



**Kodak**

**Ngenuity**  
9000 Series Scanners

Scanning Setup Guide  
for TWAIN Applications

# Scanning Setup Guide for the TWAIN Datasource

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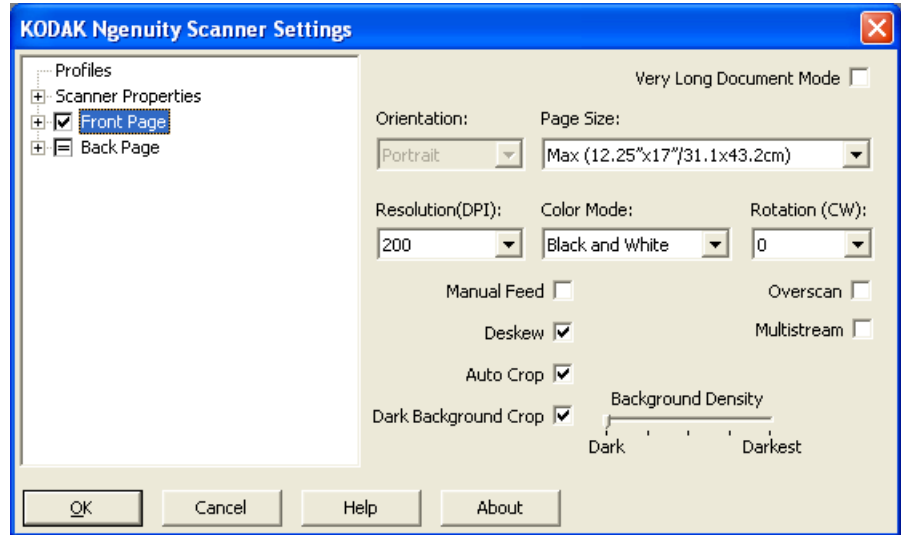
The *Kodak Ngenuity i9000 Series Scanners* provide the ability to process scanned images to improve their quality by using image processing features.

*Image processing* refers to several separate features of the scanner that allow you to automatically adjust each image in a certain way that may improve the resulting images. Common examples of image processing features are correcting any skew in the fed document or cleaning up extraneous “noise” on the image. This can be done automatically so you can get better images with minor rework.

The information in this guide provides descriptions for the features and options of each dialog box and procedures for creating a profile and setting up multistream scanning. The same options should be available on the user interface of the scanning application you are using.

## Scanner Settings main window

- Using your scanning application, access the TWAIN Datasource. The *Kodak Ngenuity* Scanner Settings main window will be displayed.



**Profiles** — click **Profiles** to display a list of existing profiles or create a new one.

**Scanner Properties** — allows you to set all scanner-specific options. If an optional imprinter is installed, you can also setup imprinter options.

**Front Page / Back Page** — when you select **Front Page** and/or **Back Page**, the following options are available for configuration. Up to 8 different image outputs can be defined using the Multistream option.

- If you select **Front Page**, the settings on all windows will be applied to the front page only.
- If you select **Back Page**, the settings on all windows will be applied to the back page only.
- If you select **Front Page** and **Back Page**, the settings on all windows can be configured for the Front Page and Back Page independently.
- If you click the **Back Page** option until the = sign is displayed, all settings made for the Front Page will be applied to the Back Page as well.

Based on the *Color Mode* selection (Black and White, Color, Grayscale and Auto Color Detect), additional options (other than Image Settings) can be configured (e.g., Background Saturation and Auto Color Detection).

NOTE: If an optional imprinter is installed, you may also set up imprinting options. See the section entitled, “The Imprinter window” for more information.

**Very Long Document Mode** — when enabled, this option adjusts the scanner’s transport speed to accommodate a long document (more than 40 inches/1016 mm) to be scanned into individual images. The size of the images is determined by the *Paper Size* setting in the scanning application.

**Orientation** — select whether the documents will be fed into the scanner in **Portrait** or **Landscape** mode.

**Page Size** — the default page size is set when a scanner is first selected. You can choose a different page size using the drop-down list.

**Resolution** — allows you to select the dots per inch (dpi), which is a determinant of a better quality image. Depending on the resolution you select, it may also increase scanning time and image size (i.e., the higher the resolution the larger the file size). The options are: 100, 150, 200, 240, 300, 400, 500 and 600 dpi.

**Color Mode** — allows you to select the electronic image output.

- **Black and white:** produces a black and white version of your document.
- **Grayscale:** produces a grayscale version of your document.
- **Color:** produces a color version of your document.
- **Auto Color Detect:** the scanner will save the image as a color or black and white image depending on the amount of color in the image.

