Kodak

i4x50 Series Scanners

Scanning Setup Guide
for ISIS Applications

Using the ISIS Driver

Contents

The *Kodak* i4250, i4650 and i4850 Scanners provide the ability to process scanned images to improve their quality by using image processing features.

Image processing refers to features of the scanner that allow you to automatically adjust each image that may improve the resulting images (e.g., correcting any skew in the fed document, cutting the edges of the image off to remove unneeded borders or cleaning up extraneous "noise" on the image).

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 Alaris Inc. This driver can be used to interface with many scanning applications that support ISIS drivers.

The information in this guide provides descriptions of the features on the tabs of the ISIS driver windows. The same features should be available on the user interface of the scanning application you are using.

Starting the Scan Validation Tool

NOTE: The Scan Validation Tool is provided by Kodak Alaris and is a diagnostic tool only. Kodak Alaris does not support the use of the Scan Validation Tool as a scanning application.
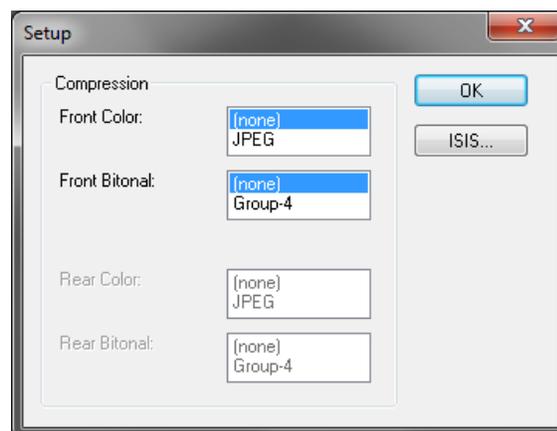
1. Select **Start>Programs>Kodak>Document Imaging>Scan Validation Tool**.
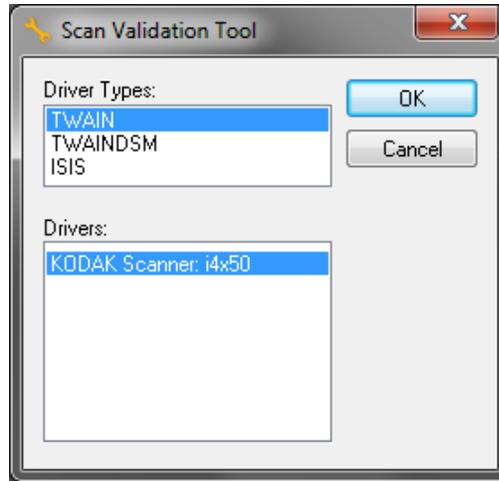
2. Select **ISIS** for the Driver Type and the **KODAK Scanner i4250/ i4650/i4850** as the driver and click **OK**. The main Scan Validation Tool window will be displayed.
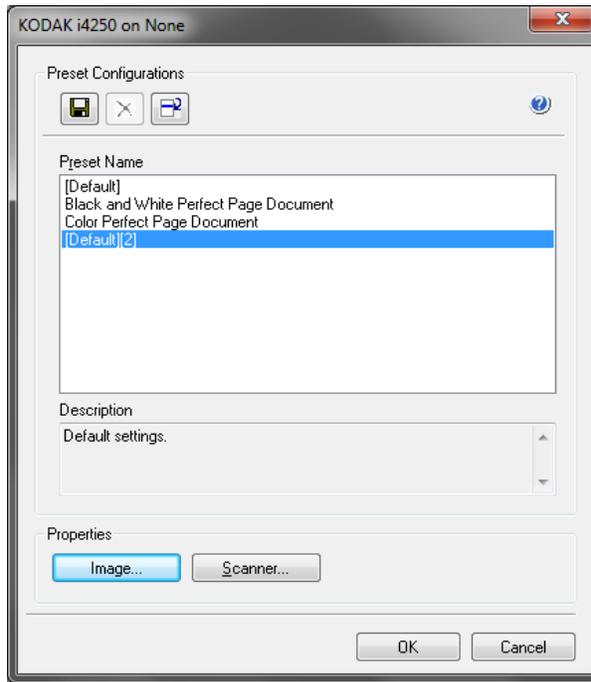
3. Click the **Setup** icon. The Setup dialog box will be displayed.

4. Click **ISIS**. The Preset Configurations dialog box will be displayed. This dialog box maintains a list of saved driver settings.

    You can *Save, Delete* or *Import* a preset by clicking one of the Preset Configuration icons; or you can select/modify a predefined preset that is shown in the *Preset Name* list box.

5. Click **Image** to configure settings associated with the image.

The Scan Validation Tool dialog box

The Scan Validation Tool (SVT) 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 the ISIS Driver.

NOTE: There are many full featured applications that support the *Kodak* i4x50 Scanners. The *Kodak* Capture Pro Software Limited Edition scanning application that is included with this scanner is a good choice for basic scanning. *Kodak* Capture Pro Software Limited Edition can be upgraded to the full version of *Kodak* Capture Pro Software as your scanning needs increase.

Toolbar buttons

Setup — displays the user interface for the selected driver.

Start Scanning — scans the documents in the input elevator.

Scan One Page — scans only one page.

Stop Scanning — ends the scan session.

Change — switches between the TWAIN Datasource and ISIS Driver.

Destination — allows you to select a directory to store scanned images and their file names. This option is not available for the ISIS Driver.

Delete — deletes the destination files.

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.

**TWAIN Settings** — displays the TWAIN Settings screen.

About: displays the scanners' version and copyright information.

The following sections provide descriptions and procedures for configuring Image settings. See the section later in this chapter entitled, "Configuring Scanner settings" for scanner configuration procedures.

Configuring Image settings

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

NOTE: The **Image Mode**, **Camera**, **Mode** and **Toggle Patch** selections are available on all of the Image tabs (e.g., Main, Layout, Image Processing, etc.).
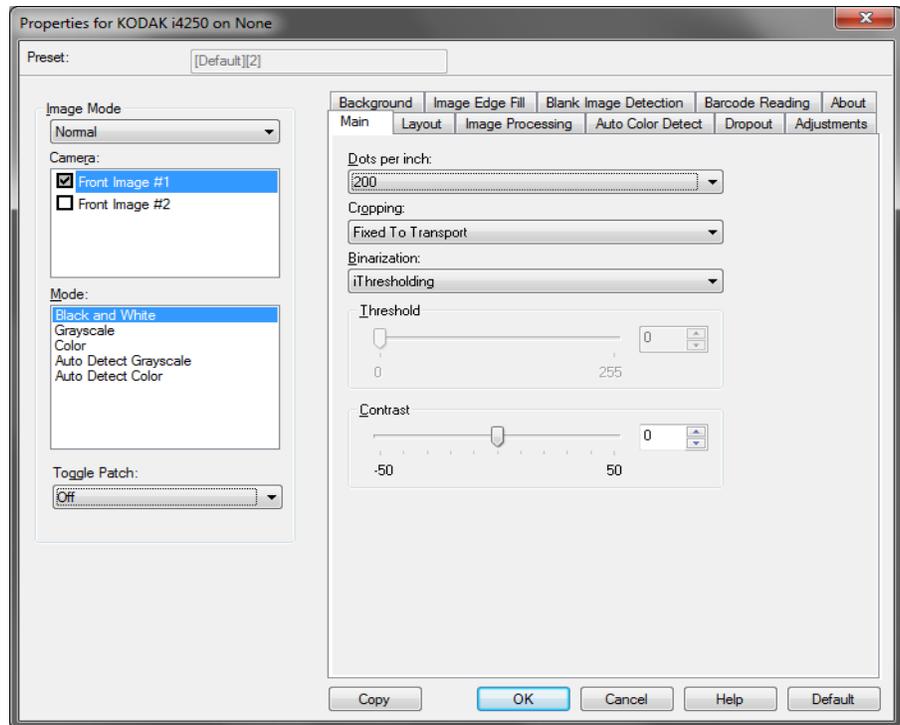
Image Mode — select one of the following options:

- **Normal** — typically for a document, one image is created for the front side and another image is created for the back side. Select this option if you want the front and back side to be individual images.

- **Merged** — select this option if you want one image that contains both the front side and back side of the document. *Image Merged* options are: **Front on Top**; **Front on Bottom**; **Front on Left** or **Front on Right**.

Camera — the selections in the *Camera* list displays 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.

Mode — select one of the following modes:

- **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.

- **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 and both sides will toggle.

Buttons — the buttons on the bottom of the window apply to all tabs:

- **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.
- **Help** — displays on-line help about the options available on the selected window.
- **Default** — resets the values on all tabs to the default settings.

