Black Art Eboni
100% Carbon Pigment Printing
For the Epson R1800

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9-26-08

Advantages of Black Art Eboni

Greater Image Stability

The 100% carbon pigment prints made with this approach have far greater lightfastness and image tone stability than those B&W systems that use color pigments, such as the Epson "Advanced B&W" approach. Carbon pigments are simple far stronger than color pigments, and the color pigments in other approaches will fade at different rates, causing the B&W prints to turn different colors. For more information see http://www.paulroark.com/BW-Info/R1800-Lightfastness.pdf

No Color Artifacts

The lack of color inks avoids all the color artifacts like metamerism (appearing to be different colors in different light).

Multiple Workflows

There are multiple printing procedures or "workflows," including simple plug and play printing that takes no special knowledge of additional software, like "RIPs."

"Color Managed" – Print Matches Monitor

Printing from Photoshop or Elements, free ICCs automatically match the monitor's relative densities to the print, unlike the Epson ABW approach.

High Bit Printing – More Gray Levels

Using these grayscale ICCs, a high bit (16 bit) grayscale file can be printed and maintain its high bit depth straight through the driver to the print. That is, unlike the Epson ABW workflow, which limits the print to 8 bits or 256 gray levels, the Black Art Eboni workflow allows thousands of gray levels to be printed.

Eight Channels of Carbon Pigments

The printer has 8 channels of carbon ink as opposed to the 3 channels in the best Epson B&W approach, allowing smoother prints.

Less Clogging

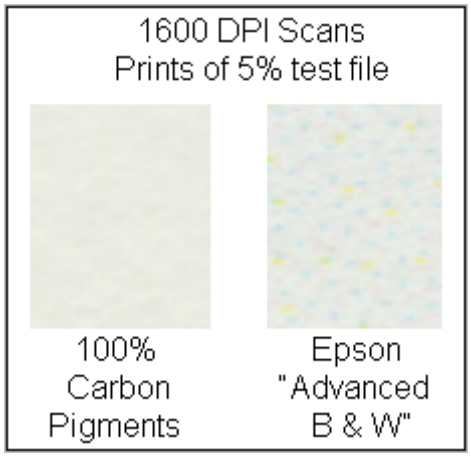
Matte paper only inks like Black Art Eboni have very low levels of binder, leading to lower clogging than pigments that must be sticky enough to stay on glossy paper.

Image File Preparation

Black Art Eboni is made to print grayscale files, not color, RGB files. If you have a color original there are many ways to convert it to grayscale, including just clicking on Image>Mode>Grayscale in Photoshop or Elements. The most common grayscale file type is a Tiff file. Having the file in 16 bit/channel mode is recommended. Black Art Eboni will print any grayscale image file type.

Print Structure -- Comparison 1600 DPI Scans

With no color pigments and many more carbon channels and levels, the 100% Carbon pigment Black Art Eboni prints have a significantly different image structure than the Epson "Advanced Black and White" mode prints. See the high resolution (1600 DPI Epson flatbed) scans of prints made with the 2 different approaches.