**Rotation** — allows you to rotate the scanned image **0, 90, 180** or **270** degrees. 0 is the default.

**Manual Feed** — select this option to feed exception documents that cannot be fed in ADF mode (e.g., multiple forms). When this option is selected, you must feed documents manually into the scanner one at a time.

**Deskew** — the scanner will automatically find each document (regardless of size) and will straighten any document that may have been fed crooked.

**Auto Crop** — dynamically adjusts the cropping window for different document sizes based on the edges of the image. Use this option for batches of mixed-sized documents.

**Dark Background Crop** — in addition to auto-crop and deskew, this option could be considered as an alternative for dark documents. The default setting should satisfy most of these exception cases.

**Overscan** — adds a percentage of border before and after the edge of the image. Overscan is used in applications where automatic feeding of highly skewed documents is likely. Overscan reduces the possibility of corner clipping on skewed images.

**Multistream** — allows you to configure different scanning options for the front and back of an image. For more information, see the section entitled, “Setting up Multistream scanning” later in this chapter.

The following buttons are common to all screens:

**OK** — when selected, you will be prompted to save any unsaved changes.

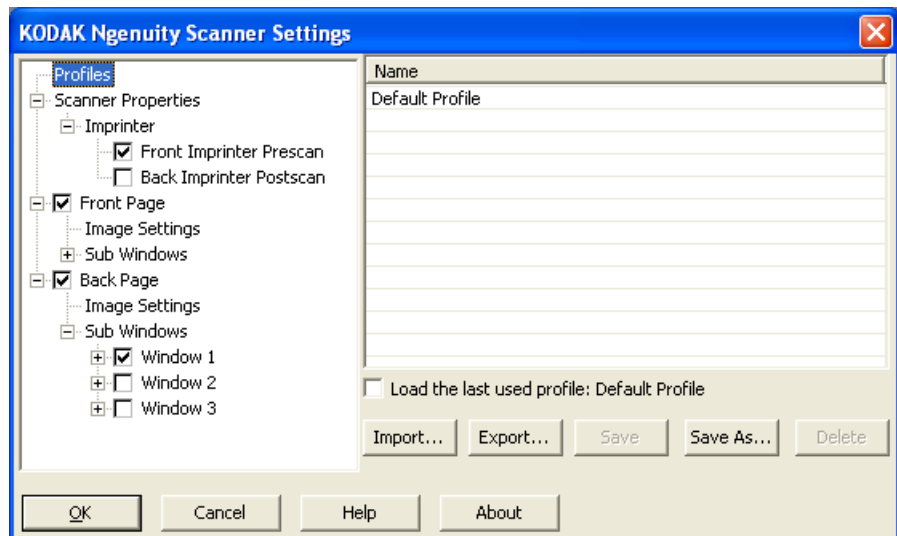
**Cancel** — closes the main *Kodak Ngenuity Scanner Settings* window without saving any changes.

**Help** — displays help information for the window currently being displayed.

**About** — displays the scanners' version and copyright information.

## Profiles window

Use the Profiles window to setup a new profile.



**Name** — provides a list of currently defined profiles.

**Load the last used profile** — if selected, the last profile that was used when you closed the application will be loaded.

**Import** — displays the File dialog box and loads the settings of a selected file.

**Export** — displays the File dialog box and writes settings to a file. When no profile is selected, it exports the current settings to a file, otherwise the selected profile is exported.

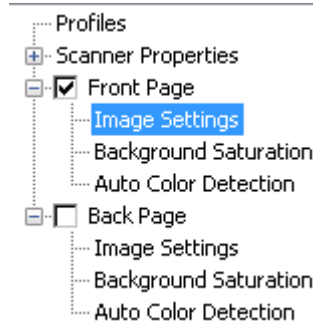
**Save** — updates the currently selected profile with the current settings. If the default profile is selected, a new profile will be created.

**Save As** — copies the currently selected profile to a new profile.

**Delete** — allows you to delete the selected profile. When you click Delete, the message, ***Are you sure you want to delete this profile?*** will be displayed. Click **Yes** to continue.

