

Screen Adjustment Guidelines

This document describes how to evaluate your screen display and make display adjustments, if necessary.

What Should a Normal Screen Display Look Like?

Shape

For a monitor that contains a CRT (cathode-ray tube), the normal screen display should have a uniform shape. That is, the rectangular screen image should have about one-half inch (13 mm) of black border around all four sides.



Normal Shape

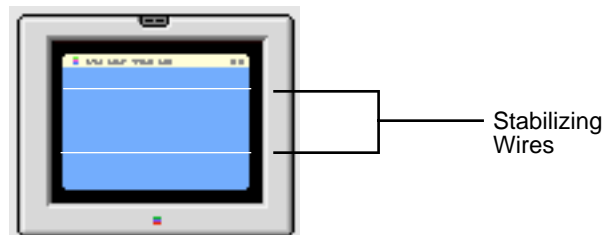
Not Normal

Not Normal

Two Horizontal Lines

Most CRT-based Apple monitors contain a "tron" style tube. This display contains a Mitsubishi Diamondtron tube, which uses an aperture grill. Electron beams pass through the aperture grill to display the screen image. Two stabilizing wires, which are thinner than a human hair, can be noticed on a light-colored background screen as light gray horizontal lines across the entire width of the display image. The stabilizing wires decrease the vibration of the aperture grill that can occur when the display is bumped. Without the stabilizing wires, the aperture grill's vertical wires could vibrate much like a guitar string—causing display quality problems for several minutes.

These horizontal stabilizing wires are normal and cannot be adjusted out.



Colors

When you select a single-color screen, you should see no distinct color blotches or areas that are dimmer than the rest of the screen. If you do, check if the same areas of the screen are dim when you select other single-color images.

Refer to the Degauss section in this document or Mac Help for more information.

What About Magnetic or Electrical Interference?

Before assuming that your display requires adjustment or repair, check for magnetic or electrical interference.

Fluorescent lights, computers, other monitors, or electronic appliances such as coffee makers and copy machines can cause screen distortion. Move the monitor to another room or building to determine if external interference is the source of the problem.

If the full-screen image has shifted up/down or right/left only, adjust it using the geometry controls in the Monitors control panel. Keep in mind that if you then move the monitor to another location you may need to readjust the controls. If the display changes (for better or worse) when you move it to another location, the environment is the source of the problem. Move the monitor or the distortion-causing object.

CRT tolerances allow for some distortion. Additional distortion can be caused by magnetized metal objects (desks, file cabinets). Rotate the monitor or move it to a different location if you notice bowing of the screen shape or bent edges. You can also use the Monitors control panel to make geometry adjustments to optimize the screen display.

Making Screen Adjustments With the Monitors Control Panel





The Monitors control panel is used to make adjustments to the viewable area of your screen display. Because adjustments are made to the screen before the display leaves the factory, you might never have to use the Monitors control panel.

You can open the Monitors control panel by pressing the button on the lower left of the display bezel.



Press to open Monitors control panel

From the Monitors control panel, you can select four main buttons: Monitor, Geometry, Color, and Preferences. From these buttons, you can select the following settings or adjustments:

