



See your true colours

By Derrick Story

With great image-editing tools such as iPhoto 5 and Adobe Photoshop, you'd think that every print would turn out perfect. But how many times have you slaved over a photo until it looked great on screen, only to have it look much different when printed? If you've encountered this disappointment, it's time to think about calibrating your monitor. Calibration ensures that your editing decisions are based on the right information.

Automated colour
Spyder2 uses a piece of hardware to take colour readings from your monitor and then feeds them to the software to create a precise profile.



Monitor calibration is a simple process. First you adjust the brightness, contrast, and tint of your screen. Then you create a profile for those settings so your computer can communicate them to other devices. Mac OS X includes some basic tools for calibrating your monitor. For more precise results, you can use a USB device called a colorimeter, which reads the colours of your monitor and then works with software to create the correct profile.

No matter which method you use, let your monitor warm up for an hour before you calibrate it. (You should do this before editing photos, too.) Also make sure the room's ambient lighting is similar to your normal working conditions.

Keep in mind that calibrating your monitor isn't a one-shot deal. Over time, your monitor undergoes subtle colour shifts. You'll want to repeat the process once a month to keep things looking good.

Using OS X's calibrator

Most people don't realize that OS X includes its own monitor calibrator. To access it, open the Displays preference pane and click on the Color tab. When you click on Calibrate, OS X launches the Display Calibrator Assistant, which walks you through the steps required to adjust your screen. At the bottom of the screen, turn on the Expert Mode option and then click on the Continue button.

The first series of tests addresses luminance – how brightly images appear on your monitor. Use the right-hand control to make the colour

of the grey apple as neutral as possible. Then use the left-hand control to adjust the colour's intensity. The goal is to make the apple blend as seamlessly with the background as possible (see "Eye up!" on page 169). You may find that squinting makes this adjustment easier.

When the apple seems to disappear, click on Continue. You'll repeat this process four more times, calibrating different aspects of luminance.

The next test calibrates the target gamma – the setting that determines your monitor's contrast. Deselect the Use Native Gamma option, and then move the slider control to the 2.2 marker. Mac users sometimes balk at this setting because it makes the display look too much like a Windows PC screen. However, this has become the default setting in the world of imaging, and your best bet is to be on the same page as everyone else. Of course, if you work in a production environment where printing is based on a different target gamma, then you should choose that gamma setting here.

The next test asks you to set the target white point. This influences the tint of your monitor. The standard setting is 6,500 degrees. Don't worry if you can't get the slider to read exactly 6,500; 6,512, for example, is close enough.

In the next screen, turn on the option that lets other users access this calibration. That way, anyone who uses your Mac can take advantage of the profile you're creating. Finally, give your profile a name and click on Continue.

The Display Calibrator Assistant produces an overview of the ColorSync profile you've just created. Click on Done to leave the assistant.

Using a colorimeter

OS X's built-in calibrator is great for a casual photographer who doesn't have a big budget.

Tip

If you'd like to get rid of one of your monitor profiles, go to the /Library/ColorSync/Profiles/Displays folder on your hard drive and drag out the unwanted ICC profile. If you opted to not allow your Mac's other users to access your calibrated profile, you'll find the profile by following this same path in your user folder.

have one weakness: it relies on the viewer's perception of colour.

A colorimeter, on the other hand, eliminates subjectivity from the process. It takes precise light measurements directly off your monitor and feeds them into dedicated software that creates the profile for you.

Colorimeters used to be quite expensive, but prices have recently come down, putting them within the reach of even amateur photographers. One of the most popular colorimeters for the Mac is the Spyder2, by ColorVision (£119 ex VAT; www.colourconfidence.com). The Spyder2 is easy to use, thanks to a step-by-step calibration wizard. Just load the software, plug the Spyder2 into a USB port, and follow along.

The entire calibration process takes about 30 minutes. When it's over, you'll have a new profile, in your Displays preference pane, based on the readings from the colorimeter (see "Automated colour" on page 168).

Communicating with your printer

Now that your monitor is calibrated to industry standards – the same standards online photo-printing services use – you should see an improvement in the prints that show up in your mailbox.