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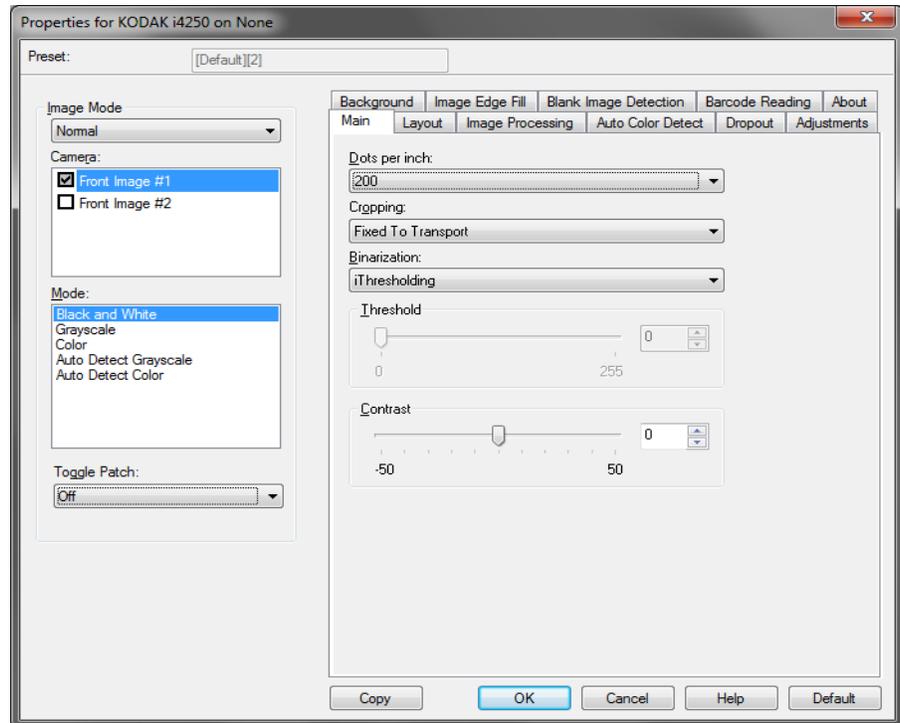
Dots per inch (dpi) or resolution — indicates the scanning resolution, which largely determines the quality of the scanned image. The greater the resolution, the better the reproduction. However, scanning at a higher resolution also increases scanning time and file size.

Select a resolution value from the drop-down list. The default is 200 dpi. Available resolutions are: 100, 150, 200, 240, 250, 300, 400, 500 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 simultaneous scanning, color/grayscale and black and white cropping must be the same per side. Only one cropping option can be assigned per image.

• **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.

• **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 guide.

- **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.

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 (e.g., 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 (e.g., text, graphics, lines, etc.) from the background information (e.g., white or non-white paper background). When using Adaptive Thresholding, Brightness and Contrast can be adjusted. Use this option when scanning similar type documents.

Threshold (Brightness) — this option is available when you select **Fixed Processing** or **Adaptive Thresholding (ATP)**. This option allows you to change the black and white image to be darker or lighter. The higher the threshold value, the darker the image. Use the slider to select a value from 0 to 255. The default is 90.

Contrast — adjusts how much of the faint detail you want to see in the output image. The higher the contrast value, the more faint lines will be shown in the image. The lower the contrast value, the clearer (or less detailed) the output image will be. If contrast is set too high, you may get lines or black areas in your output image that you do not want. If the contrast is set too low, some letters or lines may not show in the output image. Select a contrast value from -50 to 50. The default is 0.

Layout tab

The Layout tab provides the following options:I
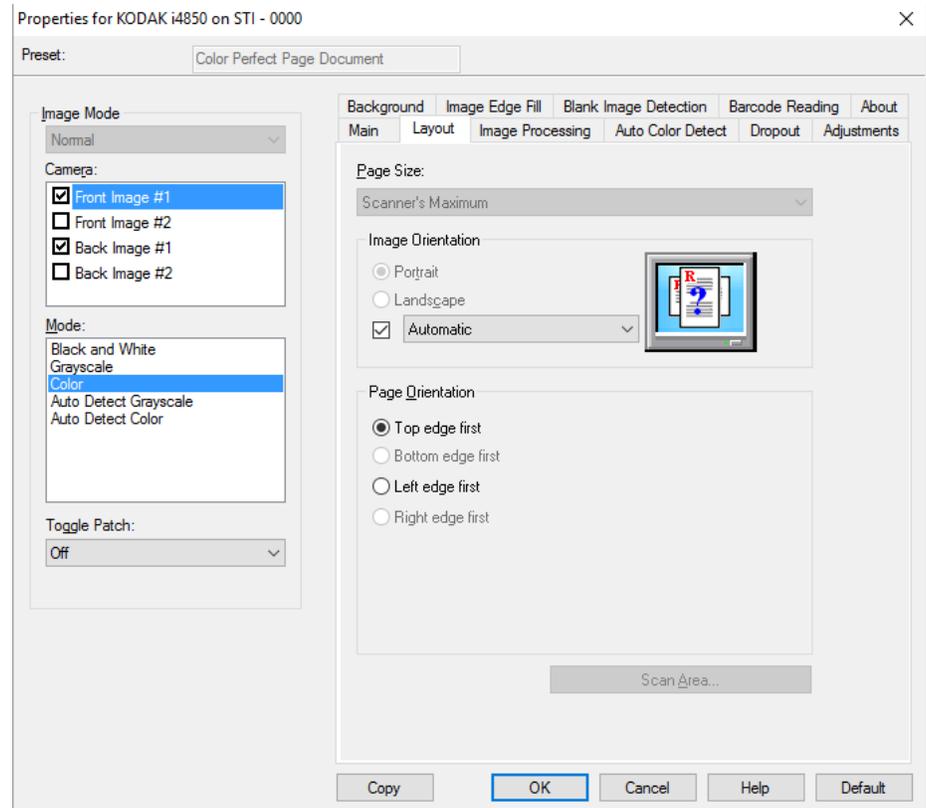
Page Size — the default page size is set when a scanner is first selected. You can choose a different page size using the drop-down list. Page size should be set to the **Scanner's maximum** when using the **Automatic** or **Aggressive** cropping option.

Image Orientation

• **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.

• **Automatic** — the scanner will analyze each document to determine how it was fed and will rotate the image to the proper orientation.

• **Automatic - default to 90:** the scanner will analyze the content of each document to determine how it was fed and will rotate the image to the proper orientation. If the scanner cannot determine how the document was fed, it will rotate the image 90 degrees.

• **Automatic - default 180**: the scanner will analyze the content of each document to determine how it was fed and will rotate the image to the proper orientation. If the scanner cannot determine how the document was fed, it will rotate the image 180 degrees.

• **Automatic - default 270**: the scanner will analyze the content of each document to determine how it was fed and will rotate the image to the proper orientation. If the scanner cannot determine how the document was fed, it will rotate the image 270 degrees.

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**.

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 next section entitled, "The Scan Area dialog box" for more information.
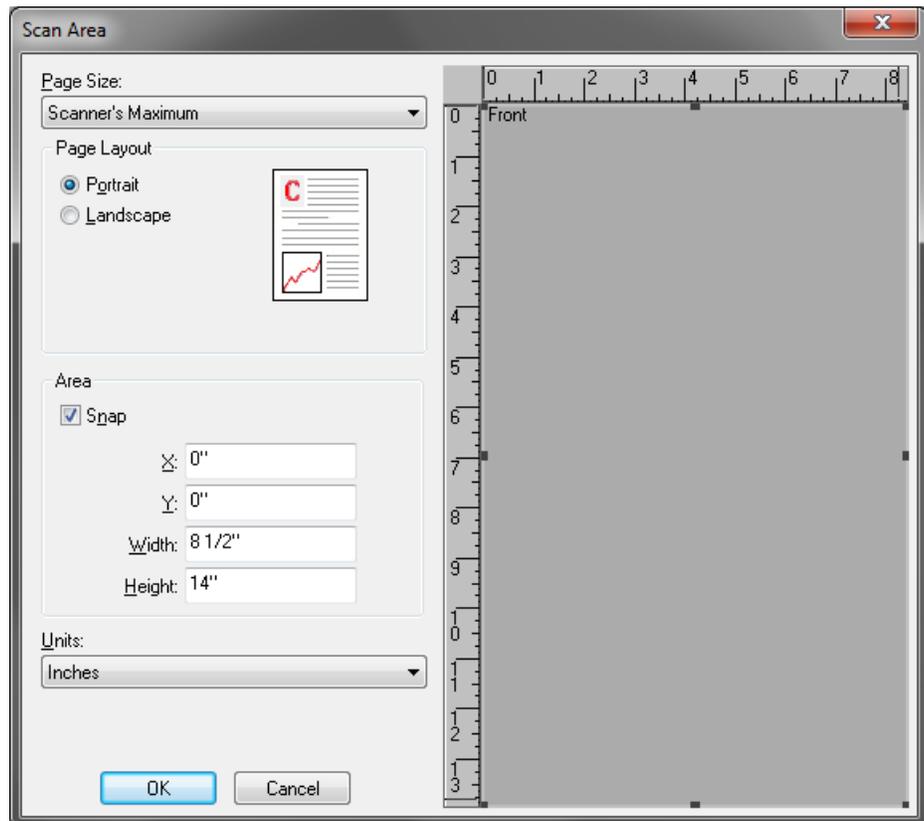
Scan Area dialog box

The Scan Area dialog box allows you to define the amount of image data which is returned to the host.

NOTES:

- Select the **Image Mode** (either **Normal** or **Merge**) based on the cropping option selected on the Main tab. If you select **Normal**, select the side(s) (i.e., **Front Image #1, Front Image #2, Back Image #1** and/or **Back Image #2**) to be defined.
If you Select **Merge**, select the orientation of the merged images (i.e., **Front on Top, Front on Bottom, Front on Left** or **Front on Right**). The scan areas defined for all camera selections are independent.

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

When you select **Scan Area** on the Layout tab, the Scan Area dialog box.

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 also appears on the Layout tab. If you make a change on the Scan Area dialog box, the same selection appears 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 0.3175 cm (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**.

