Kodak

i1400 Series Scanners

Scanning Setup Guide
for ISIS Driver

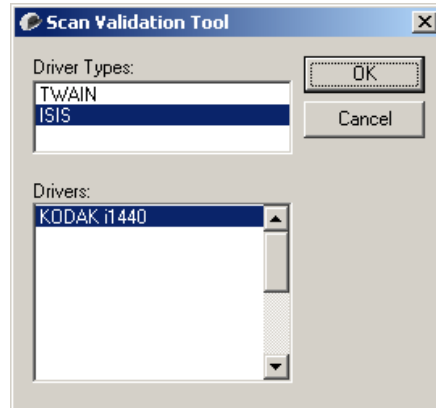# Scanning Setup Guide for ISIS Driver

Contents

The *Kodak* i1400 Series 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 (i.e., 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 information in this guide provides procedures for using the ISIS Driver as well as descriptions of the features. The same features should be available on the user interface of the scanning application you are using (i.e., *Kodak* Capture Software).
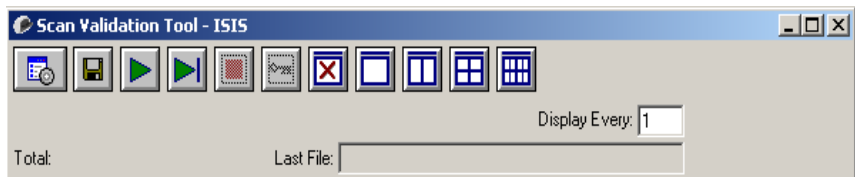
Starting the Scan Validation Tool

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

2. Select **ISIS** for the Driver Type and the *Kodak* **Scanner i14XX Scanner** as the Driver. The Scan Validation Tool dialog box will be displayed.

   NOTE: For a description of the icons on the Scan Validation Tool dialog box, see the section entitled, "Scan Validation Tool dialog box" at the end of this guide.

3. Click the **Setup** icon [icon]. The Setup dialog box will be displayed.

4. Click **ISIS** to display the Main tab.

Using the ISIS driver

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

This guide 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* i1405, i1420 and 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 document to access the ISIS Driver.

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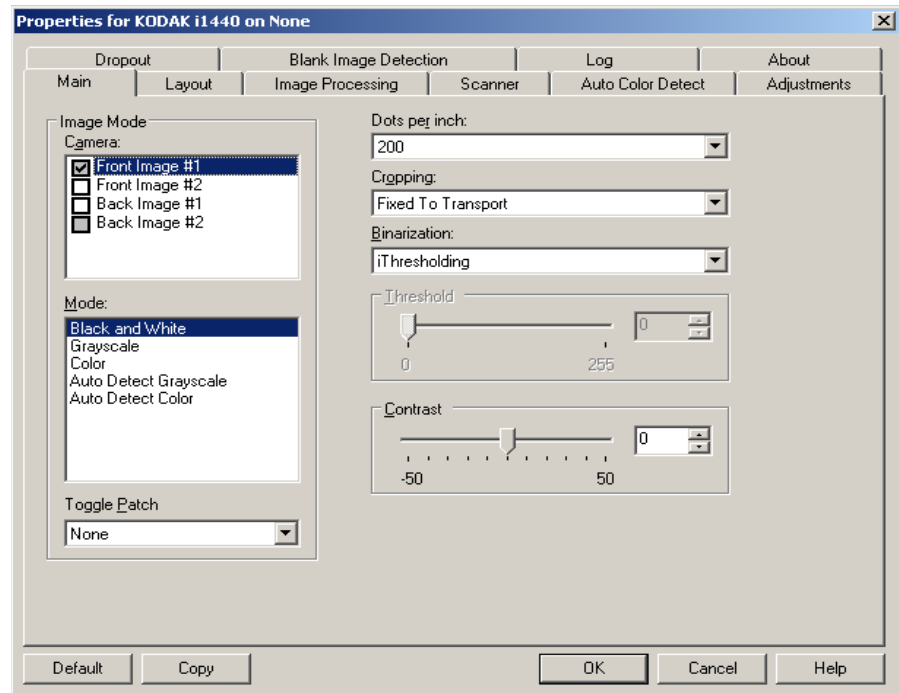
Four Image Display mode — displays four images at a time.