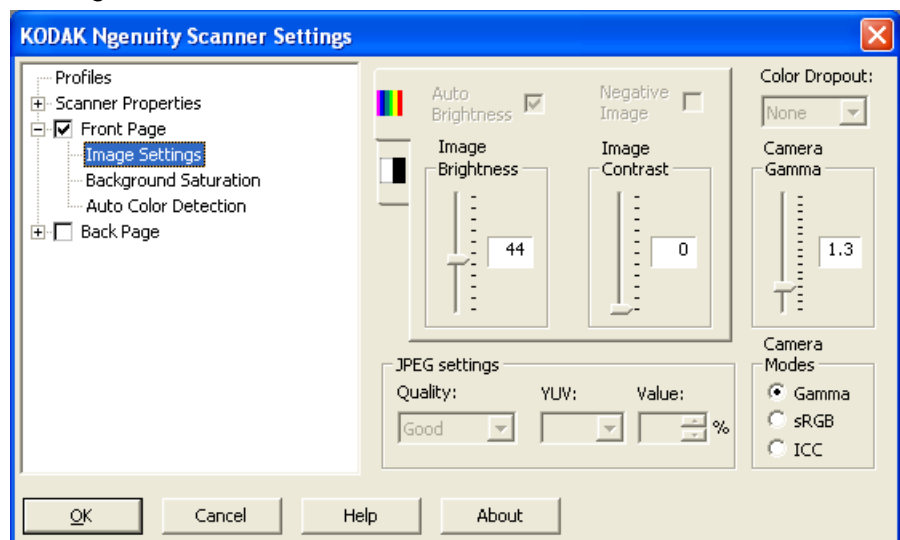
## Image Settings window

When you click **Front Page** and/or **Back Page** in the tree structure on the left pane, the Image Settings window will be displayed. The descriptions that follow, are the same for the Front Page and Back Page settings whether you have **Front Page** selected, **Back Page** selected or both **Front Page** and **Back Page** selected.



NOTE: *Background Saturation* and/or *Auto Color Detection* may also be displayed in the **FrontPage/Back Page** tree structure depending on your selection in the *Color Mode* drop-down list.

- Check **Front Page** and select **Image Settings** to display the Image Settings window.



The following options are available:

**Auto Brightness** — changes the amount of white in the color or grayscale image. The values range from **0** to **50**. The default is 0. This option is not available if **Color** or **Auto Color Detection** is selected in the *Color Mode* drop-down list.

**Image Brightness** — when **Auto Brightness** is unchecked, you can manually adjust the image brightness.

**Negative Image** — allows you to request a black and white/grayscale image when scanning in black and white or grayscale only. This option is not available when scanning in color.

**Image Contrast:** makes the image sharper or softer. The values range from **0** to **50**. The default is 0.

**JPEG settings** — click **Enabled** to select a JPEG Quality option.

Choices are:

- **Good**: a fair amount of compression but still produces acceptable image quality.
- **Better**: some compression which produces decent image quality.
- **Best**: minimal compression which produces very good image quality.
- **Custom**: select this option to customize your JPEG compression values. When selected, the **YUV** and **Value** percent options are available.

- **YUV** is a type of color space used in JPEG compression. The 4-2-2 selection (default) uses downsampling and generates smaller files compared to the 4-4-4 selection, which uses no downsampling (keeps as much image color data as possible) and generates large files.

- **Value**: a high percentage value compresses the least (and generates larger files), while a low percentage value compresses the most, generating smaller files, which can result in lower quality images.

**Color Dropout** — allows you to dropout a form's background so that only the entered data is included in the electronic image (i.e., remove the form's lines and boxes).

Select the desired dropout color you want to eliminate from the front/back side. Selections are: **None**, **Red**, **Green** or **Blue**.

**Camera Gamma** — when the *Camera Mode*: **Gamma** is selected, you can use the slider to specify a specific camera gamma (1.0 - 2.5). The camera gamma value can be entered or selected by moving the slider to the desired value.

**Camera Modes** —if the color on your images is not as expected, you can use the following options to make color adjustments to meet your scanning needs.

NOTE: Selecting one of these Camera Mode options activates that option for both the front and back camera.

- **Gamma** (default) — select a lower gamma value to enhance color saturation for bright colors and a higher gamma value to enhance color variations for dark colors. For most documents the camera gamma should be kept at the default value of 1.3.
- **sRGB**: uses specific camera gamma to achieve the best approximation of sRGB color response.

NOTE: This setting applies to the camera output only; any post-capture image processing settings affect the color content of the final output file.

**ICC:** selecting this option will embed ICC profile data into the image file. ICC profile data is used by some viewing or printing applications to compensate or adjust colors for optimal quality. ICC data is useful only for applications that are ICC-profile aware. To properly view the images, the viewing application must be ICC-profile aware.

