

MAKING CUSTOM PRINTER PROFILES

Optimal scanning of the printed target

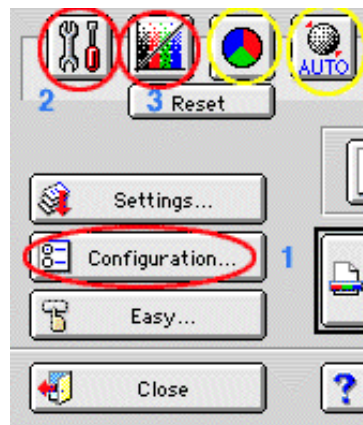
Configuring the Epson TWAIN Module

By Ian Lyons © 2001

A fair percentage of my emails relate to the subject of creating custom printer profiles or more specifically the problems folk encounter trying to create them. It would appear that Epson scanners account for more than their fair share of the problems. I'm not sure why this should be, but clearly, a problem does exist in so far as some users can't figure Epsoms rather obtuse driver settings.

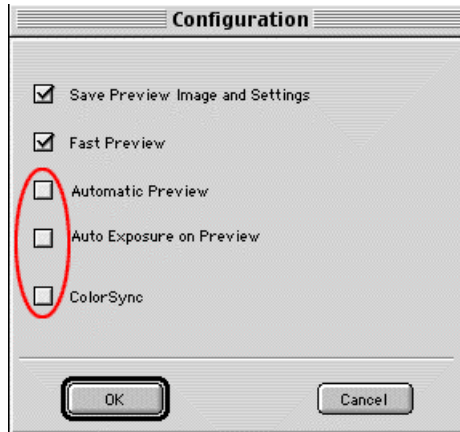
This short Tutorial will show how I configure the Epson Twain module to obtain optimum results. The screen grabs are all based on the Twain module (Version 4) supplied with the Epson 1200 Photo Scanner, but I think many of the settings should be compatible with later versions. The objective is to get the scanner driver to a state where no automatic controls could influence the scan.

Typically, it is best to set the scanner driver to scan at 100% with a resolution of 300ppi. Higher resolutions are not required. Also, ensure that you have the driver set to scan 24bit colour and NOT 36bit (high-bit colour on Epson 1600 series scanners). The following screen grab gives you an idea of how the scanner window should look. If it doesn't show these controls simply click the "Advanced" button.



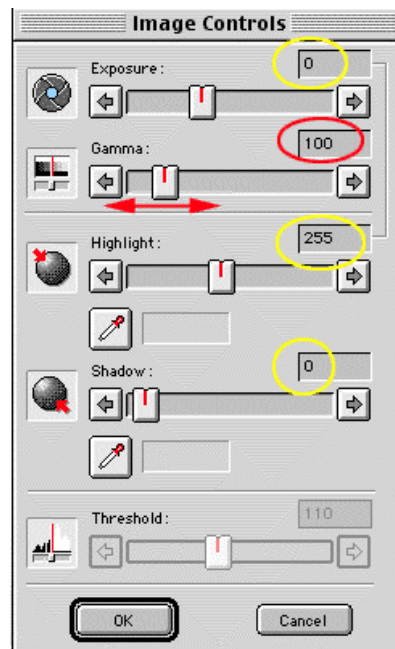
Twain Driver Controls

First we must configure the driver (1), simply press the "Configuration" button and the following dialog box should appear.



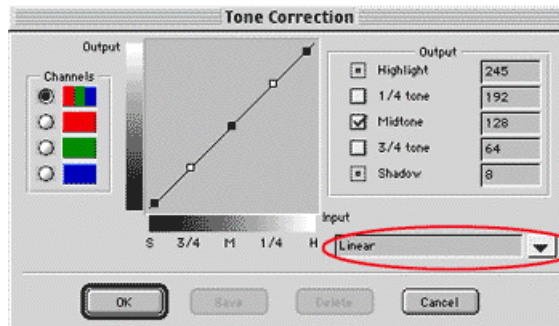
It is ESSENTIAL that the three options circled in red are all disabled (unchecked). If ANY of these options is ON you will be allowing the scanner driver to automatically determine the range of the target and the results are likely to be poor.