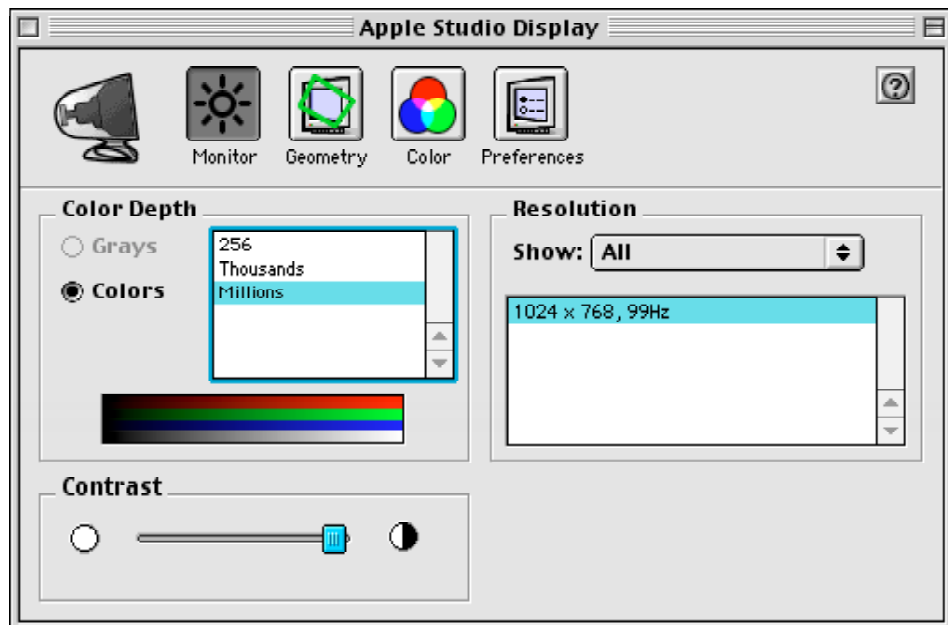
 <p>Monitor</p>	 <p>Geometry</p>	 <p>Color</p>	 <p>Preferences</p>
<p>Color Depth Resolution Contrast</p>	<p>Height/Width Position Pincushion Rotate Keystone Parallelogram Bow</p> <p>Convergence Degauss Factory Settings</p>	<p>White Point Gamma Curve Ambient Light</p> <p>Import/Export Preferences Recalibrate</p> <p>ColorSync Profile</p>	<p>Theater Mode</p>

Monitor Button

When the Monitors control panel first opens, the Monitor button is selected. From this window, you can change the following settings:

- Color Depth
- Resolution
- Contrast

Under Color Depth, the setting Millions of colors is the default setting. This gives your display the widest range of color options. If you ever want a narrower range of colors (required by some applications), you can temporarily set the Color Depth to Thousands. And if you want your display screen to show colors as shades of gray only, select 256, and then select Grays. All of these settings can be changed in the Monitors control panel at any time.



Under Resolution, you can select another screen resolution. The number of screen resolutions available depend on the amount of video memory (VRAM) in your computer and the capabilities of your display.

To adjust the contrast, drag the Contrast slider control left or right to decrease or increase the screen contrast.

Geometry Button

When you click Geometry, the Monitors control panel looks like this:



From this window you can change settings to adjust the shape of the viewable screen area.

Important: Do not change geometry settings unless your display's screen shape is distorted and you have already tried:

- restarting your system
- allowing the display to warm up for 30 minutes to see if the screen distortion goes away on its own
- unplugging and moving away any electrical motor devices, such as fans, away from your monitor

Factory Settings

Important: Clicking the Factory Settings button (in the lower right corner of the Geometry window) resets only the geometry controls and convergence. The screen image returns to the factory preset levels of geometry and convergence for the current screen resolution.

Adjustments you have made in the Monitor, Color, or Preferences windows are not reset when you click Factory Settings.