**NOTE:** Do not use other post-processing color adjustments in combination with this option enabled.

For the ICC profile data to be successfully embedded, the scanning application must:

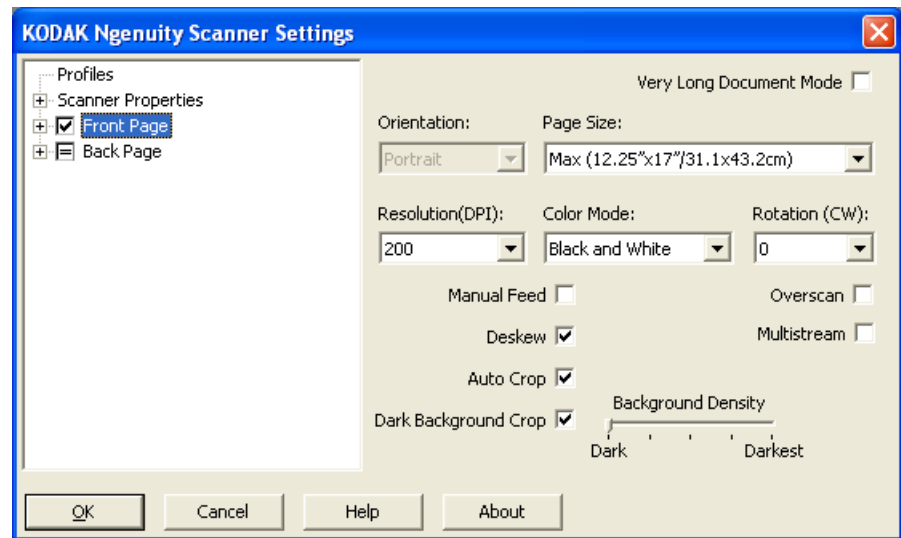
- be an ImageControls, Direct ISIS or Direct TWAIN application
- be set up for color scanning
- be set up to store TIFF, JPEG or PDF image file types



## Scanner Properties window

From this window you can set all scanner-specific options. The values used in this window are saved in the selected Profile.

- Select **Scanner Properties** to display the following window:.



### Document Setup

- **Document Types** — allows you to change the transport speed to accommodate the feeding needs of various document types.
  - **Normal**: highest transport speed for scanning standard document types. This is the full performance mode.
  - **Fragile/Difficult**: lower transport speed which is useful for delicate documents that can easily tear.
  - **Thick or Envelope**: for scanning thick paper or envelopes.
  - **Tri-Fold**: for scanning tri-fold documents.

NOTE: Document types other than **Normal** may reduce scanner speed.

- **Allow Large Skew**: when a document is fed crooked, the overscan at the top and bottom of a document is extended so that the corners of the document are not cut off.
- **Ignore Holes/Ragged Edges Less Than**: if you enable this option, if a punched hole(s) goes over a sensor, the scanner will ignore the hole(s) and not trigger an error condition.

**Units** — select the unit of measurement for the scanner; this includes any size-related options. The Units options are: **Inches** and **Millimeters**.

**Multifeed detection** — multifeed detection aids in document processing by detecting documents that may go through the feeder overlapped. Multifeeds can happen due to stapled documents, adhesives on documents, or electrostatically charged documents.

- **Mode:** select how you want to scanner to handle the multifeed when detected.
  - **Off:** no multifeed detection will be performed. Scanning continues when a multifeed is detected and all scanned images are retained.
  - **Notify:** the scanner responds to a multifeed by sounding an audible alarm and the Multifeed LED on the scanner. momentarily lights. Scanning continues, the multifeed is ignored and the image of the multifeed document is retained.
  - **Stop:** when a multifeed is detected, the scanner will sound an audible alarm, the Multifeed LED on the scanner will light and the scanner's transport will stop. You can delete or keep the multifeed image.

**Enable Sensors** — allows you to enable or disable the **Left**, **Center** and **Right** sensors that assist in triggering a multifeed alarm. One or more of these sensors can be enabled/disabled at any time. If all three sensors are disabled, the **Enable Sensors** option is unavailable and the Multifeed Mode option automatically is set to **Off**.

**Ignore by Size: Multifeed if >:** allows you to set the maximum size of a multifeed that will **not** trigger a multifeed error. This is used to scan documents with labels or stickers (mailing labels), documents with taped photographs or receipts while multifeed detection is active.

Ignore by Size can be set in inches or millimeters, with a range of 1.0 to 25.5 inches (25-647 mm). The default setting for this control is 1.0 inch (25 mm).

