



Kodak

i1400 Series Scanners

Image Processing Guide

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Image Processing

Overview

The *Kodak i1400 Series Scanners* provide the ability to process scanned images to improve their quality. Using these features the scanner can sometimes make the scanned image look better than the original document. Basic image processing concepts are reviewed in this chapter to help you take advantage of these 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, cutting the edges of the image off to remove any unneeded border or cleaning up extraneous “noise” on the image. This can be done automatically so you can get better images with minor rework.

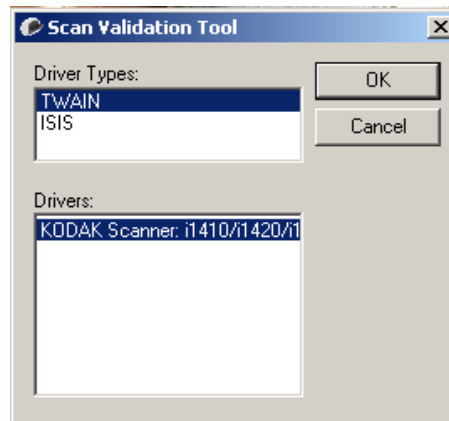
The information that follows describes the image processing features. The same options should be available on the user interface of the scanning application you are using (i.e., *Kodak Capture Software*).

Terminology and features

If you have used previous scanners from Kodak, you may be familiar with the image processing features already. With the new graphical user interface in the TWAIN datasource, some of the names of those features have changed.

Starting the Scan Validation Tool

1. Select **Start>Programs>Kodak>Document Imaging>Scan Validation Tool**.



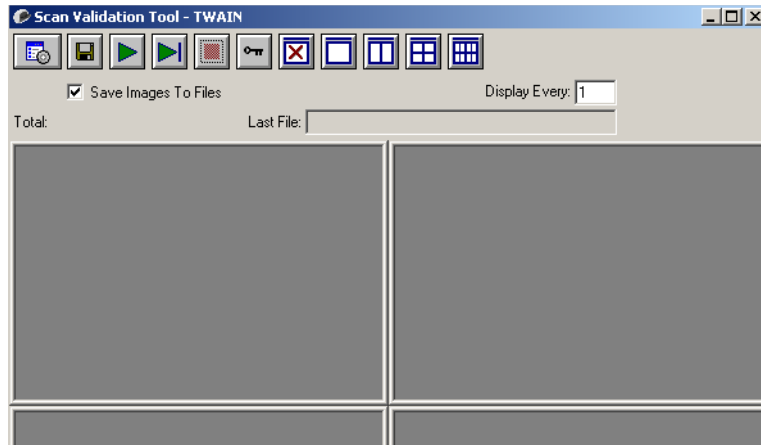
2. Select **TWAIN** (or **ISIS**) for the Driver Type and the **Kodak Scanner i1410/i1420/i1440 Scanner** as the driver.

The Scan Validation Tool dialog box will be displayed.



The Scan Validation Tool dialog box

The Scan Validation Tool (SVT) is a diagnostic application provided by Kodak. The SVT user interface allows access to all the features of the scanner and is a good way to verify that the scanner is working properly. The Scan Validation Tool allows you to verify scanner functionality using both the TWAIN datasource and the ISIS driver.



Toolbar buttons



Setup — displays the user interface for the selected driver.



Destination — allows you to select a directory to store scanned images and their file names. This option is only available when **Save Images to Files** is selected.



Start Scanning — scans the documents in the input tray.



Scan One Page — scans only one page.



Stop Scanning — ends the scan session.



License Key — displays the License Key window



No Image Display mode — closes the Image Viewer window (no images will be displayed).



One Image Display mode — displays one image at a time.



Two Image Display mode — displays two images at a time.



Four Image Display mode — displays four images at a time.



Eight Image Display mode — displays eight images at a time.

Save Images to Files — when selected, will save the images to the specified directory.

Display Every — enter the sampling rate of the images you want to display while scanning. For example, to see every image, enter a value of 1. To see every 10th image, enter a value of 10.

Total — displays the total number of images scanned during the current Scan Validation Tool session.

- To access the TWAIN datasource (or ISIS driver), double-click the **Setup** icon on the Scan Validation Tool dialog box to access the main *Kodak* Scanner window.

Last File — displays the full path and file name for the last stored image.

Using the TWAIN datasource

The *Kodak* i1400 Series Scanners can provide a wide variety of electronic images. This can be done by using the TWAIN datasource Kodak provides in concert with your scanning application. The TWAIN datasource is the part of the capture system which links the scanner to your scanning application.

When using the TWAIN datasource, the main *Kodak* Scanner window will display a list of Setting Shortcuts. Each Setting Shortcut is a group of specific image and device settings. The supplied Setting Shortcuts represent some common electronic image outputs used for a wide variety of input documents. If none of the Setting Shortcuts meet your scanning needs, you can create a customized Setting Shortcut. For example, you could create a Setting Shortcut called "Invoices" and whenever you want to scan invoices, you simply select that Setting Shortcut. For more information, refer to the sections entitled, "Creating a new Setting Shortcut" and "Changing image settings" later in this chapter.

For the purpose of this manual, all displayed dialog boxes assume the features available on the *Kodak* i1405, i1420 and i1440 Scanners (duplex scanner). If you have a *Kodak* i1410 Scanner (simplex scanner) all options are limited to one-sided scanning only.

How do I begin?

The goal is to make scanning as simple as possible. This is accomplished by selecting a *Setting Shortcut* from the main *Kodak* Scanner window and then selecting **OK/Scan**.

The scanner comes with some Setting Shortcuts already defined. In most cases, you will find that these shortcuts are all you will need. If you find that you need different settings, then you should create your own Setting Shortcut. Your shortcut will be added to the list of Setting Shortcuts and available for all future scanning.

Most of the options you will want to set are available on these two windows:

- **Image** Settings: clicking the **Settings** button on the main *Kodak* Scanner window, displays the Image Settings window. From this window you can set your image processing parameters by using the General, Size, Adjustments and Enhancements tab. You can also access the Device settings, by clicking the **Device** button or the Advanced settings by clicking the **Advanced Image Setup** icon.
- **Device** Settings: the Device button is located on the Image Settings window. When you select **Device**, you will have access to the General and Multifeed tabs (and Printer tab if you have the document printer installed). From the Device Settings window, you can also access Diagnostics.

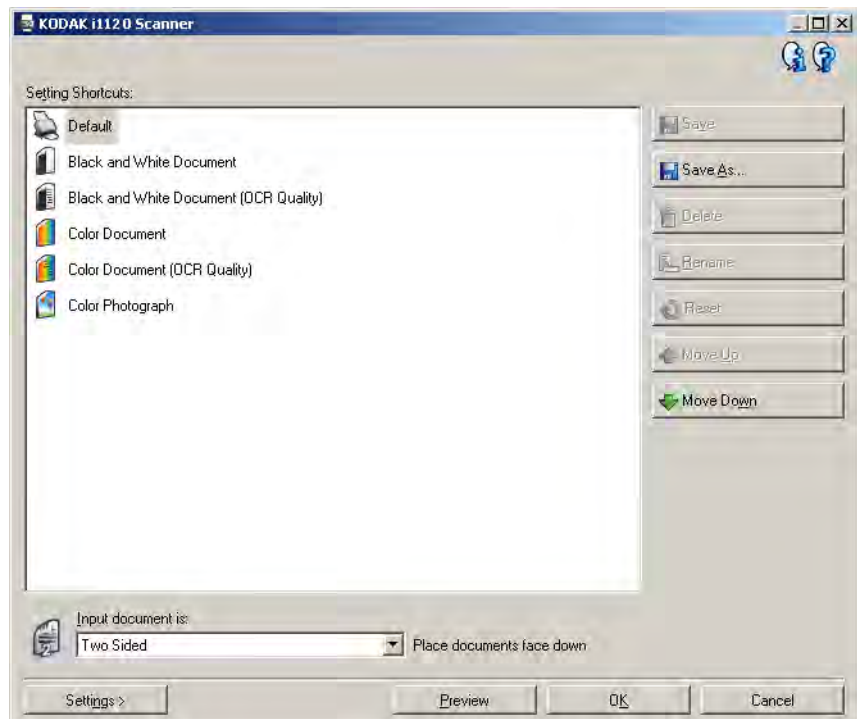
The procedures that follow describe how to configure a customized Setting Shortcut. Complete descriptions of the features and options on the *Kodak Scanner* window and tabs are found in the section entitled, “The main *Kodak Scanner* window”.

NOTE: Setting Shortcuts can sometimes be overridden by your scanning application. If this happens, the shortcut you call will appear in the main *Kodak Scanner* window in italics with the word *<Changed>* next to it. This is normal behavior for an application that does not use Setting Shortcuts and downloads its preferred individual settings to the scanner first and then provides access to the TWAIN datasource.

When you click **OK** to begin scanning, you will be asked if you want to save the changed settings. When using an application that does not use Setting Shortcuts, select **No** to this prompt and continue scanning.

Selecting Image settings

From the main *Kodak Scanner* window:



1. Select a predefined Setting Shortcut from the Setting Shortcuts list. Choose a Setting Shortcut that describes as closely as possible the image output you desire.
2. 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 and make the selection from the *Input document is* drop-down list. Options are:
 - **Two Sided** — captures both sides of the document
 - **One Sided-Front** — captures the front side only
 - **One Sided-Back** — captures the back side only

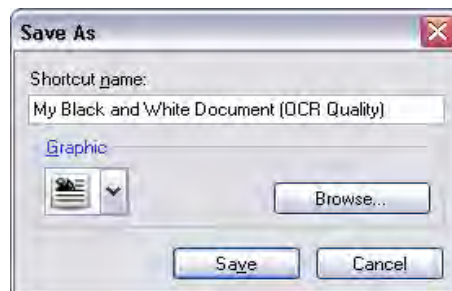
3. Place one or two representative documents in the input tray of the scanner.

NOTE: When scanning one side of a document or if you are using an i1410 Scanner, be sure to place the side of the document to be scanned facing the input tray.

4. If you want to see what your selected image processing options will look like and make on-screen changes, click **Preview** to review and adjust the image.

NOTE: This only needs to be done if you want to make interactive adjustments to your selected image processing options.

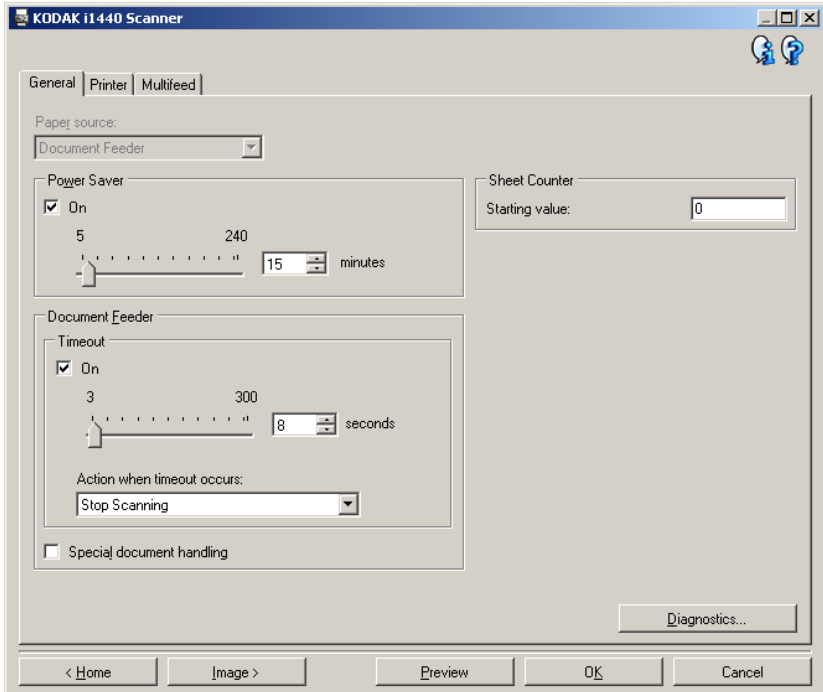
5. If you are satisfied with your selected image processing options, reload your document if necessary and click **OK/Scan**.
 - If the images are acceptable, the image processing settings are fine and you do not need to click the Settings button to alter any values in the General, Size, Adjustments or Enhancements tabs.
 - If the images are not acceptable, you can either select a different predefined Setting Shortcut that more closely describes your desired output or you can continue to work with the Setting Shortcut you have selected by reviewing each setting on the General, Size, Adjustments and Enhancements tabs and make the appropriate changes. When you make any changes, repeat Steps 3 - 5 to until you get the desired results.
6. If you made any changes to a predefined default Setting Shortcut, click **Save As** on the main *Kodak* Scanner window. The Save As dialog box will be displayed.



7. Enter a new Setting Shortcut name that is meaningful to you and click **Save**. You have now created and saved a custom Setting Shortcut which can be used for your scanning operations.

Selecting Device settings

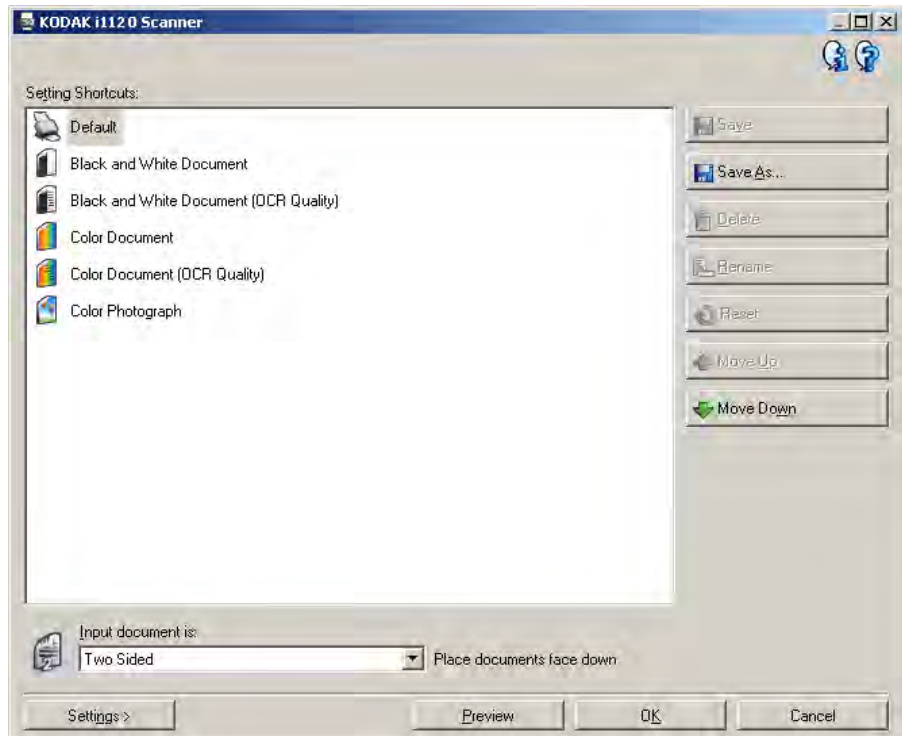
1. Select the Setting Shortcut that you just created.
2. Select **Settings** to access the Image Settings window.
3. Select **Device**. The Device Settings window will be displayed.



4. Before making any adjustments, click through the tabs on the Device Settings window to get familiar with features that are available. See the section entitled, "The Device Settings window" for information about these features.
5. Determine which features you want to use when scanning and select the appropriate tab.
6. On each tab, select the appropriate options or action you want the scanner to perform.
7. When finished:
 - Click **Home** to return to the main *Kodak Scanner* window and click **Save** to save your selections to your custom Setting Shortcut, or
 - Click **Image** to return to the Image Settings window if you need to make additional changes.

The main *Kodak* Scanner window

The main *Kodak* Scanner window is the home window of the scanner's user interface. You can scan by simply selecting a Setting Shortcut and then selecting **OK/Scan**.



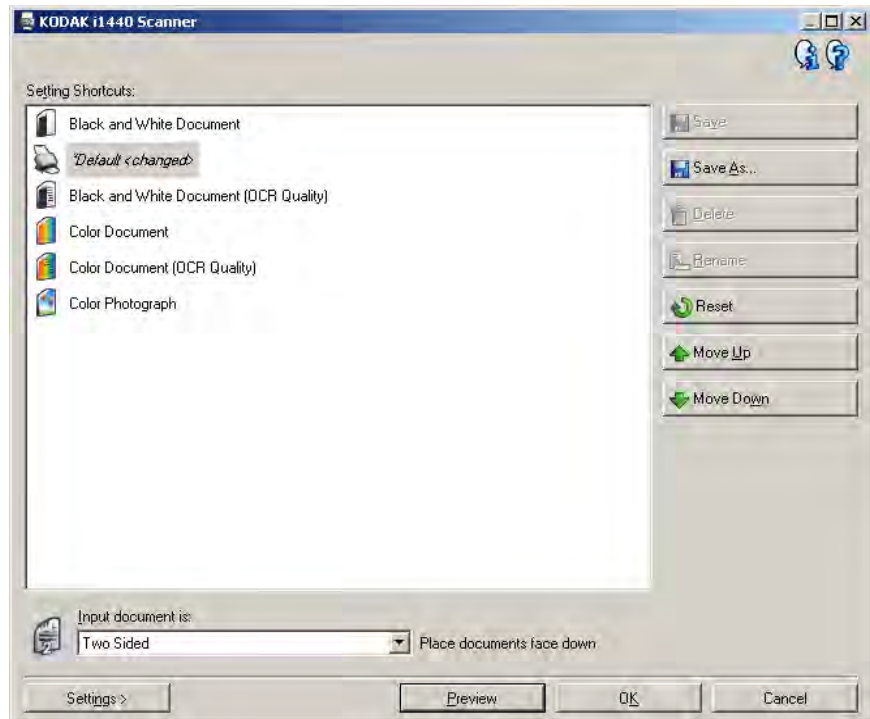
Setting Shortcuts — provides a listing of the Setting Shortcuts currently set up. The supplied shortcuts are:

- **Default** — the scanner's default settings
- **Black and White Document**
- **Black and White Document (OCR Quality)**
- **Color Document**
- **Color Document (OCR Quality)**
- **Color Photograph**

NOTES:

- Select an **OCR Quality** shortcut if you want to have the electronic images processed by an OCR application.
- These Setting Shortcuts are provided at installation and are read-only shortcuts. They can be used as models to create your custom shortcuts, but cannot be modified.

- If you have made changes to a Setting Shortcut and have not saved your changes, the Setting Shortcut will be appended with the text *<changed>*, and the name will be displayed in italics (e.g., **Default<changed>*).



Input document is — allows you to select which sides of the document has information that you want an electronic image of.

- **Two Sided:** scans the front and back of the document.
- **One Sided - Front:** scans only the front side of the document.
- **One Sided - Back:** scans only the back side of the document.

NOTES:

- Be sure to place your documents face down in the input tray.
- The *Two Sided* and *One Sided - Back* options are only available for duplex scanner models.

Save — saves any changes made to the selected Setting Shortcut.

Save As — displays the Save As window allowing you to save your current settings with a new Setting Shortcut name.

Delete — deletes the selected Setting Shortcut; you will be prompted for confirmation. This is only available for shortcuts you have created.

Rename — allows you to rename the selected Setting Shortcut. This is only available for shortcuts you have created.

Reset — allows you to undo any changes that have been made to the selected Setting Shortcut. This is only available for shortcuts you have modified (e.g., are in italics and appended with *<changed>*).

Move Up — moves the selected Setting Shortcut up one position in the Setting Shortcut list. When you move a Setting Shortcut, it will stay in that position until you move it again.

Move Down — moves the selected Setting Shortcut down one position in the Setting Shortcut list. When you move a Setting Shortcut, it will stay in that position until you move it again.

Settings — displays the Image Settings window which allows you to make changes to the selected Setting Shortcut. From this window you can also access the Device settings and Diagnostic windows.

Preview — initiates a scan and then displays the Image Settings window with the scanned image placed in the preview area. The image displayed is a sample based on your current shortcut settings.

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

NOTE: If this button is **OK**, any unsaved changes will remain in effect for the current scan session.

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

Information Icons



About: displays the scanners' version and copyright information.

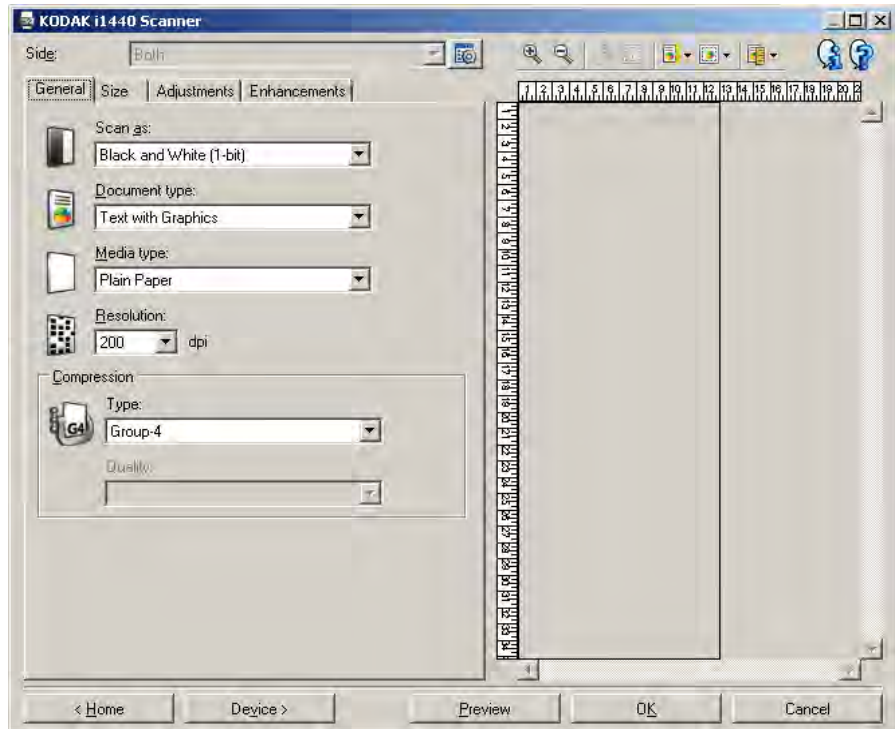


Help: displays help information for the window currently being displayed.