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

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.

NOTE: Not all scanners have toggle patch functionality.

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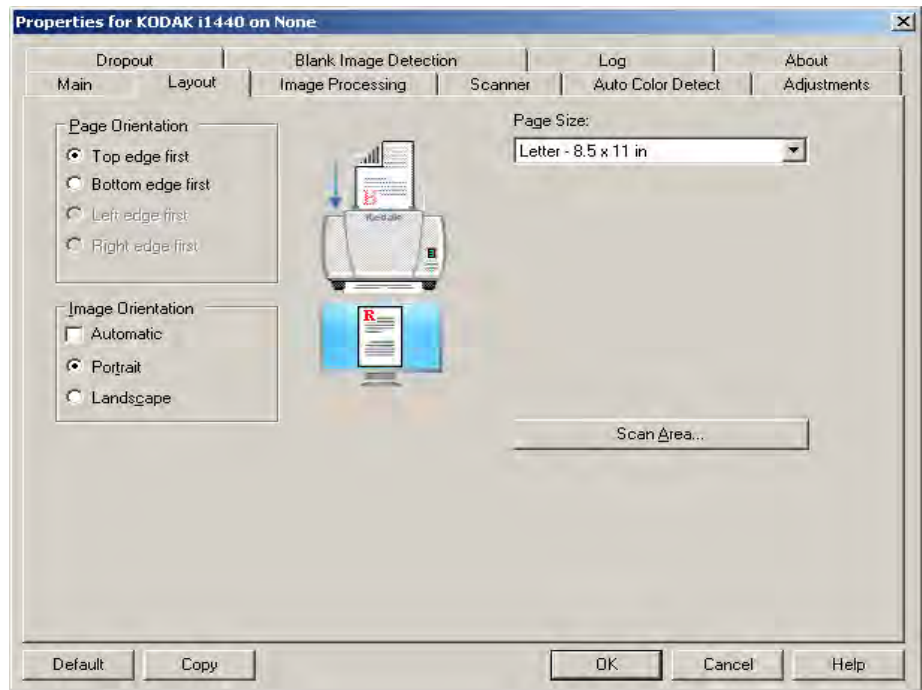
Brightness — changes the amount of white in the color and grayscale image. Use the slider to select a value from 0 to 255. The default is 90.

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.

Combine front and back images — typically, for a document, one image is created for the front side and another image is created for the back side. Turn this option on if you want one image that contains both the front side and back side of the document. The selections are:

Front
Back

Back
Front

Front on Top: front side will be above the back side within the image.

Front on Bottom: back side will be above the front side within the image.

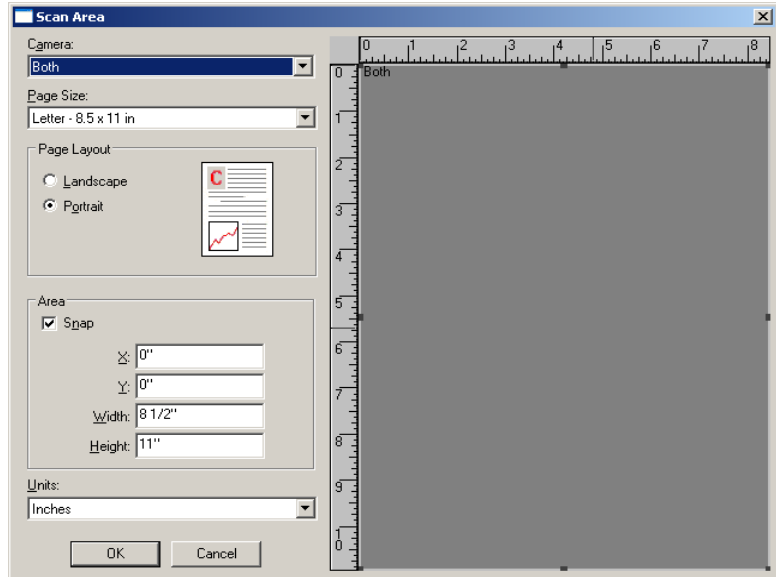| Front	Back

Back	Front

Front on Left: front side will be to the left of the back side within the image.