You should also get better output from your inkjet printer. But here, monitor calibration isn't a complete solution. Each inkjet printer produces slightly different results. To account for these differences, you need a custom ICC profile for your specific printer. This data file describes the output characteristics of the printer so your Mac can eliminate differences between what you see on the monitor and what comes out of the printer.

You can often download custom printer profiles from the manufacturer's Web site. If not, you'll have to create your own. The easiest way to do this is to get a printer profiler. If you're already investing in a colorimeter, you can often spend a little bit more to add a printer profiler to the mix. For example, ColorVision's SpyderPRO Suite (£199 ex VAT) includes Spyder2 and ProfilerPlus printer-calibration software – not a bad investment if you're serious about inkjet output.

To create a profile for your inkjet with the ProfilerPlus, you print a calibration chart with your inkjet printer and then scan that print with your flatbed scanner. The software builds a printer profile by comparing the output with the original file.

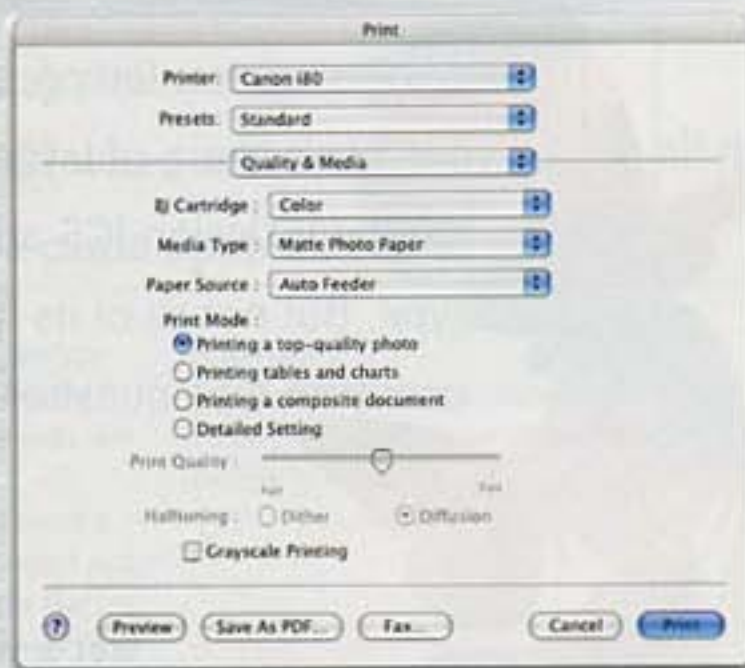
Whether you download your profile or create it yourself, you'll need to make sure your image editor knows it exists. In Photoshop, for example, open the Print With Preview dialog box. Make sure that Show More Options is selected. Choose Color Management from the pull-down menu. In the Print Space window, choose your printer's custom profile from the Profile pull-down menu. If you don't have a custom profile, choose the Same As Source option. Double-check these settings before

Even without profiling software, there are a few basic steps you can take to better match your prints to the image you see on your monitor.

In the Print dialog box (⌘-P), make sure your specific printer is selected (from the Printer pull-down menu). Then choose Print Settings from the third pull-down menu. Be sure to specify the type of paper you're using. You'd be surprised at how much your prints will improve if you simply tell your Mac whether you're using glossy, matte, or plain paper. Also choose the photo-quality setting, if that option is available.