The Image Settings window

From this window you can define image processing options by using the available tabs. The values used in Image Settings are saved in the selected Setting Shortcut. The Image Settings window includes the following tabs: General, Size Adjustments and Enhancements.

Side — allows you to select which side and image to configure (e.g., Front, Back, Both: Color (24-bit), etc.). All image settings will be applied to the selected image.









NOTES:

- The *Side* option is only available when advanced settings have been selected on the Advanced tab.
- The *Both* and *Back* options are only available for duplex scanner models.



Advanced Image Setup: displays the Advanced tab.

Toolbar buttons

	Zoom In: enlarges the image that is currently being displayed in the preview area.
	Zoom Out: reduces the image that is currently being displayed in the preview area.
	Rotate Outline: rotates the outline 90 degrees. NOTE: This is only available if the rotated outline fits in the scanner's maximum width.
	Center Outline: adjusts the X origin of the outline such that the outline is centered within the scanner's maximum width.
	Preview Quality: selects the quality of the scanning image. <ul style="list-style-type: none"> • Normal: displays acceptable image quality at a lower resolution. • High: displays the most accurate representation of the actual image. The image that is displayed in the preview area is a good representation of what the final image will look like. NOTE: Depending on the document content, you may need to zoom in to see a true representation of the image.
	Units: selects the unit of measurement for the scanner; this includes the preview area and any size-related options. The Units options are: Inches , Centimeters and Pixels .

Preview area

The main purpose of the preview area is to display a sample image that is based on your current shortcut settings. An image will be displayed in this area after a preview scan has been performed. The displayed image will automatically show the effects of your changes, in most cases, without having to rescan the document. If a rescan is necessary, you will be prompted to reinsert the document.

NOTE: If you choose **Document: Manually Select** or **Image: Part of a document** on the Size tab, the preview area will also show the current *Outline* selections.

Home — returns you to the main *Kodak Scanner* window.

Device — displays the Device Settings window.

Preview — initiates a scan and places the image in the preview area. The image displayed is a sample based on your current shortcut settings.

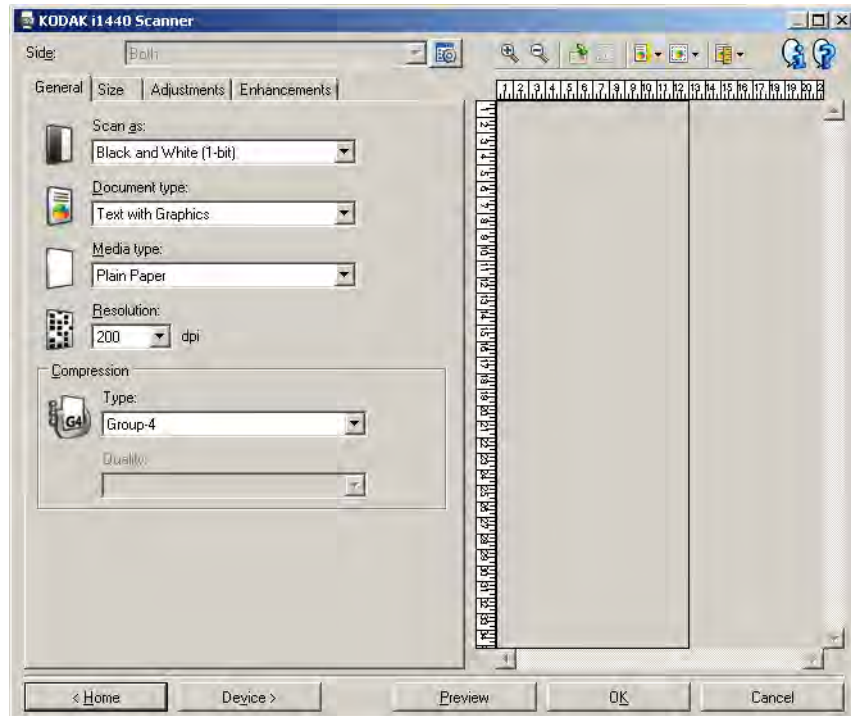
OK/Scan — when selected, you will be prompted to save any unsaved changes.

NOTE: If this button is **OK**, any unsaved changes will remain in effect for the current scan session.

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

General tab

The General tab contains commonly used image options. In most cases, you will not have to change options on other tabs.



Scan as — allows you to select the electronic image format.

- **Color (24-bit):** produces a color version of your document.
- **Grayscale (8-bit):** produces a grayscale version of your document.
- **Black and white (1-bit):** produces a black and white version of your document.

NOTE: The *Scan as* option is only available when **Images per side: One** is selected on the Advanced tab.

Document type — allows you to select the type of content on your documents.

- **Text with Graphics:** the documents contain a mix of text, business graphics (bar graphs, pie charts, etc.) and line art.
- **Text:** the documents contain mostly text.
- **Text with Photographs:** the documents contain a mix of text and photographs.

NOTE: This option is not available for all models.

- **Photographs:** the documents contain mostly photographs.

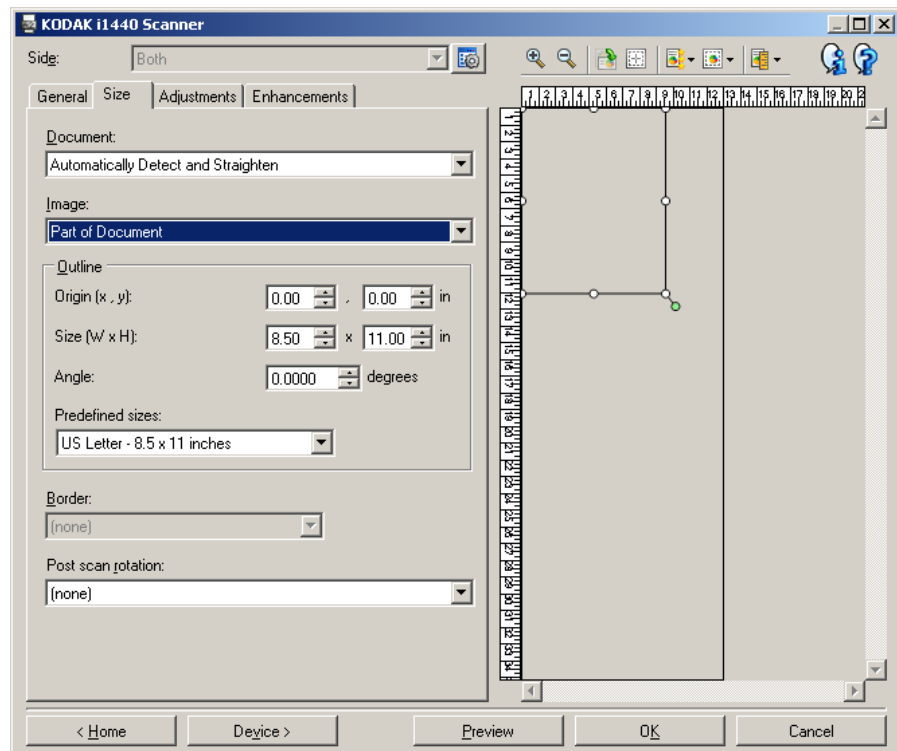
Media type — allows you to select the type of paper you are scanning, based upon the texture/weight. The options are: **Plain Paper, Thin Paper, Glossy Paper, Card Stock, and Magazine.**

Resolution — allows you to select the dots per inch (dpi), which is a determinant of a better quality image. It may also increase scanning time and image size. The options are: 75, 100, 150, 200, 240, 300, 400, 600 and 1200 dpi.

Compression — allows you to reduce your electronic image size.

- **Type:** the scanner will produce a color version of your document.
 - **(none):** no compression, which may produce a large image size.
 - **Group-4:** uses a CCITT standard to compress a black and white image, often used in conjunction with TIFF files.
 - **JPEG:** uses JPEG techniques to compress a color/grayscale image.
- **Quality** — if you choose JPEG compression, select one of the quality options:
 - **Draft:** maximum compression which produces the smallest image size.
 - **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.
 - **Superior:** the least amount of compression which produces the largest image size.

Size tab



Document — allows you to select how the scanner will detect your document as it is being fed through the scanner.

- **Automatically Detect and Straighten:** the scanner will automatically find each document (regardless of size) and will straighten any document that may have been fed crooked.
- **Automatically Detect:** the scanner will automatically find each document (regardless of size). If a document is fed crooked, it will not be straightened.
- **Photograph:** the scanner will locate the photograph on the document and return an image that contains just the photograph. If the scanner finds more than one photograph on a document, one image is still returned.
NOTE: This option is not available for all models.
- **Manually Detect:** the scanner will return an image based on the area you specify with the Outline options. It is suggested that you only use this option for scan jobs that contain same-size documents.
- **Continuous:** the scanner will split the document into separate images based on the area you specify with the Outline options. It is suggested that you select an Outline that covers the entire width of the document and a height around 11 inches (297 mm).
NOTE: This option is not available for all models.

Image — allows you to select which part of the document you want to use for creating your electronic image.

- **Entire document:**

- if you select **Document: Automatically Detect and Straighten**, **Document: Automatically Detect** or **Document: Manually Detect**, returns the entire document.
- if you select **Document: Photograph**, the entire document is used to locate the photograph.

- **Part of the document:**

- if you select **Document: Automatically Detect and Straighten** or **Document: Continuous**, returns the portion of the document which you specify with the Outline options.
- if you select **Document: Photograph**, only the portion of the document which you specify with the Outline options will be used to locate the photograph.

Outline — allows you to select the location and size to use for creating your electronic image. The preview area will show the outline.

- **Origin (x, y):**

- if you select **Document: Automatically Detect and Straighten** or **Document: Photograph**, (x) is the distance from the left edge of the document and (y) is the distance from the top edge of the document.
- if you select **Document: Manually Select** or **Document: Continuous**, (x) is the distance from the left edge of the scanner's paper path and (y) is the distance from the first portion of the document detected by the scanner.

- **Size (w, h):**

- if you select **Document: Automatically Detect and Straighten** or **Document: Manually Select**, this is the width and height of the electronic image.
- if you select **Document: Photograph**, this is the width and height of the area of the document to use to locate the photograph.
- if you select **Document: Continuous**, this is the width and height of each separate electronic image.

NOTE: The electronic image may be shorter than you specified if the outline goes beyond the end of the scanned document.

- **Angle:** allows you to select the angle of the outline.
- **Predefined sizes:** provides a list of commonly used paper sizes. Selecting an item in this list will automatically set the size of the outline to that paper's size. **Custom** will be displayed when the outline size does not match any sizes in the list.

NOTE: You can also adjust the outline displayed in the preview area using your mouse.

Border — allows you to select what action to perform on the edges of your electronic image.

- **(none)**
- **Add:** includes up to approximately 0.1 inches of border around all of the image edges.

NOTE: This option is only available for the following selections: when both **Document: Automatically Detect and Straighten** and **Image: Part of Document** are selected; **Document: Automatically Detect**; or **Document: Manually Select**.

- **Remove:** produces an image that contains just the document by eliminating any residual border. Residual border can be caused by variations in a document edge; for example, when a document is not a perfect rectangle and/or was fed crooked.

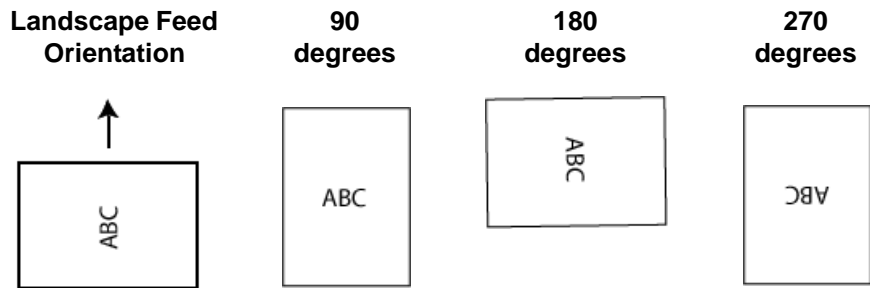
NOTES:

- While this option will not remove large amounts of residual border, there is a possibility that a small amount of the document will be lost.
- This option is only available when both **Document: Automatically Detect** and **Straighten and Image: Entire Document** are selected.

Post-scan rotation options — allows you to select any rotation to be applied to the electronic image after it has been scanned.

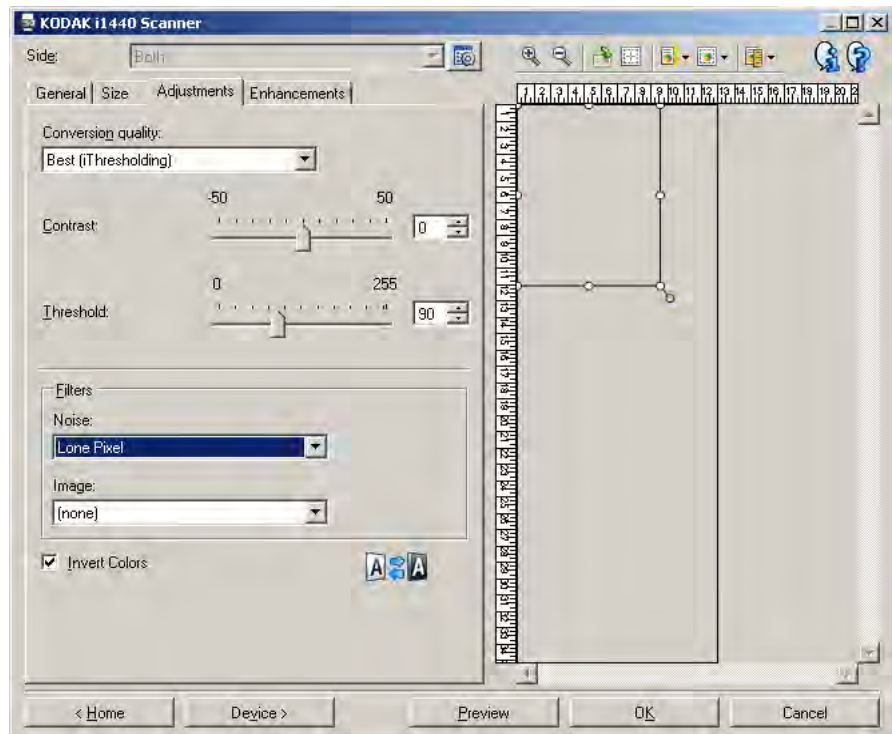
- **(none)**
- **Automatic** — the scanner will analyze each document to determine how it was fed and will rotate the image to the proper orientation.
- **90, 180, 270 degrees** — the amount of rotation that will be performed.

The following example shows how these settings effect a document that was fed landscape:



Adjustments tab: black and white

The options available on the Adjustments tab depend on the *Scan as* selection on the General tab. The following options are based on a *Scan as* selection of **Black and White**.



Conversion quality — these settings effect how the scanner analyzes a grayscale version of the document which is used to produce the black and white electronic image.

- **Best (iThresholding):** the scanner analyzes each document to produce the highest quality image. This option allows scanning of mixed documents with varying quality (i.e., faint text, shaded backgrounds, color backgrounds) and when scanning with consistent document sets.
- **Normal (ATP):** allows you to determine the optimal settings to produce the desired image quality. This option works best when scanning with consistent document sets. You may also want to use this option if you have difficult documents such that you cannot find a *Contrast* setting for *Best* that produces the desired quality.
- **Draft (Fixed):** allows you to select the grayscale threshold used to determine if a pixel is black or white. This option works best for high contrast documents.

Contrast — allows you to make an image sharper or softer. Decreasing this setting will make the image softer and reduce noise in the image. Increasing this setting will make the image clearer and make light information more visible. The options range from **-50** to **50**. The default is 0.

NOTE: This is not available for *Conversion quality: Draft*.

Threshold — aids in controlling the level at which a pixel is considered black or white. Decreasing this setting will make the image appear lighter, and can be used to subdue background noise. Increasing this setting will make the image appear darker, and can be used to help pick up light information. This options range from 0 to 255. The default is 90.

NOTE: This is not available for *Conversion quality: Best*.

Filters

- **Noise**

- **(none)**
- **Lone Pixel:** reduces random noise by converting a single black pixel to white when it is completely surrounded by white pixels or by converting a single white pixel to black when it is completely surrounded by black pixels.
- **Majority Rule:** sets each pixel based on its surrounding pixels. The pixel will become white if the majority of the surrounding pixels are white and visa versa.

- **Image**

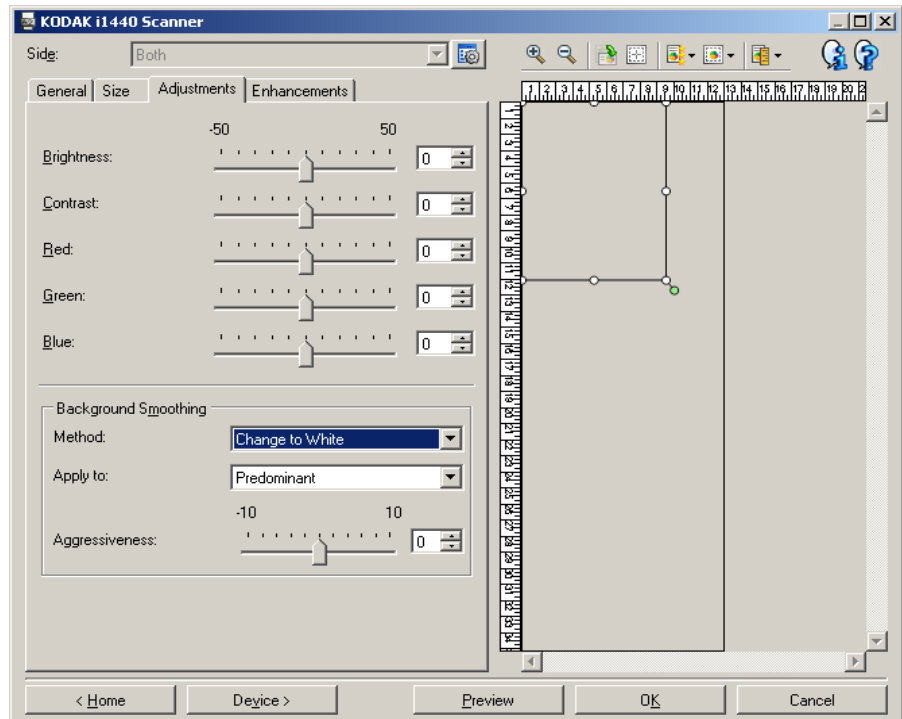
- **(none)**
- **Halftone Removal:** enhances dot matrix text and images with halftone screens (e.g., newspaper photographs).

Invert Colors — allows you to select how the black pixels will be stored in the image. By default the black pixels are stored as black and the white pixels are stored as white. Turn this option on if you want the black pixels stored as white and the white pixels stored as black.

NOTE: You may want to change this option if your application misinterprets the image data and stores your image in reverse of what you expect.

Adjustments tab: color or grayscale

The options available on the Adjustments tab depend on the *Scan as* selection on the General tab. The following options are based on a *Scan as* selection of **Color** or **Grayscale**.



Brightness — changes the amount of white in the color or grayscale image. The values range from **-50** to **50**. The default is 0.

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

Red — changes the amount of red in the color image. The values range from **-50** to **50**. The default is 0. *Does not apply to grayscale images.*

Green — changes the amount of green in the color image. The values range from **-50** to **50**. The default is 0. *Does not apply to grayscale images.*

Blue — changes the amount of blue in the color image. The values range from **-50** to **50**. The default is 0. *Does not apply to grayscale images.*

Background Smoothing — 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.

- **Method:**

- **(none)** - no background smoothing will be performed.
- **Automatic** - smooths up to three background colors.
- **Change to White** - identifies up to three background colors and substitutes each color with white.

- **Apply to:**
 - **Predominant** - smooths the predominant background color to white.
 - **Neutral** - smooths only the neutral color to white, and also smooths up to two additional background colors.
 - **All** - smooths the neutral color and up to two additional background colors to white.
- NOTE: The *Apply to* options are only available for **Method: Change to White**.
- **Aggressiveness:** allows you to adjust the extent at which the background(s) are determined. The values range from **-10** to **10**. The default is 0.

Enhancements tab

The options on the Enhancements tab depend on the *Scan as* selection on the General tab.

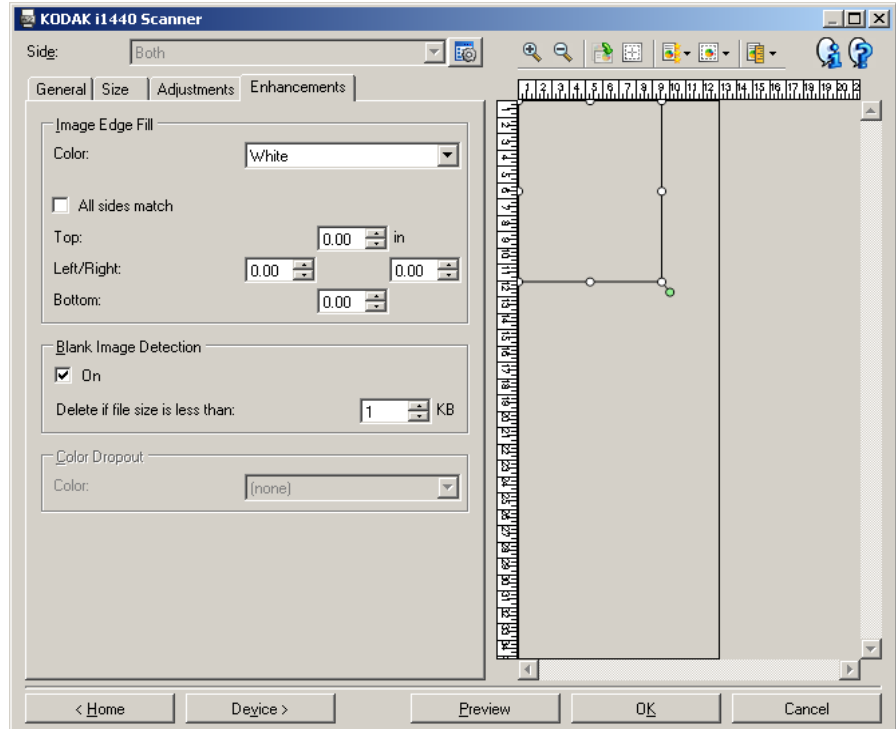



Image Edge Fill — fills the edges of the final electronic image by covering the area with the specified color.

