

PowerRIP 2000 ColorSync™ 2.6.1 or later and ICC Profiles

Notes:

This document will only address the steps related to ICC profiles and ColorSync. For a complete discussion of printing from the application go to the appropriate Read Me for that driver and application in your Read Me folder. This document also assumes that PowerRIP 2000 has been launched and Open Printer has occurred. These directions were created using OS 8.6. Menus may vary slightly with earlier version of system software.

The Apple™ColorSync Read Me in the Apple ColorSync folder should be read for a full understanding of the ColorSync features. For additional ColorSync information go to Apple> Control Panel> ColorSync. Click the About tab. Then click on the appropriate Apple web address for the information you are seeking.

It is assumed that the monitor has been calibrated, the appropriate application plug-ins have been installed, the appropriate ICC profiles have been copied to the ColorSync Profiles folder in the System Folder and that an image is ready to be printed.

Due to variances in monitor hardware, whitepoint settings may vary from machine to machine.

It should be noted that this read me is an overview of printing to PowerRIP 2000 using ColorSync. The features are predicated on the revision of PowerRIP 2000 and the printer. Not all features are available in all revisions of PowerRIP 2000.

Overview:

ColorSync is an application that comes standard with your Apple™Macintosh system software. If ColorSync is not installed on your system, you can install it from your OS CD.

When ColorSync is installed on your system, you will find a ColorSync Profiles folder in your System Folder. All the appropriate ICC profiles for your printer should be copied to this folder. When PowerRIP 2000 is installed on your system an ICC folder will also be installed in the PowerRIP 2000 folder. Unstuff and then copy the ICC profiles in the PowerRIP 2000 ICC folder to the ColorSync Profiles folder in your System Folder.

Before we discuss printing to PowerRIP 2000 using ColorSync and ICC profiles there are a number of terms that need to be defined for a clear understanding of what we will be doing.

Glossary of Terms:

ICC Profiles are color space descriptions. The ICC profile format is defined by the International Color Consortium as a cross platform standard. Ability to cross platforms allows you to print from Mac to PC, PC to Mac, etc. Color management is built into Windows 98 as well as the Macintosh operating system. ICC compliant applications, such as Photoshop 5.x, Illustrator 8.x, Quark 4.0.x, have the capacity to output using ColorSync. PowerRIP 2000 can print using ColorSync from any ICC compliant application.

ColorSync is the industry standard for managing color across a broad spectrum of devices such as monitors, scanners and various output devices. PowerRIP 2000 can print from any ICC compliant application.

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Gamut or Color gamut are all the colors that a device can produce. It is the range of colors that a color system can output. Many more colors can be displayed on the screen than can be printed. When colors on the screen can not be printed they are out of gamut. The RGB gamut is much larger than the CMYK gamut. The RGB gamut consists of any combination of red, green and blue. The CMYK gamut consists of only the colors that can be produced with cyan, magenta, yellow and black. So gamut is the range of colors that can print using a particular set of inks and paper.

Perceptual Matching maintains the relative color values among the original pixels as they are mapped to the printer gamut. The color relationship is preserved even though the color values may be changed when the image moves from the display to the color output.

Relative Colorimetric leaves colors that fall inside the gamut unchanged. It takes colors outside the gamut and converts them to colors inside the gamut. The colors will have the same lightness or darkness but can now be printed because they fall inside the gamut.

Saturation Matching maintains the relative saturation values. Out of gamut colors are converted to colors that fall in the gamut with the same saturation.

Absolute Colorimetric disables white point matching when converting the colors. (This is not recommended.)

Printing from Applications

Printing from QuarkXPress 4.x using LaserWriter 8.7 and ICC Profiles

These directions assume that you have already selected LaserWriter 8.7 and your printer in the Chooser.

Before you can print using ICC profile you must enable Quark CMS (Color Management System). The following is an overview of the CMS functionality. For an in-depth discussion of CMS, QuarkXPress Tech Note Color Profiles should be read. If you did not install CMS when you installed Quark, using the Quark CD, Install Quark Color Management Software.