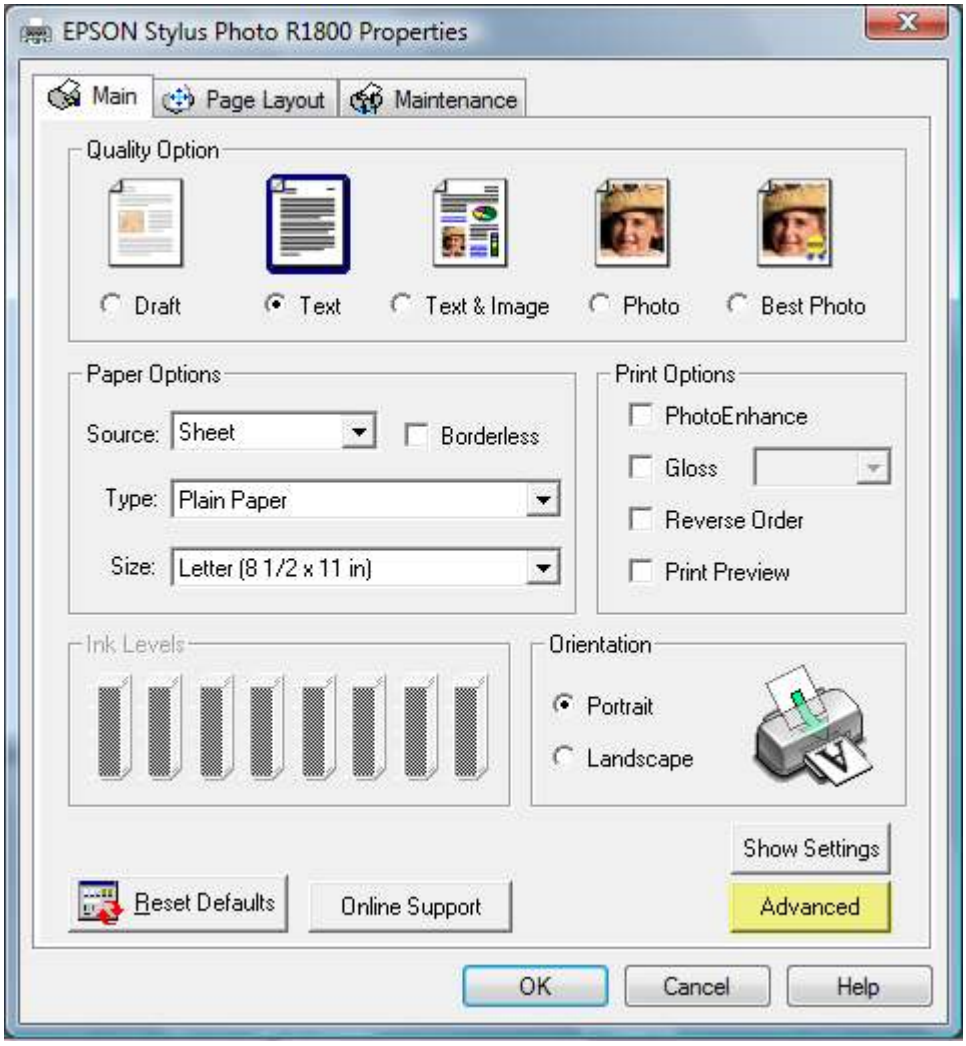


Printing Workflows

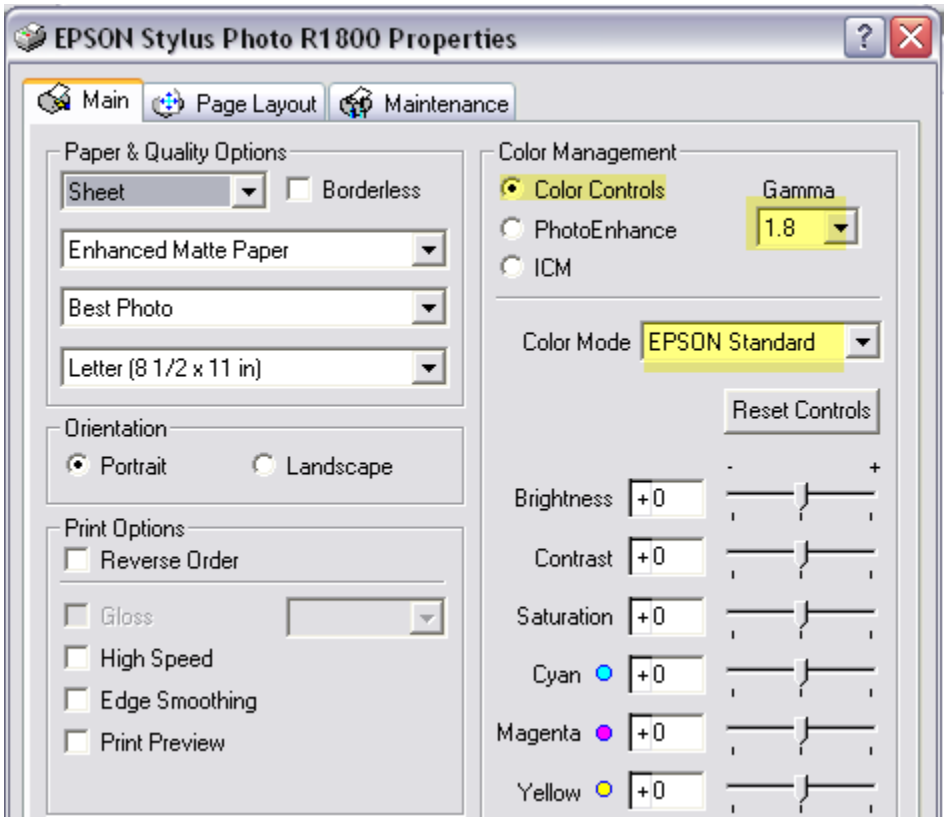
Epson Driver Printing – No ICC or profile