Image Processing tab   The Image Processing tab provides the following options:
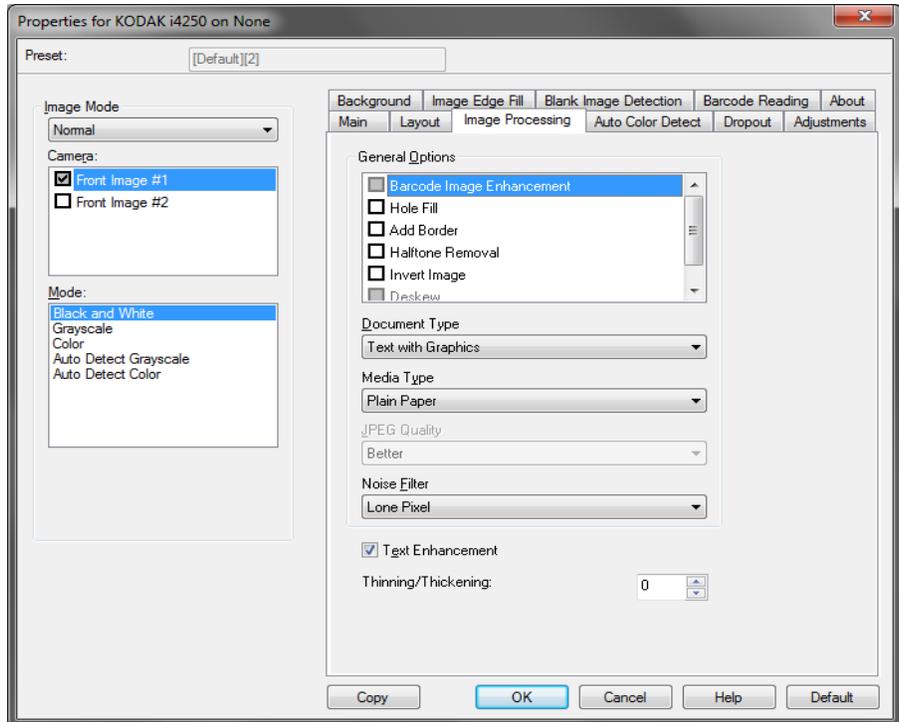
General Options

- **Barcode Image Enhancement** — allows you to configure the scanner so it will optimize the barcodes for reading by your application. The scanner will automatically find the 1D and 2D barcodes in a black and white image and will apply special image processing to the barcodes to make them easier for barcode reading after they are scanned. Barcode Image Enhancement does not affect barcode reading that is enabled in the ISIS Driver, as the barcode reading functionality that Kodak Alaris provides is performed using high resolution grayscale data during image processing.

- **Hole Fill** — allows you to fill in the holes that are around the edges of your document. The types of holes that are filled include: round, rectangular, and irregularly shaped (e.g., double-punched or those having a slight tear that could have occurred when the document was removed from a binder).

  NOTE: Do not turn **Hole Fill** on if you are scanning photos.

- **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 not available when **Aggressive** is selected.

- **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.

- **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 only available when **Automatic** is selected.

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

Document Type
- **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.

- **Photographs**: when the documents you want to scan are composed mainly of photos.

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**.

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.

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 vice versa.

Text Enhancement — allows you to configure the scanner to improve the appearance of text. Turn this option on if your document is mostly text and the characters are disconnected or not smooth. This option improves the readability of dot matrix printing and improves poor quality characters if the font size and/or resolution is large/high enough.

NOTES:

- This may have no effect on small fonts and effectiveness may be diminished if **Thinning/Thickening** is being used.

- If the font size is too small or the resolution is not high enough, this option may cause characters to fill in.

Thinning/Thickening — allows you to make the lines and characters appear to be thinner or thicker. Decreasing this setting will make the lines and characters thinner/smaller. Increasing this setting will make the lines and characters thicker/larger. The default is 0, no thinning or thickening.

Auto Color Detect tab   The Auto Color Detect tab provides the following options:
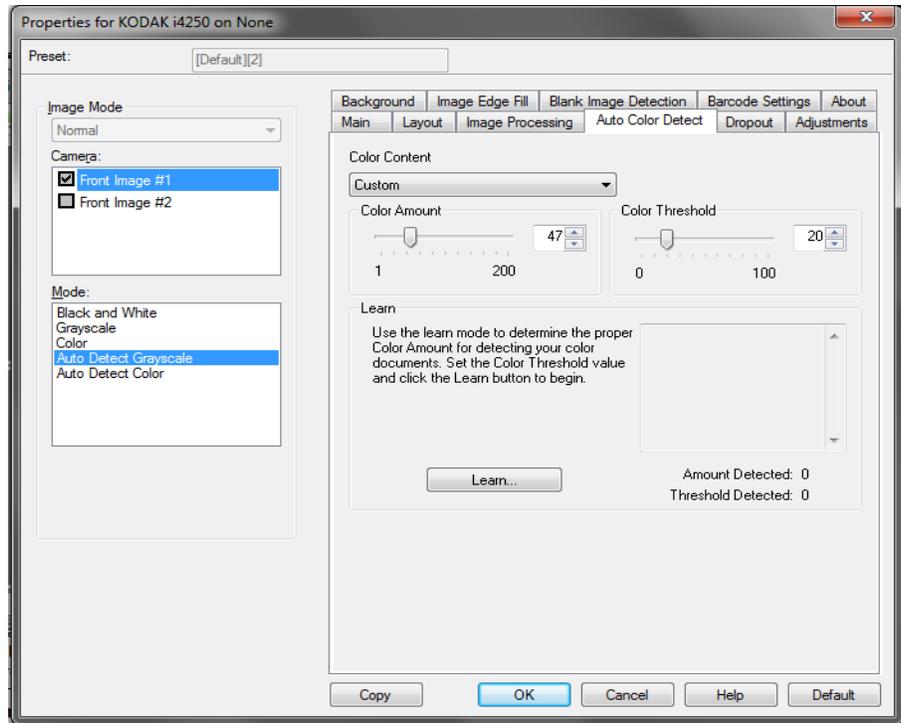
Color Content

- **Off:** this is the default. No color content will be detected.

- **Low**: documents requiring 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**: allows you to manually adjust the **Color Amount** and/or **Color Threshold**.

  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 the **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 (e.g., 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 elevator. The documents will be scanned and analyzed to determine the recommended Color Amount.

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

Dropout tab   The Dropout tab provides the following options:
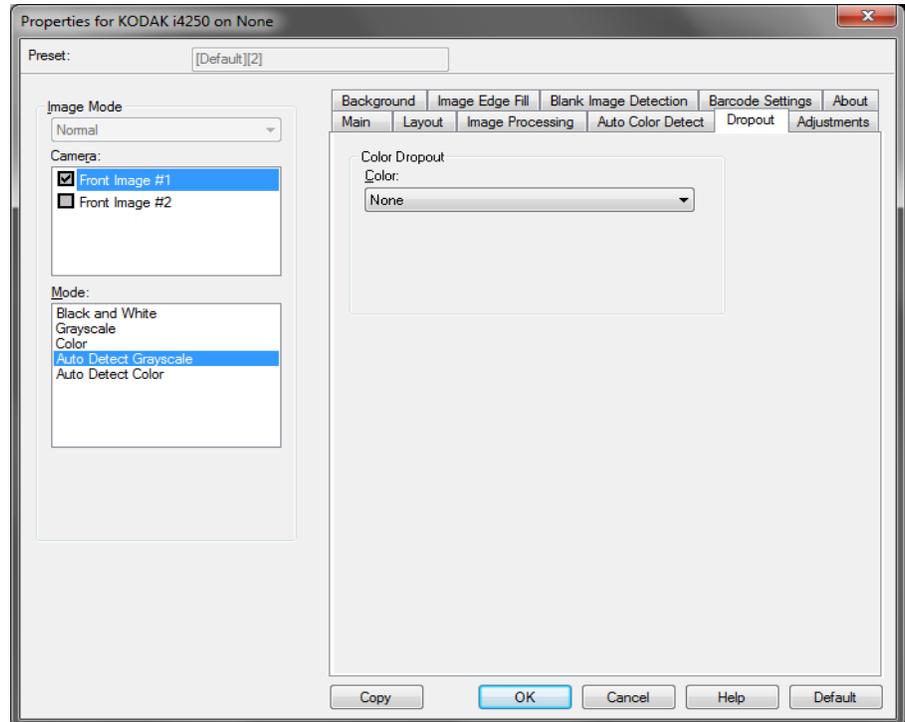

Color Dropout — used to eliminate a form's background so that only the entered data is included in the electronic image (e.g., remove the form's lines and boxes). For black and white images, these settings affect the grayscale version of the document which the scanner analyzes to produce that electronic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

- **Color**: select the desired dropout color.
    - **None**
    - **Red**
    - **Green**
    - **Blue**
    - **Orange**
    - **Orange and red**

Adjustments tab   The Adjustments tab provides the following options:
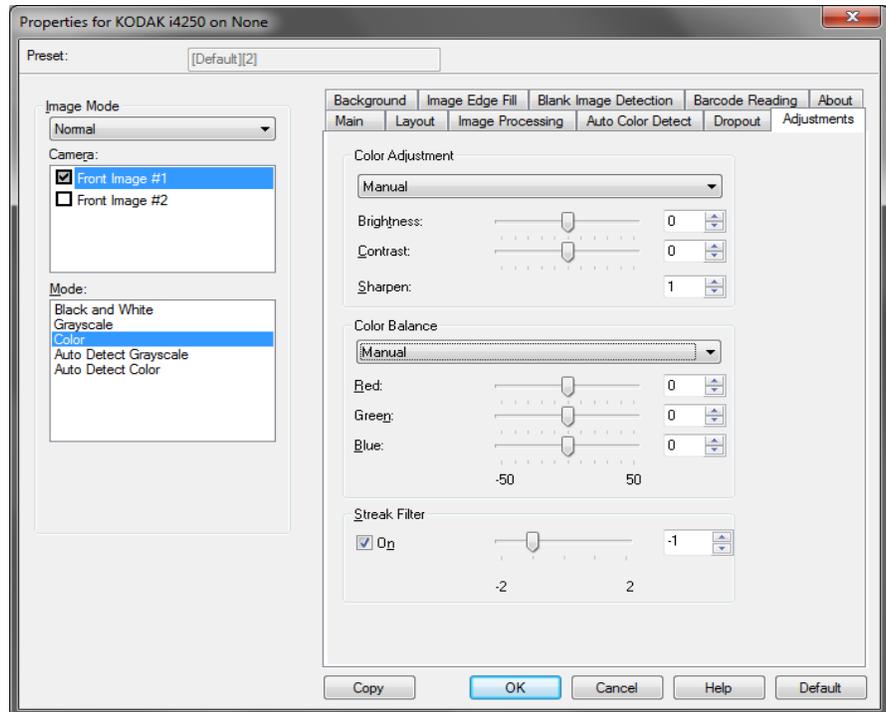
Color Adjustment — available options are:

For **Black and White, Grayscale** or **Auto Detect Grayscale** mode:
Available options are:
- **(none)**
- **Manual**
- **Automatic**

If you select **Manual** you can adjust the **Brightness, Contrast** and **Sharpen** values.