Step 1:

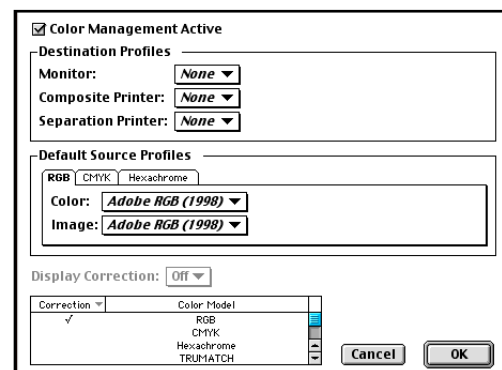
Enable CMS

- In QuarkXPress 4.x go to **Utilities>XTension Manager**.
- Select **Quark CMS**.
- Quit out of Quark.
- Launch Quark.

Step 2:

Activate CMS

- In QuarkXPress 4.x go to **Edit>Preferences>Color Management**.
- Select **Color Management Active** to activate CMS.



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Note: If you create a default profile with no document open, that profile will be applied globally to all documents. If you create a default profile with a document open then the default profile will affect that file only.

To see what ICC profiles you have installed on your system go to **Utilities>Profile Manager**. If the profile you want to use has a check next to it, CMS will use it.

You can specify a default profile in the Color Management Preferences dialog box. (**Edit>Preferences>Color Management**)

Step 3:

Destination Profiles

Monitor will affect your monitor display only.

Composite Printers will affect your printer output.

Default Source Profiles

RGB tab

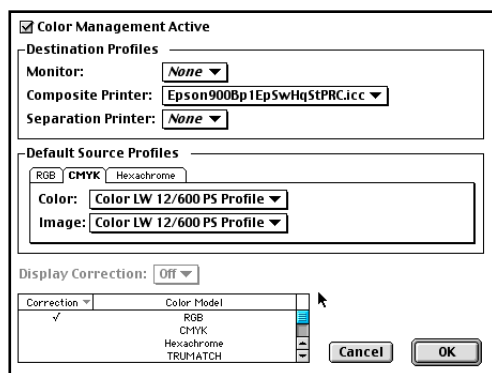
Color corresponds to the monitor you used when you created the RGB document.

Image corresponds to the input device.

CMYK tab

Color corresponds to the CMYK source (monitor or scanner). If you don't have a CMYK monitor or scanner select the profile for your CMYK output device

Click **OK**.



Step 4:

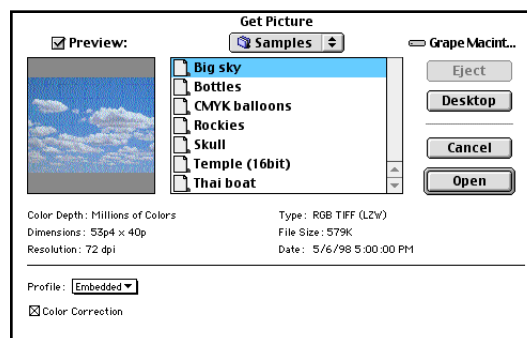
Using ICC Profiles

Get Picture - (File>Get Picture)

When CMS is active a Profile pull-down is added to the Get Picture dialog box. This allows you to define the images source profile to be compared with the destination profile.

Note: Profiles specified in **Get Picture>Profile** will override the default source profile in **Color Management Preferences**.

If the Profile pull-down list and Color Correction check box are unavailable, the picture you are importing may have been saved by an application not supported by Quark CMS. Quark CMS will only define the color space of a color raster images, such as TIFF, JPEG, BMP and Photo CD.



Print - (File>Print)

When color management is active an additional Profile tab will display in the print menu. Composite Profile will override the Composite Printer specified in the Color Management Preferences. Go to **File>Print** and follow the steps 5-14 to print.

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Step 5:

The LaserWriter 8.7 Print dialog will display.

Setup tab

Select your **printer** in Printer Description.

Select the correct **Paper Size**.

Print Style: Default

Copies: 1 Pages: All Range Separators...

Document Setup Output Options Preview Profiles

Printer Description: iProof PowerRIP Mac/PMac (Epson Stylus Color 9...)