- **Color:** allows you to select the color to fill the edges with.
 - (none)
 - White
 - Black
- **All sides match:** when turned on, an equal amount will be filled in on all sides.
- **Top:** determines how much of the top edge will be filled in.
NOTE: This option is applied to all edges when **All sides match** is turned on.
- **Left/Right:** the option on the left will determine how much of the left edge will be filled in and the option on the right will determine how much of the right edge will be filled in.
- **Bottom:** determines how much of the bottom edge will be filled in.
NOTE: When using **Image Edge Fill**, be careful not to enter a value too large as it could fill in image data that you want to keep.

Blank Image Detection — allows you to configure the scanner to not give blank images to the scanning application.

- **(none)**: all images are given to the scanning application.
- **Based on Document Content**: images will be considered blank based on the document content within the image.
 - **Content amount**: allows you to select the maximum amount of content that the scanner will consider to be blank. Any image that has more content than this value will be considered non-blank and will be given to the scanning application. The values range from **0** to **100** percent.
 -  Content amount will be filled in with the amount of content in the preview image. If you have a representative blank document (e.g., blank sheet with letter head), this can be used to assist with determining the setting for *Content amount* (i.e., perform a preview scan, click this button, and adjust Content amount as appropriate). *This option is only available when there is a preview image.*
- **Based on Size**: images will be considered blank based on the size of the image that would be given to the scanning application (i.e., after all other settings have been applied).
 - **Final image size**: allows you to select the minimum image size that the scanner will consider to be non-blank. Any image that is less than this value will be considered blank and will not be given to the scanning application. The values range from 1 to 1000 KB (1 KB equals 1024 bytes).

Color Dropout — used to eliminate 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). For black and white images, these settings effect the grayscale version of the document which the scanner analyzes to produce that electronic image.

- **Color**: select the desired dropout color.
 - **(none)**
 - **Red**
 - **Green**
 - **Blue**

NOTE: **For i1440 Scanners only**. If you created custom dropout colors, these colors will also be available in the *Color* drop-down list.

The following options are for the *Kodak i1440 Scanner* only.

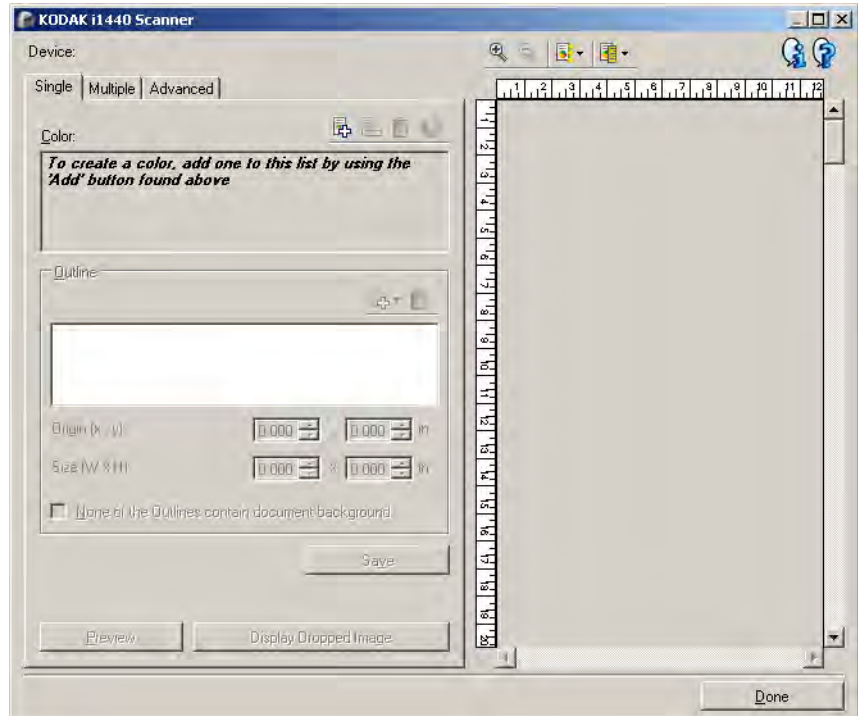
- **Form data is color**: allows you to indicate that a color other than black or dark blue ink, was used for the data entered on the form.

- **Configure:** displays the Color Dropout Configuration window, which allows you to create and change custom dropout colors. If you have any unsaved changes for the current Setting Shortcut, you will be prompted to save those changes.

NOTE: The Color Dropout options are only available when the *Scan* as selection is **Black and White** or **Grayscale**.

Defining custom dropout colors using the Color Dropout Configuration window

The Color Dropout Configuration window allows you to define custom dropout colors. If the supplied dropout colors (i.e., red, green, blue) do not dropout the color on your form, you can create a custom dropout color that is specific to your form. The custom color is created by using the Color Dropout Configuration window. If you have a complicated form that requires more than one dropout color, you can create a multiple custom color that can dropout up to three colors.



The Color Dropout Configuration window is accessed via the Configure button on the Enhancements tab of the Image Settings window. This window includes the following tabs: **Single**, **Multiple** and **Advanced**.

Device — allows you to select which device to perform the configuration on. The options are: **Document Feeder** or **Flatbed**.

NOTE: This option is only available if you had the flatbed accessory attached when the scanning application connected to the scanner.

Toolbar buttons



Zoom In: enlarges the image that is currently displayed in the preview area.



Zoom Out: reduces the image that is currently displayed in the preview area.



Preview Quality: selects the quality of the preview image.

- **Normal:** displays acceptable image quality at a lower resolution.
- **High:** displays the most accurate representation of the actual image. The image that is displayed in the preview area is a good representation of what the final image will look like.



Units: selects the unit of measurement for the scanner; this includes the preview area and any size-related options. The Units options are: **Inches**, **Centimeters** and **Pixels**.

Preview Area

The preview area displays a sample of the color dropped image based on some of the current shortcut settings (e.g. *Black and White: Conversion quality, Contrast, Threshold*). An image will be displayed in this area after a preview scan has been performed.

- **Outline:** When the Single tab is displayed, the preview area also shows the current *Outline* selections. If the outline does not align with the desired area on your preview image, you may use the mouse to adjust the size and location of the outline. As the mouse cursor moves around the outline, the cursor will change indicating that you can adjust the outline by pressing and holding the left mouse button.
 - **Move:** place the mouse cursor within the outline to adjust the location of the outline.
 - **Corner:** place the mouse cursor over one of the corner graphics to adjust two sides at the same time.



- **Side:** place the mouse cursor over one of the side graphics to adjust that side.



Done — returns you to the Enhancements tab. When selected, you will be prompted to save any unsaved changes.

Information icons



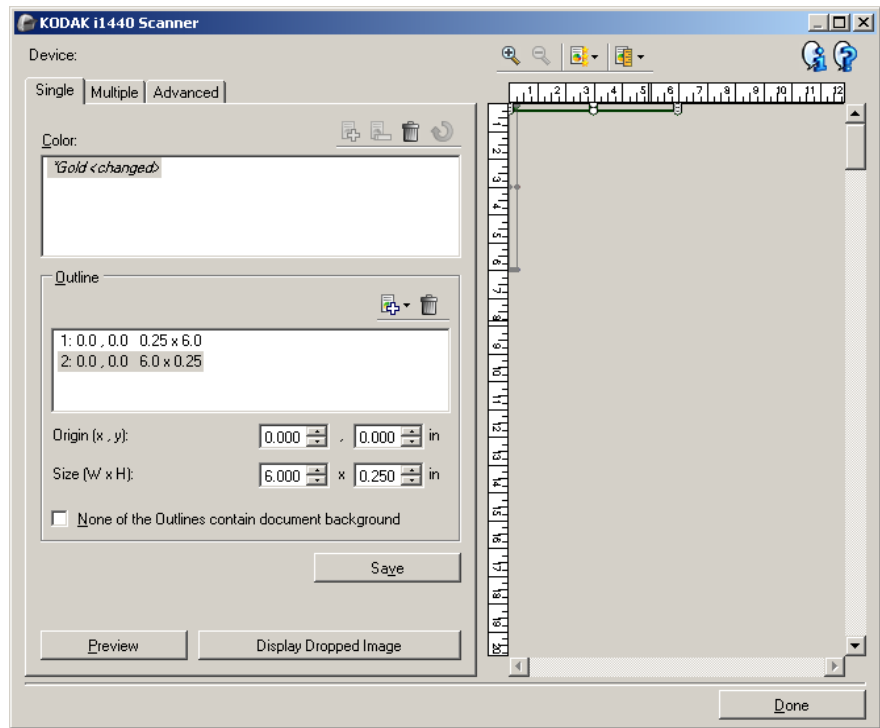
About: displays the scanners' version and copyright information.



Help: displays help information for the window currently being displayed.

Color Dropout Configuration window — Single tab

The Single tab allows you to configure a custom dropout color that contains information for one color. The information includes the learned data as well as the options used to create the color.



NOTE: You cannot select another tab while a color is being modified (e.g., when the color name is in italics and appended with *<changed>*).

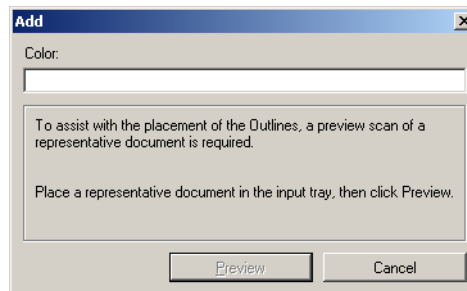
Color — indicates which custom dropout color you are configuring. The maximum number of custom dropout colors is 60.

See the section entitled, "Creating a custom dropout color to drop multiple colors" for procedures on how to configure a custom single color.

Toolbar buttons



Add: adds a color that can be configured. This option is not available if the maximum number of colors has been reached or a color is being modified. When selected, the Add window will be displayed:

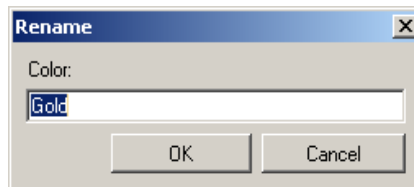


- **Color:** allows you to enter the name you want for the new color. The name cannot be the same as any existing Single, Multiple or supplied dropout color.
- **Preview:** performs a preview scan and adds the color alphabetically to the Color list.

NOTE: The preview image will automatically toggle to the color image, since no single colors have been added yet.



Rename: allows you to rename the currently selected color. This option is not available if there are no multiple colors or a color is being modified. When selected, the Rename window will be displayed:



- **Color:** allows you to enter the new name you want for the color. The name cannot be the same as any existing Single, Multiple or supplied dropout color. When you click **OK**, the color will be saved with the new name.



Delete: removes the currently selected color. This option is only available if you have a single color defined or if the single color is included in any defined Multiple color. When selected, you will be prompted for confirmation.

NOTE: If all single colors are removed, the preview image will automatically toggle to the color image.



Clear learned information: removes all previously learned information about the currently selected color. This option is not available if a color is being modified. When selected, you will be prompted for confirmation.

Outlines — allows you to define up to eight areas of the document to use for the learning process. You can select the location and size of each outline. The preview area will show each outline.

NOTE: The *Outlines* option is not available for a color that has already been learned.

- **Origin (x, y)** — (x) is the distance from the left edge of the document and (y) is the distance from the top edge of the document.
- **Size (w, h)** — the width and height of the outline area.

NOTE: The minimum size is 0.25 inches (6.35 mm).

- **None of the Outlines contain document background** — allows you to indicate that every outline is within a solid area of color. Typically at least one outline will contain the background of the document (e.g. outline is around text), in that case do not select this option.

NOTES:

- These options are not available when no *Outlines* are defined.
- The color information is re-learned when any of these options are changed. If the preview is showing a dropped image, the image will show the result of the re-learned information. However, if not re-learned successfully (e.g., an outline is not placed appropriately), the image is not updated and the *Save* button is not available.
- You can also adjust the outline displayed in the preview area using your mouse.

Toolbar buttons



Add: displays a list of predefined outline sizes. This option is not available if eight *Outlines* have been added. When selected, the outline will appear at the end of the Outline list and be visible in the preview area.

- 0.25 x 0.25 in (6.35 x 6.35 mm)
- 0.25 x 6 in (6.35 x 152.4 mm)
- 1 x 2 in (25.4 x 50.8 mm)
- 2 x 1 in (50.8 x 25.4 mm)
- 6 x 0.25 in (152.4 x 6.35 mm)



Delete: removes the currently selected Outline. This option is not available when no *Outlines* are defined.

NOTE: If all *Outlines* are removed, the preview image will automatically toggle to the color image.

Save — saves the learned color information.

NOTES:

- This option is only available when the current color is being modified (e.g. name is in italics and appended with *<changed>*) and has at least one *Outline* defined.
- This option is not available when re-learning is not successful after a selection has changed.

Color Dropout Configuration window — Multiple tab

Preview — initiates a scan and displays the scanned image in the preview area. The image displayed will be either the dropped image or a color image. This option is only available when there is at least one single color.

Display Dropped Image/Display Color Image — allows you to toggle the displayed preview image. This will only affect the preview image for the Single tab, and will be retained even if you change tabs. This option is only available when there is at least one single color, the selected single color has at least one *Outline* defined, and there is a preview image.

The Multiple tab allows you to configure a custom dropout color that contains information for up to three single colors.

NOTE: If you cannot select another tab while a color is being modified (e.g. name is in italics and appended with *<changed>*).

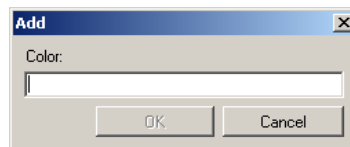
Color — indicates which custom dropout color you are configuring. The maximum number of custom dropout colors is 60.

See the section entitled, “Creating a custom dropout color to drop multiple colors” for procedures on how to configure a custom single color.

Toolbar buttons



Add: adds a color that can be configured. This option is not available if the maximum number of colors has been reached or a color is being modified. When selected, the Add window will be displayed:



- **Color:** allows you to enter the name you want for the new color.

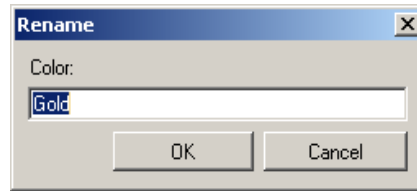
NOTE: The name cannot be the same as any existing Single, Multiple or supplied dropout color.

- **OK:** adds the color alphabetically to the *Color* list.

NOTE: The preview image will automatically toggle to the color image, since no single colors have been added yet.



Rename: allows you to rename the currently selected color. This option is not available if there are no multiple colors or a color is being modified. When selected, the Rename window will be displayed:



- **Color:** allows you to enter the new name you want for the color.
NOTE: The name cannot be the same as any existing Single, Multiple or supplied dropout color.

- **OK:** saves the Color with the new name.



Delete: removes the currently selected color. This option is only available if you have multiple colors defined. When selected, you will be prompted for confirmation.

NOTE: If all multiple colors are removed, then the preview image will automatically toggle to the color image.



Reset: allows you to undo any changes that have been made to the selected color. This option is only available when a color is being modified.

NOTE: The preview image will automatically toggle to the dropped image.

Single — allows you to define up to three single colors to be dropped as part of the multiple color.

NOTES:

- The *Single* option is only available when a multiple color has already been added.
- The preview area will not show each color's outlines.

Toolbar buttons



Add: displays a list of all existing single colors (supplied dropout colors followed by custom single colors). This option is not available if three single colors have been added. When selected, the color will appear at the end of the *Color* list.

NOTE: The preview image will automatically toggle to the dropped image.



Delete: removes the currently selected color. This option is only available if you have single colors defined.

NOTE: If all single colors are removed, then the preview image will automatically toggle to the color image.

Save — saves the single colors.

NOTE: This option is only available when the current color has been modified (e.g. name is in italics and appended with *<changed>*).

Preview — initiates a scan and displays the scanned image in the preview area. The image displayed will be either the dropped image or a color image.

NOTE: This option is only available when there is at least one multiple color.

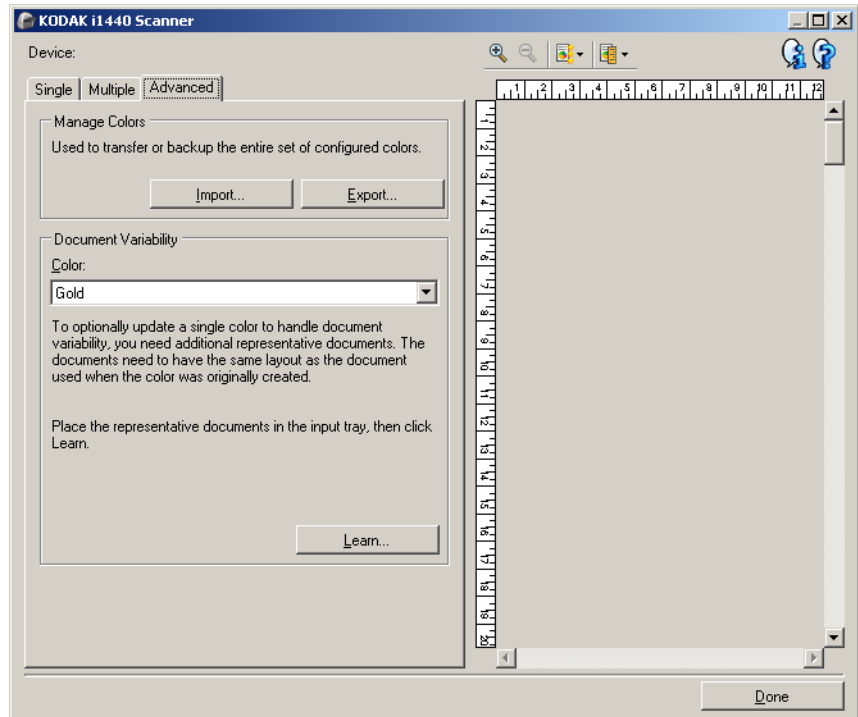
Display Dropped Image/Display Color Image — allows you to toggle the displayed preview image. This will only effect the preview image for the Multiple tab. Since most changes on this tab force the preview to display a certain image, this change is not retained.

NOTE: This option is only available when there is at least one multiple color, the selected multiple color has at least one single color defined, and there is a preview image.

Color Dropout Configuration window - Advanced tab

The Advanced tab allows you Import/Export your custom dropout color, as well as update an existing custom dropout color to handle color variability from document to document.

NOTE: No preview image will be displayed.



Manage Colors — allows you to transfer or backup your custom dropout colors. The dropout colors are transferred as an entire set.

- **Import** — imports a color set by replacing all current custom dropout colors with the colors in the set. When selected, the operating system's File Open window is displayed allowing you to select the color set you want to import.

NOTE: If at least one custom dropout color exists, you will be prompted for confirmation before the File Open window is displayed.

- **Export** — exports all the current custom dropout colors to a color set. When selected, the operating system's File Save window is displayed allowing you to select the folder and file name for the color set.

NOTES:

- This option is only available if there is at least one custom color.
- If you want to transfer colors to another PC: select **Export** on the PC that has the custom dropout colors you want to transfer and then select **Import** on the other PC.
- If you want to add a color to a current color set: select **Import**, create the new custom color and then replace the color set by selecting **Export**.

Document variability — allows you to optionally enhance a custom single dropout color to handle variability in color from document to document. For example, if you get additional prints of a form and it has a slightly different color, this feature can be used to update your existing custom color to handle the variability in the new form's color.

- **Color** — allows you to select which custom single dropout color to enhance.
- **Learn** — scans your documents in order to update the custom dropout color. When selected, you are prompted for confirmation before scanning occurs.

NOTES:

- The *Document variability* option is only available when at least one custom single color has been created.
- Only use documents of the same type and layout as the document you used when the custom dropout color was created.

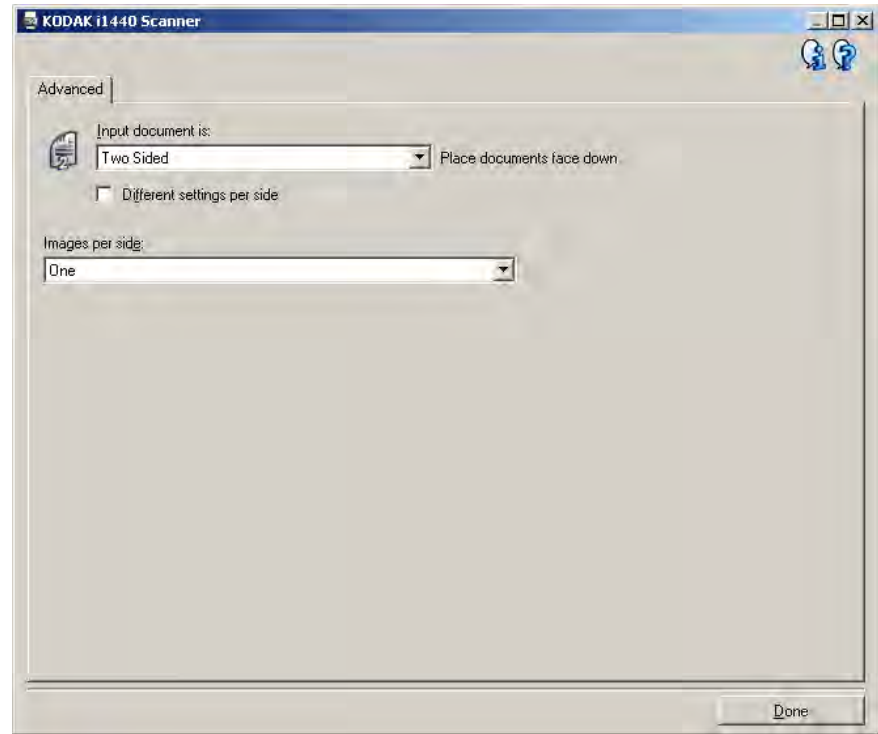
Advanced Image Setup

The Advanced tab

The Advanced Image Setup icon is located at the top of the Image Settings window next to the *Side* drop-down box.



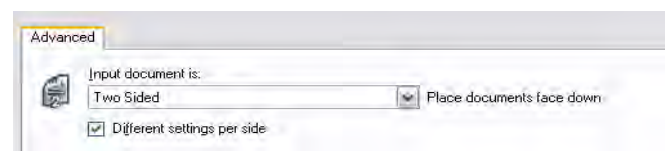
When you select the Advanced Image Setup icon, the Advanced tab will be displayed.