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

- **Contrast** — changes how dark the darker areas are, and how white the lighter areas are. The values range from **-50** to **50**.

- **Sharpen** — makes edges within the image more noticeable. The values range from **0** to **3; 0** being the least amount of sharpening.

If you select **Automatic**, you can only adjust the **Sharpen** value.

NOTE: *Color Balance* is not available for **Black and White, Grayscale** or **Auto Detect Grayscale.**

For **Color** or **Auto Detect Color** mode:

Available options are:

- **(none)**
- **Manual**
- **Automatic**

If you select **Manual** you can adjust the **Brightness, Contrast** and **Sharpen** values.

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

- **Contrast** — changes how dark the darker areas are, and how white the lighter areas are. The values range from **-50** to **50**.

- **Sharpen** — makes edges within the image more noticeable. The values range from **0** to **3; 0** being the least amount of sharpening.

If you select **Automatic**, you can only adjust the **Sharpen** value.

Color Balance — available options are:

- **(none)**
- **Manual**
- **Automatic**
- **Automatic - advanced**

If you select **Manual** you can adjust the **Red, Green** and **Blue** values by dragging the slider bar to the left or right, entering a value in the text box or using the up/down arrows.

- **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.

If you select **Automatic**, the scanner will analyze the documents to produce the best possible image.

Automatic - advanced is for advanced users that want to further adjust this option. Use the *Aggressiveness* slider bar to adjust the extent at which the color balance is determined. Values range from **-2** to **2**.

Streak Filter — allows you to configure the scanner to filter vertical streaks from your images. Streaks are lines which may appear on an image and are not part of the original document. Streaks may be caused by contaminants on your documents (e.g., dirt, dust or frayed edges) or by not following the recommended cleaning procedures for your scanner. Adjust the extent at which the streaks are filtered by moving the slider bar from -2 to 2. The default is 0.

Background tab   The Background tab provides the following options:
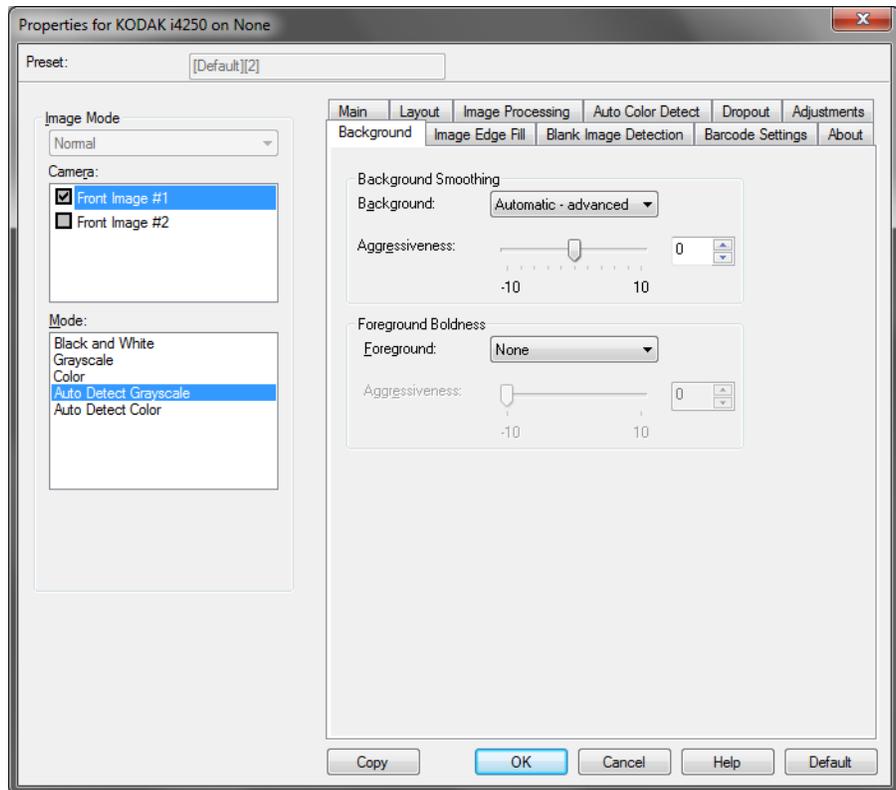
NOTE: The options on the Background tab are not available for black and white mode.

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.

NOTE: Background Smoothing is not intended for use with photographs.

              Before   **After**

• **None**
• **Automatic**: smooths up to three background colors.
• **Automatic - advanced**: for advanced users that want to further adjust the **Automatic** option.
    - **Aggressiveness** — allows you to adjust the extent at which the background(s) are determined. The values range from **-10** to **10**.

Foreground Boldness — use this option for documents or forms where you want the foreground (e.g., text, lines, etc.) to be more prominent. When **Foreground Boldness** is enabled, gray and neutral colors are darkened.

NOTE: Foreground Boldness is not intended for use with photographs.

Before	**After**

- **None**
- **Automatic**: all foreground will be bolder.
- **Automatic - advanced:** for advanced users that want to further adjust the Automatic option.
    - **Aggressiveness** - allows you to adjust the extent at which the foreground is determined. Values range from **-10** to **10**.

Image Edge Fill tab

This option 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.
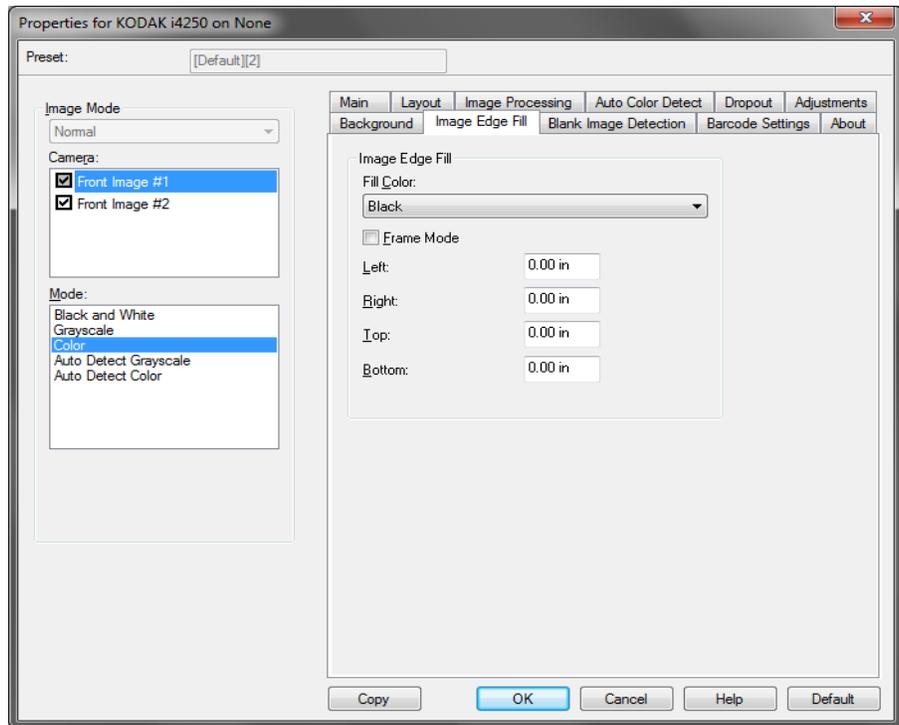
Fill Color — allows you to select the color to fill the edges with.

- **None**
- **White**
- **Black**
- **Automatic**: the scanner will automatically fill the edges of the image using the surrounding color.
- **Automatic - include tears**: in addition to filling the edges, the scanner will also fill in tears along the edge of document.

When you select **White** or **Black** these options are available:

- If you check **Frame Mode,** an equal amount of the selected color from the *Image Edge Fill* drop-down list will be filled in all on all sides of the image.

- If you do not check **Frame Mode**, 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.

