

PHOTO PRINTING

This document describes how to use EFI XF to achieve vivid colors when printing digital photos.

RGB workflow

From digital camera to printout, the digital image passes through a complex chain of production steps. It is the task of the digital photographer to control color management at each stage of the workflow to ensure that vivid colors are output at the end. This means maintaining the RGB color space of the digital camera for as long as possible.

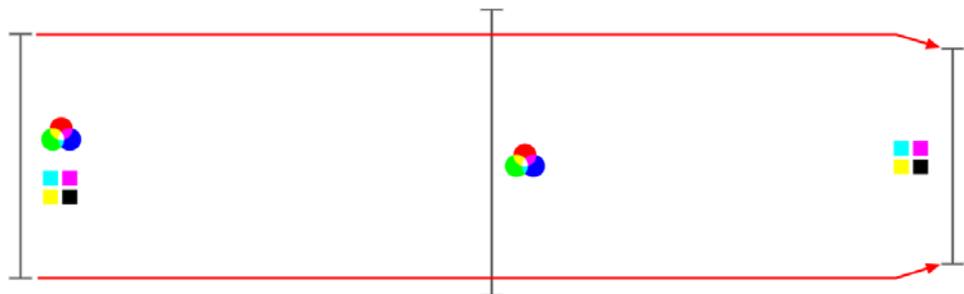
All digital photos nowadays automatically contain an embedded profile which describes the color behavior of the digital camera on which they were taken. Incorporating this profile into the workflow helps to reproduce the image's true colors in the printout.

EFI XF supports ICC color management, which means that it can slot easily into any existing color workflow. Color management in EFI XF is controlled by the following ICC profiles:

- Source profile, which describes the color properties of the input device, e.g. digital camera.
- Media profile, which describes the color properties of the printer. When you make settings for media, resolution and ink, EFI XF automatically chooses the correct media profile for those settings.
- Simulation profile, which describes the output device for the final run. In a proofing workflow this would be a profile for the CMYK printing press. However, in an RGB workflow, this type of profile is not significant.

The following illustration shows how, when processing photos, the RGB color space is maintained for as long as possible and is only converted to the smaller CMYK color space of the printer for output.

RGB workflow



Settings in EFI XF

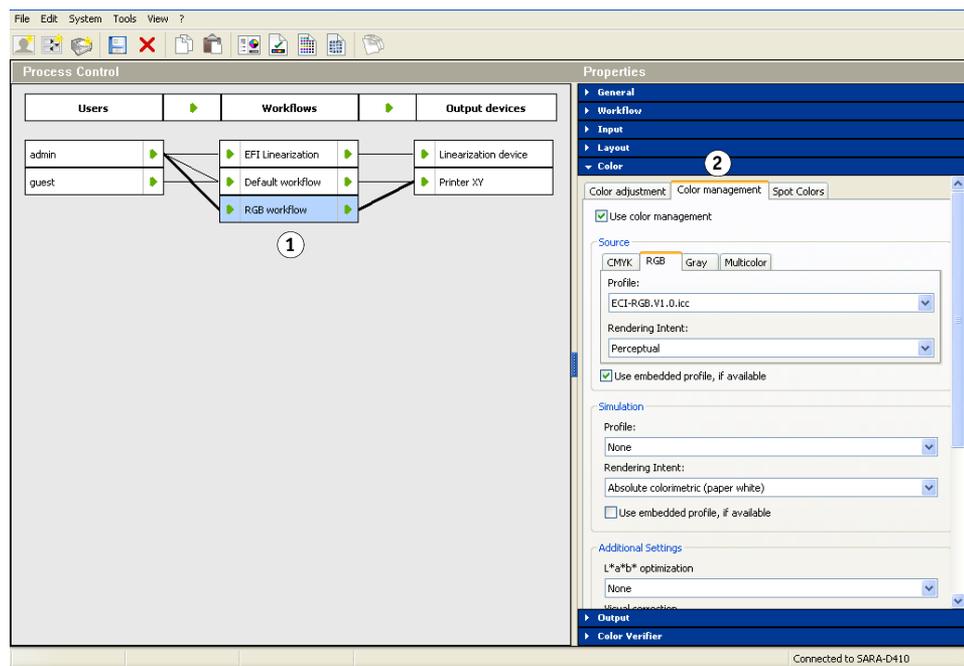
The following color-related settings are important when printing RGB images.