Input document is — select **Two Sided**, **One sided - Front**, or **One sided - Back** depending on what side(s) you want to configure.

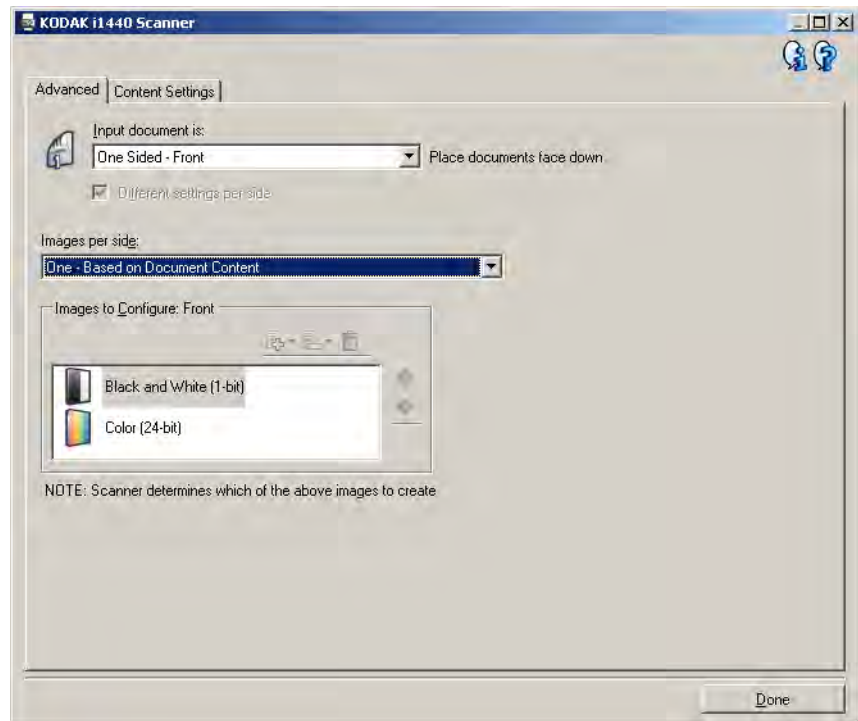
NOTE: The *Two Sided* and *One Sided - Back* options are only available for duplex scanner models.

Different settings per side — by default, the settings you select apply to both sides of the image. Turn this option on if you want you to select different image processing settings for each side of the document you are scanning. For example, if you want the front side to be color and the rear side to be black and white, first make sure that you have selected the **Two Sided** option from the *Input document is* drop-down list, then select the *Different settings per side* checkbox.



Once you have done this, the *Side* option on the Image Settings window will no longer be grayed out and you can select different settings for each side. Now that you have enabled **Different settings per side**, your initial selections will apply only to the front side of the document you are scanning. After you have made your selections for the front side, use the *Side* option to select the back side and then make the settings you want to apply to the back.

NOTE: The *Different settings per side* option is only available for duplex scanner models.



Images per side — indicates how many images the scanner will create for a side, based on your imaging selections.

- **One:** indicates you want the scanner to create one image.
- **One - Based on Document Content:** indicates you want the scanner to automatically detect if the document is color/grayscale or black and white.
- **One - Based on Toggle Patch:** indicates you want to tell the scanner, via a toggle patch document, if the document is color/grayscale or black and white.
- **Multiple:** indicates you want the scanner to create more than one image.

NOTE: If you select **One - Based on Document Content** from the *Images per side* option, the Content Settings tab will be displayed.

Images to Configure — indicates which electronic images you need to configure.




NOTE: This is only available if you select anything other than **One** from the *Images per side* option. For procedures on how to configure advanced options, see the sections that follow, entitled:

- *Creating color/grayscale or black and white images based on the content of your documents, Example 1.*
- *Creating multiple images for each side of a document, Example 2.*
- *Creating different settings for each side of a document, Example 3.*

When available, use the up and down arrows to select the order the images will be delivered by the scanner to the scanning application.



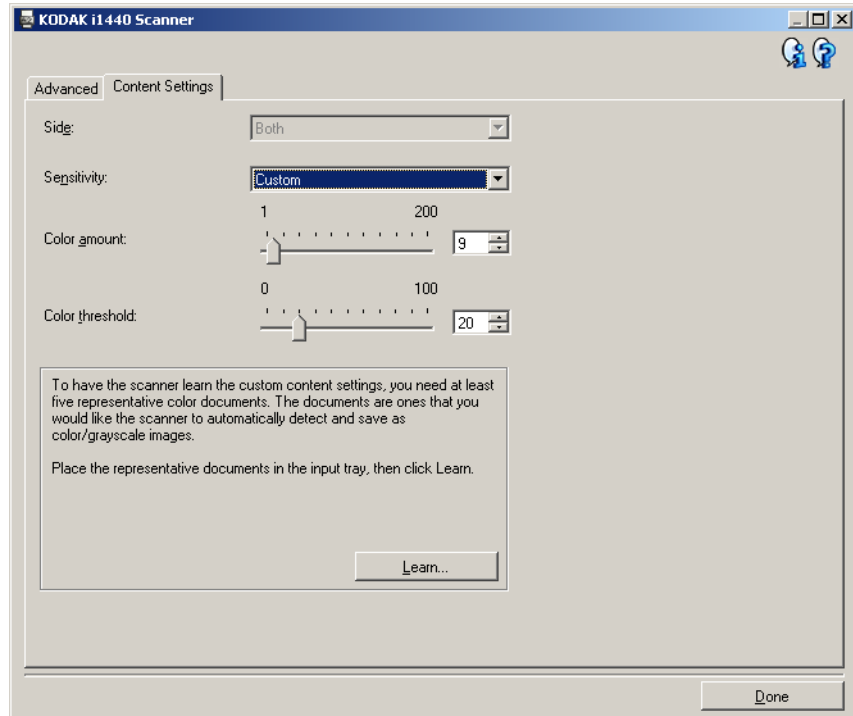
Toolbar buttons:

	Add: adds an image type to the bottom of the configuration list.
	Change: allows you to change the currently selected image type.
	Delete: removes the selected image type.

Done — returns you to the Image Settings window.

Content Settings tab

The options on the Content Settings tab can be used for either one- or two-sided jobs.



Side — determines which side the Sensitivity settings are applied to. This option is only available if **Different settings per side** is checked on the Advanced tab.

Sensitivity

- **Low:** documents requiring only a small amount of color to be saved as color/grayscale images. Used for capturing documents that are primarily black text with small logos, or contain small amounts of highlighted text or small colorful photos.
- **Medium:** documents requiring more color, as compared with the Low option, before they are saved as color/grayscale images.
- **High:** documents requiring more color, as compared with the Medium option, before they will be saved as color/grayscale images. Used for distinguishing documents containing medium- to large-size colorful photos from plain black text. Photos with neutral colors may require adjustments to the *Color Threshold* or *Color Amount* values in order to be captured correctly.

- **Custom:** allows you to manually adjust the *Color amount* and/or *Color threshold*.

NOTE: When setting Sensitivity values, it is suggested that you start with the **Medium** option and scan a typical job set. If too many documents were returned as color/grayscale vs. black and white, then change to the **High** option and re-run the job. If too few documents were returned as color/grayscale vs. black and white, then change to the **Low** option and re-run the job. If none of these options provide the desired result, select **Custom** to manually adjust Color Amount and/or Color Threshold. **Custom** also allows access to the *Learn* mode which provides a method for the scanner to analyze documents and recommend settings.

Color amount — the amount of color that needs to be present in a document before it will be saved as either color/grayscale. As the value of *Color Amount* increases, more color pixels are required. Valid values are **1** to **200**.

Color threshold — the color threshold or saturation (i.e., pale blue vs. dark blue) at which a given color will be included in the color amount calculation. A higher value indicates that a more intense color is required. Valid values are **0** to **100**.

Learn — allows you to calculate your settings based on representative color documents scanned. Before selecting **Learn**, place at least 5 representative color documents in the input tray. The documents will be scanned and analyzed to determine the recommended *Color amount*.

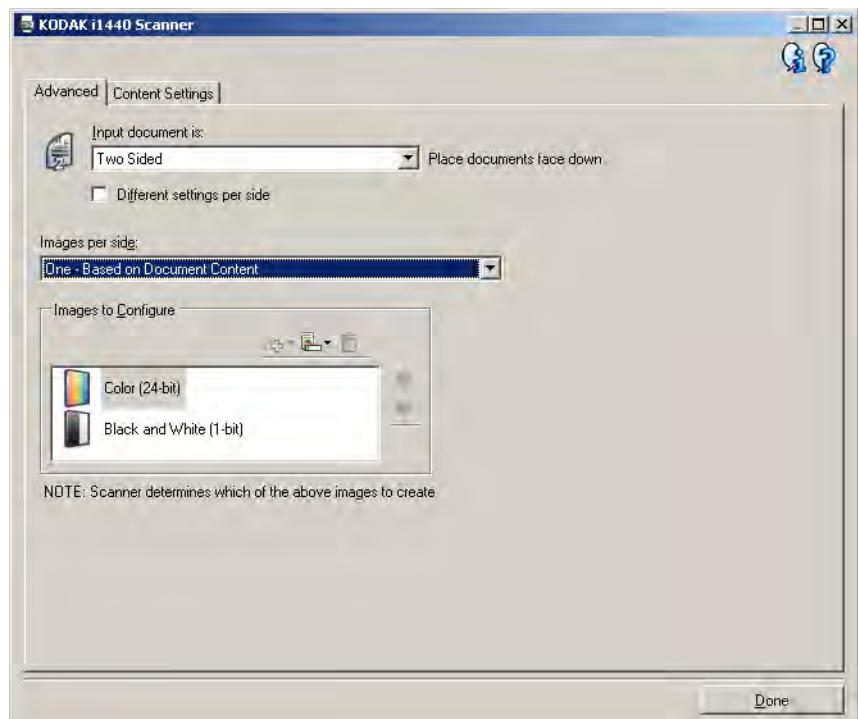
NOTE: These Color amount and Color threshold sliders will be updated automatically. If these values do not provide the desired results with your job set, you may need to manually adjust the *Color Threshold*.

**Creating color/grayscale or black and white images based on the content of your documents,
Example 1**

In this example, let's assume you want to configure a scan session that has a mix of color and black and white documents with information on both sides. In addition, you want the scanner to detect whether the page is color or not, and then output either a color or black and white image based on that.

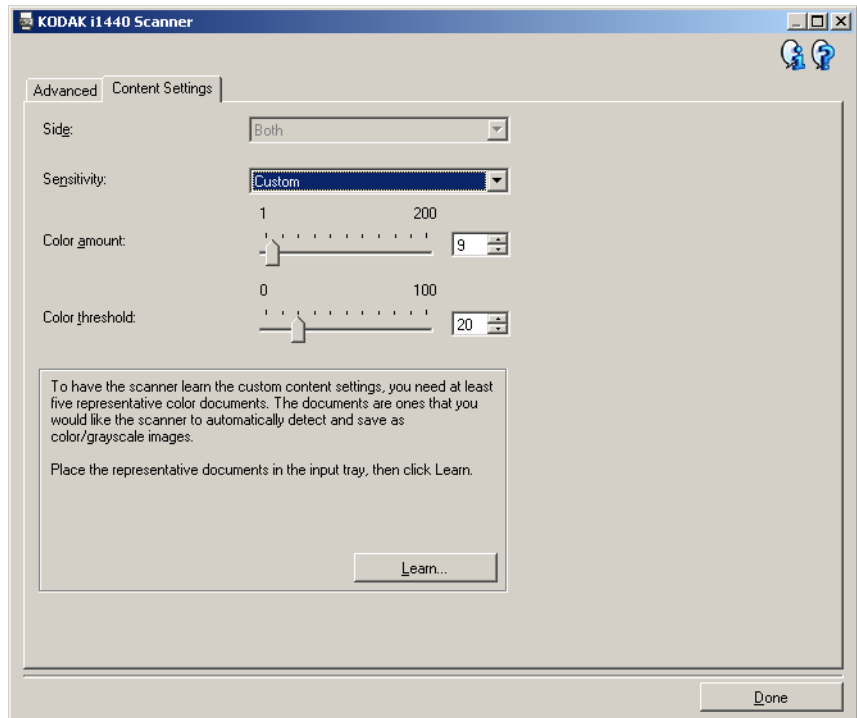
1. Select a **Setting Shortcut** from the main *Kodak Scanner* window that closely describes your desired output.
2. Select **Settings** to display the Image Settings window.
3. Select the **Advanced Image Setup** icon on the Image Settings window to display the Advanced tab.
4. Select **Input document is: Two Sided**.
5. Select **Images per side: One – based on document content**.

NOTE: The *Images to Configure* area will now be displayed on the Advanced tab and will contain a color image item and a black and white image item. The Content Settings tab will also be displayed.



6. If you want a grayscale image instead of a color image, when enough color is detected in the document:
 - make sure *Color (24-bit)* is selected
 - select **Change** to display a list of options
 - select **Grayscale**

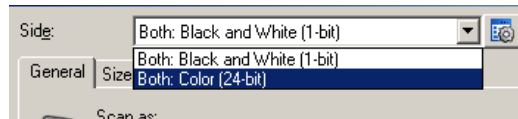
7. Go to the **Content Settings** tab.



8. Select a **Sensitivity** option.

9. Select **Done** to return to the Image Settings window.

NOTE: You will notice that the *Side* option now has two entries:
Both: Color (24 bit) and **Both: Black and White (1bit)**.



10. Select **Sides: Both: Black and White (1-bit)**.

NOTE: Make any other adjustments to the black and white image settings on the rest of the tabs on the Image Settings window.

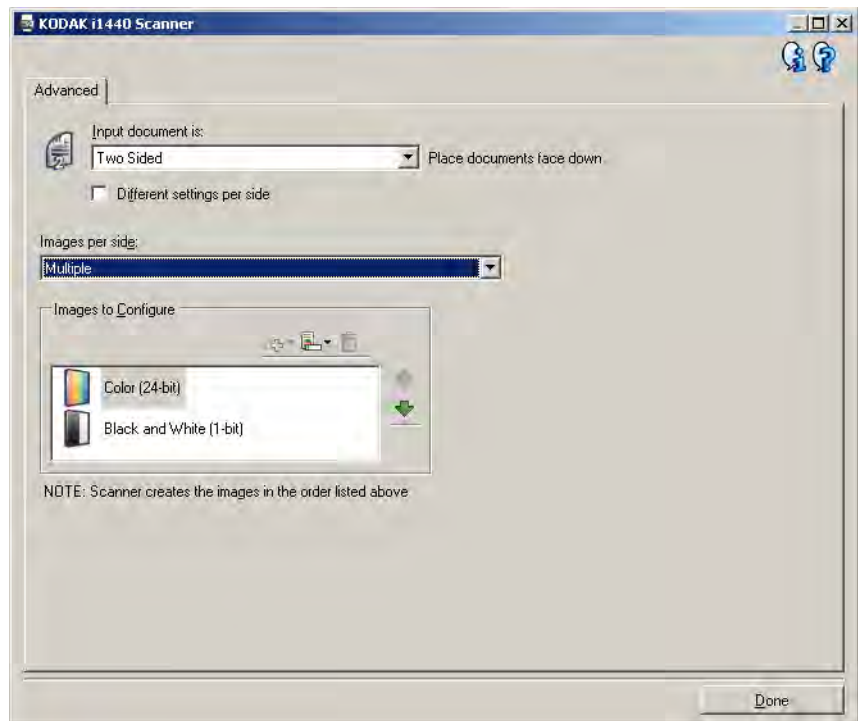
11. When finished, select **Home** to return to the main *Kodak Scanner* window and then select **Save** to save your selections to the shortcut.

Creating multiple images for each side of a document, Example 2

In this example, let's assume you want to configure a scan session that has documents with information on both sides and you want the scanner to produce both a color and a black and white image for each side of each document.

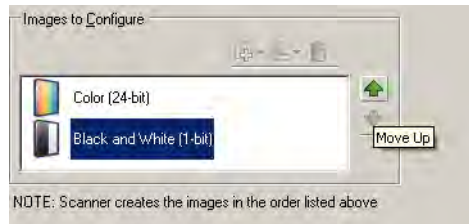
1. Select a **Setting Shortcut** from the main *Kodak Scanner* window that closely describes your desired output.
2. Select **Settings** to display the Image Settings window.
3. Select the **Advanced Image Setup** icon on the Image Settings window to display the Advanced tab.
4. Select **Input document is: Two Sided**.
5. Select **Images per side: Multiple**.

NOTE: The *Images to Configure* area will now be displayed on the Advanced tab and will contain a color image item and a black and white image item.



6. If you want a grayscale image instead of a color image, when enough color is detected in the document:
 - make sure *Color (24-bit)* is selected
 - select **Change** to display a list of options
 - select **Grayscale**

7. By default the scanner will produce the color/grayscale image first and deliver it to the scanning application, then it will produce and deliver the black and white image. If you want the black and white image to be produced and delivered first:
 - make sure *Black and White(1-bit)* is selected
 - select **Move up** to place the black and white image first in the list.



8. Select **Done** to return to the Image Settings window.

NOTE: You will notice that the *Side* option now has two entries:
Both: Color (24 bit) and **Both: Black and White (1bit)**.



9. Select **Sides: Both: Color (24-bit)**.

NOTE: Make any other adjustments to the color image settings on the rest of the tabs on the Image Settings window.

10. Select **Sides: Both: Black and White (1-bit)**.

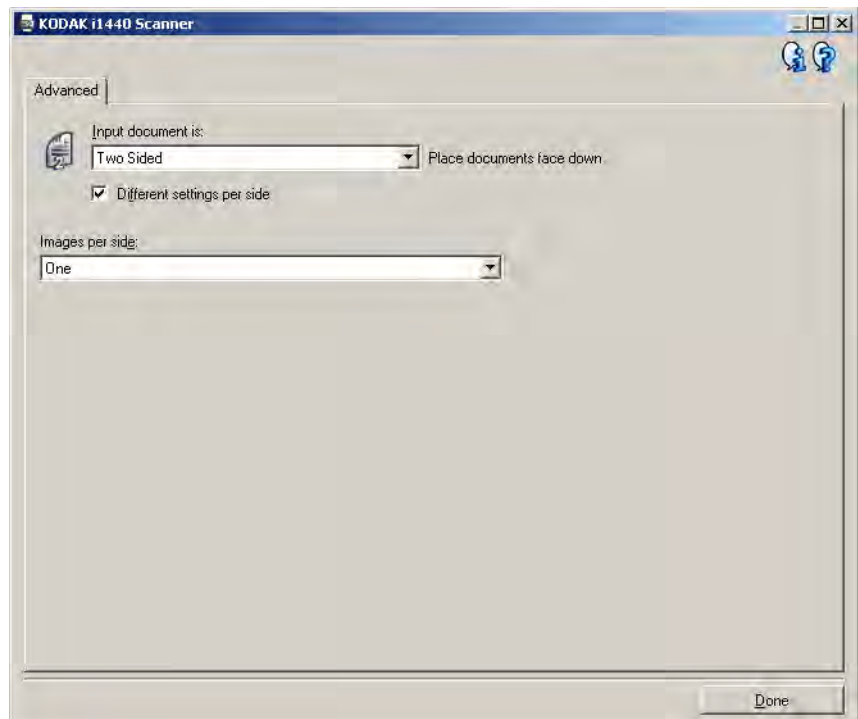
NOTE: Make any other adjustments to the black and white image settings on the rest of the tabs on the Image Settings window.

11. When finished, select **Home** to return to the main *Kodak Scanner* window and then select **Save** to save your selections to the shortcut.

**Creating different settings for each side of a document,
Example 3**

In this example, let's assume you want to configure a two-sided document stream of business documents that have color on the front of the document but the rear side is fine in black and white.

1. If you are not already on the Advanced tab:
 - Select a **Setting Shortcut** from the main *Kodak Scanner* window that closely describes your desired output.
 - Select **Settings** to display the Image Settings window.
 - Select the **Advanced Image Setup** icon on the Image Settings window to display the Advanced tab.
2. Select **Input document is: Two Sided**.
3. Turn on the **Different settings per side** option.
4. Select **Images per side: One**.



5. Select **Done** to return to the Image Settings window.

NOTE: You will notice that the *Side* option now has two entries: **Front** and **Back**.



6. Select **Sides: Front**.
7. Select **Color (24-bit)** for the *Scan as* option on the General tab.

NOTE: Make any other adjustments to the front side settings on the rest of the tabs on the Image Settings window.
8. Select **Sides: Back**.

9. Select **Black and White (1-bit)** for the *Scan as* option on the General tab.

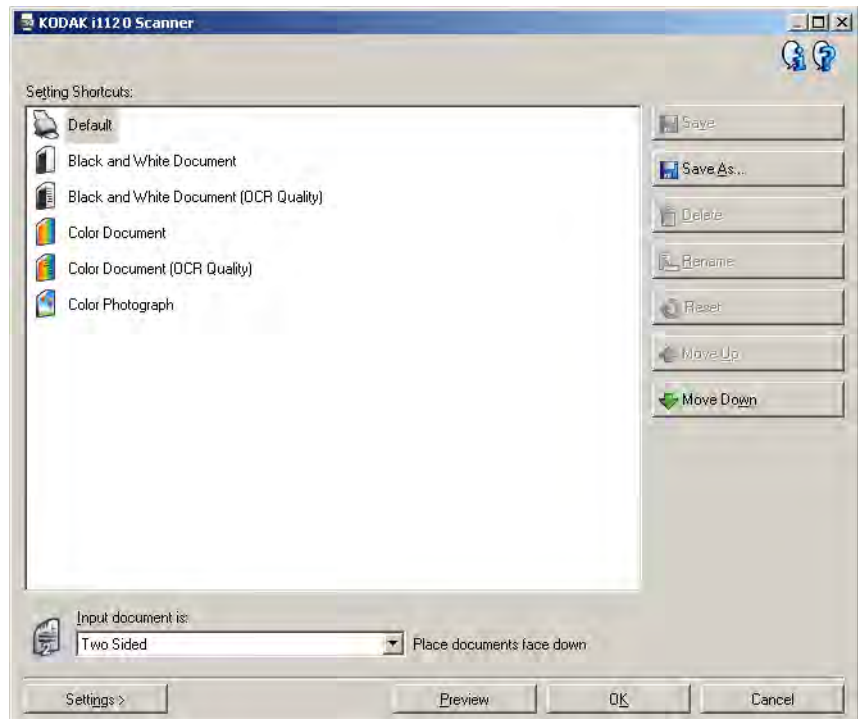
NOTE: Make any other adjustments to the back side settings on the rest of the tabs on the Image Settings window.