Height/Width

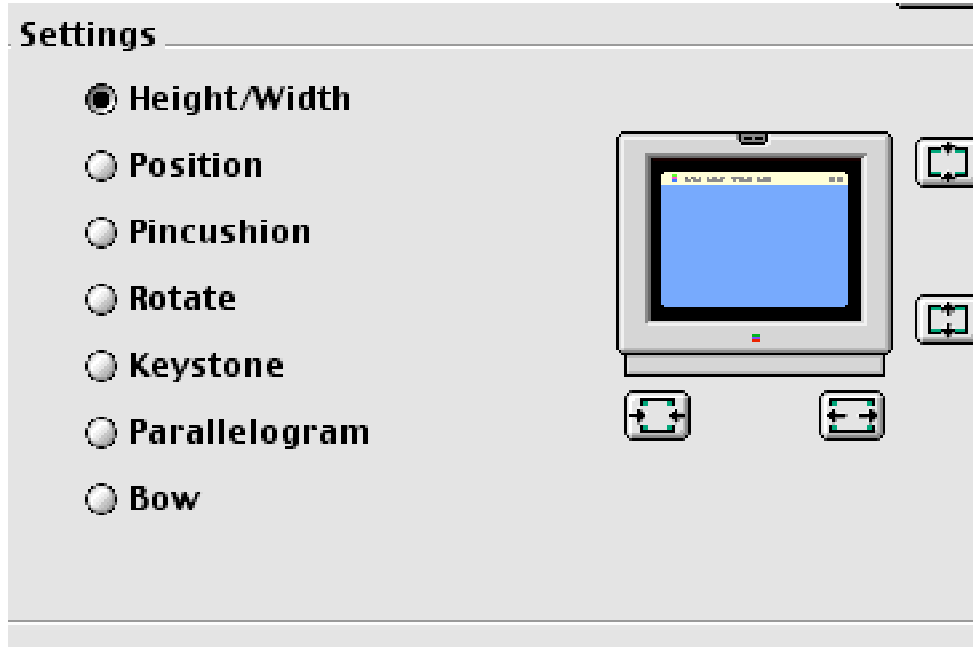


Normal height and width on an Apple CRT display leaves a black border of approximately one-half inch (13 mm) around the screen image.

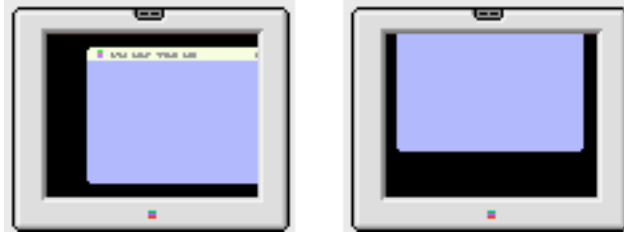
If the display image appears too short or too narrow (compressed vertically or horizontally), you can use the Height/Width controls to adjust the display.

1. Select Height/Width.
2. Move the mouse pointer over the outer edge of the screen rectangle in the picture of the display.
3. Drag the left or right side of the screen rectangle to change the width.
4. Drag the top or bottom edge of the screen rectangle to change the height.

Note: Instead of dragging the screen rectangle, you can adjust height and width by clicking the arrow buttons for incremental movement.



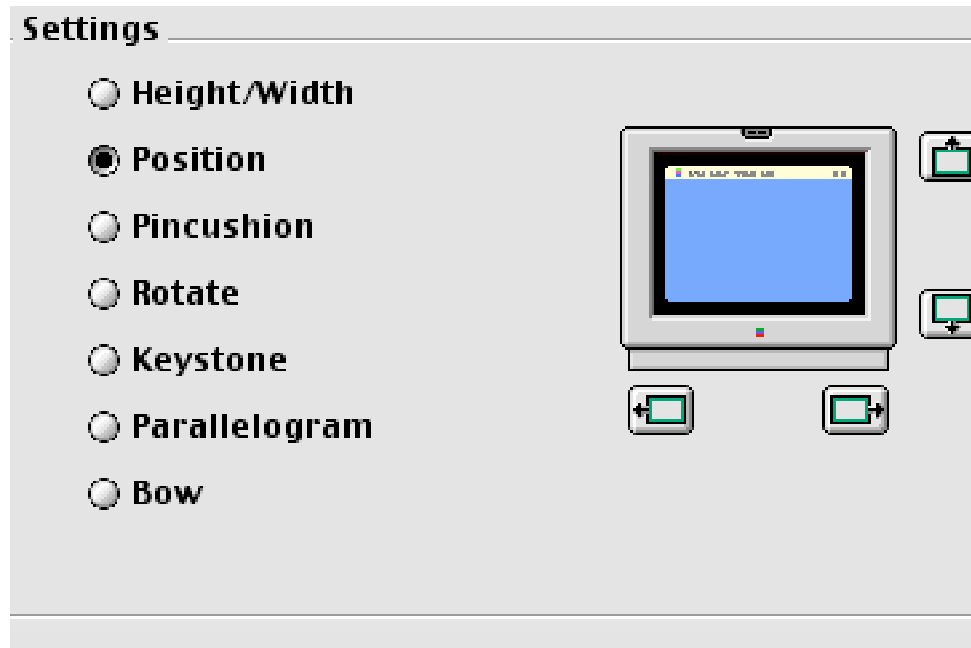
Position



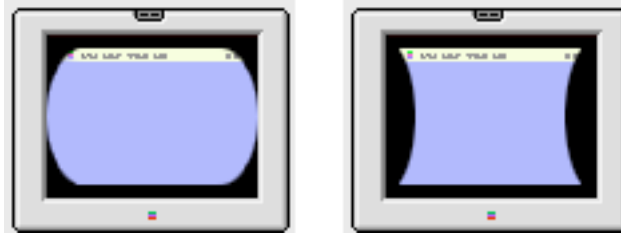
The Position selection refers to the centering of the screen image. If the image appears shifted up/down or right/left only, adjust it using the Position controls. Keep in mind that if you then move the monitor to another location you may need to readjust the controls.