Paper Size: US Letter

Paper Width: 51p Paper Offset:

Paper Height: 66p Page Gap:

Reduce or Enlarge: 100% Fit in Print Area

Page Positioning: Left Edge Orientation:

Page Setup... Printer... Capture Settings Cancel Print

Step 6:

Document tab

Deselect **Include Blank Pages**.

Print Style: Default

Copies: 1 Pages: All Range Separators...

Document Setup Output Options Preview Profiles

Separations Spreads Collate

Include Blank Pages Thumbnails Back to Front

Page Sequence: All Bleed: 0p

Registration: Off Offset:

Tiling: Off Overlap: Absolute Overlap

Page Setup... Printer... Capture Settings Cancel Print

Step 7:

Output tab

Select **Composite Color** in Print Colors.

Print Style: Default

Copies: 1 Pages: All Range Separators...

Document Setup Output Options Preview Profiles

Print Colors: Composite Color Resolution: 360 (dpi)

Halftoning: Conventional Frequency: 65 (lpi)

Print	Plate	Halftone	Frequency	Angle	Function
<input checked="" type="checkbox"/>	Process Cyan	-	65	15°	Default
<input checked="" type="checkbox"/>	Process Magenta	-	65	75°	Default
<input checked="" type="checkbox"/>	Process Yellow	-	65	0°	Default
<input checked="" type="checkbox"/>	Process Black	-	65	45°	Default

Page Setup... Printer... Capture Settings Cancel Print

Step 8:

Options tab

Select **Normal** in Output.

Select **Binary** in Data.

Select **Full Resolution TIFF Output**.

Print Style: Default

Copies: 1 Pages: All Range Separators...

Document Setup Output Options Preview Profiles

Quark PostScript Error Handler Negative Print

Page Flip: None

Pictures

Output: Normal

Data: Binary Overprint EPS Black

OPI: Include Images Full Resolution TIFF Output

Page Setup... Printer... Capture Settings Cancel Print

Step 9:

Profiles tab

Select your **ICC Profile** in Composite.

Click **Printer** in the bottom left corner.

Print Style: Default

Copies: 1 Pages: All Range Separators...

Document Setup Output Options Preview Profiles

Separation: None

Composite: Epson900Bp1Ep5wHqStPRC.icc

Composite Simulates Separation

Modifications in this dialog will affect preferences.

Page Setup... Printer... Capture Settings Cancel Print

Step 10:

The LaserWriter Print dialog box will display.

General

Select the pages you want to print.

Printer: Stylus Color 1160 Destination: Printer 8.7

General

Copies: 1 Collated

Pages: All From: To:

Paper Source: All pages from: Cassette

First page from: Cassette

Remaining from: Cassette

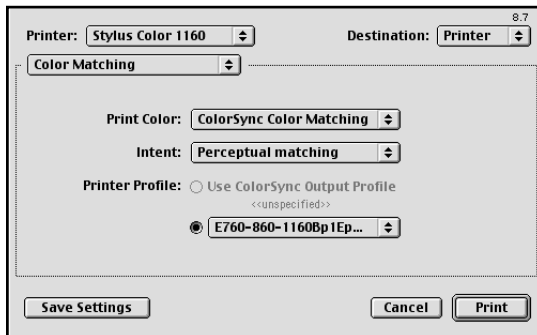
Save Settings Cancel Print

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Step 11:

Color Matching

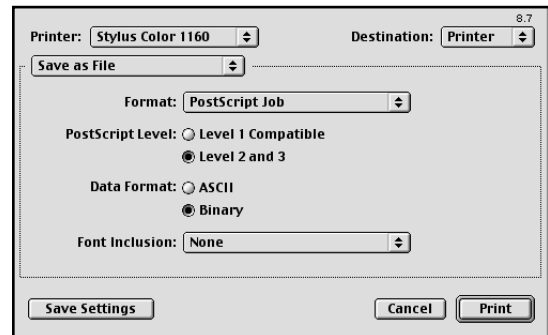
Since you have defined the ColorSync profile that you wish to use within Quark's CMS you do not have to specify ColorSync in the Color Matching dialog box. You can leave Print Color at Color/Grayscale.



