DEVICE LINK PROFILES

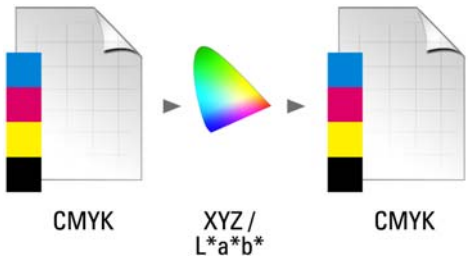
This document uses easy step-by-step instructions to explain how to create a device link profile and implement it in EFI XF.

You require the add-on option Color Manager to create a device link profile.

What is a device link profile?

In a normal workflow situation, the color space of the input device is transformed to the color space of the output device via the device-independent L*a*b* color space (known as the profile connection space). This process requires two different profiles — a source profile and a destination profile.

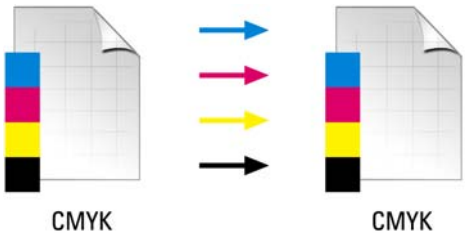
Color conversion using source and destination profiles



A device link profile is a special kind of ICC profile that converts the color space of the input device directly into the color space of the output device, whereby the output device can be either a physical printer or a file format. Unlike ordinary source or destination profiles, they do not describe a specific color space, but define the conversion from a source color space to a destination color space. The basis for creating a device link profile is, therefore, always an ordinary ICC profile.

Device link profiles are most commonly applied to direct CMYK-to-CMYK transformations because converting via a device-independent color space can lead to undesirable effects, such as unsmooth color gradients. In a device link profile the color separations are maintained, thus preserving the black channel of the source profile.

Color conversion using a device link profile



Indeed, preserving the black channel of the input color space is one of the main advantages of using a device link profile. For this reason, device link profiles are often used during data preparation, e.g. to convert from ISOcoated to ISOuncoated.

Furthermore, device link profiles enable you to by-pass the L*a*b* color space, thus preventing contamination by other colors, e.g. 50% black stays 50% black.

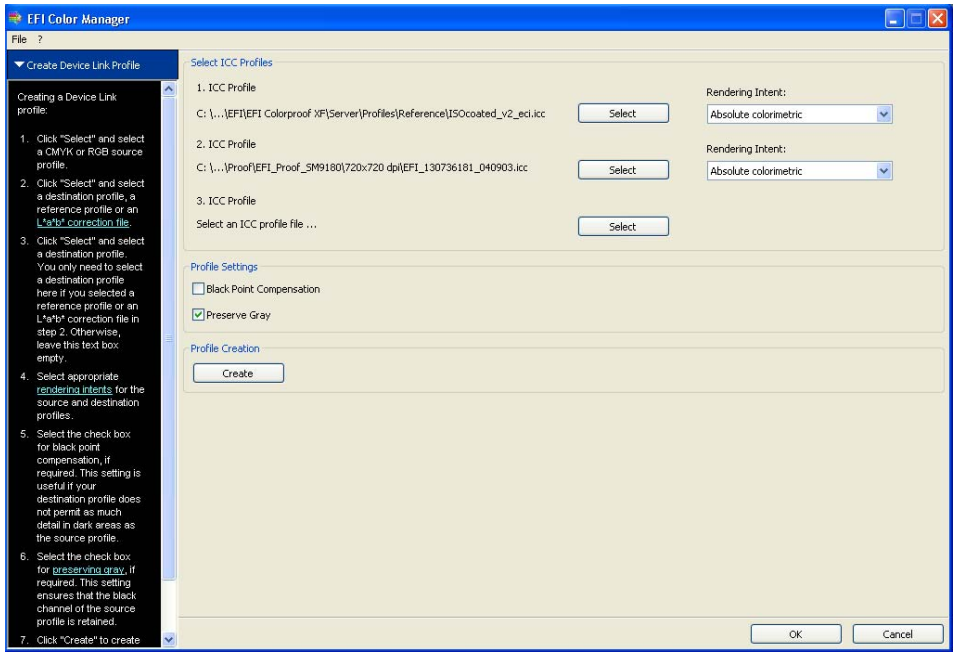
However, you should be aware that device link profiles are not as flexible in use as other ICC profiles. Each device link profile can only be used for the specific combination of source and destination profiles for which it was created.