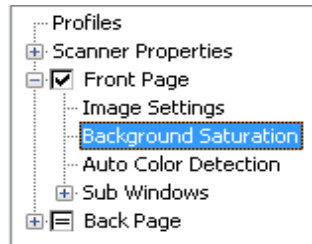
#### **Interactive Error Mode**

- **Handle Scanner Errors:** when this option is checked, an interactive dialog box will be displayed when an error is encountered. If the error can be cleared (i.e., clearing a paper jam and pressing the **Clear/Restart** button), this dialog box will close and the scanner will start scanning again. This option is performed by the driver. The scanning application is unaware of these errors and continues to scan as if no error happened, resulting in no interaction with the PC and the batch scan continuing without interruption.
- **Handle Out of Paper:** when this option is enabled, the Out of Paper dialog box will be displayed when the feeder is empty. Add more documents to the feeder and continue to scan without any interaction with the scanning application or the PC.

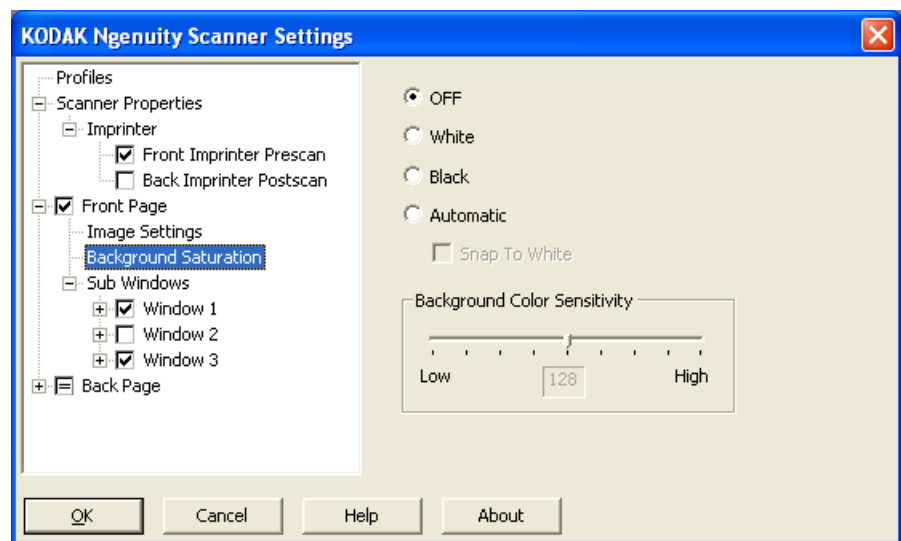
## Background Saturation window

Background Saturation is only available when **Color** or **Auto Color Detection** is selected for the *Color Mode* on the Front Page/Back Page tree structure on the left pane.

The descriptions that follow are the same for the Front Page and Back Page settings whether you have **Front Page** selected, **Back Page** selected or both **Front Page** and **Back Page** selected.



- Check **Front Page** and select **Background Saturation** settings to display the following window.



**Background Saturation** — using this option for documents or forms with a background color will help produce images with a more uniform background color. This option improves image quality and may reduce file size.

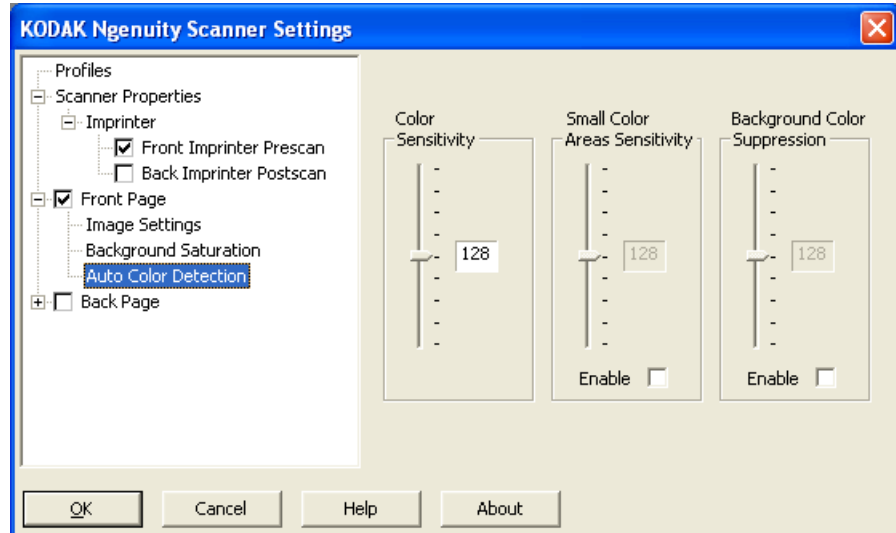
- **OFF**: no background saturation will be performed.
- **White**: smooths the predominant background color to white.
- **Black**: smooths the predominant background color to black.
- **Automatic**: smooths up to three background colors.
  - **Snap to White**: identifies up to three background colors and substitutes each color with white.
- **Background Color Sensitivity**: allows you to adjust the extent at which the background(s) are determined. The values range from **Low (0)** to **High (255)**. The default is 0.

