the computer's graphics controller must perform a digital-to-analog conversion.

Because both the Apple Cinema Display and the Apple Studio Display (LCD) are digital devices, they do not require this conversion to analog form—a conversion that can lead to image degradation. Instead, these displays receive a distortion-free digital signal directly from the graphics controller. Not only does this mean that all the pixels are razor sharp from screen edge to screen edge, but it also means that the screen needs no adjustments whatsoever. When users combine the new Power Mac G4 Cube or Power Mac G4 with either of our new Apple flat-panel displays, they will experience outstanding image quality along with the ultimate in user simplicity.

Q. Can I play full-motion video on my Apple Cinema Display or Apple Studio Display?

A. Absolutely. Our Apple flat-panel displays are designed to have fast pixel response, enabling you to watch DVD movies or edit digital video. You can display full-motion video, graphics, or animation on either Apple flat-panel display without the artifacts often found in flat-panel technology.

Q. How accurate is the color on the Apple Cinema Display and Apple Studio Display?

A. Managing color accuracy on an LCD-based display is no easy feat, but Apple has addressed the major issue affecting how well LCD-based displays can reproduce color: their inherent viewing-angle limitations. On most LCDs, users often experience severe color shifts if they view images that are just a little bit off-axis. But the Apple Cinema Display greatly reduces this problem. It uses an advanced technology that delivers up to 160-degree viewing angles in both the vertical and horizontal dimensions. The benefit of this wide viewing angle is that the Apple Cinema Display delivers much better color uniformity than any other flat-panel display available today.

The Apple Studio Display also offers impressive color accuracy in a smaller LCD screen, with the best viewing angles you can get for a flat-panel display its size—up to 90 degrees vertically and 120 degrees horizontally. Although the viewing angle of the Apple Studio Display is not quite as wide as that of the Apple Cinema Display, in fact it doesn't need to be—smaller screens are naturally viewed at shallower angles.

But you get even more than extrawide viewing angles—you also get true 8-bit drivers, delivering an amazing color gamut of 16.7 million colors. With all these benefits, you can see why the Apple Cinema Display and the Apple Studio Display are the ideal flat-panel displays for creative professionals, providing a better color solution than any other LCD displays on the market.

Q. Besides their stunning look, what other important design attributes do the Apple Cinema Display and Apple Studio Display offer?

A. Both the Apple Cinema Display and Apple Studio Display are perfectly matched to the new Power Mac G4 Cube and Power Mac G4 computers and are designed to offer a large virtual desktop, while taking up very little physical desktop space. The design includes a stand that minimizes the desktop space used and allows users to adjust the display effortlessly to different viewing angles.

Both displays are designed with the Apple Display Connector and both include a two-port, self-powered USB hub that offers a convenient way to connect desktop peripherals, such as keyboards and digital audio speakers.

Apple Studio Display (CRT)

Q. What are the new features of the CRT-based Apple Studio Display?

A. The 17-inch (16-inch viewable) Apple Studio Display has been designed with significant new features. We've used the latest Natural Flat Diamondtron CRT with ultrafine (0.25 mm) aperture grille pitch for sharp, natural-looking images. It also includes a patented internal calibration system that works in conjunction with Apple's ColorSync color management system to maintain color accuracy over the life of the monitor. Another new feature is the two-port, self-powered USB hub for convenient connection of peripherals and software control over all screen functions. Finally, an innovative new technology called Theater Mode increases the brightness and contrast of video played in full-screen mode with iMovie, Apple DVD Player, and QuickTime Player applications.

Q. What is Theater Mode?

A. Theater Mode is a technology we've built into the Apple Studio Display (CRT) to work with Apple's media-playing software: QuickTime Player, iMovie, and Apple DVD Player. It enhances the brightness and contrast of video content when played full screen on the Apple Studio Display. Working together, the software and Theater Mode hardware produce a more lifelike image by increasing the brightness up to three times and improving the color saturation.

Typically, when video content is displayed on a computer monitor, it appears dark and dull. This is because manufacturers must decrease display brightness levels so that fine text appears sharply. Too much brightness causes text to appear extremely fuzzy. Video content, however, rarely requires the display of sharp text—in fact it is often optimized for high-brightness screens such as TV and movie screens. Theater Mode works by automatically increasing the brightness of the Apple Studio Display when video content is played full screen with iMovie, Apple DVD Player, or QuickTime Player applications. This feature allows users to enjoy a more cinematic experience when viewing video content.

Q. Why is color calibration important for the Apple Studio Display?

A. A display's color performance can be affected by various factors, such as changes in electronic components, phosphor aging, and ambient light conditions. If there is no compensation for these performance variations, you cannot trust the screen as an accurate color reference. Color images may look different when printed, when viewed on other displays, or even when viewed on the same display over time.

A calibrated display works with Apple's ColorSync software to achieve higher-quality screen-to-screen and screen-to-print matching. The Apple Studio Display is the most affordable monitor available that provides integrated, professional-quality color accuracy and consistency—day after day, week after week, year after year.

Q. How does the Apple Studio Display differ from other calibrated monitors?

A. The Apple Studio Display has a higher level of color consistency, is much easier to use, and is far more affordable than competing monitors. We've achieved this by developing a special calibration system to measure and control color. Traditional CRT display measurement systems include an external photometric light sensor—also called a "puck" because of its shape. This device is physically placed on the front of the screen. But Apple designed a system that doesn't require this cumbersome and expensive device. Instead, our measurement system works internally. Rather than measuring the light output of the monitor as the puck does, the calibration

system inside the Apple Studio Display measures the current of the electron beam. Because the beam current is ultimately responsible for generating the colors on the screen, this approach provides an accurate measurement of the color your eye actually sees.

Q. Where can I go for more information on Apple displays?

A. For more information about Apple displays, visit www.apple.com/displays on the World Wide Web. Other resources on the web include the following:

Apple	www.apple.com
Apple hardware products	www.apple.com/hardware
Power Mac G4 computer	www.apple.com/powermac
Power Mac G4 Cube	www.apple.com/powermaccube
The Apple Store	www.apple.com/store
USB information	www.apple.com/usb
Listing of USB peripherals	guide.apple.com/uscategories/usb.html

For More Information

For more information about Apple displays, visit www.apple.com/displays.

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