Creating a device link profile

TO CREATE A DEVICE LINK PROFILE

1. **In EFI XF, ensure that your printer is set up as the linearization device.**
2. **Start EFI LinTool/Color Manager and select the tool Create Device Link Profile.**

Create device link profile



3. **For the first ICC profile, click Select and select a source color space, e.g. ISOcoated_v2_eci.icc.**

   Reference profiles are located in the folder ...\EFI\EFI XF\Server\Profiles\Reference.

4 **For the second ICC profile, click Select and select a media profile as the destination color space.**

Media profiles are located in the folder ...\EFI\EFI XF Profiles

NOTE: Alternatively, you can select an additional reference profile or an L*a*b* correction file here instead. For example, you might want to choose a reference profile to simulate newsprint, such as ISOnewspaper24v4.icc.

5 **For the third ICC profile, select a media profile as the destination color space.**

You only need to select a media profile here if you selected a second reference profile or an L*a*b* correction file in the previous step. If you have already selected a media profile as the second ICC profile, leave this edit box empty.

6 **Choose your rendering intents from the appropriate drop-down list boxes.**

For the color conversion between two CMYK color spaces you should choose Relative colorimetric. For a color transformation from a reference profile whose paper white you want to simulate, choose Absolute colorimetric.

7 **Select the check box Preserve Gray, if required.**

This setting ensures that black will be generated from black ink only if the following conditions are met:

- R = G = B (i.e. black is composed of equal amounts of RGB)
- C = M = Y = 0 and K > 0 (i.e. black is composed of black ink only)

8 **Click Create.**

9 **In the dialog Device Link Profiles, type a name for your device link profile and click Save.**

It is a good idea to define a name that enable you to identify which profiles and rendering intents have been used to create the device link profile.

10 **Click OK to close the tool Create Device Link Profile.**

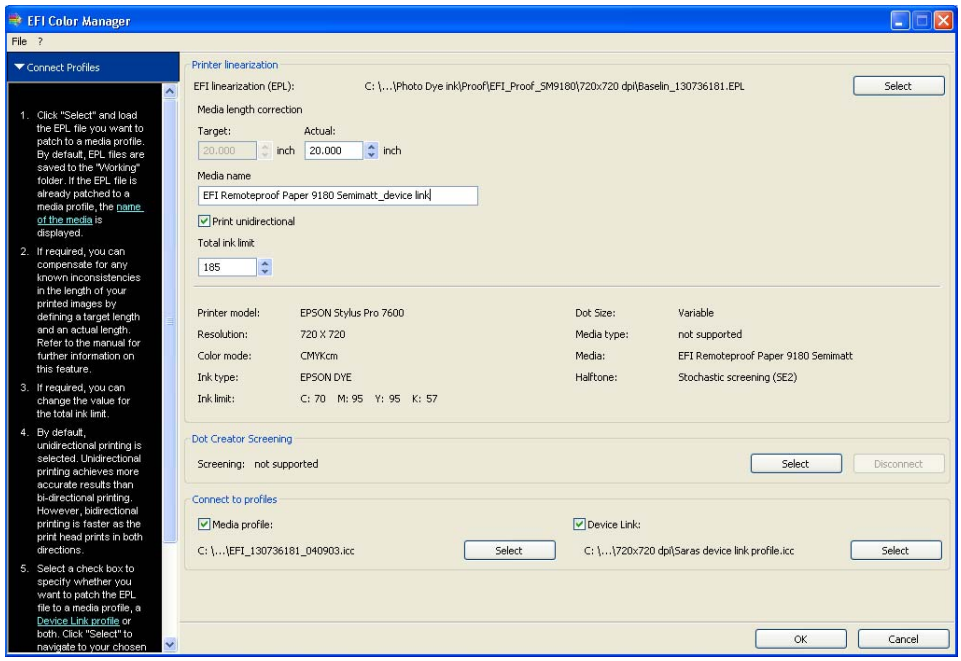
"Patching" the device link profile to a base linearization file

Having created a device link profile, the next step is to connect it to the base linearization file of the media profile.