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 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.
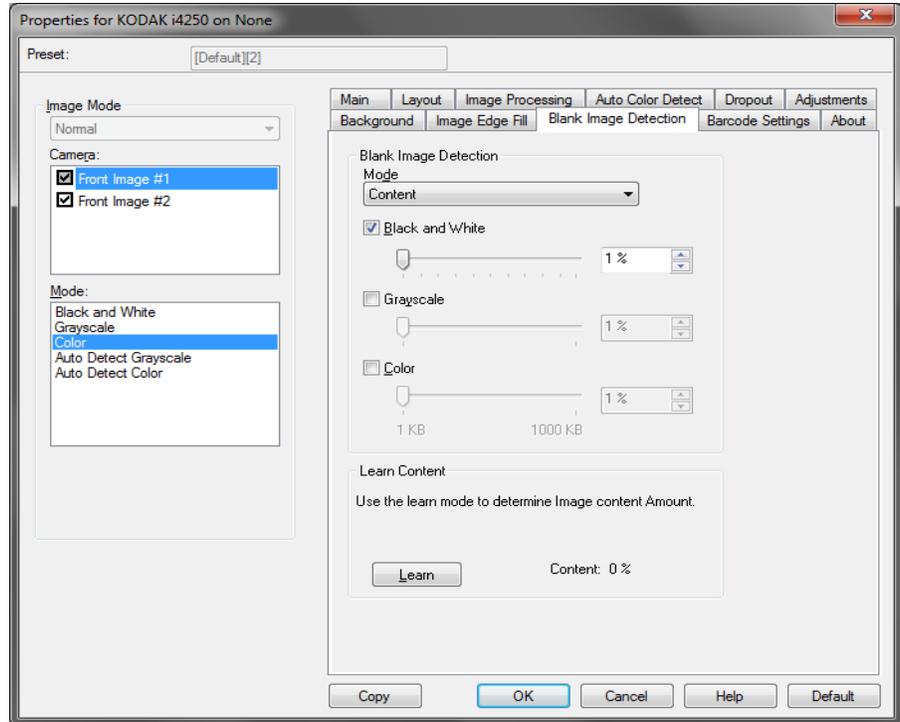

Mode

- **Off:** all images are given to the scanning application.

- **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).

- **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.

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.

Barcode Reading tab

The Barcode Reading tab allows you to configure the scanner to search your images for barcodes and return the information to the scanning application.
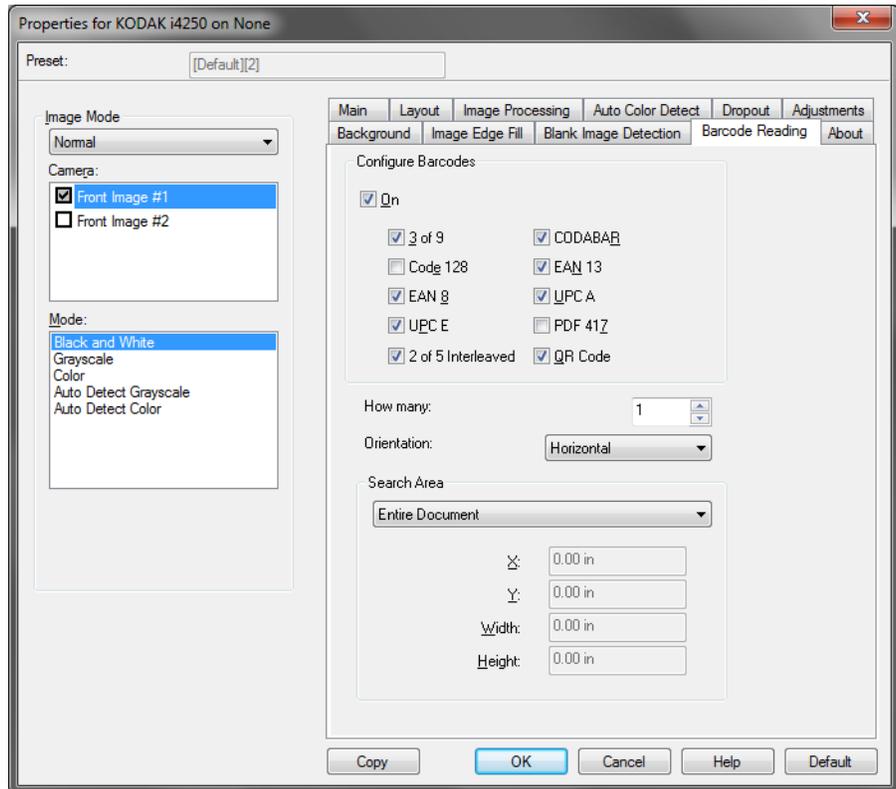
Configure Barcodes

- **On**: turns barcode reading on. When you select **On**, all barcode types are selected. Deselect any of the barcode types you do not want the scanner to search for.

  - 3 of 9
  - Code 128
  - EAN 8
  - UPC E
  - 2 of 5 Interleaved
  - CODABAR
  - EAN 13
  - UPC A
  - PDF 417
  - QR Code

- **How many:** select the number of barcodes the scanner will search for.

- **Orientation:** select the orientation of the barcodes to search for. Selections are: **None**, **Horizontal**, **Vertical** or **Both**.

  NOTE: This is relative to the final image (i.e., after any cropping and rotation has been applied).

- **Search Area**: select the area of the image to search.
  - **Entire Document**
  - **Part of Document:** if selected, you can make an entry in the following fields:
    - **X** is the distance from the left edge of the image.
    - **Y** is the distance from the top edge of the image.
    - **Width and Height**: the width and height of the area to search.

  NOTES:

  - These are relative to the final image (i.e., after any cropping and rotation has been applied).

  - If **Part of Document** is selected, the rules for *top left* to *bottom right* barcode reading apply with the selected Region of Interest.

  - If **Image Merge** is selected, the barcode settings for the front image will be applied to the merged front and rear image.
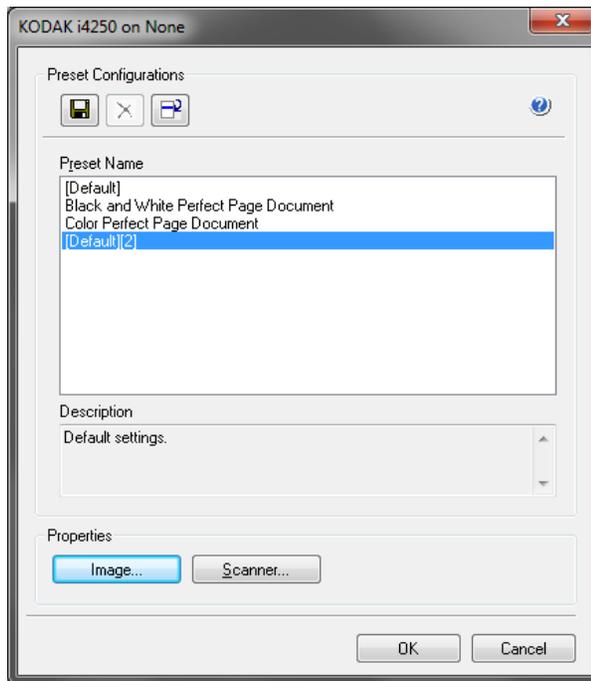
About tab

The About tab displays information about your scanner and driver.
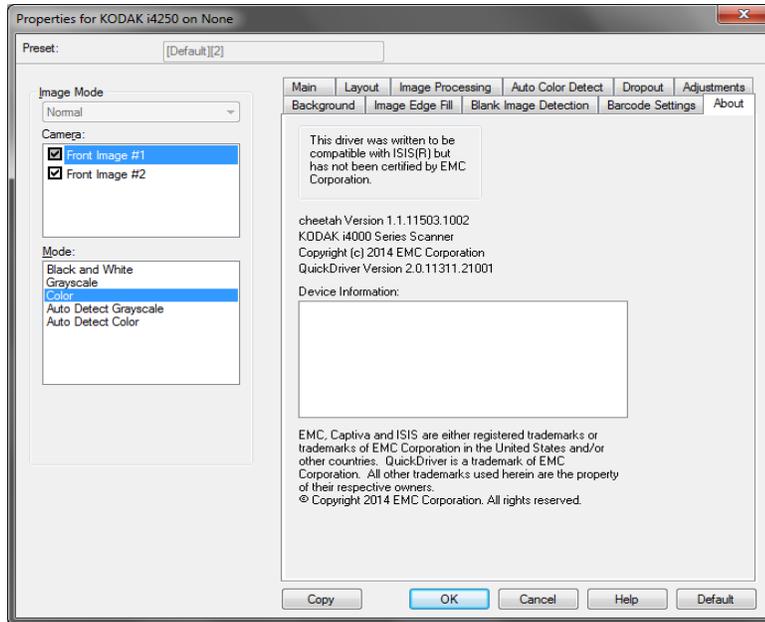
Configuring Scanner settings

To access scanner settings from the ISIS Driver, go into the Scan Validation tool as described earlier in this guide and access the ISIS driver.

- Click **Scanner** to configure settings associated with the scanner. The following sections provide descriptions and procedures for configuring Scanner settings. See the section entitled, "Configuring Image settings" earlier in this guide for image configuration procedures.

Scanner tab   The Scanner tab provides the following options:
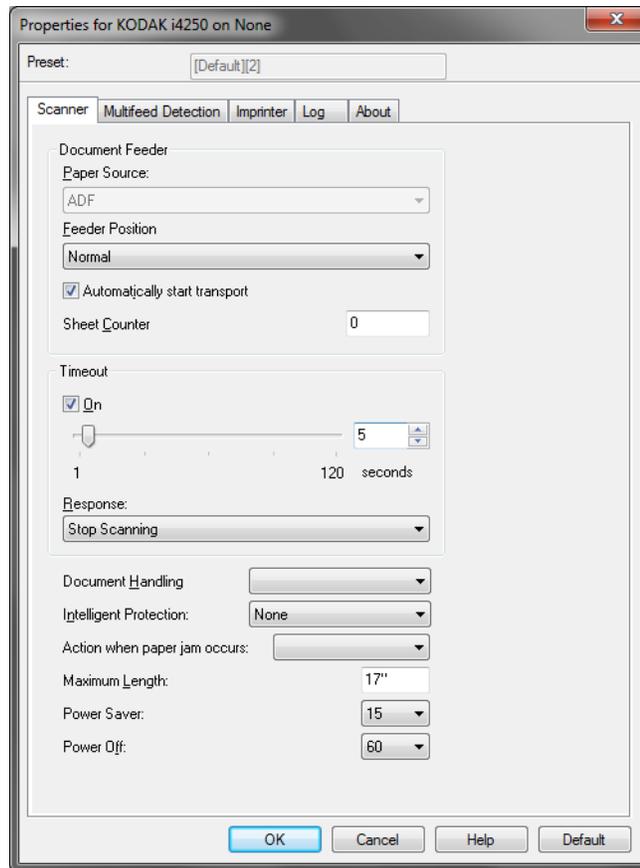
Document Feeder

Paper Source
- **Automatic**: looks for paper in the ADF first. If there are no documents in the input elevator, the scanner will scan from the flatbed. *This option is only available if a flatbed is attached.*

- **ADF**: the input elevator is in the highest position. This selection is recommended when you are scanning 25 sheets or less from the input elevator.