To MAKE COLOR SETTINGS

- 1 In System Manager, highlight the workflow.
- 2 On the Color bar, click the Color management tab.

Color management settings

- 1 Highlight the workflow.
- 2 Make color settings on the Color management tab.



- 3 Click the RGB tab for source profiles and choose an appropriate RGB profile from the list.

You can also choose a rendering intent. A rendering intent defines how bigger color gamuts will be compressed into smaller color gamuts. See the user guide for further information.

- 4 In the Source area, select the check box Use embedded profile, if available.

This ensures that the color properties of the input device are taken into account during job processing. This setting only affects source profiles embedded in JPEG and TIFF files.

Embedded source profiles, if available, always overwrite the source profiles selected in EFI XF.

- 5 In the Simulation area, make sure that the check box Use embedded profile, if available is not selected.

This ensures that if an output intent is embedded in a PDF/X-3 file it will not be applied as a simulation profile.

- 6 Scroll down to the bottom of the property inspector dialog and select the check box Use solid black. In the edit box, enter a value of 1%.**

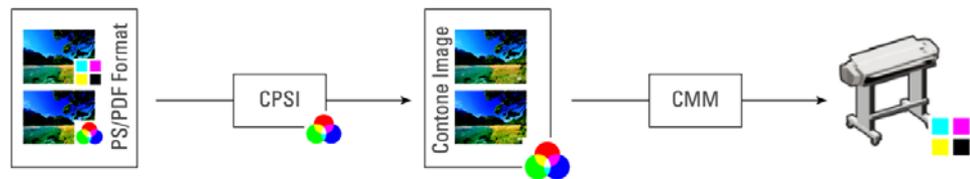
This setting ensures that black areas will always be printed using pure black ink. If you enter any other value, areas with a black percentage up to that value will be printed from a mixture of cyan, magenta and yellow.

- 7 On the Input bar, click the PS/PDF tab.**

- 8 In the Working Color Space area, select RGB.**

This setting affects RGB elements of PostScript, PDF and EPS files. It ensures that RGB data is not converted to CMYK by the PostScript interpreter, thus maintaining the RGB color space in the workflow.

Handling of RGB data



NOTE: This setting has no effect on JPEG or TIFF files and may, therefore, not be important for your workflow setup.

Settings in LinTool/Color Manager

The following settings are recommended when working with LinTool/Color Manager:

Creating a base linearization

Program window	Setting	Epson	HP	Canon
General settings	Resolution	1440 dpi	1200 dpi	2400 dpi (new models)
	Color mode	6 colors or more		
	Print mode	Super	Super	High quality
	Halftoning	Super Enhanced 2 (= stochastic)		
	Profile settings	Proof		
Total ink limit		Use the calculated value. However, it is recommended that you also perform a visual assessment to check the calculated value. Increase the value slightly, if necessary.		
Ink limit per channel		Two things are important for photographers: a wide color gamut and a good gray balance. It is therefore recommended that you select values at the upper end of the blue bars. This will ensure that the channels are cut at the latest point possible.		

Program window	Setting	Epson	HP	Canon
Linearization	Norm starting point	Select a late norm starting point to create smooth gradations. However, be careful that the total amount of light ink does not get too high.		
	Dot gain	Use the default value.		
Quality control		Visually check the gray balance of the CMY strip. If the CMY patch appears more gray, the total ink limit may be too low.		

Creating a media profile

The following settings are recommended:

	Setting	Epson	HP	Canon
Black generation	Black length	16	10	10
	Black width	10	10	10

If the image appears too gray or contains black dots, you should decrease the black length and, more importantly, the black width. This effect may occur if you are using a printer which has bigger ink droplets.

If the image has a green tint or appears dirty, try increasing both values in small increments (steps of two) until the desired color is achieved.

Archiving images

The EFI Tiff Output Option is a convenient way to prepare all your digital images for archiving. Instead of outputting to a printer, your print jobs, including all color management settings, are output to TIFF format.

This method enables you to convert RGB files from any source (e.g. different digital cameras or old data from a scanning device) to one standard format. You can assign an RGB profile as the source profile and use embedded profiles, if required.

Processing all image files in this way ensures color consistency across the whole workflow.