10. When finished, select **Home** to return to the main *Kodak* Scanner window and then select **Save** to save your selections to the shortcut.

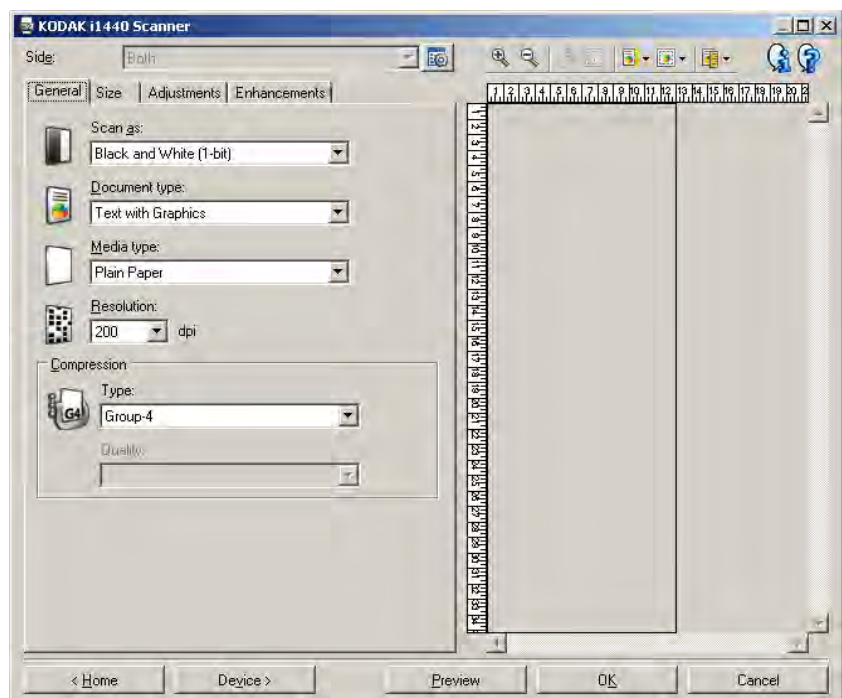
NOTE: Steps 2 and 3 are only valid for duplex scanner models.

Creating a new Setting Shortcut

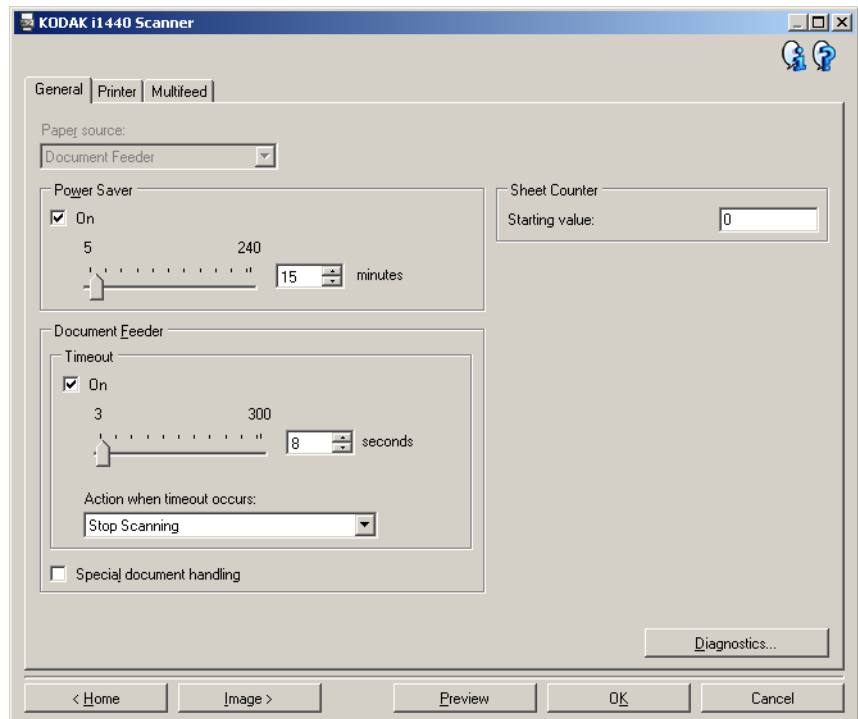
1. From the main *Kodak Scanner* window, select a Setting Shortcut from the list. It is recommended that you select a shortcut that most closely describes the desired image output.



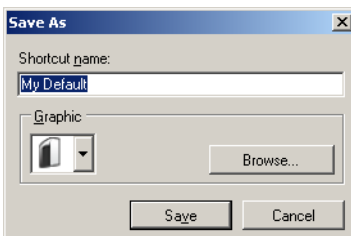
2. Determine if you want to capture an electronic image of the front of your document, back of your document or both sides of your document and make the selection from the *Input document is* field.
3. Select **Settings** on the main *Kodak Scanner* window. The General tab of the Image Settings window will be displayed.



4. Select the appropriate options on the General tab.
 NOTE: If necessary, review each setting on the other tabs and make any changes.
5. Place one representative document in the input tray of the scanner.
6. Select **Preview** to review the resulting image.
 NOTE: If the images are not acceptable, you can either select a different predefined Setting Shortcut or make additional changes on the rest of the tabs on the Image Settings window.
7. Define the desired Device settings by selecting **Device** on the Image Settings window to display the Device Settings window.



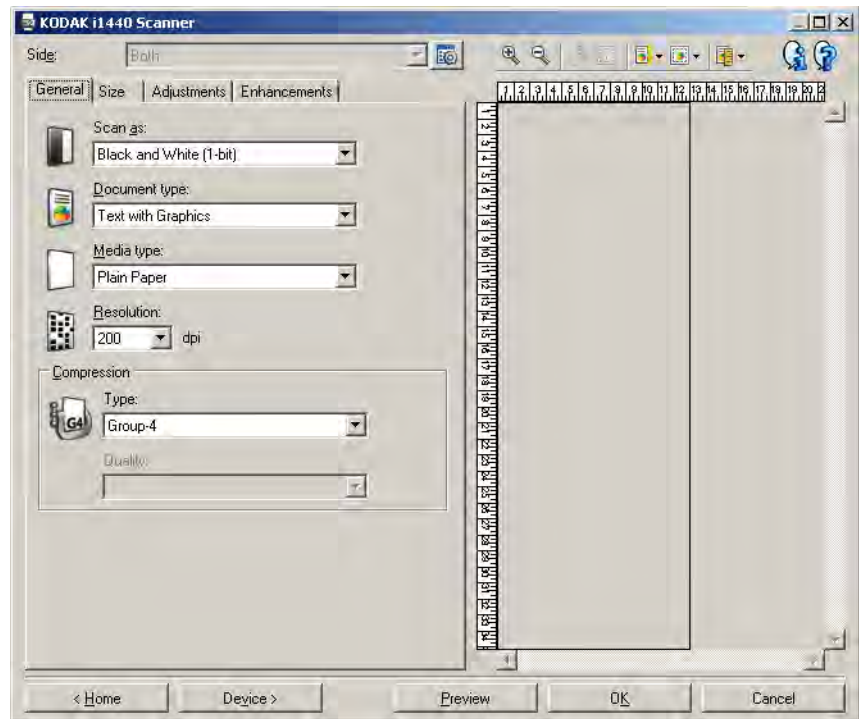
8. Review each tab and select the appropriate options or actions you want the scanner to perform.
9. Select **Home** to return to the main Kodak Scanner window.
10. Select **Save As** to display the Save As window.



11. Enter a new shortcut name that is meaningful to you and select **Save**.

Changing Image Settings

1. Select a Setting Shortcut from the main *Kodak Scanner* window that closely describes your desired output.
2. Select an *Input document is* option from the main *Kodak Scanner* window.
3. Select **Settings** to display the Image Settings window.



4. Before making any adjustments, browse through the tabs on the Image Settings window to get familiar with options that are available.
5. For each option you want to use, make the appropriate selections you want the scanner to perform when scanning.
6. If you want to see the result of your options:
 - Place a representative document in the input tray of the scanner.
 - Select **Preview** to perform a preview scan.

NOTE: If the images are not acceptable, you can either select a different Setting Shortcut or continue working with the current Setting Shortcut by reviewing each tab within the Image Settings window again. Repeat this step as needed.
7. When finished, select **Home** to return to the main *Kodak Scanner* window and then select **Save** to save your selections to the shortcut.

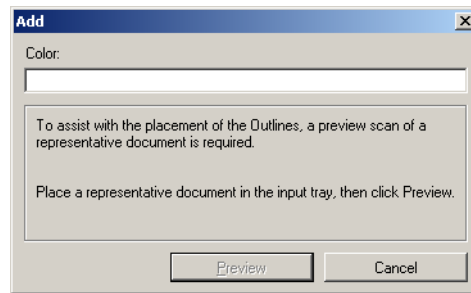
Creating a custom dropout color to drop a single color

In this example, let's assume you want to configure a custom dropout color that will drop a single color from a document.

1. Select a **Setting Shortcut** from the main *Kodak Scanner* window that closely describes your desired output.

NOTE: The shortcut will need to include a Black and White (1-bit) or Grayscale (8-bit) image.

2. Select **Settings** to display the Image Settings window.
3. Select the **Black and White (1-bit)** or **Grayscale (8-bit)** image on the General tab.
4. Select **Configure** within the *Color* dropout option on the Enhancements tab.
5. Select the **Single** tab.
6. Select the *Color's Add* icon to display the Add window.



7. Enter the name of the custom color.
8. Place a representative document in the input tray of the scanner.
9. Select **Preview** to perform a preview scan and add the color.
10. Select a predefined outline from the *Outline's Add* icon.
11. Adjust the outline by placing it over an area of the document that contains the color to be dropped (i.e. area of the document to learn).

NOTE: Some documents contain different shades of the same color. For those documents, it is recommended that you start by placing the outline over an area that contains the darkest shade.

12. Select **Display Dropped Image** to see the effect of the learning.

If all of the color is not dropped, repeat the following steps until all the color is dropped:

- select **Display Color Image**
- add another outline and place it over an area that was not dropped
- select **Display Dropped Image** to see the effect of the updated learning

13. Select **Save** to save the learned information.

Creating a custom dropout color to drop multiple colors

In this example, let's assume you want to configure a custom dropout color that will drop more than one color from a document.

1. Select a **Setting Shortcut** from the main *Kodak Scanner* window that closely describes your desired output.

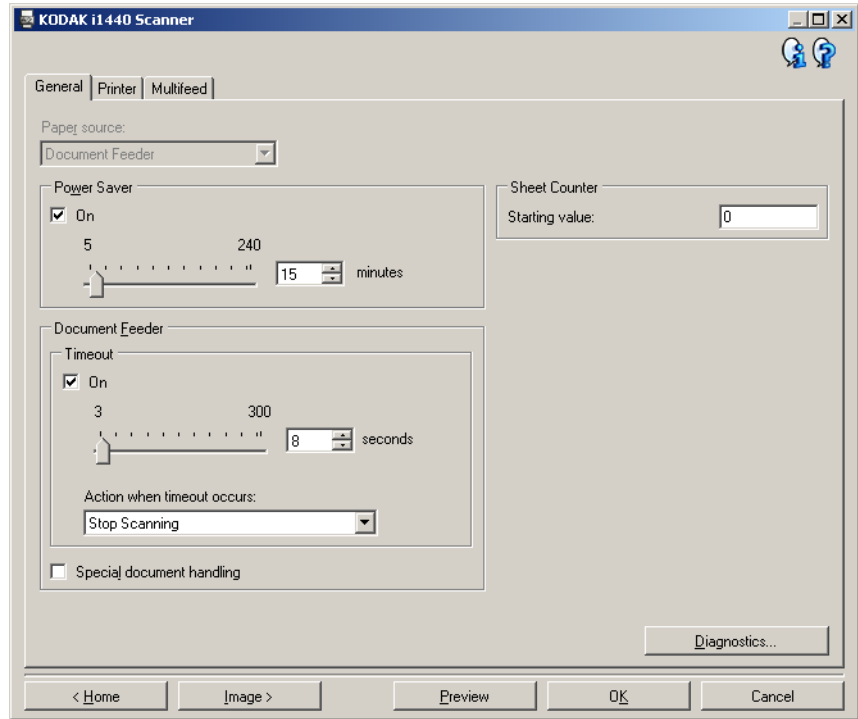
NOTE: The shortcut will need to include a Black and White (1-bit) or Grayscale (8-bit) image.

2. Select **Settings** to display the Image Settings window.
3. Select the **Black and White (1-bit)** or **Grayscale (8-bit)** image on the General tab.
4. Select **Configure** within the Color dropout option on the Enhancements tab.
5. Select the **Multiple tab**.
6. Select the *Color's Add* icon to display the Add window.
7. Enter the name for the custom dropout color and click **OK**.
8. Select up to three colors from the *Single's Add* icon.
9. If you want to see the effect of the dropped colors:
 - place a representative document in the input tray of the scanner
 - select **Preview** to perform a preview scan
 - select **Display Color Image** to see the color image
10. Select **Save**.

The Device Settings window

From this window you can set all scanner-specific options, as well as diagnostics, by using the available tabs. The values used in Device Settings are saved in the selected Setting Shortcut. The Device Setting window includes the following tabs: General, Printer and Multifeed.

NOTE: The Printer tab is only available if your scanner is equipped with the document printer.



Home — returns you to the main *Kodak* Scanner window.

Image — displays the Image Settings window.

Preview — initiates a scan and then displays the Image Settings window with the scanned image placed in the preview area. The image displayed is a sample based on your current shortcut settings.

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

NOTE: If this button is *OK*, any unsaved changes will remain in effect for the current scan session.

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

Information Icons



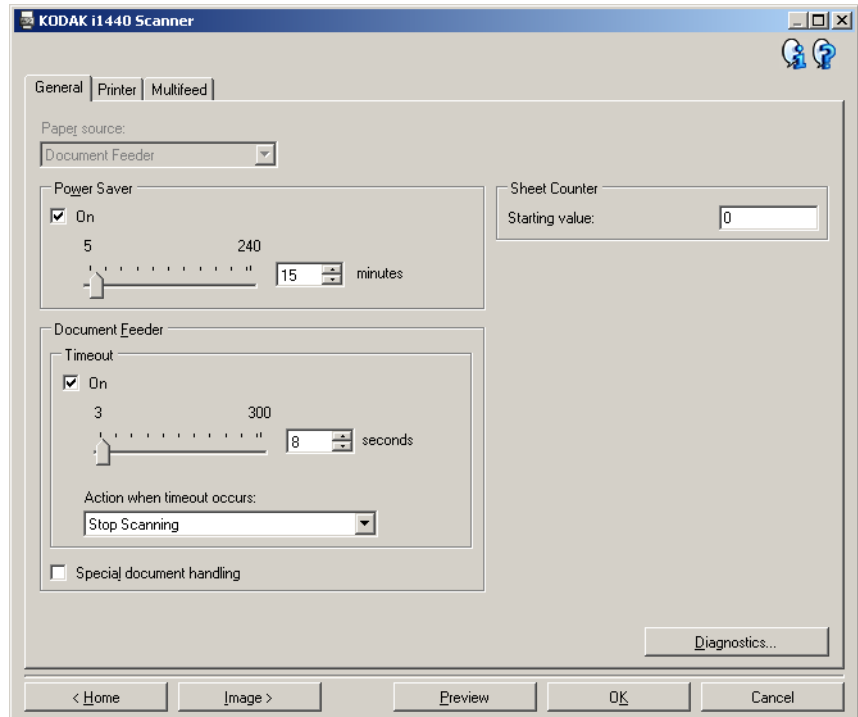
About: displays the scanners' version and copyright information.



Help: displays help information for the window currently being displayed.

Device - General tab

The General tab allows you to set scanner-specific options and provides access to scanner diagnostics.



Paper Source

NOTE: Flatbed options are only available if your scanner is equipped with the *Kodak i1400 Series A3 Flatbed Accessory*.

- **Automatic:** looks for paper in the document feeder first. If there are no documents in the input tray, the scanner will scan from the flatbed.
- **Document Feeder:** scanner will only scan documents from the input tray.
- **Flatbed:** scanner will scan from the flatbed.

Power Saver — allows you to set the amount of time the scanner has to be inactive before going into power saver mode. You can turn this option **off** or set a time from **5** to **240** minutes.

Document Feeder

- **Timeout:** allows you to select the amount of time the scanner will wait once the last document enters the feeder before the timeout occurs. You can set a time from **1** to **300** seconds.
- **Action when timeout occurs:** indicates the action that will be taken when the document feeder timeout has been reached.
 - **Stop Scanning:** scanning will stop and control will return to the scanning application (i.e. ends the job).

Special document handling — allows you to scan irregularly shaped documents (e.g., pages with coupons removed or documents with large holes or cutouts in them) that may produce jams or truncated images.

NOTES:

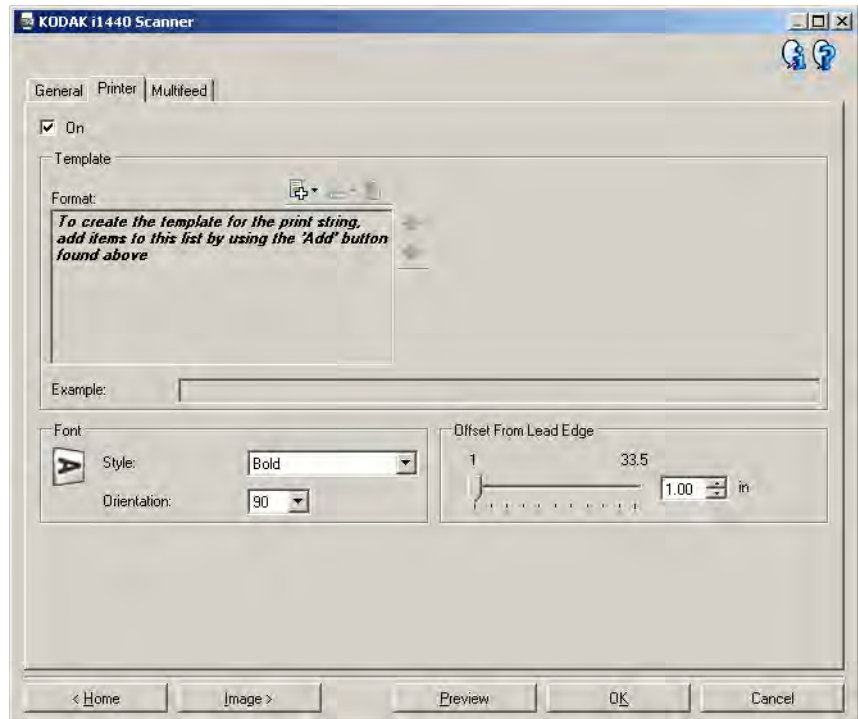
- This option is not available for all models.
- Using this option may decrease overall throughput.

Sheet Counter — enter a value that will be used to assign the document count for the next document entering the scanner. This is incremented sequentially by the scanner and is returned in the image header.

Diagnostics — displays the Diagnostics tab.

Device - Printer tab

The printer provides a vertical print capability and supports a alphanumeric characters, date, time, document count and a custom message.



On — turns printing on and makes the rest of the options on this tab available.

Template: Format — allows you to define your print string. The maximum amount of characters for the print string is 40 characters (including spaces).

Toolbar buttons

	Add: displays a list of items you can add to your print string. When you select an item, that item will appear at the end of the <i>Format</i> list.
	Change: allows you to change the currently selected item in the <i>Format</i> list with one of the items from the list that is displayed.
	Delete: allows you to remove the currently selected item from the <i>Format</i> list.

NOTE: As you build your print string, only items that will fit in the 40-character limit will be available from the *Add* and *Change* lists.

Items — when an item is selected, any associated options will be displayed to the right of the Format list.

- **Counter:** this is the document count for the scan session. This value is incremented sequentially by the scanner and returned in the image header.

- **Starting value:** allows you to set the document count for the next document that will be scanned.

- **Field width:** allows you to configure the width of the counter from 1 to 9. However, if for example, you only have 6 characters left in the print string, then the field width would be limited to 6.

- **Leading zeroes:** allows you to configure the format of the counter when the width of the value is less than the field width (the examples indicate a field width of 3 and the counter at 4). Options are:

- Display:** “004”

- Do Not Display:** “4”

- Display As Spaces:** “ 4”

- **Date**

- **Format:**

- MMDDYYYY**

- DDMMYYYY**

- YYYYMMDD**

- DDD (Julian)**

- YYYYDDD (Julian)**

- **Separator:** (the examples indicate a format of YYYYMMDD)

- None**

- Slash:** 2006/12/03

- Hyphen:** 2006-12-03

- Period:** 2006.12.03

- Space:** 2006 12 03

- **Specific date:** allows you to select a specific date if you do not want to use the current date within the scanner.

- **Time**

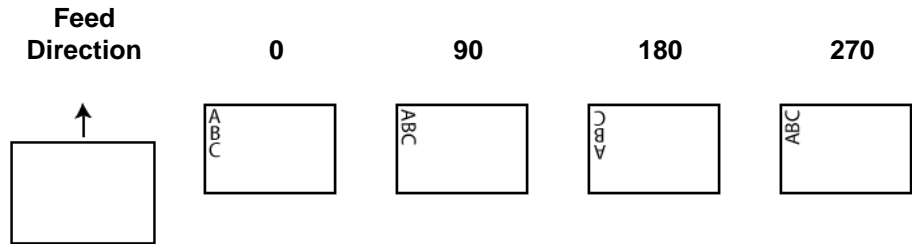
- **Specific time:** allows you to select a specific time if you do not want to use the current time within the scanner.

- **Message:** allows you to specify custom text to be included in your print string. A maximum of 20 characters is allowed.

NOTE: To view the Japanese characters correctly you must get the MS Gothic font set by installing the Microsoft Global IME 5.01 for Japanese - with Language Pack, English Language Version which can be found at http://www.microsoft.com/msdownload/iebuild/ime5_win32/en/ime5_win32.htm.

