

Generic QTR Windows Printing My Approach

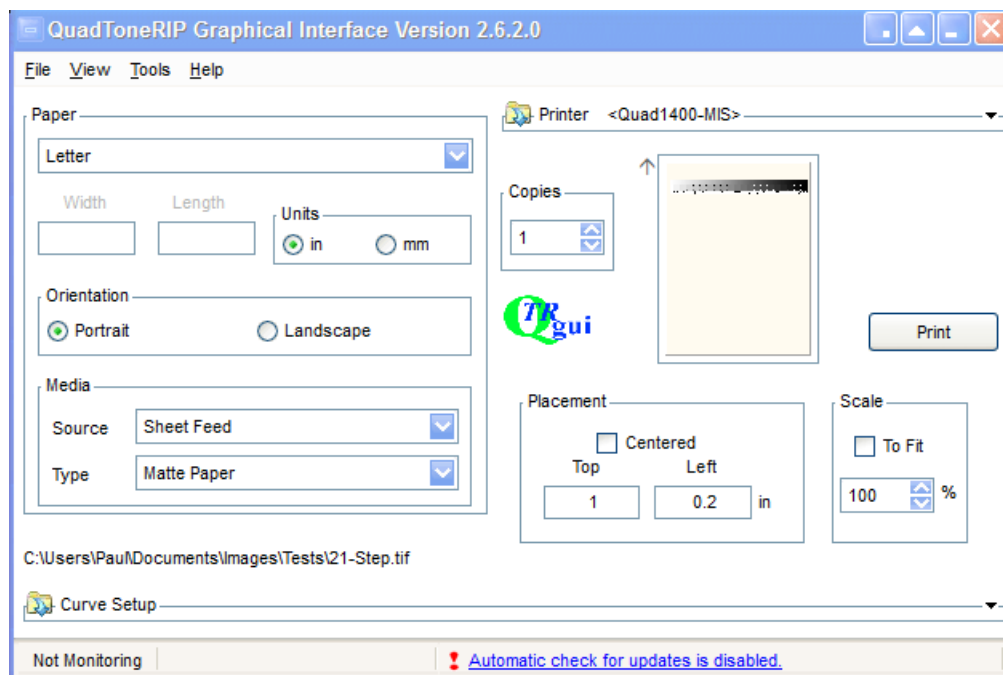
www.PaulRoark.com

1-2014 draft

QuadToneRip (QTR)¹ provides the most control and flexibility of the printing approaches I use.

I use Windows, so the following is based on the Windows QTR interface/GUI. With Windows, QTR must be used as a separate program as opposed to printing directly from Photoshop.

(This PDF is a cut and paste from a section relating to an Epson 1400 and Eboni-4 Plus inkset, but the basics are the same. The gray inks are not in the same positions as will be the case with other inksets.)



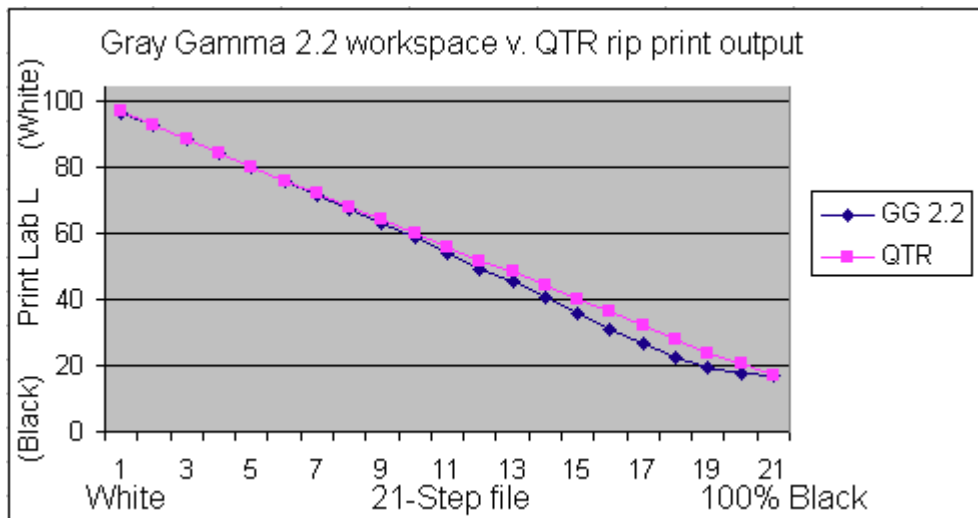
Matching the Monitor and Print

QTR is not, in and of itself, “color managed.” That is, it does not automatically adjust the output to match the working space or embedded profile of the image file such that

¹ <http://www.quadtonerip.com/html/QTRoverview.html>

the relative densities displayed on the monitor will be reflected in the print.² QTR prints with a straight-line response or characteristic curve. None of the common working color spaces use this density distribution. I usually save a Tiff file to the desktop that has the print size and other final printing adjustments to it. QTR prints only grayscale Tiff files (and Jpegs for later QTR versions). Files are flattened, profiles ignored, and 16 bit files are converted to 8 bit for printing.