Front on Right: back side will be to the left the front side within the image.

Scan Area dialog box

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

NOTE: Select the side and image to be defined by highlighting **Front Image #1, Front Image #2**, etc. based on the cropping option (either **Fixed to Transport** or **Relative to Document**) selected for each of these in the Main tab. The scan areas defined for all camera selections are independent.

Page Size — the default paper size is set when a scanner is 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 will be displayed 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.
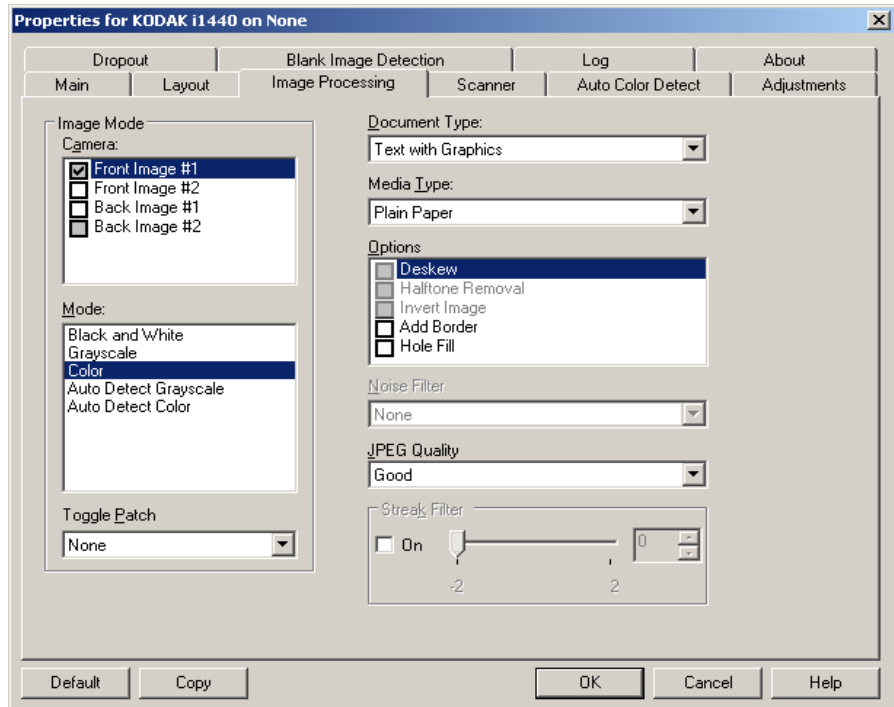
Area

- **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**.

Image Processing tab

The Image Processing tab displays the Image Mode and Mode information that was previously described. Refer to the section entitled, "Main tab" earlier in this chapter for descriptions.

Document Type

- **Photographs**: the documents are comprised mainly of photos.

- **Text**: the documents contain mostly text.

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

- **Text with Photographs**: the documents 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.

  NOTES:

  - To prevent data loss, the document must have all four corners within the image path.
  - Turning this option **on** may result in a slower scanning speed.

- **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.

- **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 as removed from a binder).

NOTE: Turning this option **on** may result in a slower scanning speed.