1. Select Position.
2. Move the mouse pointer over the picture of the display.
3. Drag the screen rectangle to center the image.

Note: Instead of dragging the screen rectangle, you can also adjust the image position by clicking the arrow buttons for incremental movement.

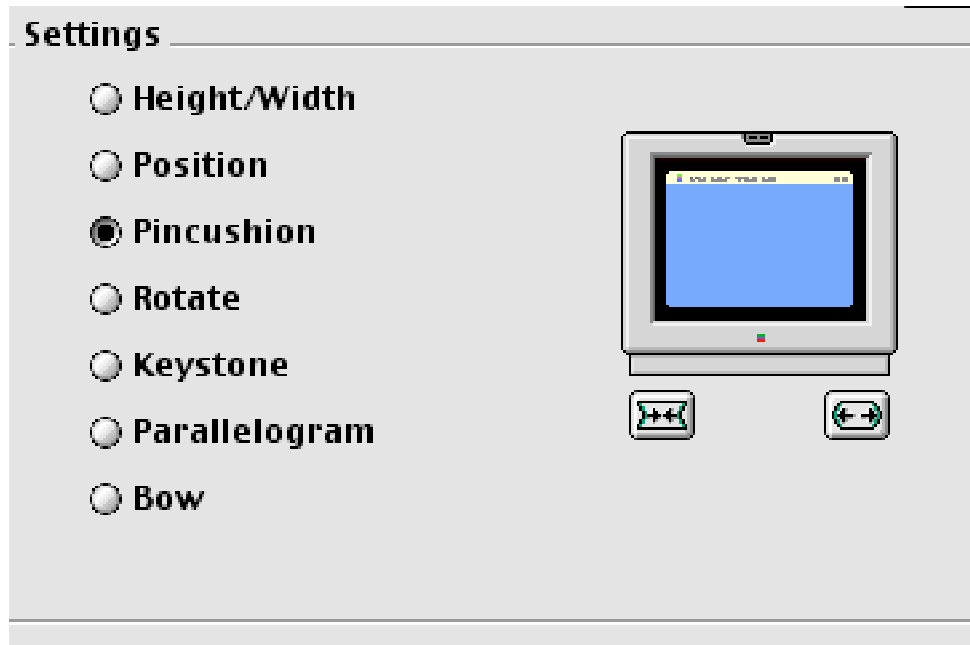


Pincushion



Pincushion is present if the screen image appears bowed in or bowed out on both sides. If just one side is affected, refer to the "Bow" section.

1. Select Pincushion.
2. Move the mouse pointer over the picture of the display.
3. Drag the left or right side of the screen rectangle to adjust the image.
Note: Instead of dragging the screen rectangle, you can adjust the shape of the image by clicking the arrow buttons for incremental movement.



Rotate



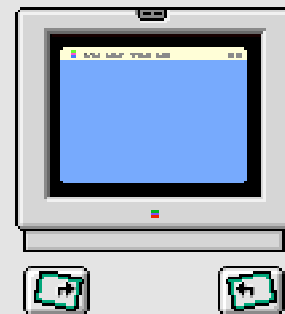
If the entire screen image appears off balance, use the Rotate controls to correct it.

1. Select Rotate.
2. Move the mouse pointer over the picture of the display.
3. Drag the screen rectangle clockwise or counterclockwise to rotate the image.

Note: Instead of dragging the screen rectangle, you can rotate the image by clicking the arrow buttons for incremental movement.

Settings

- Height/Width
- Position
- Pincushion
- Rotate
- Keystone
- Parallelogram
- Bow



Keystone



Keystone distortion (also known as trapezoid) appears as if the screen image length at the top edge is noticeably shorter or longer than the length at the bottom edge.