NOTE: This option is not available if **OFF** is selected.

## Auto Color Detection window

Auto Color Detection is only available when **Auto Color Detection** is selected for the *Color Mode* on the Front Page/Back Page tree structure on the left pane.

The descriptions that follow are the same for the Front Page and Back Page settings whether you have Front Page selected, Back Page selected or both Front Page and Back Page selected.



Auto Color Detection allows you to make color sensitivity settings to help determine the amount of color that needs to be on a document to be saved as a color or black and white image.

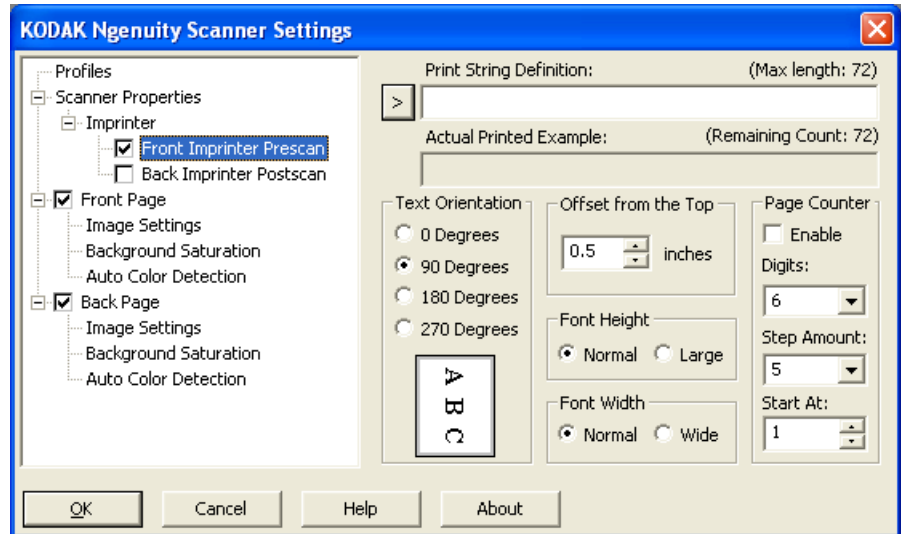
- **Color Sensitivity** — select a value from 0 to 255 (0 = the lowest amount of color); 255 = the highest amount of color) that needs to be on a document to be saved as a color or black and white image.
- **Small Color Areas Sensitivity** — click **Enable** to select a value from 0 to 255 (0 = the lowest amount of color); 255 = the highest amount of color). Use this option to detect small amounts of color on a document that would otherwise be detected as a black and white. This option enhances the sensitivity for color detection.
- **Background Color Suppression** — click **Enable** to select a value from 0 to 255 (0 = the lowest amount of color); 255 = the highest amount of color). This option allows black printing on colored paper to be saved as black and white (the background color is ignored). Normally a colored sheet of paper would be detected as color and saved as color.

## Imprinter window

If you have the optional front/back imprinter installed, you will need to setup your imprinting options using the Imprinter window.

The imprinter provides a vertical print capability and supports alphanumeric characters, date, time, page count and a custom message. All print information is captured in the image header of each document.

- Click the **Front/Back Imprinter Prescan/Postscan** checkbox to enable imprinting and set your options.



**Print String Definition** — allows you to specify custom text to be included in your print string. A maximum of 72 characters is allowed.

> — when an item is selected, any associated options will be displayed to the right of the selection.

- **Date:** the following formats are available:

YY/MM/DD  
YYYY/MM/DD  
MM/DD/YY  
MM/DD/YYYY  
DD/MM/YY  
DD/MM/YYYY  
DD  
MM  
YY  
YYYY

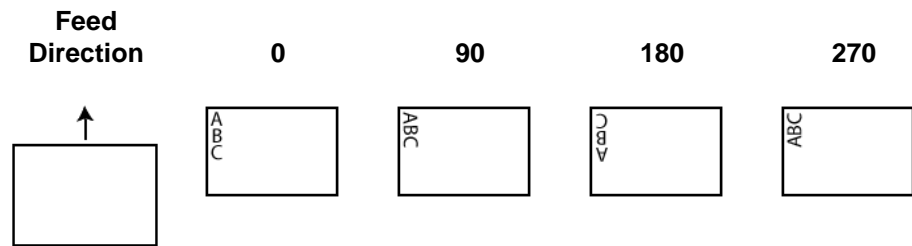
- **Time:** the following formats are available:

HH:MM  
HH:MM:SS  
HH:MM AM/PM  
HH:MM:SS AM/PM

- **Page counter:** this is the document count for the scan session. This value is incremented sequentially by the scanner and returned in the image header.
- **Scanner ID:** this is the scanner identification number.
- **Special symbols: Euro and Yen.**

**Actual Printed Example** — shows a sample of what the print string will look like. As you select items using the > icon, the corresponding portion within the example will be highlighted.