TO "PATCH" THE DEVICE LINK PROFILE

1 **In the EFI LinTool/Color Manager window, select the tool Profile Connector.**

"Patching" the device link profile



2 **In the Printer linearization area, click Select and select the base linearization file of the media profile you used to create your device link profile.**

3 **In the Connect to profiles area, select the Device Link check box. Then click Select and navigate to your device link profile.**

NOTE: If required, you can also select the Media profile check box. This setting defines how job files created in a different color space from that for which the device link profile was created will be handled. For example, if the device link profile was created for a CMYK source profile and the print job is of RGB origin, the following will occur:

- Check box selected: the media profile will be applied instead of the device link profile;
- Check box not selected: an error message will be displayed.

4 **In the Printer linearization area, type a new media name in the edit box.**

It is a good idea to define a name that enables you to identify that a device link profile is attached.

5 **Click OK and define a new name for the base linearization file.**

It is recommended that you define a new name and do not overwrite the original base linearization file. This is because all incoming files are processed according to the profiles used to create the device link profile.

6 **Exit EFI LinTool/Color Manager.**

Implementing a device link profile in EFI XF

Having successfully created a device link profile and patched it to the base linearization file of the media type, you can now load it in EFI XF.

Device link profiles can be used to output to a printer or to a file format.To output to a printer, you must copy the device link profile to the EFI XF Profiles subfolder in which the EPL is located. To output to a file format, the device link profile must be saved to the following destination: EFI XF\Server\Profiles\Reference.

TO OUTPUT TO A PRINTER

1 **Open System Manager and set up a printer.**

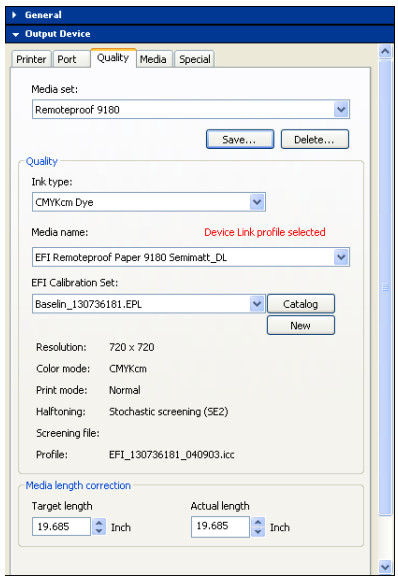
The printer must match the media profile you used to create the device link profile.

2 **On the Quality tab, select the correct ink type. Then, from the drop-down list box Media type, select the device link profile.**

The device link profile is listed under the name you defined in Profile Connector. EFI XF displays an appropriate message when a device link profile is selected.

The device link profile must be located in the EFI XF Profiles folder, otherwise it will not be detected.

Print to printer: Quality tab settings



TO OUTPUT TO FILE

1 **Open System Manager and set up a printer.**

2 **On the Printer tab, select an EFI Output Option as the device type.**

NOTE: You require an extra license to output to a file format.

3 **Select the check box Use Device Link profile.**

4 **From the drop-down link box Device Link Profile, select the device link profile.**

The device link profile is listed under the name you defined in Profile Connector.

The device link profile must be located in the EFI XF\Server\Profiles\Reference folder, otherwise it will not be detected.

5 **From the drop-down list box Profile, select a simulation profile.**

This profile will be applied if the print job was created in a different color space from the source profile incorporated into the device link profile.

6 **Select the check box Keep input resolution for non-PostScript files.**

This setting is useful if you want to convert a set of digital files to a single color space without affecting the resolution (size) of the original images.

Print to file: Printer tab settings