- **Template Example** — shows a sample of what the print string will look like. As you select items in the Format list, the corresponding portion within the example will be highlighted.

- **Font** — you can select what orientation you want your information to be printed.
- **Style**: available character styles: **Normal** and **Bold**.
- **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**.

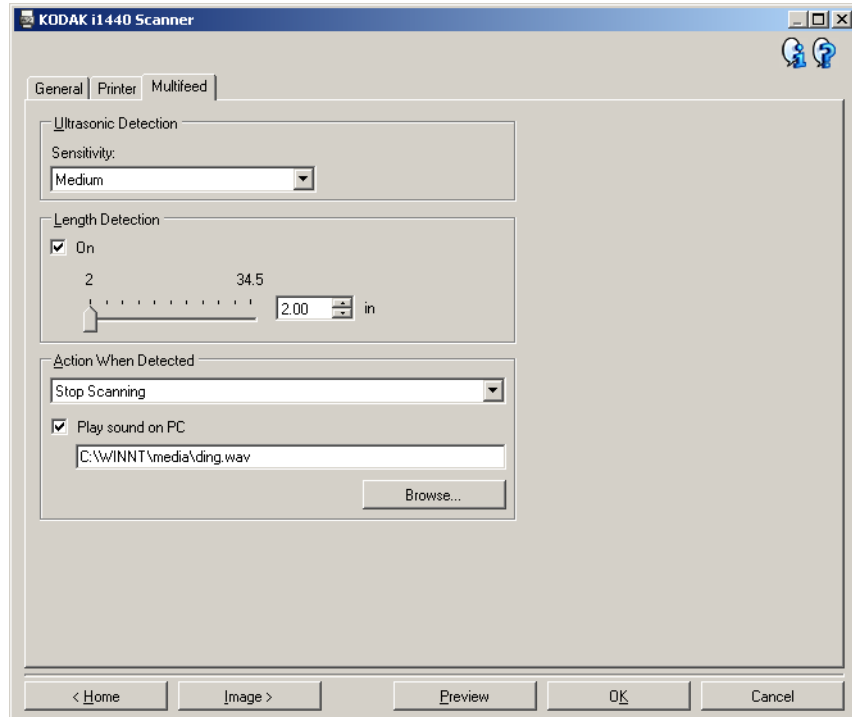


Offset from lead edge — select a value from **0.35** to **33.5** inches to determine how far the printed information will appear from the leading edge of the document.

NOTE: Printing automatically stops 6.3 mm (1/4-inch) from the trailing edge of the document even if the information has not been completely printed.

Device - Multifeed tab

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.



Ultrasonic Detection

Sensitivity — controls how aggressively the scanner will work to determine if more than one document is fed into the scanner. Multifeeds are triggered by detecting air gaps between documents. This allows multifeed detection to be used with job sets containing documents with mixed thicknesses.

- **(none)**
- **Low:** least aggressive setting and is less likely to detect labels, poor quality, thick or wrinkled documents as multi-fed documents.
- **Medium:** use if your job set has varying document thicknesses or labels attached to the document. Depending on the label material, most documents with labels should not be detected as a multi-fed document.
- **High:** the most aggressive setting. This is a good setting to use if all documents have a thickness no greater than 20-lb. bond paper.

NOTE: Regardless of the setting, “sticky” notes may still be detected as multi-fed documents.

Length Detection — allows you to select the maximum length of the documents in your job set. If the scanner detects a document of that length or longer, it will determine that a multifeed has occurred. You can turn this option **off** or set a length up to **34.5** inches.

Action When Detected — select what action you want the scanner to take when a multifeed is detected. With all options, the condition will be logged in the scanner.

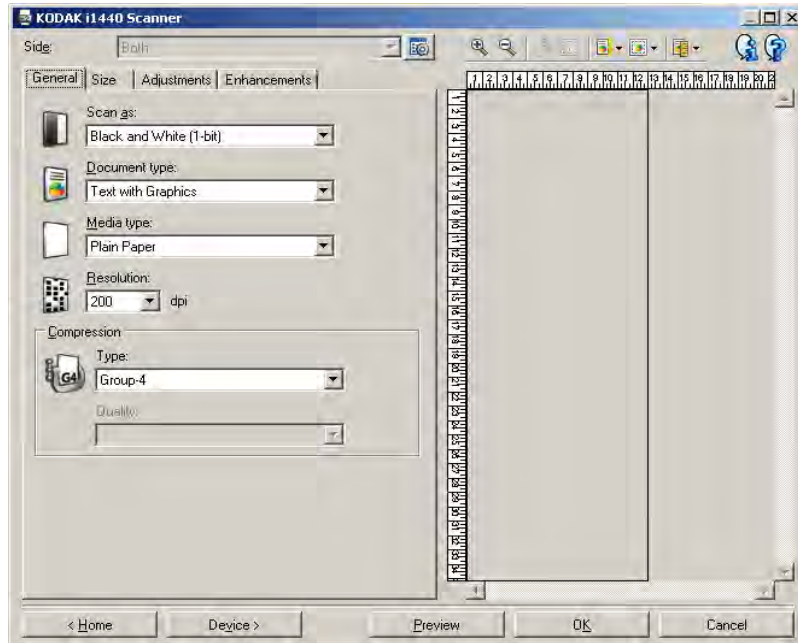
- **Stop Scanning:** scanning will stop and control will return to the scanning application (i.e., ends the job). Verify that the paper path has been cleared and restart the scan session from the scanning application.
- **Stop Scanning - leave paper in path:** scanning will stop immediately (i.e., making no attempt to clear the paper path) and control will return to the scanning application (i.e., ends the job). Clear any documents from the paper path prior to restarting the scan session from the scanning application.
- **Continue Scanning:** the scanner will continue to scan.

Play sound on PC — turn this option on if you want the PC to make a sound when a multifeed is detected. You can click the **Browse** button to select the desired .wav file.

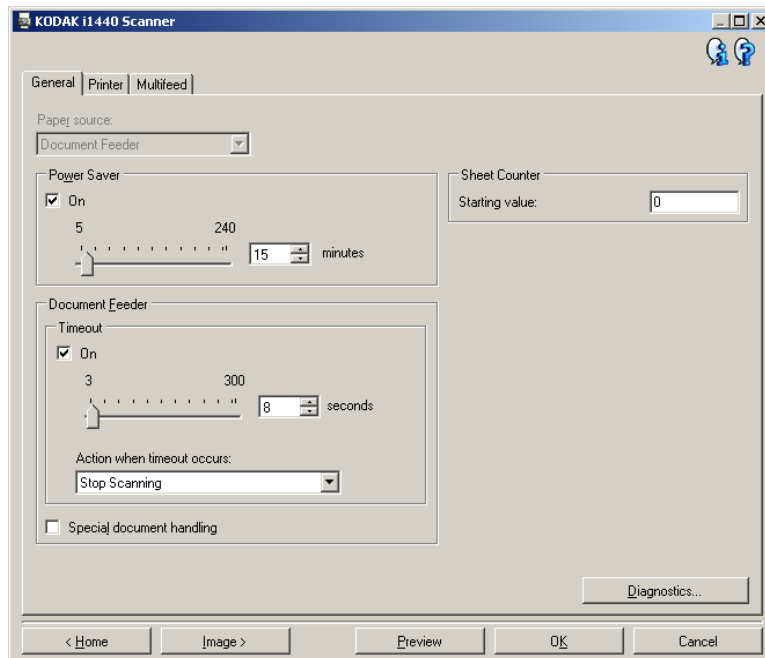
NOTE: The sound on the PC may not occur at the exact time the multifeed is detected by the scanner.

Changing Device settings

1. Select a Setting Shortcut from the main *Kodak Scanner* window that closely describes your desired output.
2. Select **Settings** to display the Image Settings window.



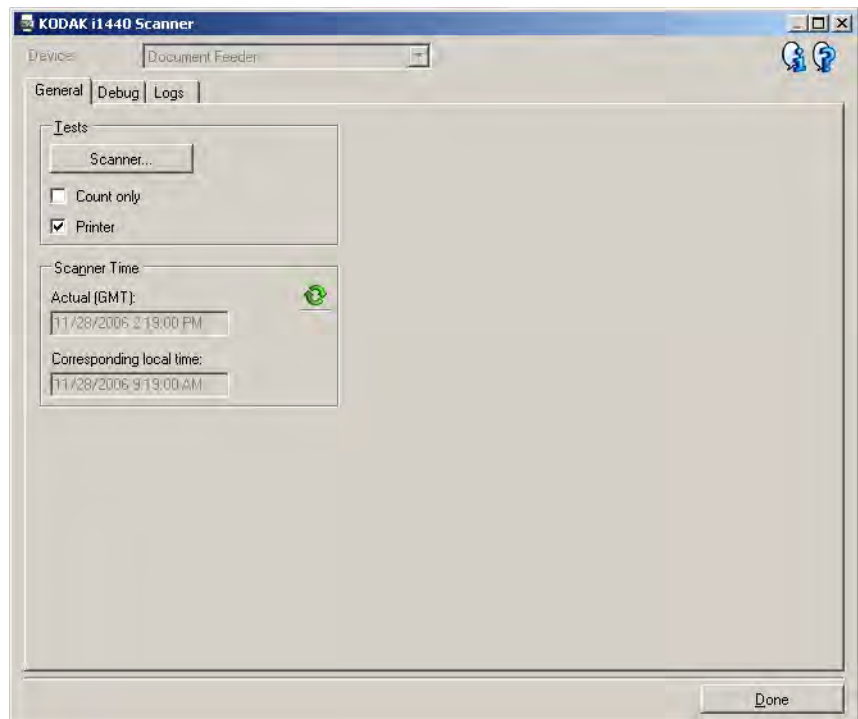
3. Select **Device** to display the Device Settings window.



4. Before making any adjustments, browse through the tabs on the Device Settings window to get familiar with options that are available.
5. For each option, you want to use, make the appropriate selections you want the scanner to perform when scanning.
6. When finished, select **Home** to return to the main *Kodak Scanner* window and then select **Save** to save your selections to the shortcut.

The Diagnostics window

From this window you can access the diagnostic functions of the scanner. The Diagnostics window includes the following tabs: General, Debug and Logs. The Diagnostics window can be accessed via the Diagnostics button which is located on the General tab of the Device Settings window.



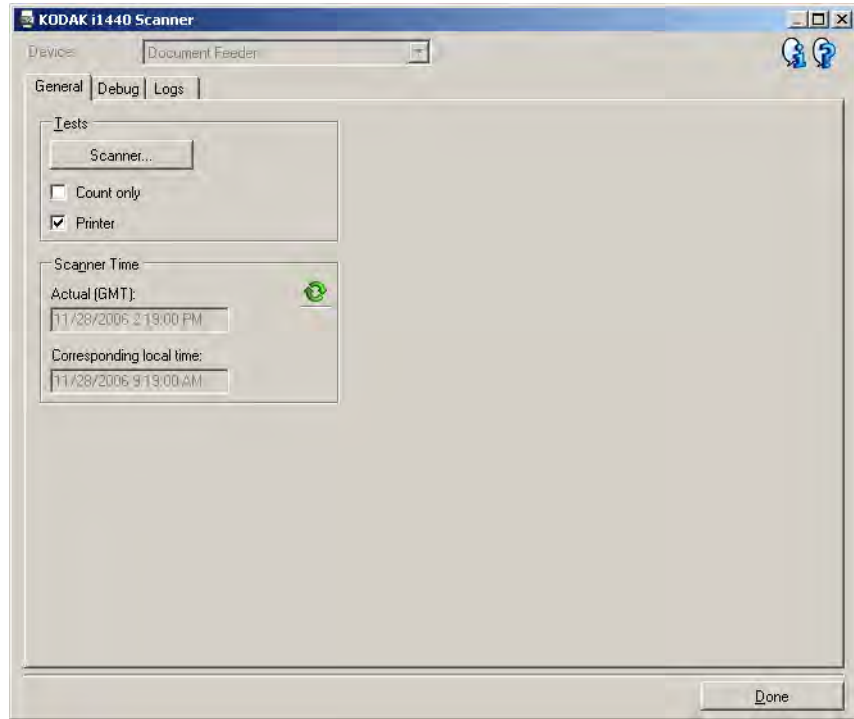
Device — allows you to select which device to perform diagnostics on. The options are: **Document Feeder** or **Flatbed**.

NOTE: This option is only available if you had the flatbed accessory attached when the scanning application connected to the scanner.

Done — returns you to the Device Settings window.

Diagnostics - General tab

The General tab allows you to perform a scanner test and displays the scanner time.



Tests

- **Scanner:** similar to, but more extensive than, a power-on self test. Selecting this will immediately put the device through a series of checks to determine that all the scanner hardware is working.
- **Count only** — counts the number of documents entering the scanner without actually sending the images to the scanning application. This test is performed during any scan session in which this option is turned on.

NOTE: This test is automatically turned off when the scanning application disconnects from the scanner.

- **Printer:** tests the functionality of the Printer, e.g., are all ink jets working. This test is performed during any scan session in which this option is turned on.

NOTE: This test is automatically turned off when the scanning application disconnects from the scanner.

Scanner Time

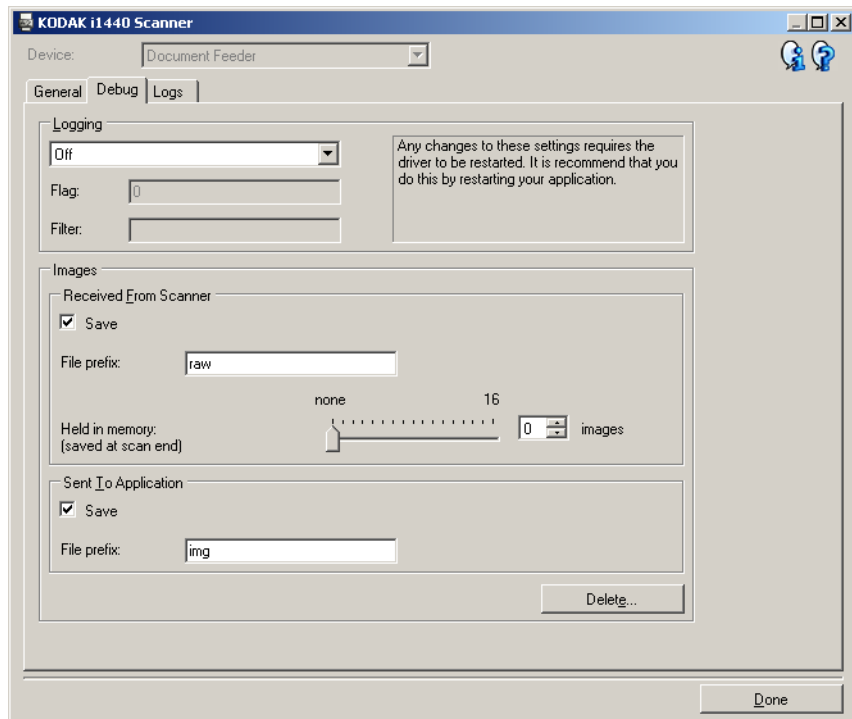
- **Actual (GMT):** displays the Greenwich Mean Time of the scanner.
- **Corresponding local time:** displays the scanner's Greenwich Mean Time in the PC's local time zone.



Refresh: redisplay the current scanner time.

Diagnostics - Debug tab

The Debug tab allows you to store the communications between the scanner and a scanning application, as well as the images, to a file that can be reviewed later by Kodak support personnel.



Logging — saves the communications between the scanner and a scanning application. The options are: **Off** (the default), **On** or **Custom**. It is suggested that you do not use the *Custom* setting, unless directed to do so by Kodak support personnel.

NOTES:

- **Flag** and **Filter** are only available for Custom; only make changes as directed by Kodak support personnel.
- For changes to take effect, you must restart your application.

Images

- **Received From Scanner:** normally, it is not necessary to save the images received at the PC from the scanner. It is suggested that you only turn this on when instructed by Kodak support personnel.
 - **Save:** normally, it is not necessary to save the images received at the PC from the scanner. It is suggested that you only turn this on when instructed by Kodak support personnel.
 - **File prefix:** the scanner will apply the entered text to the beginning of each file created. This can be used to more easily find and sort the saved images.
 - **Held in memory:** if scanning a large job and you only need to save the last few images, then turn this on by selecting the number of images you want to save.

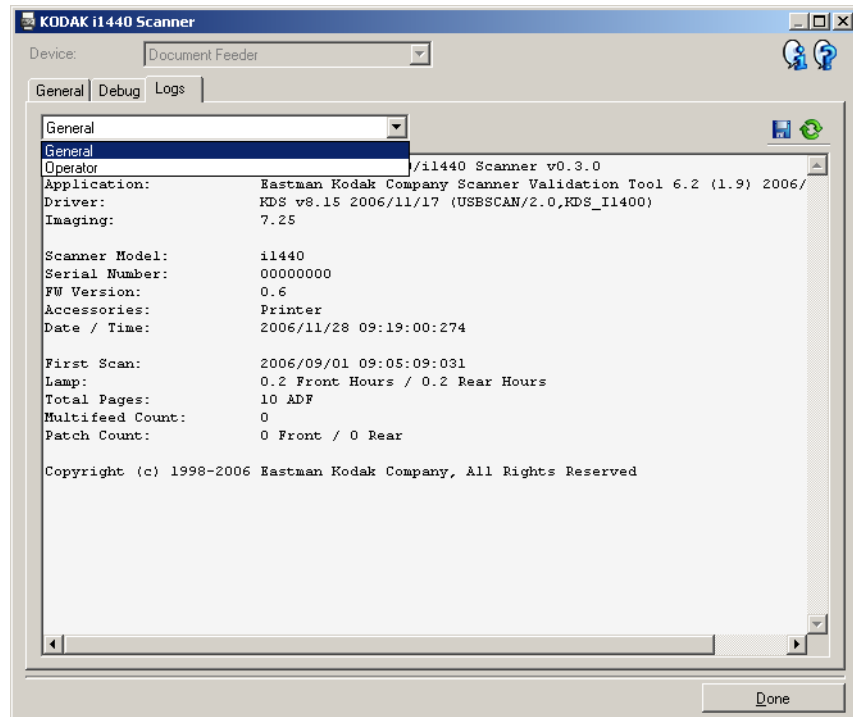
NOTE: Turning this on will use more PC memory.

- **Sent To Application:** normally, it is not necessary to save the images received at the scanning application from the scanner. It is suggested that you only turn this on when instructed by Kodak support personnel.
 - **Save:** normally, it is not necessary to save the images received at the scanning application from the scanner. It is suggested that you only turn this on when instructed by Kodak support personnel.
 - **File prefix:** the scanner will apply the entered text to the beginning of each file created. This can be used to more easily find and sort the saved images.

Delete — deletes any debug images that may have been created during previous scan sessions.

Diagnostics - Logs tab

The Logs tab allows you to view scanner information.



Logs

- **General:** displays the scanner's version information, serial number, attached/installed accessories, meters, etc.
- **Operator:** displays the scanner's log. This log can only be cleared by Kodak support personnel.
- **Debug:** displays communications between the scanner and the scanning application. This option is only available when **Logging** is turned on in the Debug tab. This log is cleared each time the scanning application connects to the scanner.

Toolbar buttons



Save As: saves all the logs for viewing by Kodak support personnel. When selected, you will be prompted for the location to save the logs along with the option of including any debug images.



Refresh: refreshes the currently displayed log.

Using the ISIS Driver

The ISIS Driver is software that communicates with the scanner. This driver is created and maintained by EMC Captiva and is provided with the scanner by Kodak. Many scanning applications support ISIS drivers and this driver can be used to interface with them.

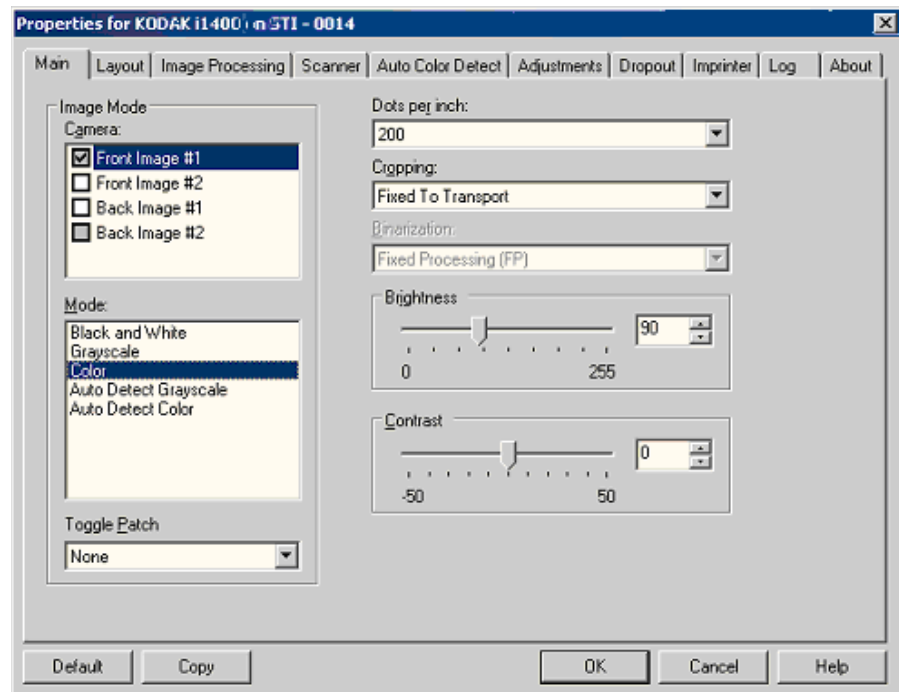
This section provides descriptions of the options on the tabs of the main ISIS Driver window and how to set these options.

For the purpose of this manual, all displayed windows assume the features available on the *Kodak i1420/i1440* Scanners. If you have a *Kodak i1410* Scanner, all options are limited to one-sided scanning only.

See the section entitled, “Starting the Scan Validation Tool” earlier in this chapter to access the main ISIS Driver window.

The main ISIS Driver window

The main ISIS Driver window provides a set of several tabs. You can select each of these tabs and make any choices necessary to meet your scanning needs.



The buttons on the bottom of the window apply to all the tabs:

Default — when you select **Default**, the values will be reset to the factory defaults.