**Text Orientation:** while the characters are printed vertically (starting at the lead edge of the document) this allows you to select the orientation of the print string. Available options are: **0, 90, 180, 270.**



**Offset from the Top** — select a value to determine how far the printed information will appear from the leading edge of the document.

NOTE: The horizontal print position is determined by the location of the print cartridge within the scanner. See the User's Guide for setting print positions.

- **Font Height** — you can select **Normal** or **Large**.
- **Font Width:** available character styles: **Normal** (regular typeface) and **Wide** (bold typeface).

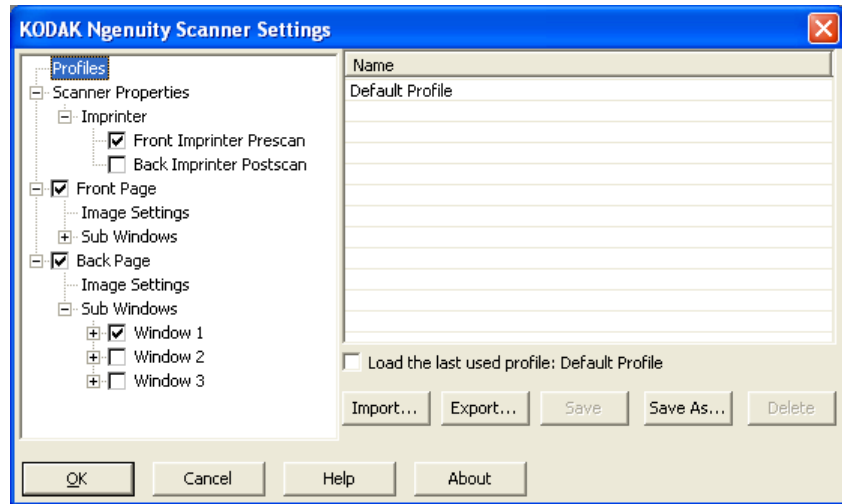
**Page Counter** — click the **Enable** check box to enable to Page Counters.

- **Digits:** select a value from the drop-down list to specify the page counter length, which should take into consideration any leading zeros or leading or trailing spaces appended to the page count in the *Print Width* drop-down list. You can specify from 1 to 9; default is 5.
- **Step Amount:** select a value from the drop-down list to determine how the automatic imprinter/annotation counter is incremented on each page. The counter should be set based on the documents being scanned, how the batches are organized, and specific user needs. Increment amounts of 0, 1 (default) and 2 are available.
- **Start At:** when you start a new batch, this option allows you to set the document count for the next document that will be scanned. Enter a value from 1-99999999.

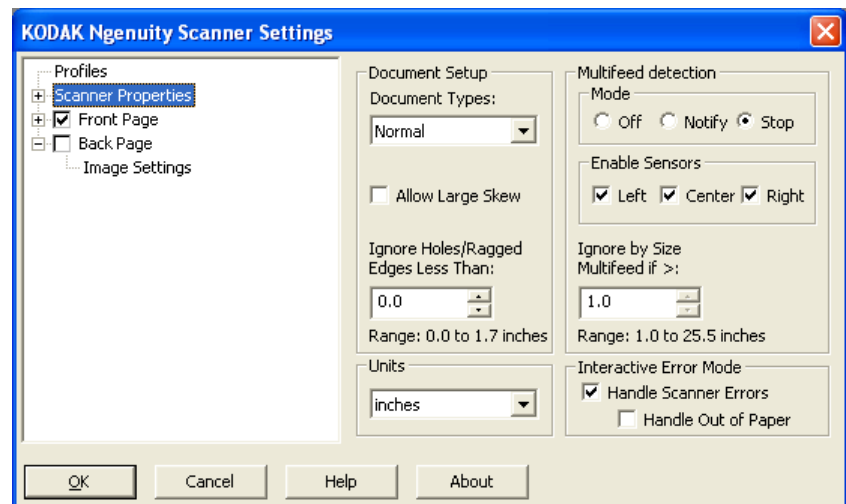
## Creating a new profile

From the main Scanner Settings window:

1. Click **Profile**. The Profiles window will be displayed.

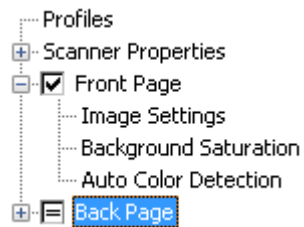


2. Select a profile that most closely describes your image output.
3. Click **Scanner Properties** and make the desired scanner settings.



