## Procedures used for the Calibration and Colour Management of Book2net Scanners

Devices that capture and display images in colour use different colour spaces like RGB, CMYK etc and the representation of colours vary from model to model and within the model from device to device. Any lossy file compression applied also tampers with the colours of the image.

Within a model differences can occur due to the varying sensitiveness of the sensors and optical components
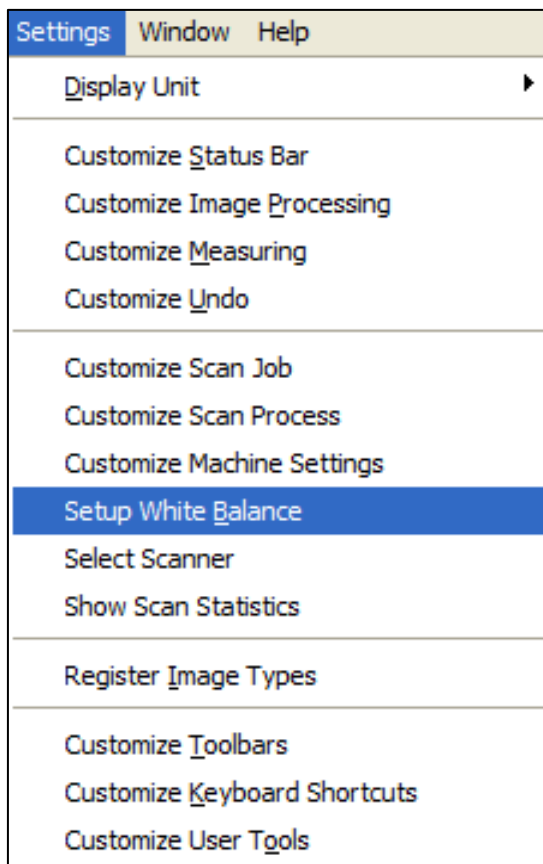
The Book2net scanners have the color management in two stages

1. Compensation of ambient effect: Through White noise calibration.

2. Color management through ICC Profiling.
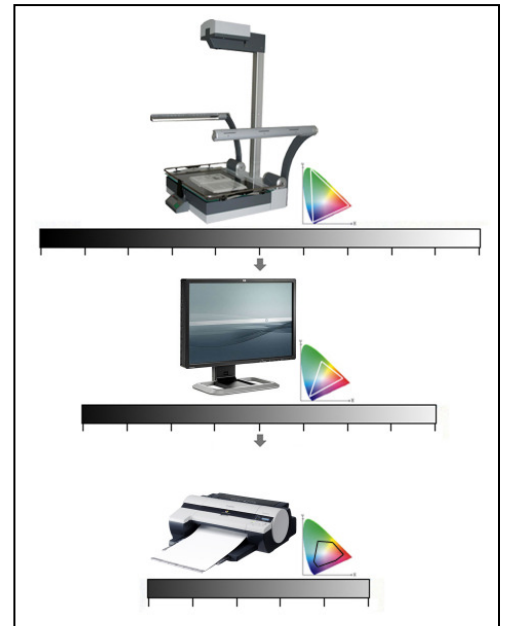
Compensation of Ambient effect:

The light and reflections around the scanner are compensated through this process.

A white target is placed on the entire scan surface.

The book expert software option of White noise calibration is selected.

The scanner captures the images across the scan bed and compensates and calibrates the scanner across the scan area.