With Black Art Eboni, the Epson driver prints in the normal manner with no special procedures. Nonetheless, for the best prints it is best to check the printer driver settings. After clicking on File>Print, go to the printer driver "Properties" dialog box.

Go to the “Advanced” dialog box by clicking that button.



In the Advanced Properties box, the driver settings to start with are shown below:



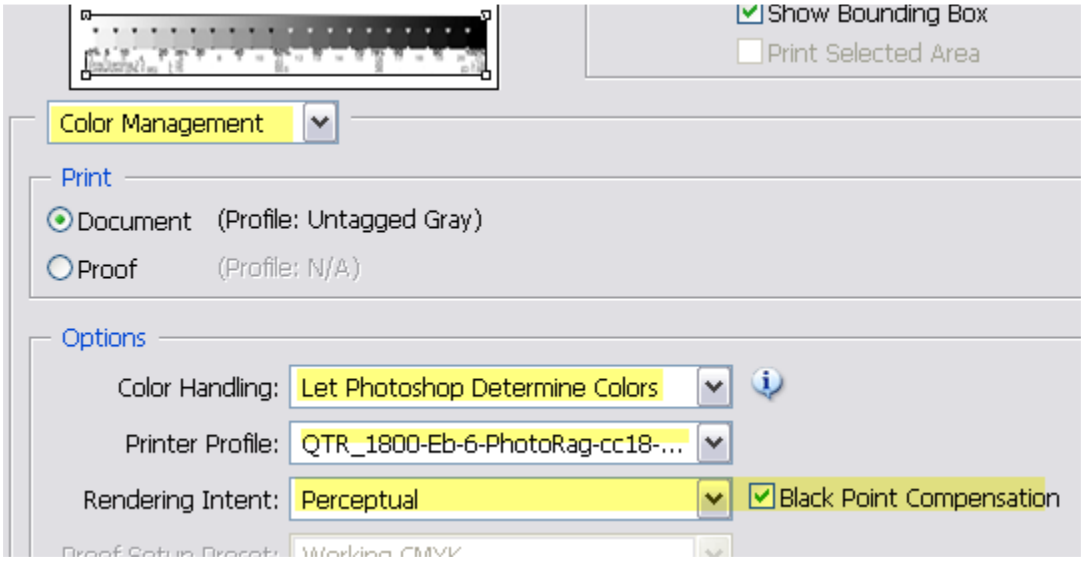
Fine-tuning photos is easiest when the computer monitor closely matches the print. Different papers print somewhat differently, however. The sliders in the Epson driver may be all that one needs to correct for minor differences.

Epson Driver Printing with ICCs

To get a near perfect match between the monitor and the print automatically, the use of an ICC is recommended. The grayscale ICCs utilize the "color management" systems of the computer and printer, even though we are using grayscale files to print B&W images. Note, however, that while Adobe Photoshop and Elements can use these grayscale ICCs, most image editors are geared to RGB files and do not recognize these ICCs. Photoshop and Elements are highly recommended as the image editors of choice.

The ICC is selected in the Photoshop or Elements Print Preview.

The important **Print Preview settings** are shown below.



If the Print Preview does not show the bottom portion of this screen grab, check "Show More Options." (The screen grabs are from a Windows computer running CS2.)