The next step (2) is to configure the scanner "Image Controls", namely "Highlight", "Shadow", "Exposure", "Threshold" and "Gamma". The following screen grab shows the desired settings. Don't even think about using the "Eyedropper" tools or you will alter the balance.



We want all those items circled in YELLOW to be pre-set to the values shown above, ONLY the gamma control (circled RED) will be varied. The default gamma value is 100. NOTE: contrary to popular belief 100 is NOT equal to gamma 1. If it were equal to a gamma of 1 you would not be reading this tutorial! My own comparison with a wide range of scanners suggests the value of 100 is **MUCH** closer to gamma 1.8.

Now we want to ensure that "Tone Correction" (3) is set correctly. I have found that the default values are probably the best, so my recommendation is leave this dialog set for "Linear".

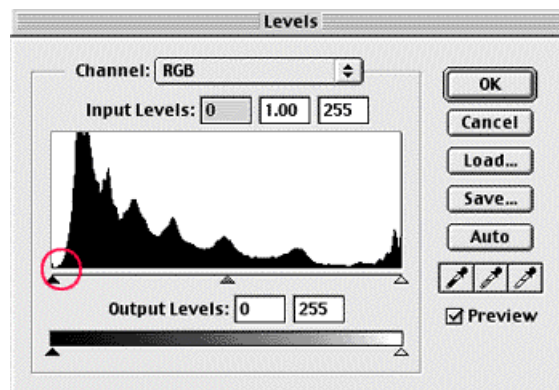


The remaining two Twain driver controls circled in "Yellow" should NOT be touched.

Since we have the scanner module configured, all we need do now is make a pre-scan of the target print. We are trying to get an image that is neither light nor dark. As explained above, ONLY the gamma value needs to be adjusted and you should see the preview scan updating as you move the gamma slider to the left or right.

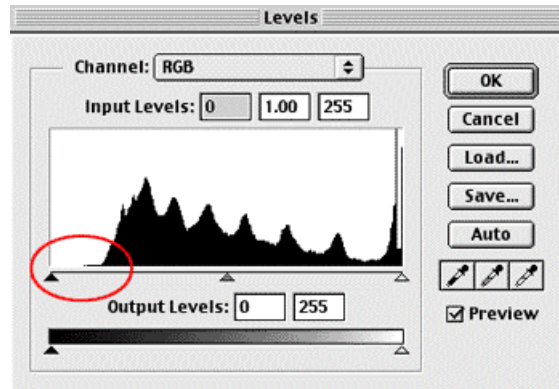


I suggest that you make the first scan at a gamma of 100. When the image opens in Photoshop choose "Levels" and check the spread of the data. Ideally, the data should spread from Shadow to Highlight as shown below.



Photoshop Levels - Ideal Spread of Data

If the scan results in a data "spread" similar (identical peaks and troughs isn't possible) to that shown above, then it is likely that a good profile can be created. Simply move on to the next stage of making the custom printer profile. However, if the scan looks like the following screen grab it is almost certain that the scanner gamma was NOT set to the ideal value and so you should rescan using a different gamma value.



Scanner Gamma was set higher than required

The above screen grab shows the result of scanning with gamma value set to high. Typically, the scan will be light and lack contrast. I have found that depending on the paper/ink/printer combination; values in the range 80 to 120 are best.

I hope this short tutorial helps resolve the problems Epson scanner users are having when trying to make custom printer profiles. Certainly, I have found that using the approach described above allows me to create very good profiles using either ColorVison Profiler RGB or Monaco Ezcolor. It also works for Praxisoft WiziWYG as an alternative to the configuration I previously suggested (that method still works perfectly okay). However, WiziWYG seems to favour gamma values slightly higher (100 plus) than Profiler RGB or EZcolor, but the spread of data shown in Photoshop Levels is still the KEY indicator as to whether a successful profile can be obtained.