- **Flatbed**: scanner will scan from the flatbed. *This option is only available if a flatbed is attached.*

Feeder Position

- **Normal**: the input elevator is in the highest position. This selection is recommended when you are scanning 25 sheets or less from the input elevator.

- **100 Sheets**: this selection is recommended when you are scanning between 25 and 100 sheets from the input elevator.

- **250 Sheets**: this selection is recommended when you are scanning between 100 and 250 sheets from the input elevator.

- **500 Sheets**: this selection is recommended when you are scanning between 250 and 500 sheets from the input elevator.

- **Automatic - 100 Sheets**: looks for paper in the input elevator first, if there are no documents in the input elevator, the scanner will scan from the flatbed. This selection is recommended when you are scanning between 25 and 100 sheets from the input elevator. *This option is only available if a flatbed is attached.*

- **Automatic - 250 Sheets**: looks for paper in the input elevator first, if there are no documents in the input elevator, the scanner will scan from the flatbed. This selection is recommended when you are scanning between 100 and 250 sheets from the input elevator. *This option is only available if a flatbed is attached.*

- **Automatic - 500 Sheets**: looks for paper in the input elevator first, if there are no documents in the input elevator, the scanner will scan from the flatbed. This selection is recommended when you are scanning between 250 and 500 sheets from the input elevator. *This option is only available if a flatbed is attached.*

Automatically start transport — if selected, the scanner will wait for up to 10 seconds for documents to be placed in the input elevator before scanning will begin. In addition, once the input elevator has been emptied, the scanner will automatically resume scanning when paper is placed in the input elevator. The scanner will wait the amount of time specified by the document feeder timeout.

Sheet Counter — enter the number to be assigned to the next physical sheet of paper entering the scanner. This is incremented sequentially by the scanner and is returned in the image header.

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 **120** seconds.

Response — 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 (e.g., ends the job).

- **Pause Scanning**: scanning will stop but the scanning application will be waiting for additional images (e.g., stops the feeder). Scanning may be resumed by pressing the **Start/Pause** button on the Operator Control Panel. Scanning may be stopped by pressing the **Stop** button on the Operator Control Panel or via the scanning application.

- **Pause Scanning - wait for paper**: scanning will stop but the scanning application will be waiting for additional images (e.g., stops the feeder). Scanning will be resumed automatically when documents are added to the input elevator.

Document Handling — allows you to select how the scanner transports documents through the scanner. This affects how the documents are fed into the scanner, how fast they move through the scanner, and how they are placed in the output tray.

- **Normal**: no additional handling is performed. Best used when all documents are similar in size.

- **Improved Stacking**: aids in controlling how the documents are stacked/ordered in the output tray for mixed document sets. This should work for the majority of mixed sets.

- **Best Stacking**: when your document set contains a great variability in size, this option provides the best control of how the documents are stacked/ordered within the output tray.

Intelligent Protection — allows you to select how aggressively the scanner detects documents that enter the scanner incorrectly. This can occur when documents are not prepared properly for scanning (e.g., stapled or paper clipped documents).

- **None**

- **Normal**: this is the recommended option as it provides a balance between minimizing document damage and stopping the scanner unnecessarily.

- **Minimum**: select this option if the scanner is stopping too frequently on documents that you do not want it to detect.

  NOTE: Documents may become more damaged before detection occurs.

- **Maximum**: select this option to get the least amount of document damage.

  NOTE: This may cause the scanner to stop unnecessarily.

Action when paper jam occurs — allows you to select what happens when the scanner detects a paper jam.

- **Stop Scanning:** scanning will stop and control will return to the scanning application (e.g., ends the job). Verify that the paper path has been cleared and restart the scan session from the scanning application.

- **Pause Scanning**: if you want to automate the jam recovery option, selecting **Pause Scanning** will cause scanning to stop but the scanning application will be waiting for additional images (e.g., stops the feeder). This option will allow you to recover from a document jam faster, thus improve operator efficiency. When you clear the paper path, scanning can be resumed by pressing the **Start/Pause** button on the Operator Control Panel. Scanning can be stopped by pressing the **Stop** button on the Operator Control Panel or via the scanning application.

Maximum Length — select a value that indicates the length of the longest document in your document set.

NOTES:

- Not all combinations of settings are supported at the larger lengths (e.g., resolution, color, grayscale, etc.). To allow for greater flexibility with applications, the scanner will not generate an error until it sees a document whose length is not supported.

- The scanner's throughput may be reduced for larger lengths.

Power Off — allows you to set the amount of time, in minutes, the scanner has to be in power saver mode before it automatically turns off.

Power Saver — allows you to set the amount of time the scanner (**1** to **240** minutes) will remain inactive before the scanner goes into an idle state. The default is 15 minutes.

Multifeed Detection tab

Multifeed detection aids in document processing by detecting documents that may go through the feeder overlapped. Multifeed can happen due to stapled documents, adhesives on documents or electrostatically charged documents. The Multifeed Detection tab provides the following options.
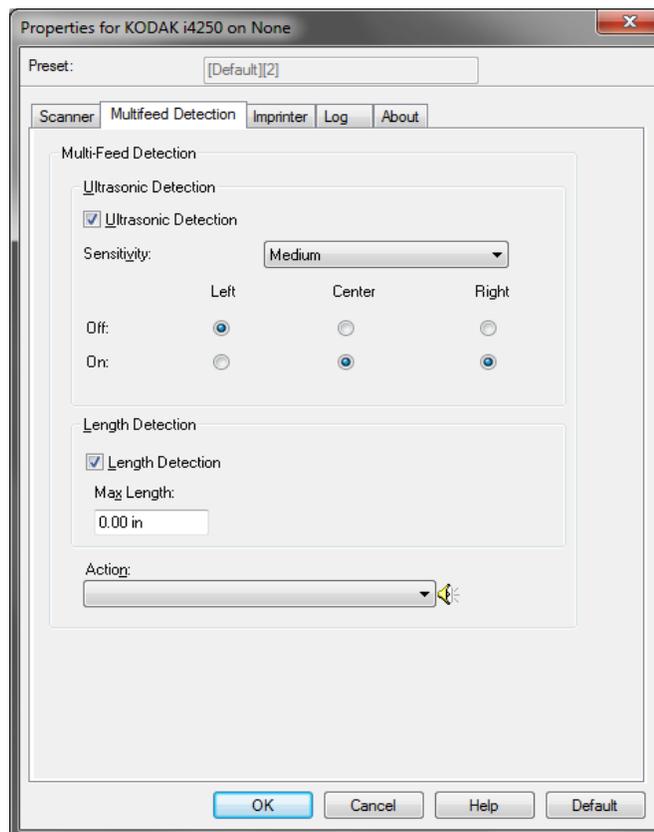
Ultrasonic Detection — check this option to set multifeed detection.
- **Sensitivity** — controls how aggressively the scanner will work to determine if more than one document is fed into the transport. Multifeeds are triggered by detecting air gaps between documents. This allows multifeed detection 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 multifed 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 multifed document.
- **High**: the most aggressive setting. This is a good setting to use if all documents are similar in thickness to 75.2 g/m^2 (20-lb.) Bond paper.

Three sensors cover the width of the paper path. In order for multifed documents to be detected correctly, they must pass under one of these sensors.

- **Left, Center, Right**: this allows you to select which sensor(s) you want to have turned on. For example, if you know that the left side of the document has a "sticky" note on it, you can turn off the left sensor.

Length Detection — when enabled, you can select the maximum length of the document that can be scanned without a multifeed being detected. Length detection is used when scanning same-sized documents to check for overlap. For example, if you are scanning A4 (8.5 x 11-inch) documents in portrait mode, enter a value of 28.57 cm (11.25 inches) in the *Max Length* field. The maximum value is 35.56 cm (13.99 inches).

Action — 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). Image(s) of the multifed document will not be generated. Verify that the paper path has been cleared and restart the scan session from the scanning application.

- **Stop Scanning - generate image(s)**: scanning will stop and control will return to the scanning application (i.e., ends the job). Image(s) of the multifed document will be generated. 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). Image(s) of the multifed document will not be generated. Clear any documents from the paper path prior to restarting the scan session from the scanning application.

- **Stop Scanning - leave paper at exit**: scanning will stop and the last portion of the multifed document will be held at the transport's exit, and control will return to the scanning application (i.e., ends the job). Image(s) of the multifed document will not be generated. 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. Image(s) of the multifed document will be generated.

- **Pause Scanning - generate image(s)**: scanning will stop but the scanning application will be waiting for additional images (i.e., stops the feeder). Image(s) of the multifed document will be generated. Scanning may be resumed by pressing the **Start/Pause** button on the Operator Control Panel. Scanning may be stopped by pressing the **Stop** button on the Operator Control Panel or via the scanning application.