Step 12:

Save as File

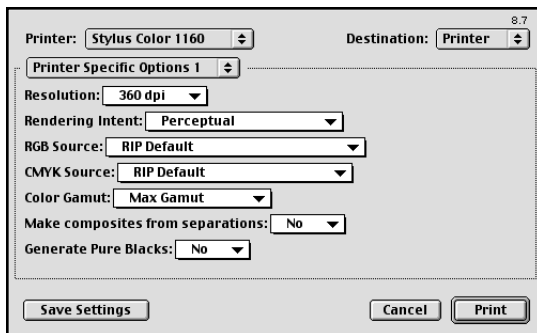
Select **Binary** in Data Format.
Select **All** in Font Inclusion.



Step 13:

Printer Specific Options 1

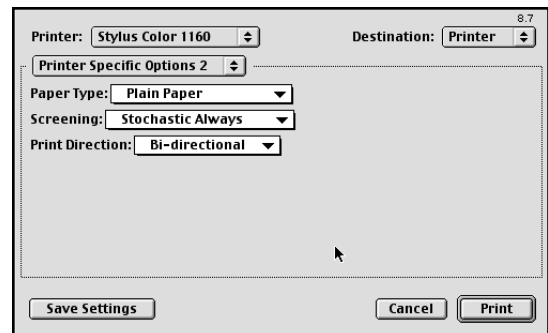
For an in-depth discussion of the Printer Specific Options for your printer see Appendix 4 of the PowerRIP 2000 manual.



Step 14:

Printer Specific Options 2

Select the appropriate **Paper Type**.
Select **Stochastic Always** in Screening.
Select **Bi-Directional** in Print Direction.



Click **Print**.

Click **Print**.

The file will process and print

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Printing from PhotoShop 5.0 using LaserWriter 8.7 and ICC Profiles

Photoshop uses CMM (Color Management Module) to interpret ICC profiles. Before using ICC profiles you should calibrate your monitor using ColorSync. Go to Apple>Control Panels>Monitors & Sounds. The Monitors & Sounds window will display. Click Color and then calibrate. Follow the screen directions to calibrate your monitor.

Note: For an in-depth discussion of Photoshop and ColorSync, the Photoshop Users Guide should be read.

Step 1: CMYK Setup

CMYK Setup lets you define the CMYK color space based on the ICC profile you are going to use.

File>Color Settings> CMYK Setup

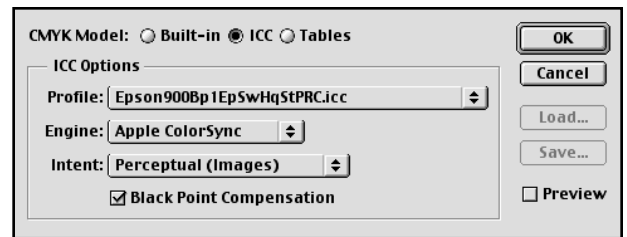
Select **ICC** for the CMYK Model.

Select **Preview** if you want to preview your changes on the screen.

Select your **ICC profile** in Profile.

Select **Apple ColorSync** in Engine.

Select the **Intent** that matches your ColorSync profile.



Select **Black Point Compensation** if you want to map the darkest natural color of the source color to the darkest natural color of the destination color. Click **OK**.

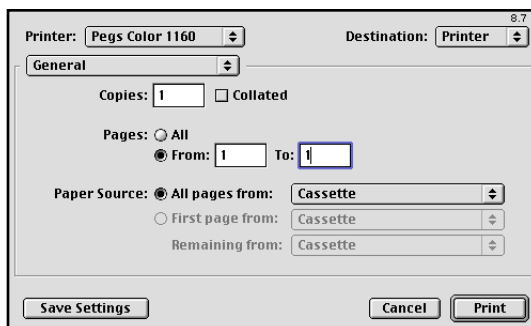
Step 2:

Go to **File>Print**.