The **"Printer Profile" box** will show the list of ICCs when the down arrow is clicked.

The ICCs are made with programs called "Create ICC" or "Create ICC-RGB" from QuadToneRip ("QTR"). The ICC names will all start with "QTR."

To **download ICCs** go to http://www.paulroark.com/BW-Info/1800-Black-Art-Eboni-ICCs.zip

For QTR go to http://www.quadtonerip.com/html/QTRiccprofile.html

Save the Zip file to and/or open it in the folder shown below.

The **location of ICCs** in different OS's is as follows:

Windows XP & Vista -- C:\Windows\System32\spool\drivers\color

Mac OS 9.x: -- Systems Folder/ColorSync Profiles

Mac OS X -- Library/ColorSync/Profiles

Windows 98/M --C: \Windows\System\Color

Windows NT/2000 or XP upgrade from NT/2000 -- \Winnt\system32\spool\drivers\color

(A shortcut can be made on the computer desktop that allows one to just drag and drop the folder of profiles into the correct location. To make a shortcut in Windows, right click on the desktop and click on New>Shortcut. The above location can be typed in.)

(Note that if Photoshop was already running when the ICCs were put into their correct location, PS's ICC list will need to be refreshed. Click on Edit>Color Settings in PS to refresh the ICC list.)

The **Epson driver settings** remain as indicated above, on page 4.

Making Custom ICCs

Advanced users may want to make their own ICCs. They are easily made with QTR's "Create ICC" or "Create ICC-RBG programs. The QTR package can be downloaded from http://www.quadtonerip.com/html/QTRoverview.html While a spectrophotometer is ideally used for measuring test strips, ICCs can also be made using a flatbed scanner. See http://www.paulroark.com/BW-Info/Making_B-W_ICCs-GrayCard.pdf

Printing with the QTR RIP

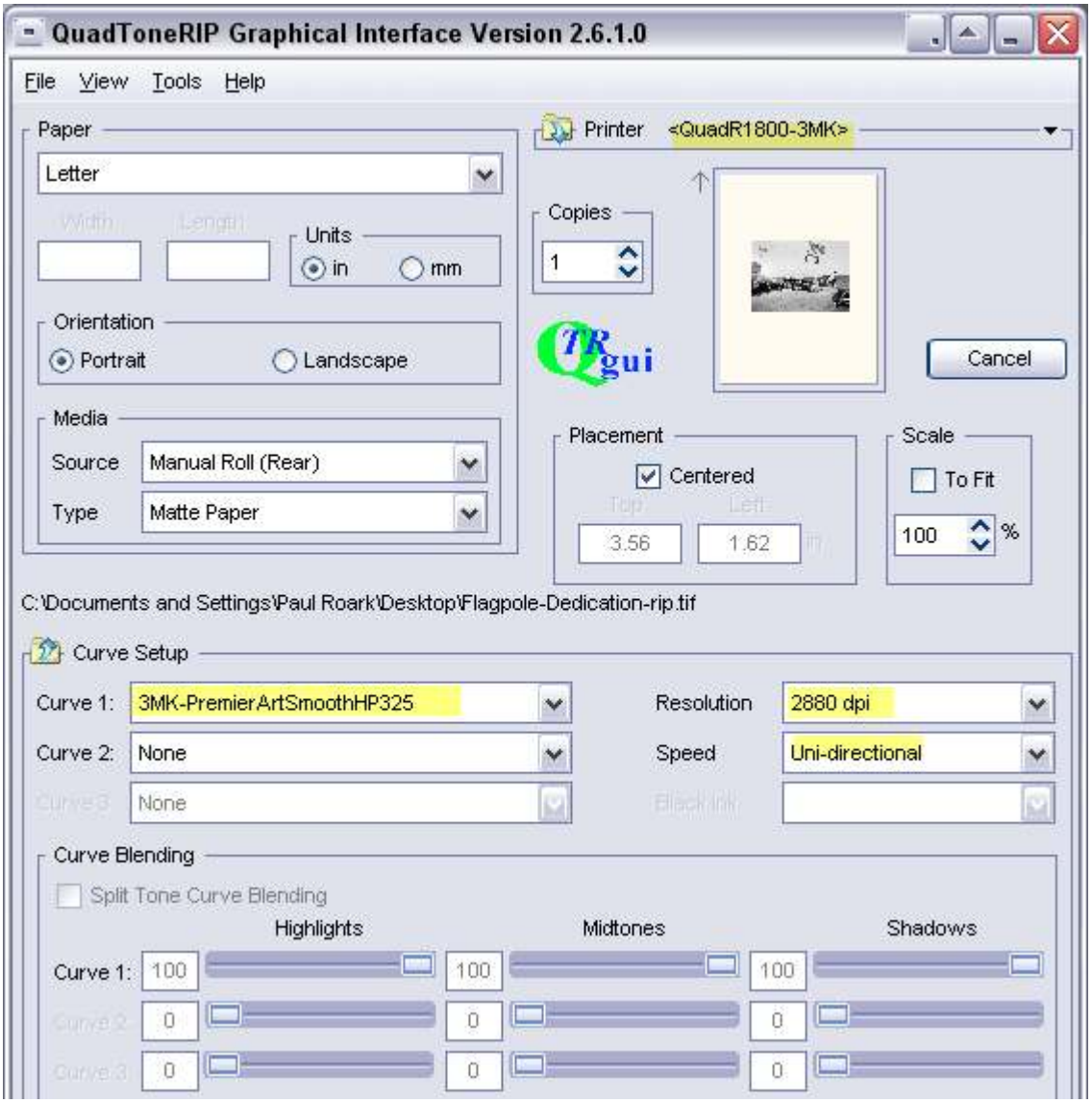
The QTR rip can also be used to print Black Art Eboni. This specialized B&W printer utility allows the advanced user to control each channel separately. It is a powerful printer driver that can fully utilize the 8 carbon channels in a variety of ways.