The calibration tool also incorporates an oscilloscope which gives the RGB levels across the various points on the scan area. These can be adjusted accordingly to ensure that none of the levels of color are beyond a required amount.
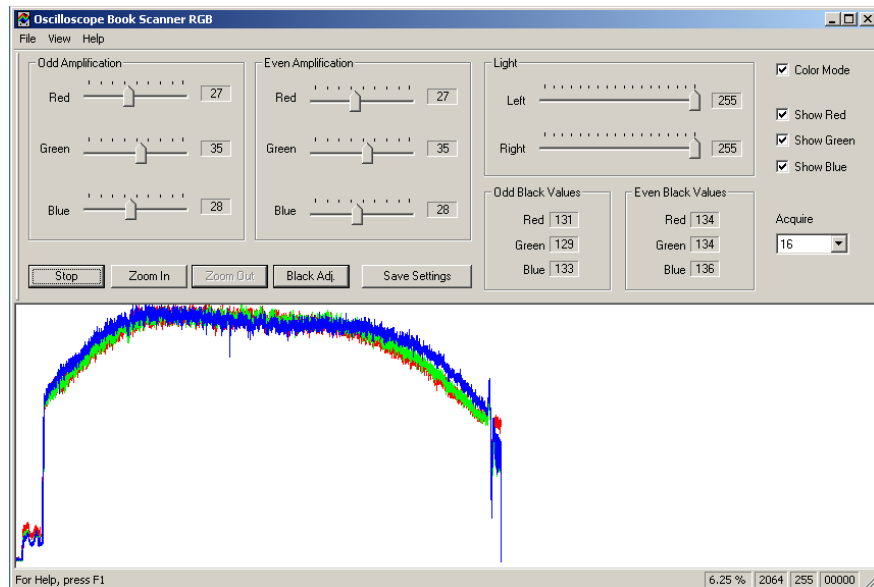
Also if there is the presence of any pigmentation/hue, dominance of any particular color this can be compensated by the adjustment of the RGB components of the image acquisition.

Color management through ICC Profiling.

Once the white noise caliberation is completed the Color management is done using ICC Profiling.

Please note: The profiling needs to be done for the scanners, monitors and printers if they have to be consistent in coloration as they use separate color spaces.

The ICC profiling has been done using the X-Rite color targets once white noise calibration is completed.

The X-rite software is loaded on the scanning PC.

Color target is scanned having a number of blocks with various colours of predefined values of RGB are scanned.

The software now checks for consistency of each of the colours and compensates for the differences in color by creating an ICC profile for the scan.

The ICC Profiles are saved separately in the header of the images.

While scanning the images the ICC Profile will need to be loaded in the options of the software. Further when viewing the images the ICC Profile option will need to be activated in the software (ex: Photoshop) used for viewing the image.
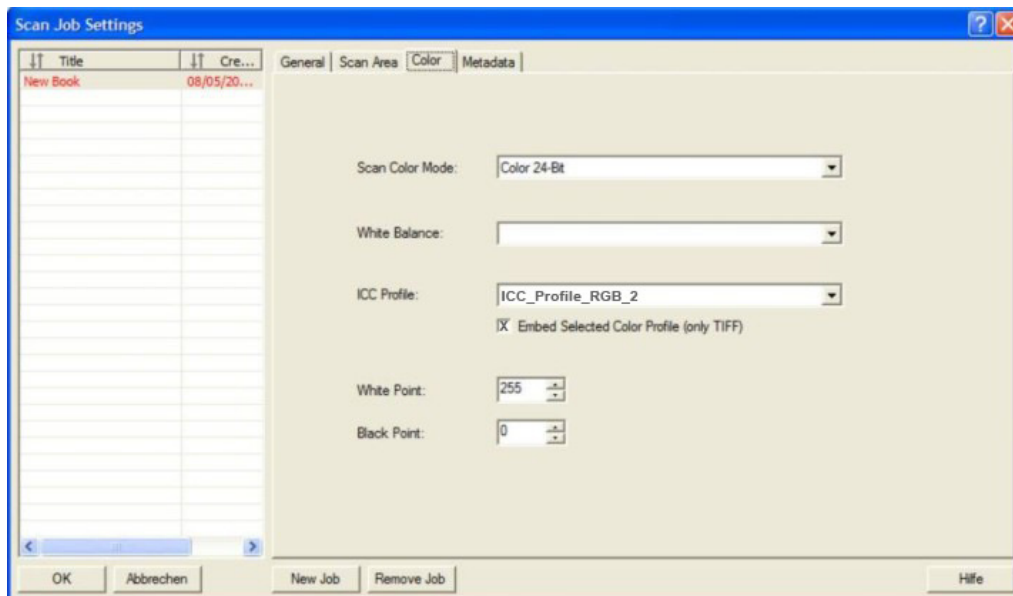
Color Management without ICC Profiling:

There is also an iterative option to manage color with the Book2net scanners without using an ICC profile. It requires scanning the test targets and comparing samples of the various colours in the target card vs the respective colours in the scanned image. The levels of the RGB are adjusted in the scanner settings and a rescan occurs iteratively to get as close as possible to the test targets.