- **Pause Scanning - leave paper in path:** scanning will stop immediately (i.e., making no attempt to clear the paper path) but the scanning application will be waiting for additional images (i.e., stops the feeder). Image(s) of the multifed document will not be generated. Clear any documents from the paper path prior to resuming the scan session. Scanning may be resumed by pressing the **Start/Pause** button on the Operator Control Panel. Scanning may be stopped by pressing the **Stop** button on the Operator Control Panel or via the scanning application.

- **Pause Scanning - leave paper at exit**: scanning will stop and the last portion of the multifed document will be held at the transport's exit, but the scanning application will be waiting for additional images (i.e.,stops the feeder). Image(s) of the multifed document will not be generated. Clear any documents from the paper path prior to resuming the scan session. Scanning may be resumed by pressing the **Start/Pause** button on the Operator Control Panel. Scanning may be stopped by pressing the **Stop** button on the Operator Control Panel or via the scanning application.

- **Interactive Multifeed Recovery:** scanning will stop but the scanning application will be waiting for additional images (i.e., stops the feeder). Images of the multifed document will be displayed on your computer. You can accept these images or rescan to replace them. You can make your selection on your computer or the scanner. Send the images to your application and resume scanning by selecting **Accept**. Selecting **Rescan** will discard the images and scanning will resume. Scanning may be stopped by selecting **Stop**.

NOTE: Put the multifed document(s) into the input elevator before selecting **Rescan**.

Speaker icon — displays the Open dialog box allowing you to select the desired tone (.wav file) for your alarm.

Patch tab

Patch Readers can automatically sense predefined patch code(s) and be configured to control document level changes.
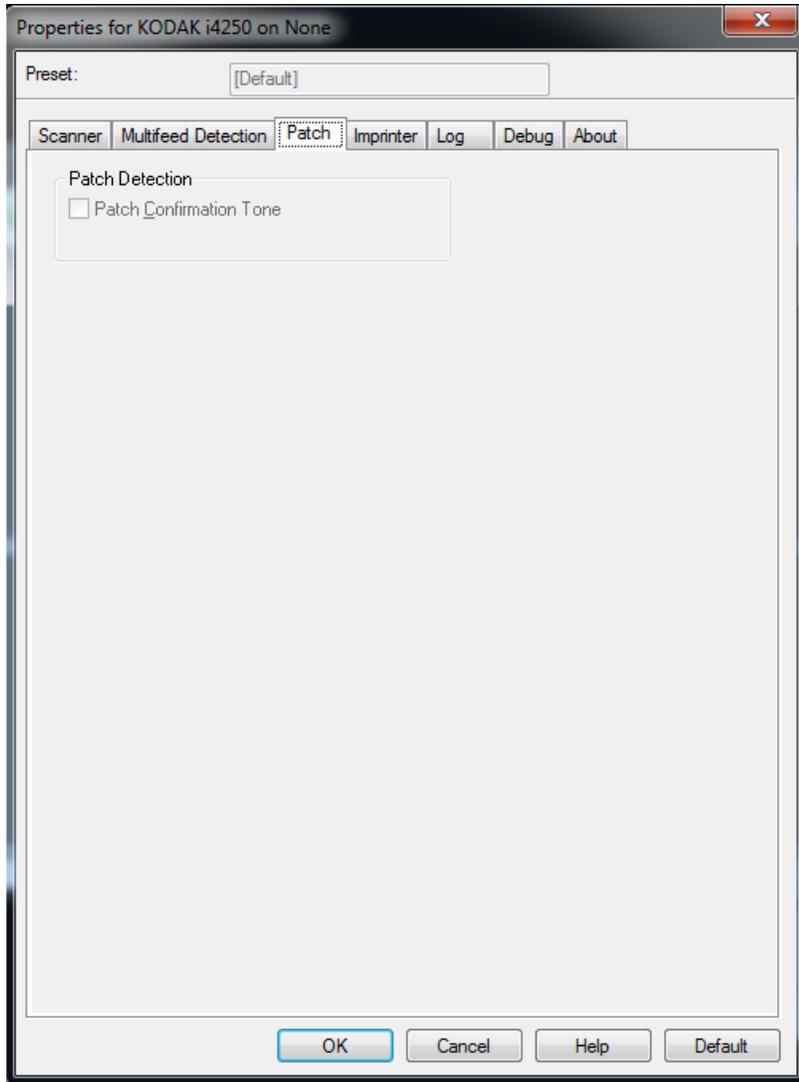

Patch Confirmation Tone — the confirmation tone may be used to signal that a patch has been recognized by the scanner.

Imprinter tab

The 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 (e.g., information that stays the same for each document, such as batch name or operator) and dynamic information (e.g., 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. You can print on the physical sheet of paper, or stamp a digital image, or both. For printing on the paper:
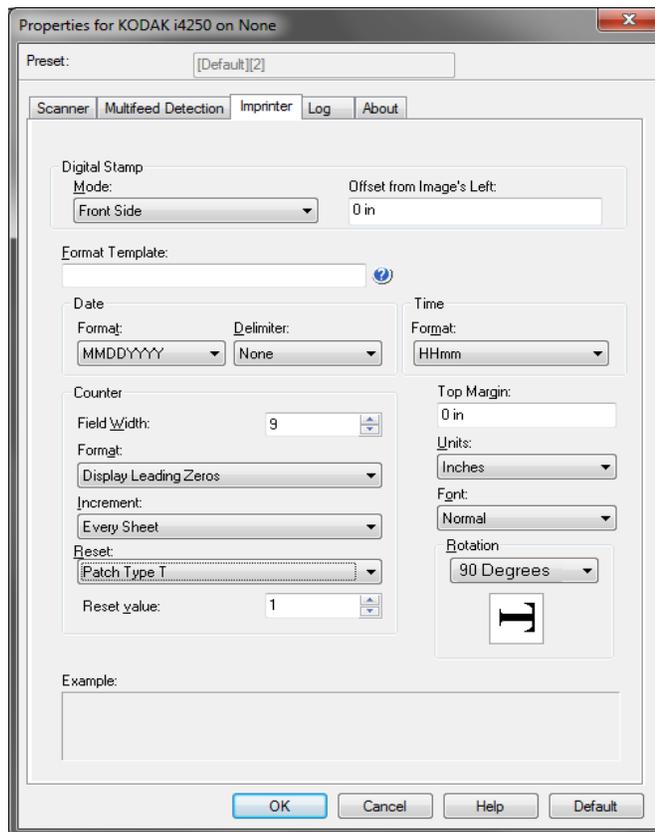
Imprinter — turns digital printing on for the physical sheet of paper.

For digital stamping:

• **Mode**
  - **Disabled**
  - **Front Side** — turns digital printing on for all front images.
  - **Back Side** — turns digital printing on for all rear images.

NOTES:

• Digital stamp is applied to the image *after* it has been cropped and rotated. Therefore, if **Front Side** and **Back Side** are both enabled, the print may be printed on different edges of the document.

• Digital stamp is applied before **Image Merge** so if **Back Side** is enabled, the digital print will be printed on the merged image twice.

Offset for Image's Left — select a value to determine how far the printed information will appear from the left edge of the document.

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

- **Format**:
  - MMDDYYYY
  - MMDDYY
  - DDMMYYYY
  - DDMMYY
  - YYYYMMDD
  - YYMMDD
  - DDD (Julian)
  - YYYYDDD (Julian)
  - YYDDD (Julian)

- **Delimiter**: (the examples indicate a format of YYYYMMDD)
  - None
  - Slash: 2010/08/24
  - Hyphen: 2010-08-24
  - Period: 2010.08.24
  - Space: 2010 08 24

- **Time**:
  - HHmm
  - HHmmss
  - HHmmss.xx
  - hhmm
  - hhmmss
  - hhmmss.xx
  - hhmm tt
  - hhmmss tt
  - hhmmss.xx tt

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

- **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"

- **Increment**, **Reset** and **Reset value** are only for the *Kodak* i4850 Scanner.

  - **Increment**: allows you to configure when the counter is incremented.
    - Every Sheet
    - Patch Type T
    - Patch Type 1
    - Patch Type 2
    - Patch Type 3
    - Patch Type 6

  - **Reset**: allows you to configure when the counter is reset.
    - Never
    - Patch Type T
    - Patch Type 1
    - Patch Type 2
    - Patch Type 3
    - Patch Type 6

  - **Reset value**: allows you to select the value for the counter when it is reset.

  When the counter is reset, you can reset the value from 0 to 999,999,999. However, the maximum value is limited by the number of digits you enter (e.g., if the maximum number of digits is 3, then the maximum value you can set is 999). The default is 1.

NOTES:

- Patch patterns in the i4850 Scanner are read vertically and they must be in the first 2 inches of the page.

- When using the **Increment** option, every page will be printed and the counter will be incremented on the page *after* the patch page.

Top Margin — select a value for the distance from the top edge of the document.

NOTES:

- 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.

- The horizontal print position is determined by the location of the ink cartridge in the scanner. See the User's Guide for information about setting print positions.

- This option is only available when printing on the physical sheet of paper.

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

- **Font** — you can select what orientation you want your information to be printed.

  - **Style**: available character styles: **Normal, Large** and **Bold**.

| **Normal: 90° rotation** | **Large: 90° rotation** | **Bold: 90° rotation** |

  - **Digital Print examples**

| **Normal: 90°** | **Bold: 90°** | **Extra Bold: 90°** |

Rotation — you can select either 0 or 90 degrees.