One of the workflows – the "3-MK" approach – uses 3 channels of full strength, neutral-toned Eboni MK carbon pigment. This approach was recently reviewed by Shutterbug magazine.
(See http://www.shutterbug.net/equipmentreviews/scanners_printers/0208winkjet/)

For full information on the 3-MK approach, see http://www.paulroark.com/BW-Info/R1800.htm. For a copy of QTR, go to http://www.quadtonerip.com/html/QTRoverview.html.

"3-MK" Workflow Settings

This screen grab shows the settings I often use with Premier Art Smooth 325, an un-brightened paper that I use for the museum reproduction project, and one of my all time favorite papers. The 3-MK workflow with QTR prints it very well.



The 3-MK workflow makes quite neutral prints on un-brightened, natural (no OBAs) papers. It has a very fine grained image structure that also tends to impart a sense of finer detail than is actually in, for example, an old photo reproduction. A subtle, grain-like, random noise level can also hide distracting defects in the underlying image.

QTR File Preparation

QTR is a non-color-managed driver that prints slightly lighter, particularly in the deep shadows, than the Gray Gamma 2.2 workspace often used for B&W images.

There are several different methods to either edit in the space QTR uses or adjust for the differences. I edit in Gray Gamma 2.2 and apply a Photoshop curve to the file for printing. This adjustment curve ("GG22-QTR.acv") is in the Zip download file: http://www.paulroark.com/BW-Info/1800-Black-Art-Eboni-ICCs.zip

In my workflow, after the curve is applied to an image I want to print, I save this file to the desktop, with "rip" or the like in the name. On the Desktop, the image file icon can be dragged and dropped into the QTR icon for printing.

Print Tones

Print tones are primarily determined by the paper used, ranging from neutral/cool to medium warm. Additionally, with QTR one can use sliders to combine a smooth, dilute carbon workflow (like that used by the Epson driver) with the 3-MK workflow, with its different paper tones and image structure.

When the Epson driver is used, as examples, Premier Art Smooth Bright White prints relatively cool; Hahnemuhle papers print medium warm.

With QTR and the 3-MK workflow, Premier Art Smooth (no-OBAs) 325 gsm is a very even-toned, natural paper, whereas many papers print with a warm split tone.