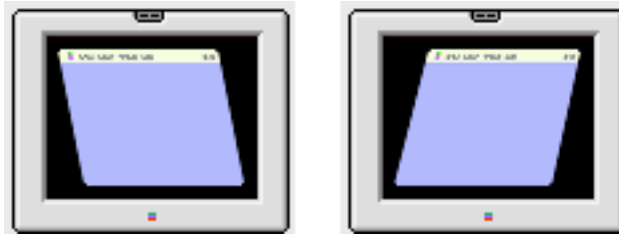
1. Select Keystone.
2. Move the mouse pointer over the picture of the display.
3. Drag the screen rectangle left or right to adjust the image.
Note: Instead of dragging the screen rectangle, you can adjust the image by clicking the arrow buttons for incremental movement.

Settings

- Height/Width
- Position
- Pincushion
- Rotate
- Keystone
- Parallelogram
- Bow



Parallelogram



Parallelogram distortion appears as if the screen image is leaning to one side.

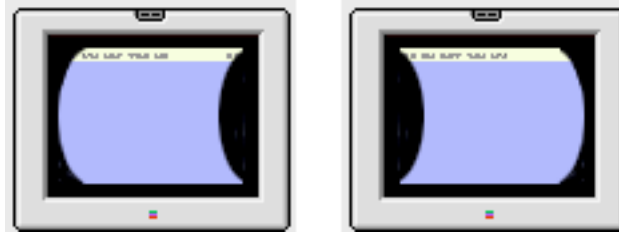
1. Select Parallelogram.
2. Move the mouse pointer over the picture of the display.
3. Drag the screen rectangle left or right to adjust the image.
Note: Instead of dragging the screen rectangle, you can adjust the image by clicking the arrow buttons for incremental movement.

Settings

- Height/Width
- Position
- Pincushion
- Rotate
- Keystone
- Parallelogram
- Bow



Bow



Bow is present if the screen image appears bowed to the left or right side. If both sides are bowed in or both sides are bowed out, refer to the "Pincushion" section.

1. Select Bow.
2. Move the mouse pointer over the picture of the display.
3. Drag the screen rectangle left or right to adjust the image.
Note: Instead of dragging the screen rectangle, you can adjust the image by clicking the arrow buttons for incremental movement.

Settings

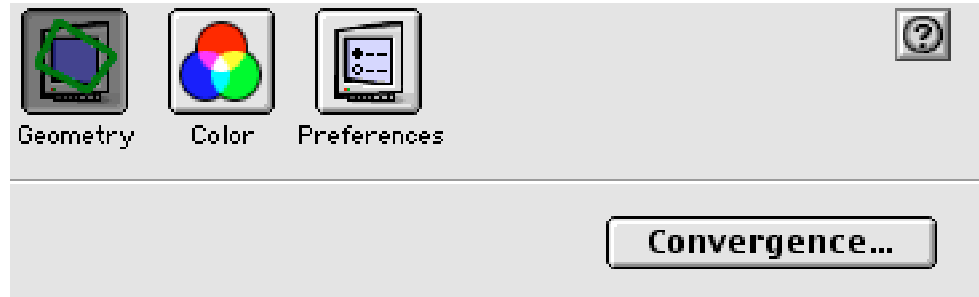
- Height/Width
- Position
- Pincushion
- Rotate
- Keystone
- Parallelogram
- Bow



Convergence

Color images may appear blurry and out of focus if Convergence needs adjustment. The convergence adjustment is used to align the red, green, and blue electron guns for a sharper screen image.