Copy — this function is only available when scanning two-sided documents. The Copy button provides a convenient way to set up the color, grayscale or black and white image settings on one side and transfer them to the other. For example, if you highlight and set up **Front Image #1**, you can use the Copy button to duplicate those settings for **Back Image #1**.

OK — saves the values set on all tabs.

Cancel — closes the window without saving any changes.

Main tab

The Main tab provides the following options:

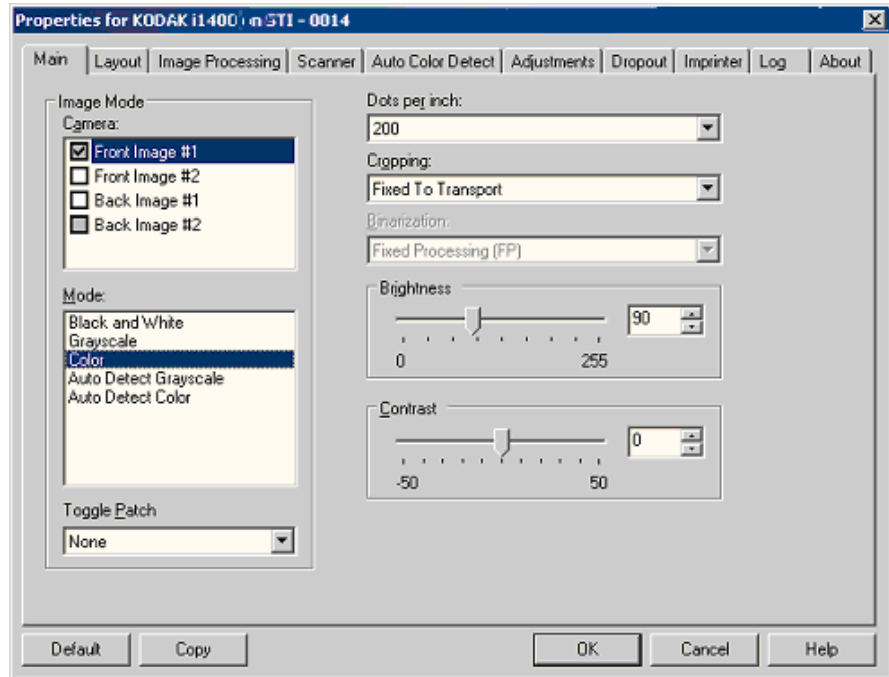


Image Mode

Camera — the selections in the Camera box list the available sides (front and back) of an image where you can define individual image processing values. Options include: **Front Image #1**, **Front Image #2**, **Back Image #1** and **Back Image #2**.

The *Kodak* Scanner drivers allow you to control the camera settings independently. Some settings apply only to black and white images, others apply to color/grayscale images. By selecting the appropriate camera and image mode, you can control the scanner's output.

Mode

- **Black and white:** if you want your electronic image to represent all elements of your document in black and white.
- **Grayscale:** if you want your electronic image to have a range of varying shades of gray from black to white.
- **Color:** if you want your electronic image to be in color.
- **Auto Detect Grayscale:** sets auto color detect for grayscale. See the section entitled, "Auto Color Detect tab" for more information.
- **Auto Detect Color:** sets auto color detect for color. See the section entitled, "Auto Color Detect tab" for more information.

Toggle Patch — indicates you want to tell the scanner, via a toggle patch document, if the document is color/grayscale or black and white. You can select:

- **Off:** no patches will be used.
- **Same Side:** only the side which recognizes the patch sheet will toggle.
- **Both Sides:** a patch will be recognized on either the front or the back side.

Dots per inch (dpi) or resolution — indicates the scanning resolution, which largely determines the quality of the scanned image. The greater the resolution, the better the reproduction. However, scanning at a higher resolution also increases scanning time and file size.

Select a resolution value from the drop-down list. The default is 200 dpi. Available resolutions are: 75, 100, 150, 200, 240, 300, 400 and 600 dpi.

Cropping — allows you to capture a portion of the document being scanned. All cropping options can be used with color/grayscale and black and white images. Front and Back cropping are independent, however, for dual stream scanning, color/grayscale and black and white cropping must be the same per side. Only one cropping option can be assigned per image.

- **Fixed to Transport:** (used for batches of same-sized documents) allows you to define the area to be imaged. Fixed to Transport cropping is used in conjunction with paper size and page layout and assumes you are center-feeding your documents. If you are not using center feeding, you must select the Layout tab to define your scan area. See the section entitled “Layout tab” later in this chapter.
- **Automatic:** dynamically adjusts the cropping window for different document sizes based on the edges of the image.
- **Aggressive:** eliminates any residual black border on any image edges. In order to achieve this, there is a possibility that a small amount of image data from the edge of the document may be lost.
- **Relative to Document:** (zone processing): (used for batches of same-sized documents) — zone processing is a floating fixed crop window (the zone) located relative to the upper left corner of a document. It allows you to select an area on the document to be delivered in either color/grayscale or black and white format (a separate window for both black and white and color/grayscale may be defined). Different parameters may be selected for both the front and back of the image.

This option may be used in conjunction with Automatic cropping where a separate color/grayscale or black and white area to be saved is desired. It is useful in applications where a photograph, signature, embossment or seal appears in a consistent area for an application (you may want that small area in color/grayscale and the rest in black and white). To define a zone, select the Layout tab.

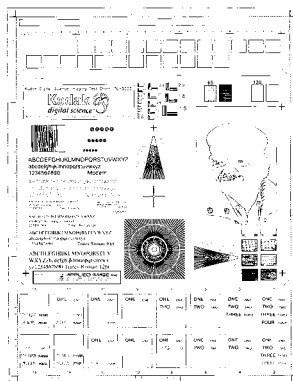
For Kodak i1440 Scanners only:

- **Photo:** the scanner will locate the photograph on the document and return an image that contains just the photograph. If the scanner finds more than one photograph on a document, one image is still returned. The entire document is used to locate the photograph.
- **Photo w/Region of Interest:** this option is the same as *Photo* (above) except that only a portion of the document (which is specified on the Scan Area dialog box) will be used to locate the photograph.
- **Long Paper:** the scanner will split the document into separate images based on the area you specify on the Scan Area dialog box. It is suggested that you select an area that covers the entire width of the document and a height around 11 inches (297 mm).

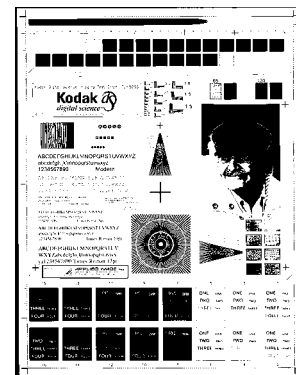
Binarization — these options work on grayscale images and outputs a black and white electronic image. Their strength lies in the ability to separate the foreground information from the background information even when the background color or shading varies, and the foreground information varies in color quality and darkness. Different types of documents may be scanned using the same image processing parameters and results in excellent scanned images.

- **iThresholding:** allows the scanner to dynamically evaluate each document to determine the optimal threshold value to produce the highest quality image. This allows scanning of mixed document sets with varying quality (i.e., faint text, shaded backgrounds, color backgrounds) to be scanned using a single setting thus reducing the need for document sorting. When using iThresholding, only Contrast can be adjusted.
- **Fixed Processing (FP):** used for black and white and other high contrast documents. If Fixed Processing is selected, only Brightness can be adjusted.
- **Adaptive Thresholding (ATP):** separates the foreground information in an image (i.e., text, graphics, lines, etc.) from the background information (i.e., white or non-white paper background). When using Adaptive Thresholding, Brightness and Contrast can be adjusted.

Brightness — changes the amount of white in the color and grayscale image. Use the slider to select a value from 0 to 255. The default is 90.



Brightness: 50



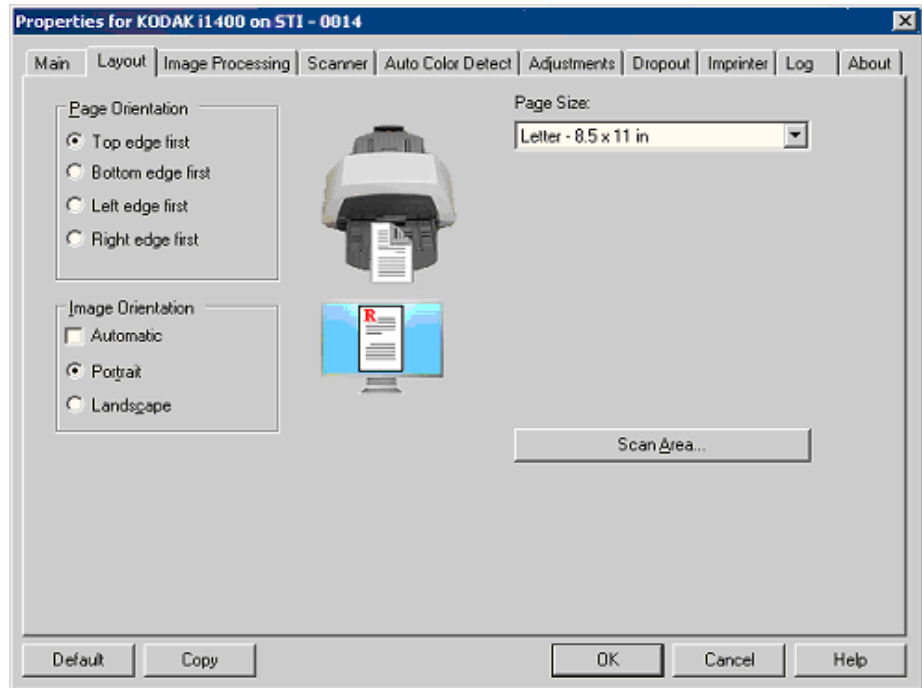
Brightness: 127

Contrast — adjusts the difference between black and white, thereby making an image sharper or softer.

The difference between black and white is small with a low contrast setting, so the image is softer. With a high contrast setting, the difference between black and white is large, so the image is clearer. Select a contrast value from -50 to 50. The default is 50.

Layout tab

The Layout tab provides the following options:



Page Orientation — allows you to select the way you place your documents in the scanner, **Top edge first**, **Bottom edge first**, **Left edge first** or **Right edge first**. When using the *Kodak i1400 Series* Scanners, select **Top edge first**.

Image Orientation

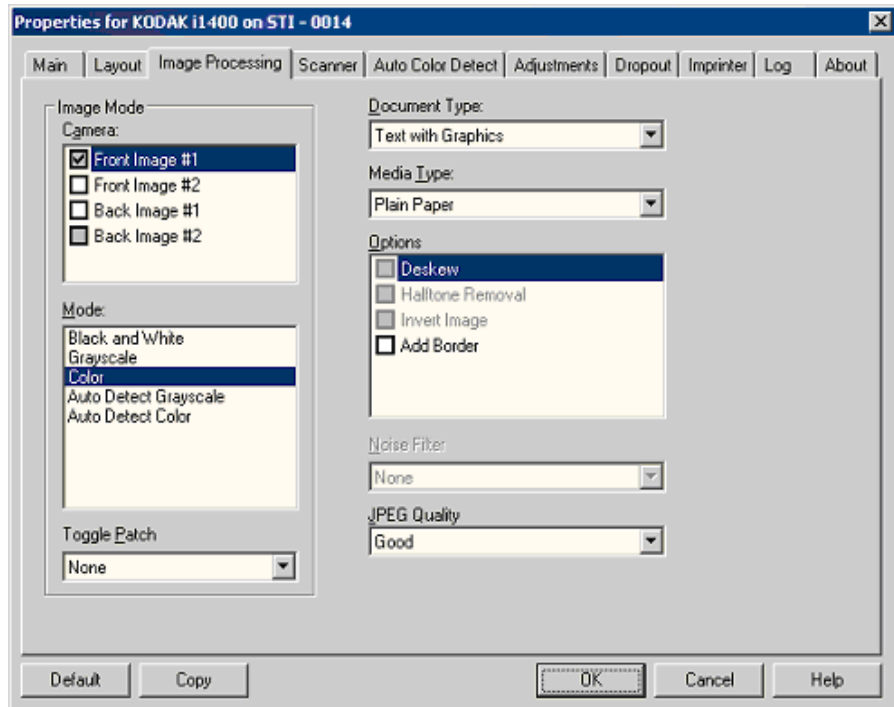
- **Automatic:** if you select **Automatic**, the Page Orientation options are not available.
- **Portrait:** displays the image orientation in the shape of a conventional portrait, where height is greater than width.
- **Landscape:** displays the image orientation in the shape of a conventional landscape painting, where width is greater than height.

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.

Scan Area — displays the Scan Area dialog box. The Scan Area options are only available for images when the cropping option is **Fixed to Transport** or **Relative to Document**. See the section entitled “The Scan Area dialog box” later in the chapter for more information.

Image Processing tab

The Image Processing tab displays the Image Mode and Mode information that was previously described. Refer to the section entitled, “The main ISIS Driver tab” earlier in this chapter for descriptions.



Document Type

- **Photographs:** when the documents you want to scan are comprised mainly of photos.
- **Text:** when the documents you want to scan contain mostly text.
- **Text with Graphics:** when the documents you want to scan contain a mix of text, business graphics (bar graphs, pie charts, etc.) and line art.
- **Text with Photographs:** when the documents you want to scan contain a mix of text and photos.

Media type — select one of the following options based upon the texture/weight of the paper you are scanning. Available options are: **Plain Paper, Thin Paper, Glossy Paper, Card Stock, Magazine.**

Options

- **Deskew** — automatically straightens a document within ± 0.3 degrees of the leading edge of the document. Deskew can detect up to a 45-degree skew and correct up to a 24-degree angle at 200 dpi or a 10-degree skew angle at 300 dpi. This option is not available when **Fixed to Transport** or **Relative to Document** is selected.

NOTE: To prevent data loss, the document must have all four corners within the image path.

- **Halftone Removal** — enhances images containing dot matrix text and/or images with shaded or colored backgrounds using halftone screens and effectively eliminates noise caused by the halftone screen.

- **Invert Image** — allows you to select how the black pixels will be stored in the image. By default the black pixels are stored as black and the white pixels are stored as white. Turn this option on if you want the black pixels stored as white and the white pixels stored as black.

NOTE: You may want to change this option if your application misinterprets the image data and stores your image in reverse of what you expect.

- **Add Border** — allows you to add a fixed amount of border to the left, right, top and bottom edge of the image. This option is only available when **Automatic** or **Fixed Cropping** is selected.

Noise Filter

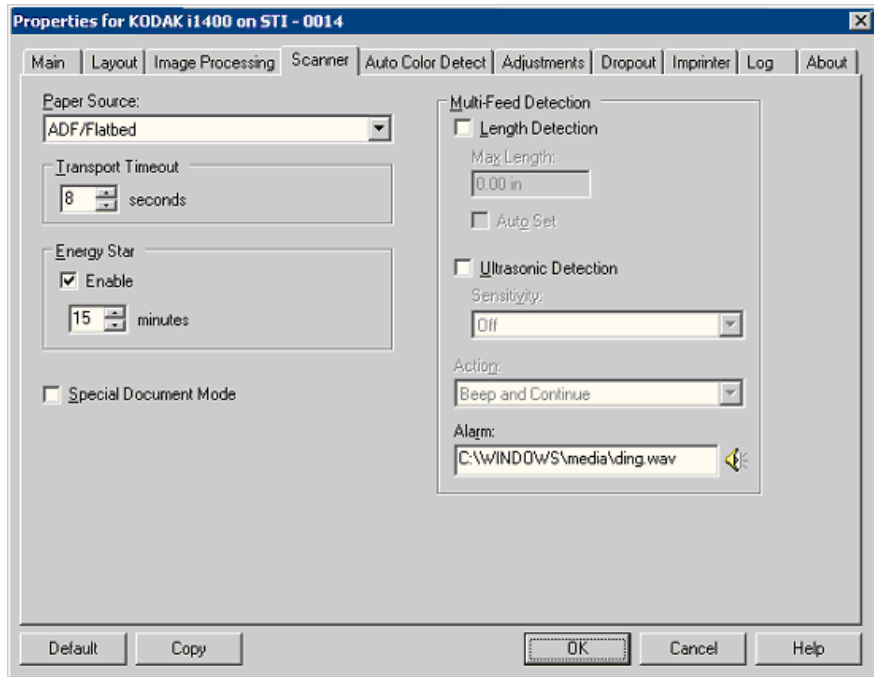
- **(none)**
- **Lone Pixel:** reduces random noise by converting a single black pixel to white when it is completely surrounded by white pixels or by converting a single white pixel to black when it is completely surrounded by black pixels.
- **Majority Rule:** sets each pixel based on its surrounding pixels. The pixel will become white if the majority of the surrounding pixels are white and visa versa.

JPEG (Joint Photographic Editor Group) **Quality** — if you choose JPEG compression, select one of the quality options:

- **Draft:** maximum compression which produces the smallest image size.
- **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.
- **Superior:** the least amount of compression which produces the largest image size.

Scanner tab

The Scanner tab provides the following options.



Paper Source

NOTE: Flatbed options are only available if your scanner is equipped with the *Kodak i1400 Series A3 Flatbed Accessory*.

- **ADF:** if you are scanning documents from the input tray.
- **Flatbed:** if you are scanning documents using the flatbed.
- **ADF/Flatbed:** when selected, the scanner will detect if the document(s) to be scanned is in the ADF or on the flatbed.

Transport timeout — allows you to set the amount of time the scanner will wait after the last document enters the transport before the transport timeout action is taken. You can specify a time delay setting from **1** to **300** seconds.

Energy Star — allows you to set the amount of time the scanner will remain inactive before the scanner goes into an idle state. Choices are: **0** to **60** minutes. The default is 15 minutes.

Special Document Mode — allows you to scan irregularly shaped documents (e.g., pages with coupons removed or documents with large holes or cutouts in them) that may produce jams or truncated images.

NOTES:

- This option is not available for all models.
- Using this option may decrease overall throughput

Multi-feed Detection options

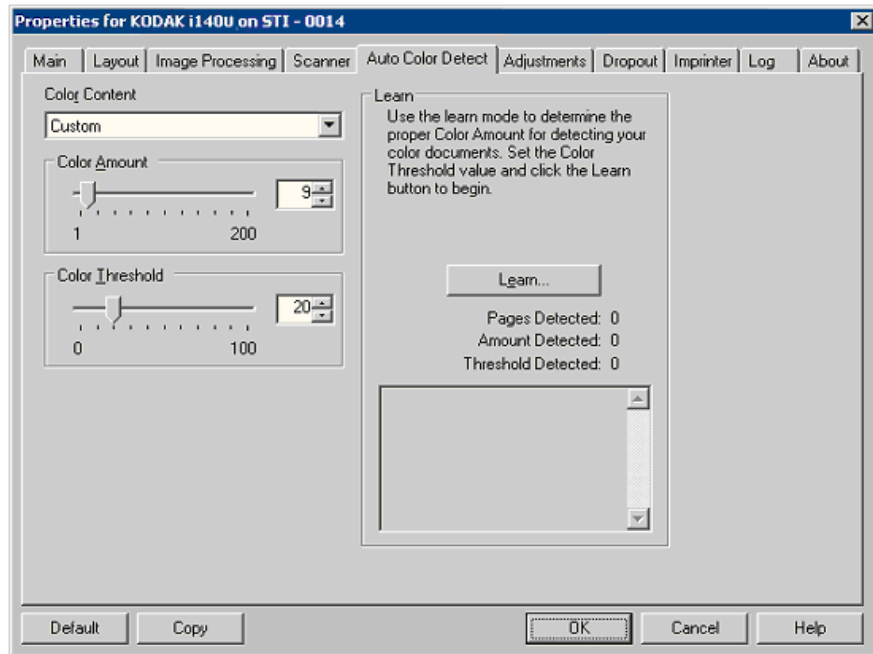
- **Length Detection** — enable or disable (the default) this option. If enabled, select the maximum length of the document that can be scanned without a multi-feed being detected. Length detection is used when scanning same-sized documents to check for overlap. For example, if you are scanning 8.5 x 11-inch (A4) documents in portrait mode, enter a value of 11.25 inches (28.57 cm) in the *Maximum Length* field. The maximum value is 13.99 inches (35.56 cm).
- **Auto Set:** automatically sets the maximum length value to .50-inch (1.27 cm) greater than the length of the currently selected page size.

Ultrasonic Detection — check this option to set multi-feed detection.

- **Sensitivity** — controls how aggressively the scanner will work to determine if more than one document is fed into the transport. Multi-feeds are triggered by detecting air gaps between documents. This allows multi-feed detection to be used with job sets containing documents with mixed thicknesses.
 - **Low:** the least aggressive setting and is less likely to detect labels, poor quality, thick or wrinkled documents as multi-fed documents.
 - **Medium:** use Medium sensitivity if your application has varying document thickness or labels attached to the document. Depending on the label material, most documents with labels should not be detected as a multi-fed document.
 - **High:** the most aggressive setting. This is a good setting to use if all documents are similar in thickness to 20-lb. Bond paper.
- **Action** — select an option of how you want the scanner to perform if it detects a multi-fed document.
 - **Beep and Continue:** if selected, the scanner will beep, display and log the condition but continue to operate.
 - **End of Job:** if selected, the scanner log the condition and stop the feeder and transport (the scanner will be disabled).
- **Alarm** — select this option if you want the scanner to make a sound when a multi-feed is detected. You can click the **Speaker** icon to display the Open dialog box. From the Open dialog box, select the desired .wav file and click **OK**.

Auto Color Detect tab

The Auto Color Detect tab provides the following options.



Color Content

- **Off:** this is the default.
- **Low:** documents require only a small amount of color to be saved as color or grayscale images. Used for capturing documents that are primarily black text with small logos, or contain small amounts of highlighted text or small colorful photos.
- **Medium:** documents require more color, as compared with the Low option, before they are saved as color or grayscale images.
- **High:** documents require more color, as compared with the Medium option, before they will be saved as color or grayscale images. Used for distinguishing documents containing medium- to large-size colorful photos from plain black text. Photos with neutral colors may require adjustments to the Color Threshold or Color Amount values in order to be captured correctly.

- **Custom**: makes the **Color Amount** and/or **Color Threshold** options available.

NOTE: When setting Auto Color Detect values, it is suggested that you start with the **Medium** option and scan a typical job set. If too many documents were returned as color/grayscale vs. black and white, then change to the **High** option and re-run the job. If too few documents were returned as color/grayscale vs. black and white, then change to the **Low** option and re-run the job. If none of these options provide the desired result, select **Custom** option to manually adjust Color Amount and/or Color Threshold.