The most common gray working space is Gray Gamma 2.2. That is what I use for all my files. The graph below shows the difference in relative densities between how a Gray Gamma 2.2 (what I abbreviate “GG 2.2”) file will look on a well-profiled monitor and print with a color managed system, versus how it will print with QTR.



If a file is edited in Gray Gamma 2.2 it will not result in a print from QTR that looks like the monitor. Because the GG2.2 shadows are compressed and QTR shadows are linear, a GG2.2 file will appear lighter and perhaps lacking in good blacks when printed with QTR.³

There are two basic approaches to matching the properly calibrated monitor’s display and QTR print. First, if QTR printing is the primary objective one has in editing a file, it may make sense to edit the file in a manner that it will print with QTR and look like it did on the monitor with no further conversions or modifications to the file. The QTR download includes ICCs that can be used for this purpose. These are located in the /QuadToneRip/ICC folder. There is also a Readme file in the /QTR/ICC folder that explains the use of the ICCs. When I was editing only for printing with a rip like QTR, I

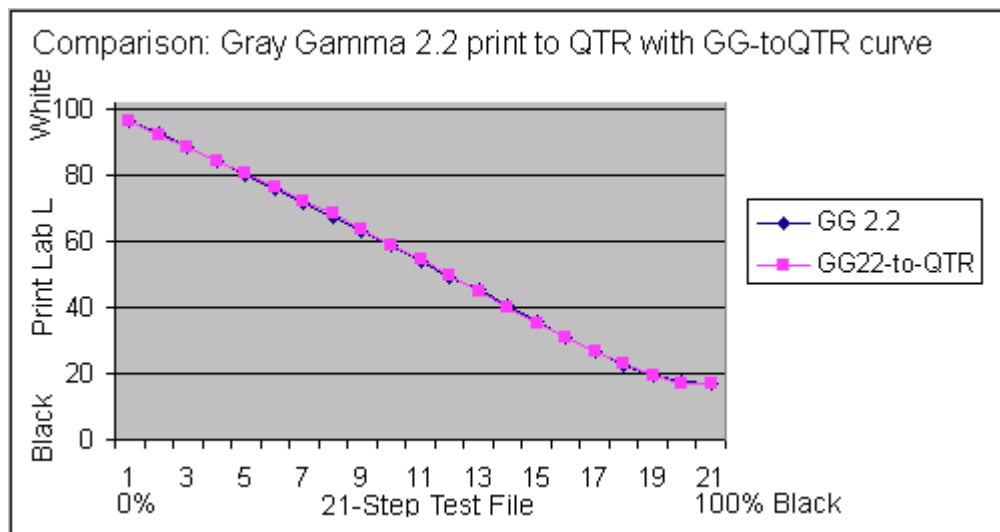
² Mac users can insert matte or glossy QTR ICCs in the PS Print Preview to get the advantages of color management with QTR. Windows does not support this type of printing.

³ Ironically, with the very bright LCD monitors, the lighter QTR print may actually match the screen better. However, calibrating the monitor and coordinating viewing light intensities are other issues that I will not go into here.

used the soft-proofing approach (View>Proof Setup>Custom). I no longer use these approaches.

Second, if QTR printing is just one of several expected uses of the file, it might make sense to edit the file using the, de facto, standard working space – Gray Gamma 2.2 – and then adjust a copy of the file as needed to print with QTR only when ready to print. One method of doing this is to convert the file (Edit>Convert to)⁴ to the Gray Matte or Gray Photo spaces, for matte or glossy papers, respectively, with the QTR ICCs.

Alternatively, one can apply a Photoshop image adjustment curve that makes this conversion. This is what I do. The graph below compares the matte paper print densities (Lab L, technically) resulting from, first, a color-managed workflow where the file used the Gray Gamma 2.2 working space and the printer was color managed with a custom ICC with, second, a QTR workflow where the “GG22-to-QTR.avc” curve was applied to the file before printing with QTR. They are virtually identical. In short, the GG22-to-QTR curve replicates the Gray Gamma 2.2 output characteristics, allowing one to edit in that standard working space and match the output to the monitor when QTR is used to print the file.



The “GG22-to-QTR.avc” curve can be downloaded from <http://www.paulroark.com/BW-Info/Roark-QTR-ACV.zip> .

Note that as good as color management is, variations in display lighting cannot all be accounted for. One advantage to using a PS image adjustment curve, which can be on a layer, is that the user can modify it to also account for individual variables.

⁴ Use Perceptual and Black Point Compensation. Note that the dmax might be slightly affected.

To summarize, my printing procedure is to do a final edit of my Gray Gamma 2.2 file and save that file before I apply the GG22-to-QTR adjustment curve. When I want a print, I pull up that file, set the size I want, apply the GG22-to-QTR curve, and save the file to the Desktop with QTR at the end of the name. For large files, I often also re-size down to be sure the dpi is not larger than 720, change the mode to 8 bit, and eliminate all selections and layers to avoid a file that is unnecessarily large.

It works for me, and it's easy.