HALFTONING METHODS

This document is intended principally for users who want to create media profiles in EFI XF for use in other EFI proofing software, such as EFI Designer Edition.

The printers supported in EFI Designer Edition employ one of two possible EFI halftoning methods - Super enhanced 1 (SE1) or Super enhanced 2 (SE2). The setting is hardwired into the software.

A problem can arise when creating media profiles in EFI XF because some printers in EFI XF support both methods of halftoning. This document tells you the correct halftoning setting to make for use in an EFI Designer Edition workflow.

What is halftoning?

Inkjet printers use a so-called frequency-modulated halftone process. The screens consist of small, fine dots, whereby the density of color is determined by how closely together the dots are printed. The greater the density of color, the more dots are required.

The halftone process governs how the dots are placed. The aim is to achieve as regular a distribution of dots as possible. EFI XF supports three different halftone processes. These are described below.

Contone

Some printers in EFI XF apply the printer's own halftoning method, as defined by the device manufacturer. The halftone method is integrated into the printer's media setting. Although the media setting takes into account all the printer's available inks, in EFI XF it is only possible to edit CMYK ink curves.

Super enhanced 1 - Error diffusion

To determine whether a dot will be placed or not, a special algorithm is applied which evaluates neighboring dots. If the result of the evaluation is above a certain threshold, the dot will be printed. If the result is below the threshold, the dot will not be printed.

The evaluation process involved is very complicated and takes longer to calculate than Super enhanced 2. However, it creates a smoother and more even appearance.

Super enhanced 2 - Stochastic halftoning

Using this halftoning method, the dots are arranged according to a pre-calculated random pattern to make homogenous areas appear as smooth as possible. However, it can create a disorderly impression when compared to Super enhanced 1.

Halftone setting

You make the halftone setting in the Settings dialog of EFI Color Manager.

1 Halftone setting in EFI Color Manager
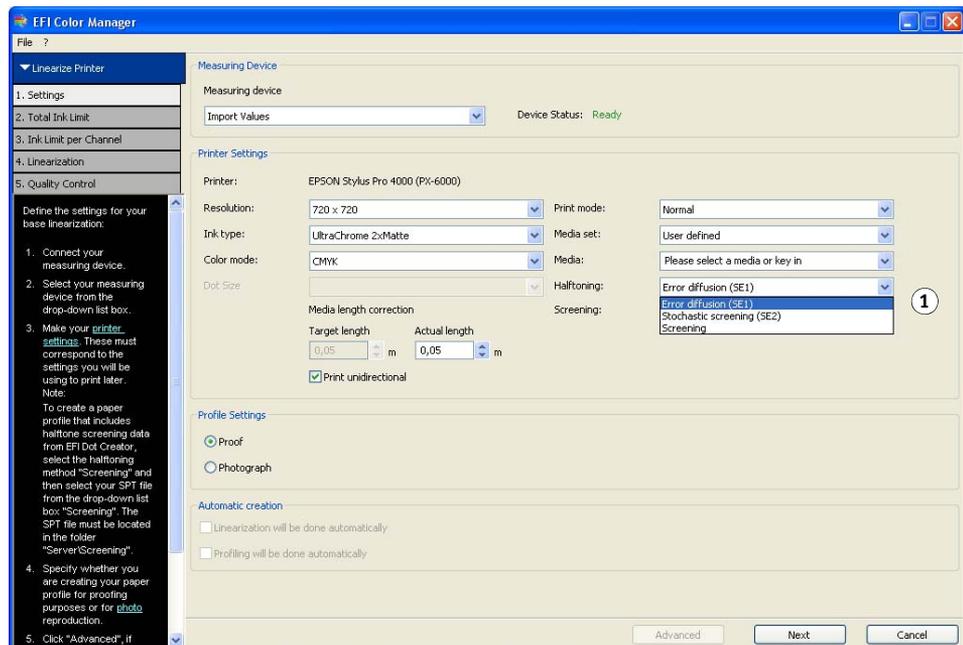
NOTE: The Screening setting is only required if you want to implement an SPT screening file from EFI Dot Creator.

The following table shows you which setting to make in EFI XF:

Printer	Halftone setting
Epson Stylus Color 3000	Super enhanced 1
Epson Stylus Pro 5000	Super enhanced 1
Epson Stylus Pro 5500	Super enhanced 1
Epson Stylus Pro 7000/9000 Dye	Super enhanced 1
Epson Stylus Photo 1290	Super enhanced 1
Epson Stylus Photo 2100	Super enhanced 2
Epson Stylus Photo 2400	Super enhanced 1

Printer	Halftone setting
Epson Stylus Pro 10000CF	Super enhanced 1 (Super enhanced 2 for OneBit Option)
Epson Stylus Pro 10000	Super enhanced 1
Epson Stylus Pro 10600 UC	Super enhanced 2
Epson Stylus Pro 4000 UC Photo	Super enhanced 2
Epson Stylus Pro 7600/9600 UC	Super enhanced 2
Epson Stylus Pro 3800 C, UC, K3	Contone
Epson Stylus Pro 3800 UC, K3	Super enhanced 1
Epson Stylus Pro 4800/7800/9800	Super enhanced 2
Canon W2200	Super enhanced 2
Canon W7200/7250 Dye	Super enhanced 2
Canon W8200	Super enhanced 2
Canon W8200/6200 pigment	Super enhanced 2
Canon W6400/8400 pigment	Super enhanced 2
Canon imagePROGRAF iPF500/700	Super enhanced 1 (printer halftone for 600 dpi)
Canon imagePROGRAF iPF5000/8000/9000	Super enhanced 1 (printer halftone for 600 dpi)
Canon imagePROGRAF iPF5100/6100	Super enhanced 1 (printer halftone for 600 dpi)
HP Designjet 310/130	Super enhanced 2
HP Designjet 500	Contone 32 bit
HP Designjet 800	Super enhanced 1
HP Designjet 1055	Super enhanced 1
HP Designjet 5000/5500 Dye	Super enhanced 1
HP Designjet 5000/5500 UV	Super enhanced 1
HP Designjet 4000	Super enhanced 2
HP Z2100	Contone
HP Z3100	Contone
HP Z6100	Contone
Roland Hi-Fi JET FJ-500	Super enhanced 1
Roland Hi-Fi JET Pro II FJ-540	Super enhanced 2
Encad NovaJet 1000i	Super enhanced 2