1. If you want to adjust the color convergence, click Convergence.



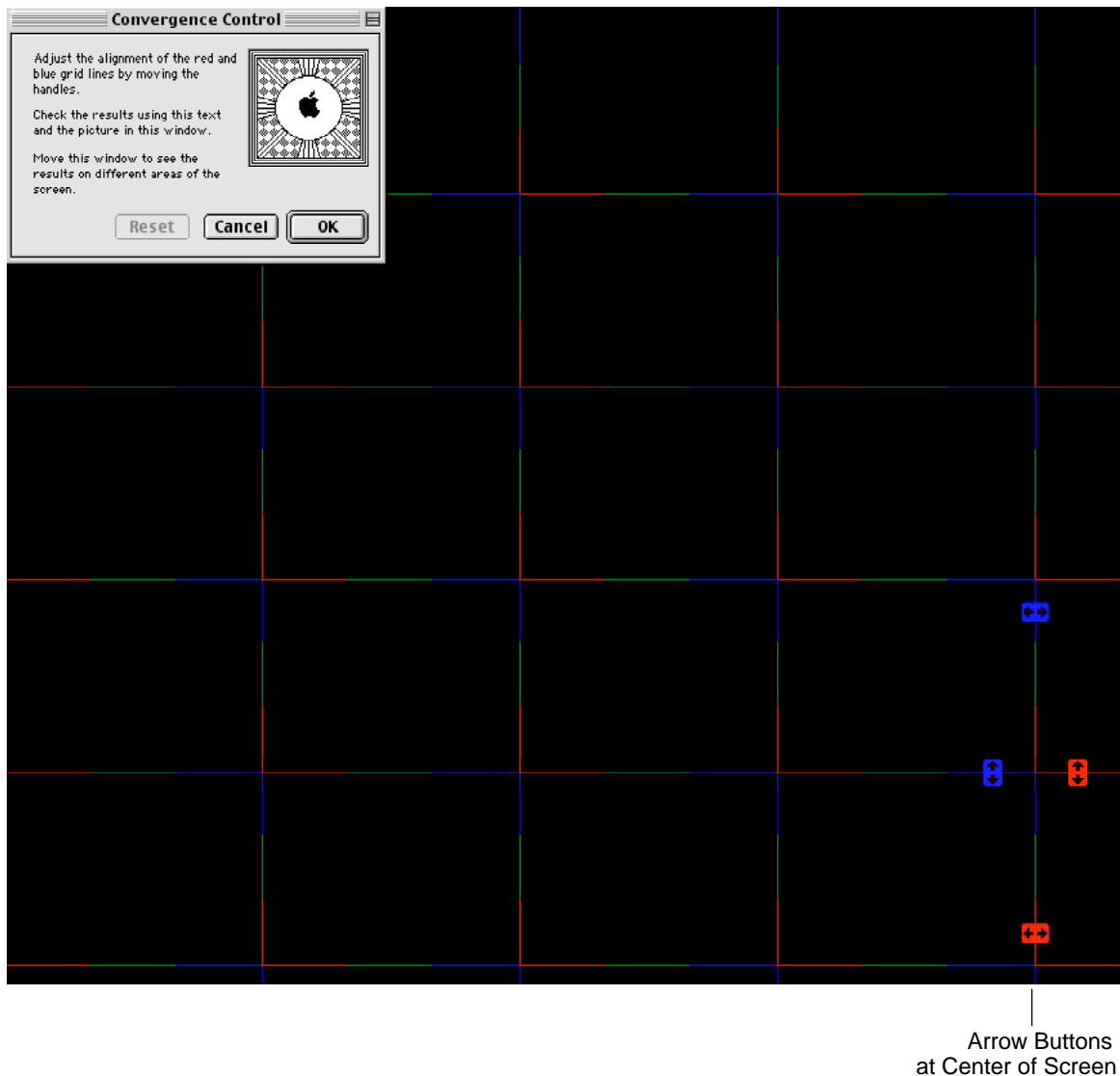
The Convergence Control window appears (see next page).

Note: When you adjust convergence, refer to the center of the screen on the grid outside the Convergence Control window.

2. Click the arrow buttons to adjust convergence. Adjust convergence for the overall best screen color clarity.

Note: The active range for the horizontal convergence controls varies from monitor to monitor. In most cases there is a portion of the range that has no effect. If the horizontal controls seem stuck, move the controls in one direction a large extent and if no effect is seen, move them in the other direction a large extent until a change is detected. Moving back and forth in small increments will have no effect until the controls are moved into the active range.

3. Click OK to save your convergence changes and close the Convergence Control window.



Degauss

If your screen display shows faint blotches of color on a single-color screen (such as a red, green, or blue screen), clicking Degauss can correct the problem.