Color Amount: the amount of color that needs to be present in a document before it will be saved as either color or grayscale. As the value of Color Amount increases, more color pixels are required. Valid values are 1 to 200.

Color Threshold: the color threshold or intensity (i.e., pale blue vs. dark blue) at which a given color will be included in the color amount calculation. A higher value indicates that a more intense color is required. Valid values are 0 to 100.

Learn — if **Low**, **Medium** and **High** options do not give you the desired results, use the **Learn** option.

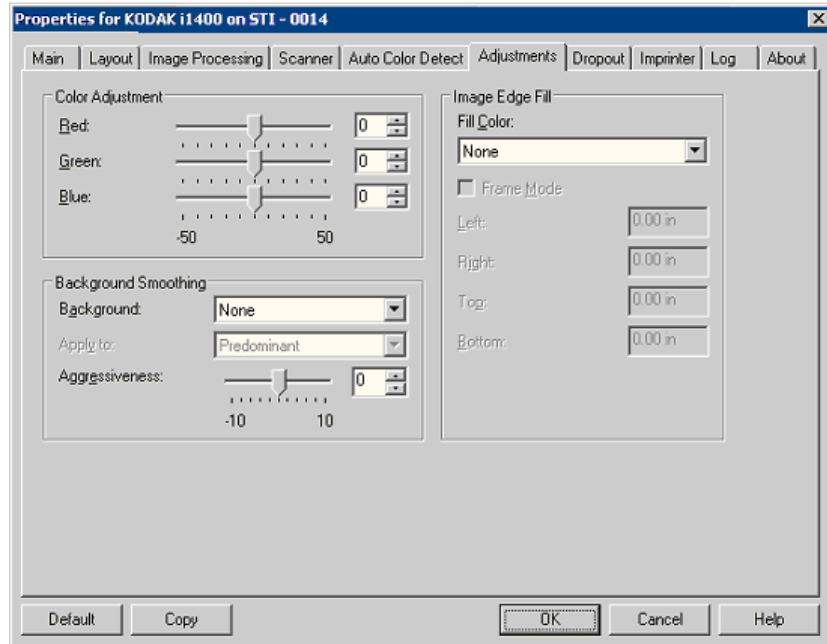
1. Click **Learn** and follow the prompts.
2. Place at least 5 representative color documents in the input tray and click **OK**. These documents will be analyzed and the recommended color amount will be calculated for you.
3. Write down the **Color Amount** and **Color Threshold** values that are displayed in the dialog box as these are the settings you will be required to use in your application.

NOTES:

- These settings were calculated based on the representative color documents scanned. If these values do not provide the desired results with your production job set, you may need to manually adjust the **Color Threshold**.
- If any of the 5 documents returns a value of 0 for the amount or threshold, the function will fail and the amount and threshold values will be inaccurate.
- Learn mode cannot be applied to both the front and back sides simultaneously. You must select the side you want to configure.

Adjustments tab

The Adjustments tab provides the following options.



Color Adjustment

Red — changes the amount of red in the color image.

Green — changes the amount of green in the color image.

Blue — changes the amount of blue in the color image.

- Adjust these settings by dragging the slider bar to the left or right, entering a value in the text box or using the up/down arrows.

Background Smoothing — using this option for documents or forms with a background color will help produce images with a more uniform background color.

- **Background:** select one of the following:
 - **None** - no background smoothing will be performed.
 - **Automatic** - smooths up to three background colors.
 - **Change to White** - identifies up to three background colors and substitutes each color with white.

- **Apply to:**

- **Predominant** - smooths the predominant background color to white.

- **Neutral** - smooths only the neutral color to white, and also smooths up to two additional background colors.

- **All** - smooths the neutral color and up to two additional background colors to white.

NOTE: The *Apply to* options are only available for **Method: Change to White**.

- **Aggressiveness:** allows you to adjust the extent at which the background(s) are determined. The values range from **-10** to **10**. The default is 0.

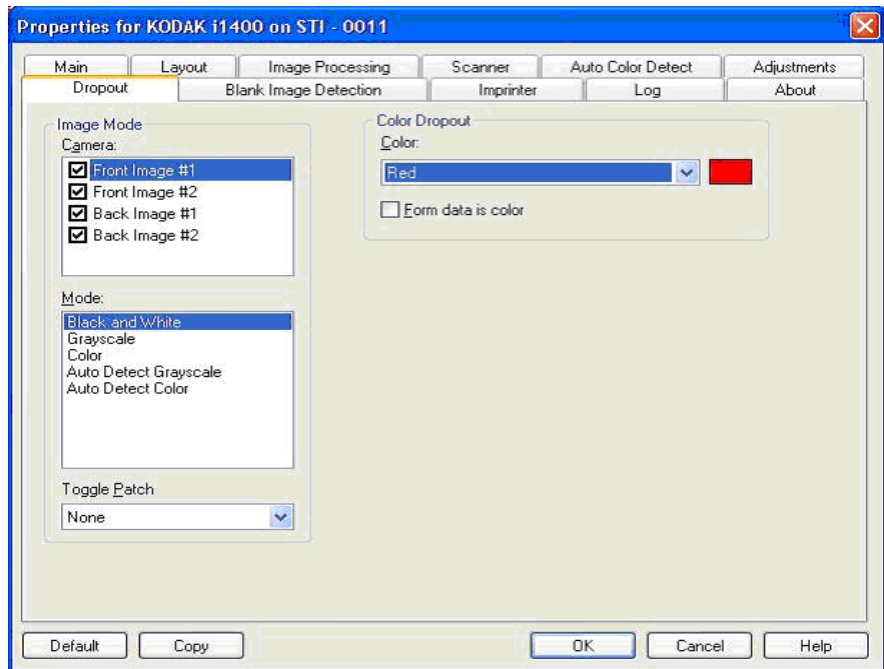
Image Edge Fill — fills the edges of the final electronic image by covering the area with the specified color. Image Edge Fill is performed after all other image processing options have been applied.

Frame Mode — fills in an equal amount of the selected color from the *Image Edge Fill* drop-down list on all sides of the image, or you can select a value in the **Top, Left, Right and/or Bottom** area(s) from each side of the scanned image to be filled.

When using this option, be careful not to enter a value too large as it could fill in image data that you want to keep.

Dropout tab

The Dropout tab displays the Image Mode and Mode information that was previously described. Refer to the section entitled, “The main ISIS Driver tab” earlier in this chapter for descriptions.

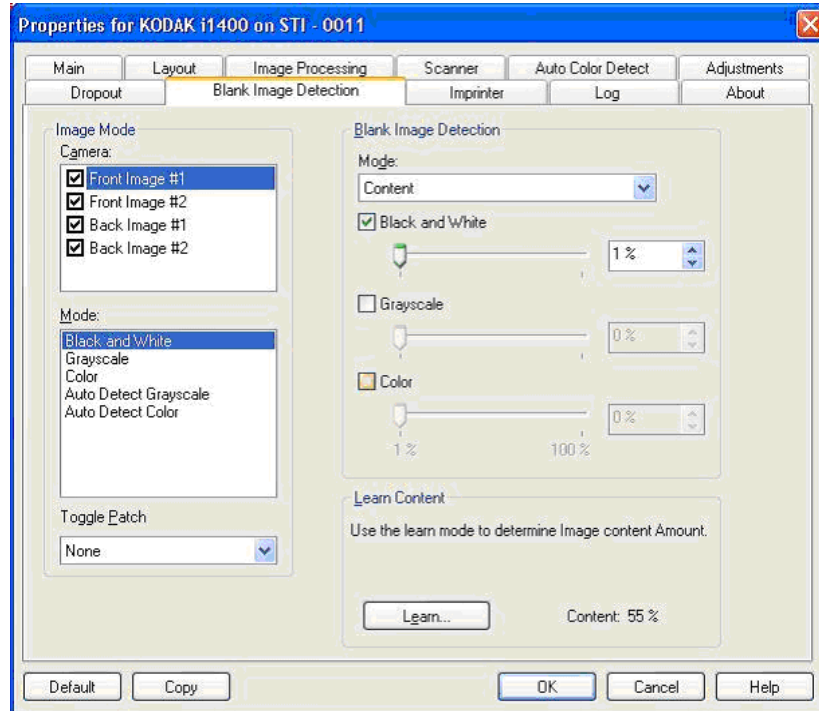


The Dropout tab is used to eliminate a form's background so that only the entered data is included in the electronic image (i.e., remove the form's lines and boxes). For black and white images, these settings effect the grayscale version of the document which the scanner analyzes to produce that electronic image.

Form Data is Color — allows you to indicate that a color other than black or dark blue ink, was used for the data entered on the form.

Blank Page Detection tab

Blank Image Detection allows you to configure the scanner to not give blank images to the scanning application. Select the image size (KB), below which an image is determined to be blank. Images with sizes less than the number you select will not be created. If you use this option, you must specify a blank image size for each image type (**Black and White, Grayscale and Color**) you want to delete. If you do not make an entry in these fields, all images are kept.



Mode

- **None:** all images are given to the scanning application.
- **Content:** images will be considered blank based on the document content within the image. Select **Black and White, Grayscale** or **Color** to choose the maximum amount of content that the scanner will consider to be blank. Any image that has more content than this value will be considered non-blank and will be given to the scanning application. The values range from **0** to **100** percent.

Content amount will be filled in with the amount of content in the preview image. If you have a representative blank document (e.g., blank sheet with letter head), this can be used to assist with determining the setting for *Content amount* (i.e., perform a preview scan, click this button, and adjust Content amount as appropriate). *This option is only available when there is a preview image.*

- **Size:** images will be considered blank based on the size of the image that would be given to the scanning application (i.e., after all other settings have been applied).

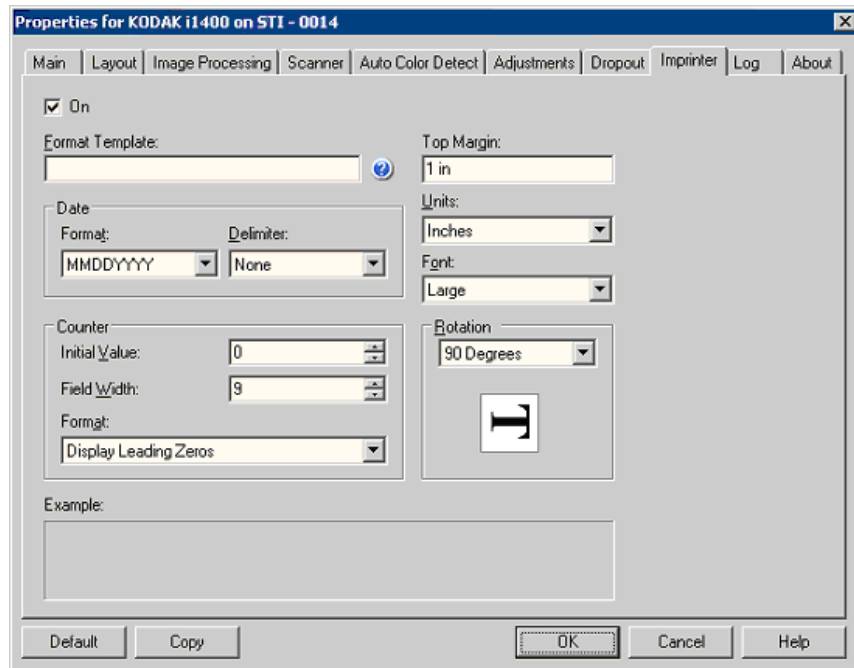
Learn Content — allows the scanner to determine the content amount based on the documents to be scanned. Click **Learn** to use this function.

NOTE: Learn mode cannot be applied to both the front and back sides simultaneously. You must select the side you want to configure.

Imprinter tab

The Document Printer/Enhanced Printer operates at full scanner speed. The printer can add a date, time, document sequential counter, and custom messages.

The print string can be configured to include both literal (static) information (i.e., information that stays the same for each document, such as batch name or operator) and dynamic information (i.e., information that may change for each page scanned, such as the document sequential counter). The capture software application controls static fields; any information that the software allows you to enter can be sent to the printer.



On — check this to enable the document printer/enhanced printer.

Defining your print string

Format Template — the format template is used to build the print string. The print string is what is printed on documents as they travel through the transport. The print string is printed before the document is scanned, therefore, it is part of the image. The maximum amount of characters for each print string is 40 characters (including spaces).

Date — if you want to add a date to the print string, select one of the following formats:

- **Format:** MMDDYYYY, DDMMYYYY, or YYYYMMDD.
- **Delimiter:** select one of the following separators: **Slash: /**, **Dash: -**, **Dot: .**, **Space** or **none**. For example: 08/24/2008, 08-24-2008, 08.24.2008 or 08 24 2008 or 08242008 (none).

Counter — if you want to add a Counter to the print string, you can enter one of the following options:

- **Initial Value:** this value is used to assign the document count for the next document entering the transport and is incremented sequentially by the scanner unless another document count is received from the host. This value is returned in the image header.
- **Field Width:** used to control the width of the document counter. Values range from 1 to 9.
- **Format** — allows you to configure the format of the counter when the width of the value is less than the field width (the examples indicate a field width of 3 and the counter at 4). Options are:
 - **Display Leading Zeros** (default): “004”
 - **Suppress Leading Zeros:** “4”
 - **Compress Leading Zeros:** “ 4”

Top Margin — allows you to define the distance from the lead edge before the print string begins. Enter the desired amount in the text box.

NOTE: Printing automatically stops 6.3 mm (1/4-inch) from the trailing edge of the document even if the information has not been completely printed.

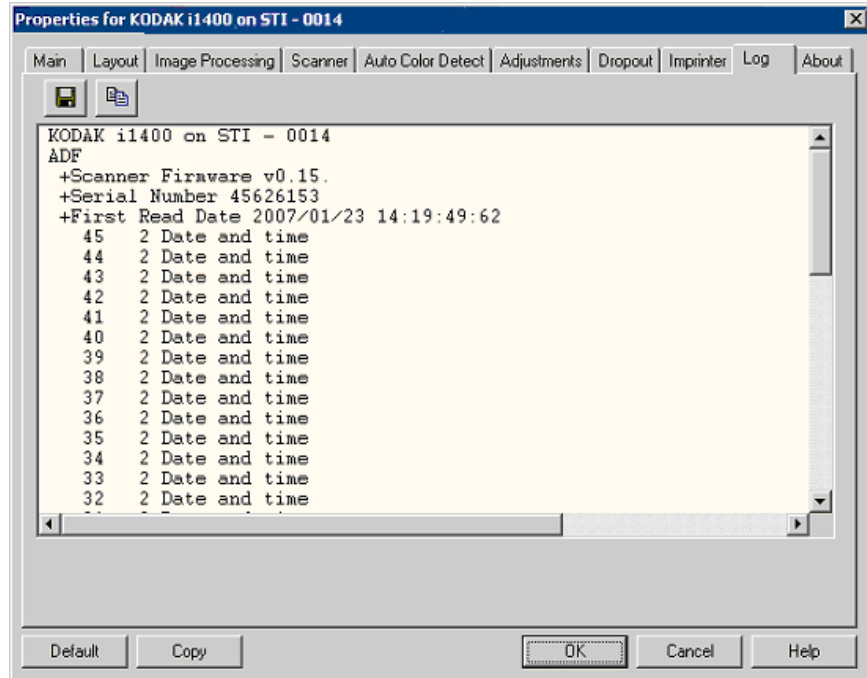
Units — select **Inches**, **Centimeters** or **Pixels**.

Font — two different character styles, referred to as **Normal** and **Large**, are available.

Rotation — you can select either 0 or 90 degrees.

Log tab

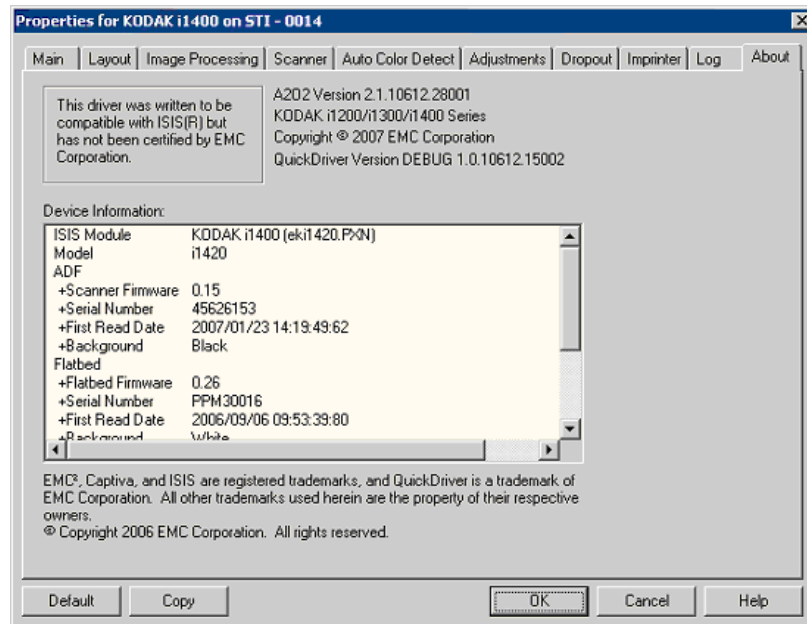
The Log tab provides a listing of any errors that have been encountered.



You can either save this information to a file by clicking the Save icon, or copy the information to the clipboard which can then be pasted into a document.

About tab

Displays information about your scanner and driver.

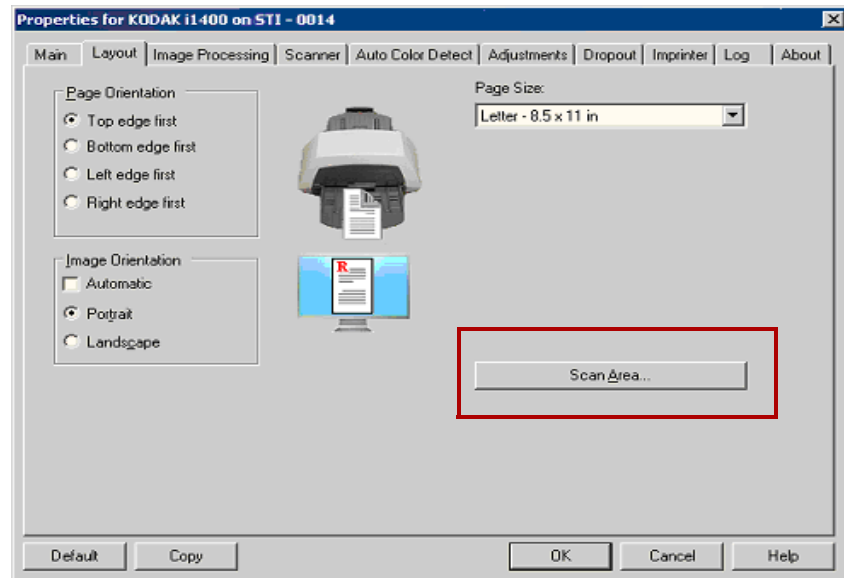


Scan Area dialog box

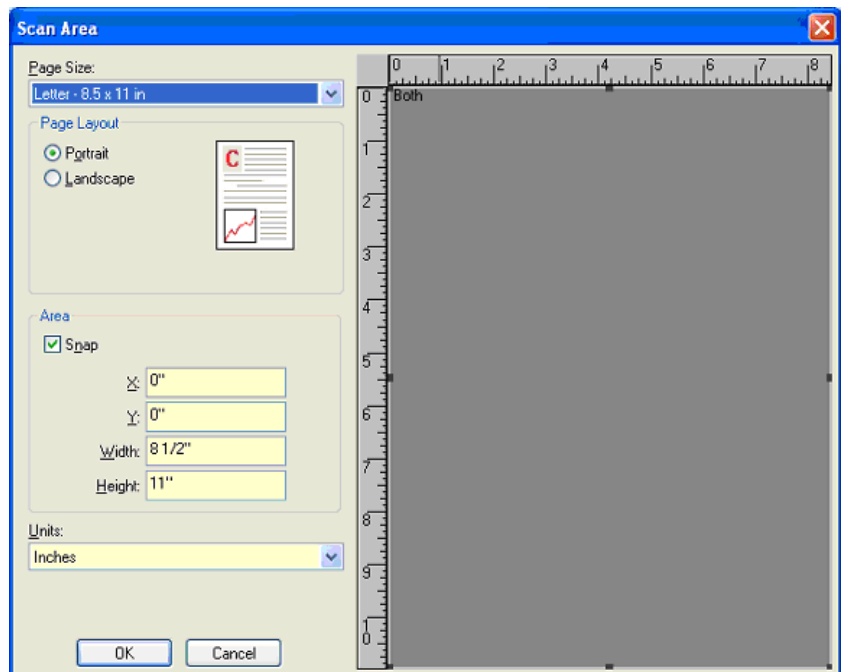
The Scan Area dialog box allows you to define the amount of image data which is returned to the host. The area can be defined in **Pixels**, **Inches** or **Centimeters**.

NOTE: Select the side and image to be defined by highlighting **Front Image #1**, **Front Image #2**, etc. based on the cropping option selected for each of these in the main ISIS Driver window. The scan areas defined for all camera selections are independent.

- Select **Scan Area** on the Layout tab to access the Scan Area dialog box.



NOTE: The Scan Area dialog box is only available when **Fixed to Transport** or **Relative to Document** is selected on the Main tab.



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

NOTE: Page Size and Page Layout selections also appear on the Layout tab. If you make a change on the Scan Area dialog box, the same selections appear on the Layout tab and vice versa.

Page Layout

- **Portrait:** displays the image orientation in the shape of a conventional portrait, where height is greater than width.
- **Landscape:** displays the image orientation in the shape of a conventional landscape painting, where width is greater than height.

Area

- **Snap** — enable this option to control the dimensions of the preview area to fixed 1/8-inch increments. This option is not available in **Pixels** mode.
- **X:** the distance from the left end of the scanner to the left-edge of the scanning area.
- **Y:** the position from the top end of the document to the top end of the scanning area.
- **Width:** the width of the scanning area.
- **Height:** the height of the scanning area.

Units — select whether you want the area to be defined in **Pixels**, **Inches** or **Centimeters**.

Kodak



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