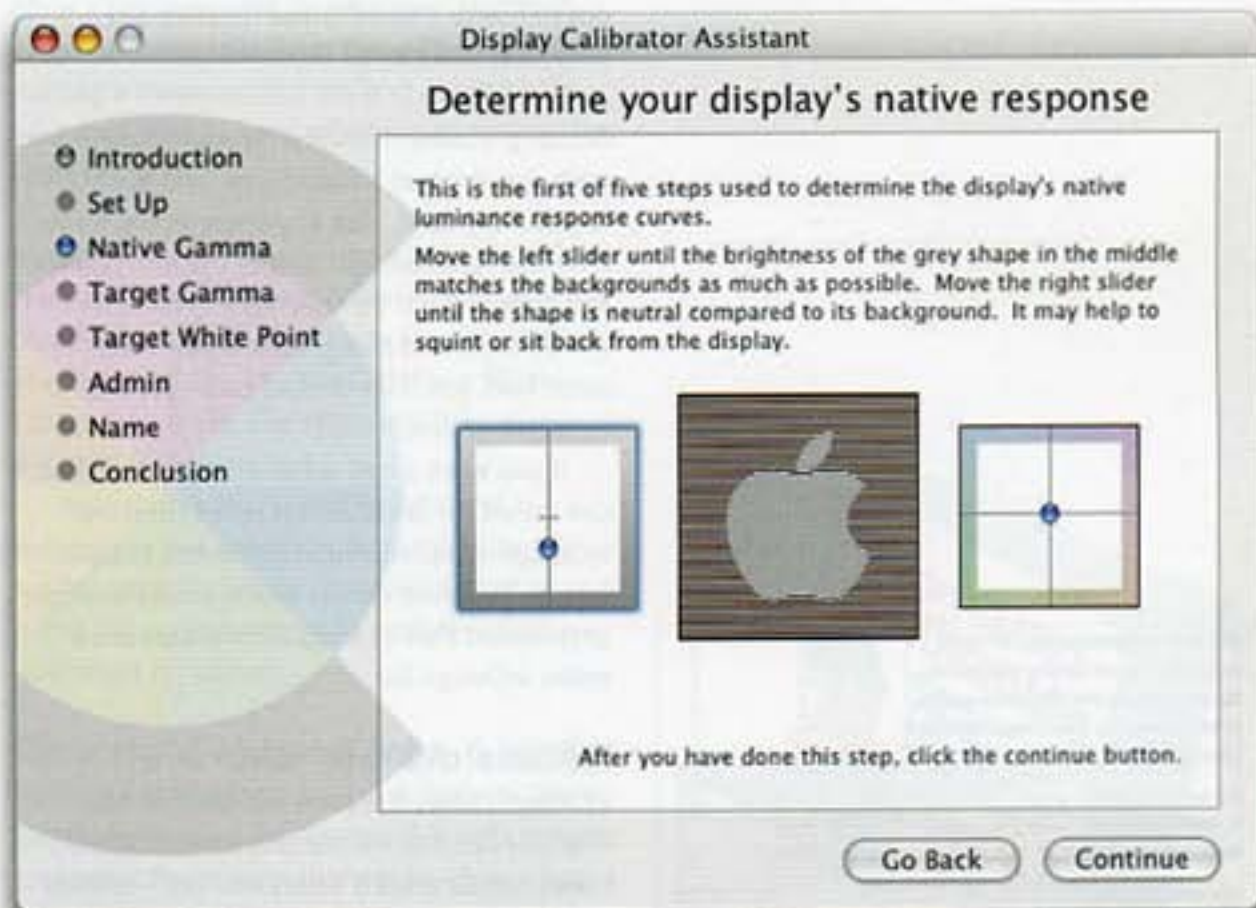
Next, switch to the Color Options or Color Management section (its name may vary depending on your printer's driver). Select the ColorSync option for colour correction. If you have a printer profile for your device, select it from the Printer Profile pull-down menu. These settings should produce an image that is very close to the calibrated picture on your monitor.

Keep in mind that there will always be differences between what you see on screen and what you see on paper. A print is reflective, while the image on your monitor is illuminated. So you're dealing with two different ways of displaying a picture. However, with a little work, you can narrow the colour-reproduction gap between your monitor and your printer.



Give as good as you get

For an accurate print, make sure that you choose your specific printer and type of paper in the Print dialog box.



printing an important image. This way, your Mac can send the most-accurate output settings to the printer.

Getting results

The quest for consistent colour may seem daunting at first. But by following these simple steps, you can make great strides toward reliable colours and tones, no matter where your pictures go after they leave your Mac. **MW**

Eye up!

Use OS X's calibration tools to fine-tune a monitor's colours. Adjust the right and left controls to make the apple match its background as closely as possible.