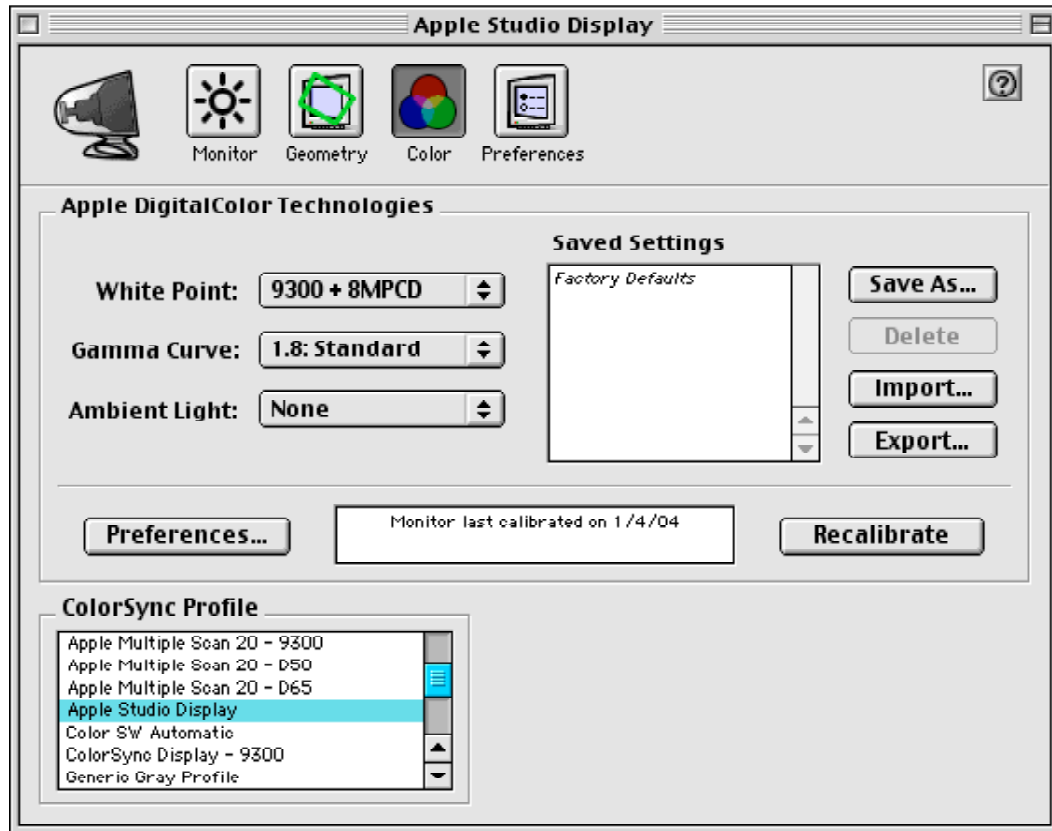
When you click Degauss, the monitor emits an audible beep and degausses itself. The screen darkens for a few seconds, and then it returns to the previous (though improved) screen display. However, if the problem persists, refer to Mac Help.



Color Button

Click the Color button in the Monitors control panel to access color settings.

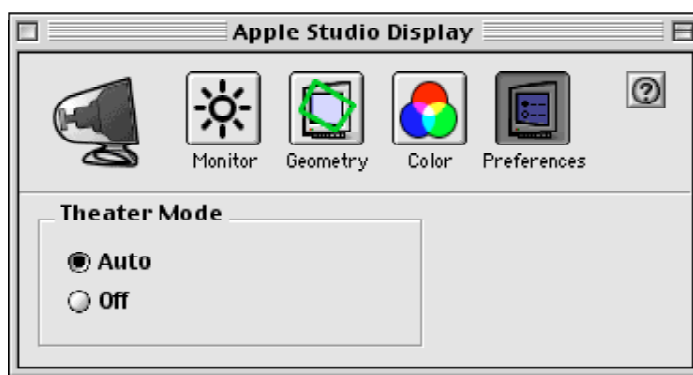
Important: Before changing any of the settings, refer to instructions in Mac Help or your computer user manual for specific color adjustments.



Preferences Button

When you click the Preferences button, the Theater Mode setting is displayed. Theater Mode is either on (set at Auto) or off.

When you show a movie full-screen, Theater Mode enhances the brightness and contrast of video content that is presented at full-screen size. With Theater Mode turned on, your monitor automatically brightens when you use full-screen mode. When you stop using the application's full-screen mode, the screen returns to its normal brightness and contrast levels.



For more information...

Refer to your computer user manual or Mac Help for more information about adjusting your display. If you experience a problem with your display and require more help, contact Apple for technical support at:
<http://www.apple.com/support/products/overview.html>

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