The LaserWriter 8.7 Print dialog will display.

General

Define the pages you want to print in **To** and **From**.

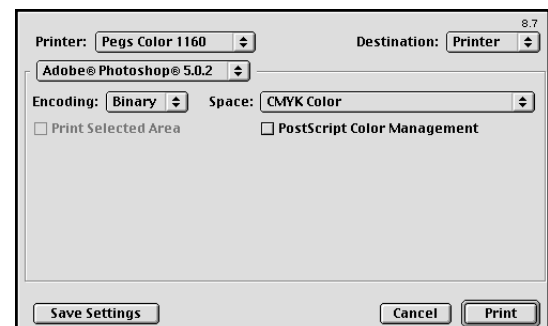


Step 3:

Adobe Photoshop

Select **Binary** in Encoding.

Select the appropriate color space in **Space**.



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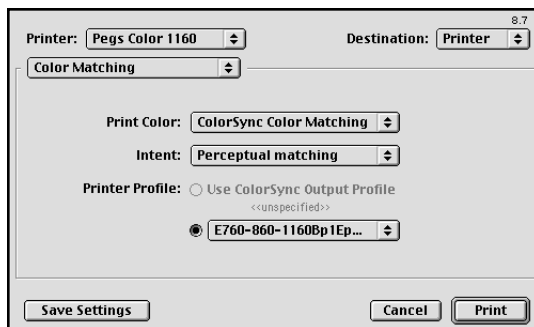
Step 4:

Color Matching

Print Color: Select ColorSync Color Matching.

Intent: The selection you made in Photoshop CMYK Setup must match the selection you make in this window.

Printer Profile: The selection you made in Photoshop CMYK Setup must match the selection you make in this window.



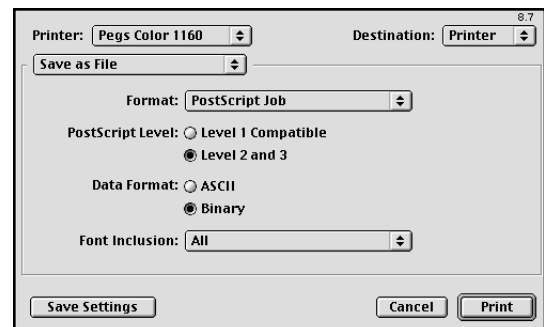
Step 5:

Save As File

Select **Level 2 and 3** in PostScript Level.

Select **Binary** in Data Format.

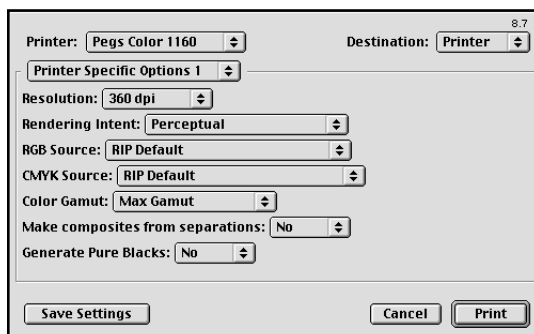
Select **All** in Font Inclusion.



Step 6:

Printer Specific Options 1

For an in-depth discussion of the Printer Specific Options for your printer see Appendix 4 of the PowerRIP 2000 manual.



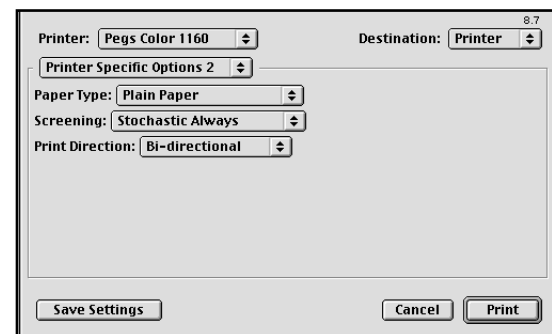
Step 7:

Printer Specific Options 2

Select the appropriate **Paper Type**.

Select **Stochastic Always** in Screening.

Select **Bi-Directional** in Print Direction



Click **Save Settings**.

Click **Print**.

The file will process and print.