- **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**.

| Feed Direction | 0 | 90 | 180 | 270 |
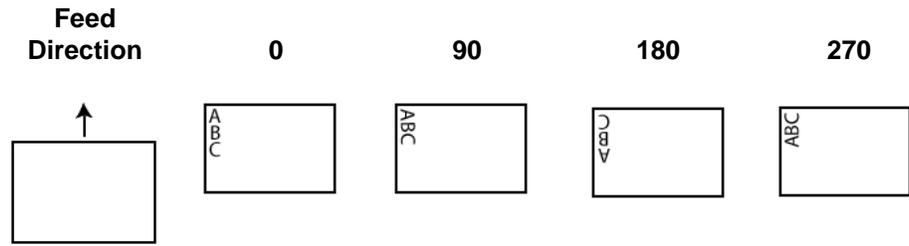
Imprinter Format table

| Specifier	Modifier	Description
%S	None	Inserts the current value of the sequential counter.
	0	Optional. Formats the counter to be left-padded with zeros to fill the defined field width. Example: %0S
	1-9	Optional. Defines the field width used to print the counter. If the 0 modifier is used, this field will be left-padded with zeros. Otherwise, it will be left-padded with spaces. Examples: %7S, %05S
#	n/a	Same as %S but cannot be formatted.
%T	1	Inserts the current time in HH:mm format
	2	Optional. Default. Sets the time format to HHmmss
	3	Optional. Sets the time format to HHmmss.nn
	4	Optional. Sets the time format to hhmm
	5	Optional. Sets the time format to hhmmss
	6	Optional. Sets the time format to hhmmss.nn
	7	Optional. Sets the time format to hhmm t
	8	Optional. Sets the time format to hhmmss tt
	9	Optional. Sets the time format to hhmmss.nn tt
%Y	1	Inserts the current date format to MMDDYYYY
	2	Optional. Sets the date format to MMDDYY
	3	Optional. Sets the date format to DDMMYYYY
	4	Optional. Sets the date format to DDMMYY
	5	Optional. Sets the date format to YYYYDDMM
	6	Optional. Sets the date format to YYMMDD
	7	Optional. Sets the date format to DDD
	8	Optional. Sets the date format to YYYYDDD
	9	Optional. Sets the date format to YYDDD
	_ (underscore)	Optional. Sets the date delimiter to the space character. Can be used with or without a date format specifier but cannot precede it. Examples: %_Y, %2_Y
	-	Optional. Sets the date delimiter to the dash character.
	/	Optional. Sets the date delimiter to the slash character
	.	Optional. Sets the date delimiter to the dot character

Log tab
The Log tab provides a listing of any errors that have been encountered.
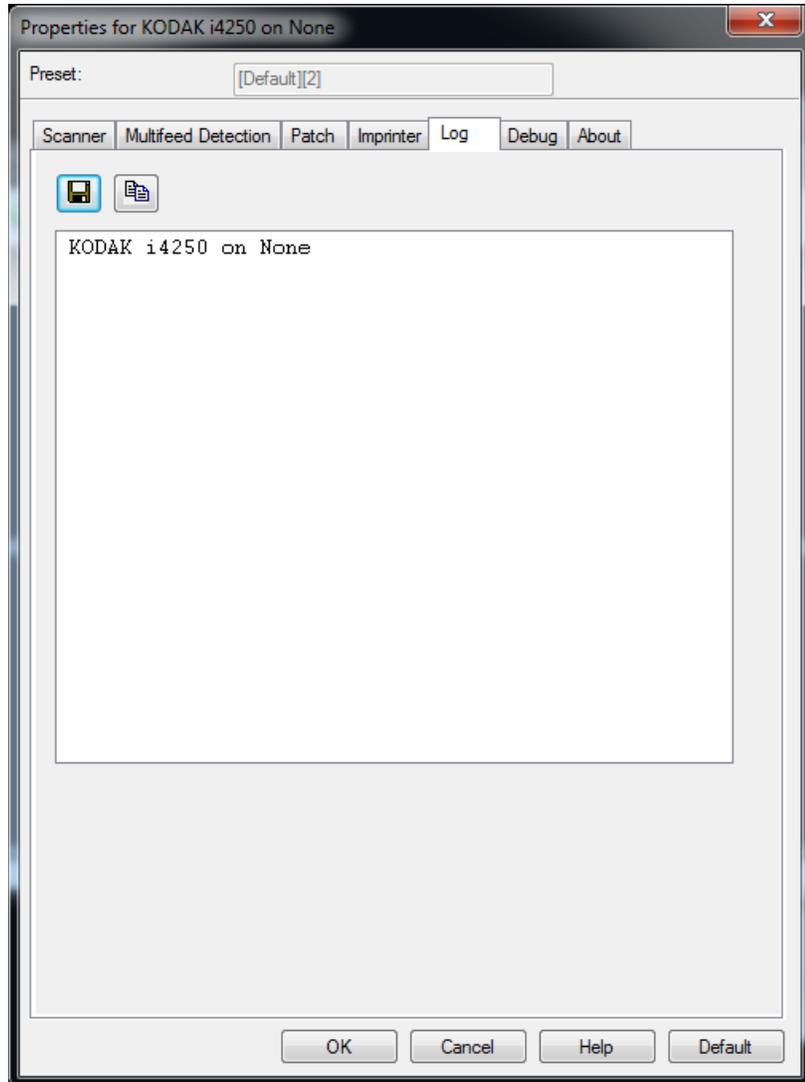
You can view the Operator and Meter logs and save this information to a file by copying the information to the clipboard then pasting it into a document or you can Save all the logs.

Save As: saves all the logs for viewing by support personnel. When selected, a save window will be displayed:
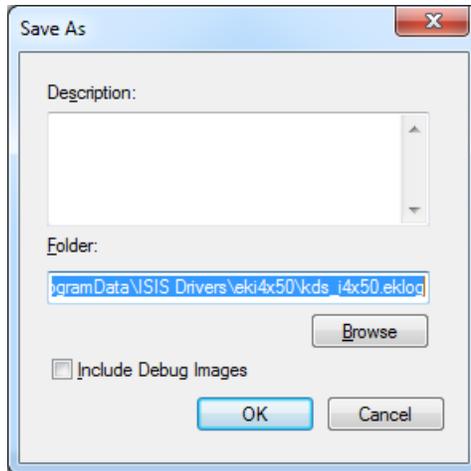

- **Description**: enter a brief description of problem/reason for saving the logs.

- **Folder**: the location to save the logs.

- **Browse**: displays the operating system's Browse for Folder window so you can find the folder that you want to use.

- **Include debug images**: includes any generated debug images with the logs. This should only be turned on when recommended by support personnel.

OK: saves the file into an eklog file.

The scanner error log can be saved to a file by clicking the **Save** icon, or copy the information to the clipboard which can then be pasted into a document.

Debug tab

The Debug tab allows you to turn on options that allow support personnel to diagnose any issues you may encounter when using your scanner. It is suggested that you only make changes on this tab when instructed by Technical Support.
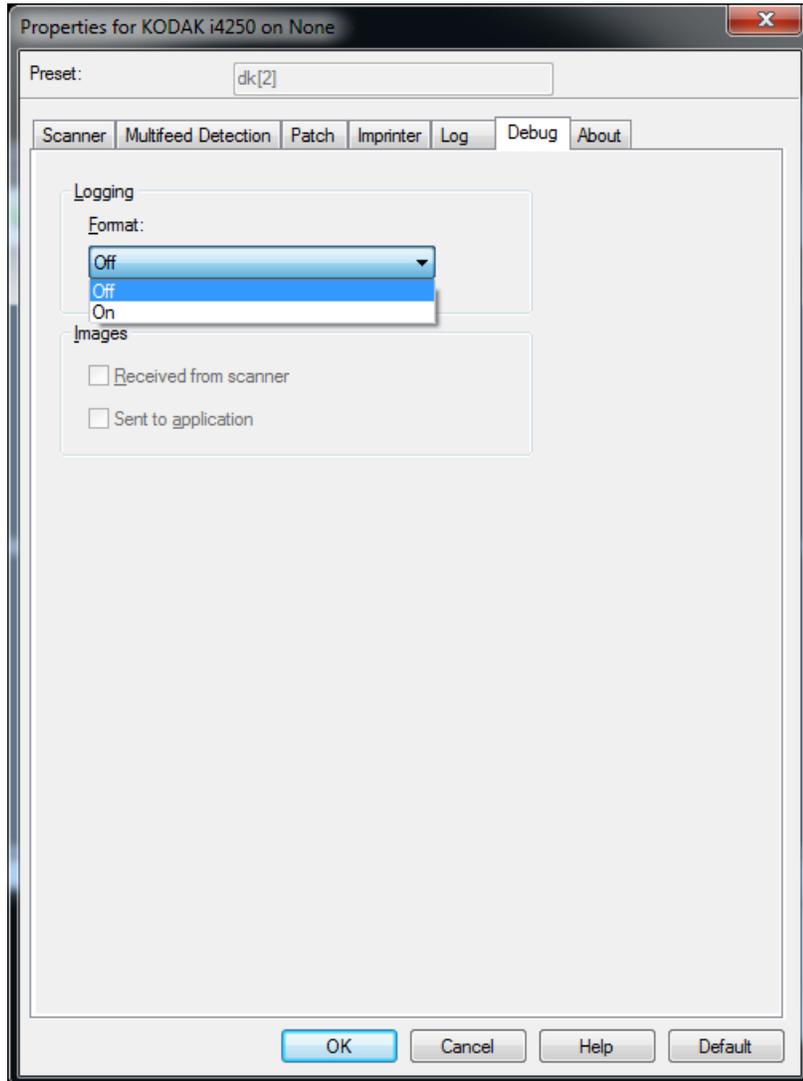
Logging — saves the communications between the scanner and a scanning application. The options are: **Off** or **On.**

Images
- **Received From Scanner**: saves the images received at the PC from the scanner.
- **Sent To Application**: saves the images received at the scanning application from the scanner.