4. If you have an imprinter installed and you want to set up imprinting options, click **Imprinter** and make the desired selections.
5. Determine if you want to capture an electronic image of the front of your document, back of your document or both sides of your document:
  - **Front Page** — captures the front side only
  - **Back Page** — captures the back side only

If you want the Back settings to be the same as the Front settings, click the **Back Page** check box until the = sign appears; otherwise you can set the Front Page settings and Back Page settings independently.



NOTE: The option is only available if **Multistream** is checked on the Scanner Settings main window.

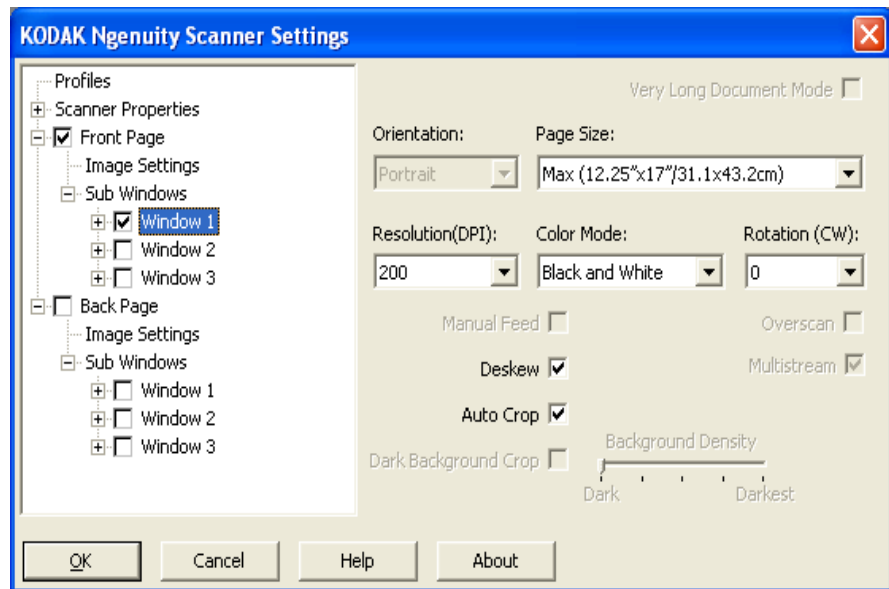
6. Make any selections for the **Front** and/or **Back** pages by selecting **Image Settings** and **Background Saturation**.
7. Click **Save As**. You will be prompted to enter a new profile name.
8. Enter a new name and click **OK**.



## Setting up Multistream scanning

Selecting **Multistream** on the *Kodak Ngenuity Scanner Settings* main window, allows you to configure different image processing settings for each side of your document (front and back) in color, grayscale and black and white. You can also configure Auto Color Detect. Up to eight configurations can be set up.

For example, suppose you have a batch of documents that you want to capture the front page in both Color and Black and White and the back page in Black and White only. You would need to set up 3 configurations. To do this following the steps below based on this example:



1. Select **Front Page**.
1. Click **Multistream**. A *Sub Windows* selection will be displayed in the tree structure under *Front Page*. Under *Sub Windows*, you can configure up to three different configurations (e.g., *Window 1*, *Window 2* and *Window 3*). Depending on your *Color Mode* selection, you can setup *Image Settings*, *Background Saturation* and *Auto Color Detection*. In this example, *Window 1* will be setup from **Front Page: Color**.
2. Select **Color** from the *Color Mode* drop-down list. When you select *Color*, *Background Saturation* and *Auto Color Detection* will be available in the tree structure.
3. Select **Window 1** and setup the desired *Image Settings*, *Background Saturation* and *Auto Color Detection* settings for your first configuration.
4. When you are finished configuring *Window 1*, configure *Window 2* for the *Front Page*.
5. Select **Window 2**.

6. Select **Color Mode: Black and White** and setup the desired Image Settings for your second configuration.

NOTE: Background Saturation and Auto Color Detection are not available for Black and White and Grayscale modes.

Based on the example, the two Front Page settings are configured.

7. Select **Back Page** to continue with the configuration.
8. Click **Window 1**.
9. Select **Color Mode: Black and White** and setup the desired Image Settings for your third configuration.
10. Click **OK**.

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