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:
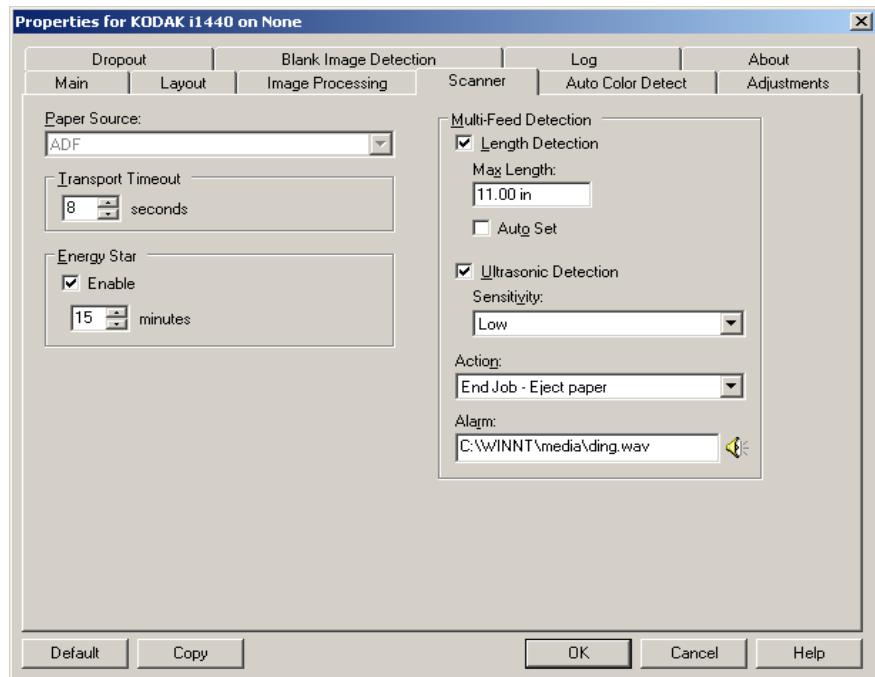
- **Draft**: maximum compression which produces the smallest image size.
- **Good**: a fair amount of compression but still produces acceptable image quality.
- **Better**: some compression which produces decent image quality.
- **Best**: minimal compression which produces very good image quality.
- **Superior**: the least amount of compression which produces the largest image size.

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.

NOTE: Turning this option **on** may result in a slower scanning speed.

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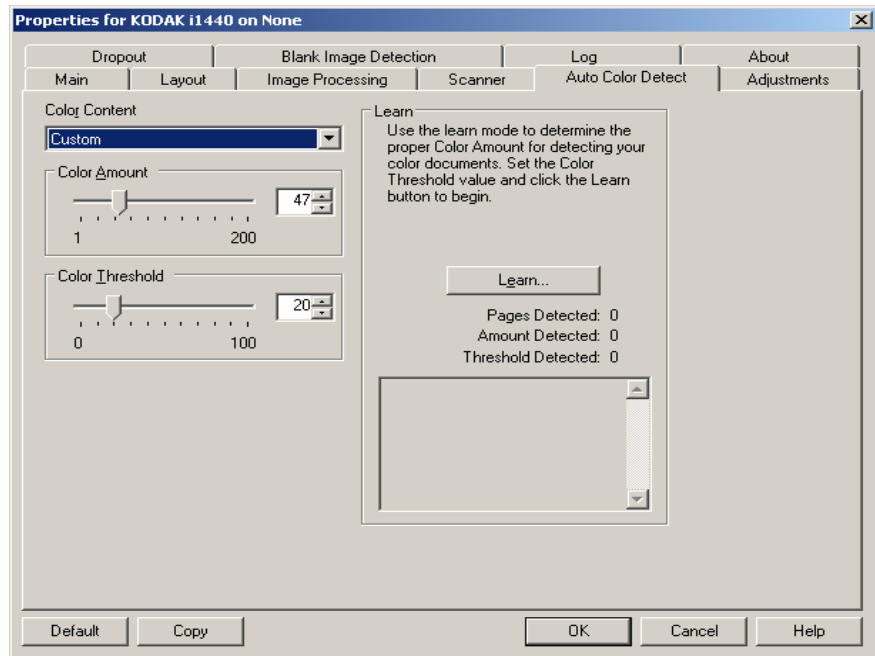
Ultrasonic Detection — check this option to set multi-feed detection.

- **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 to 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.
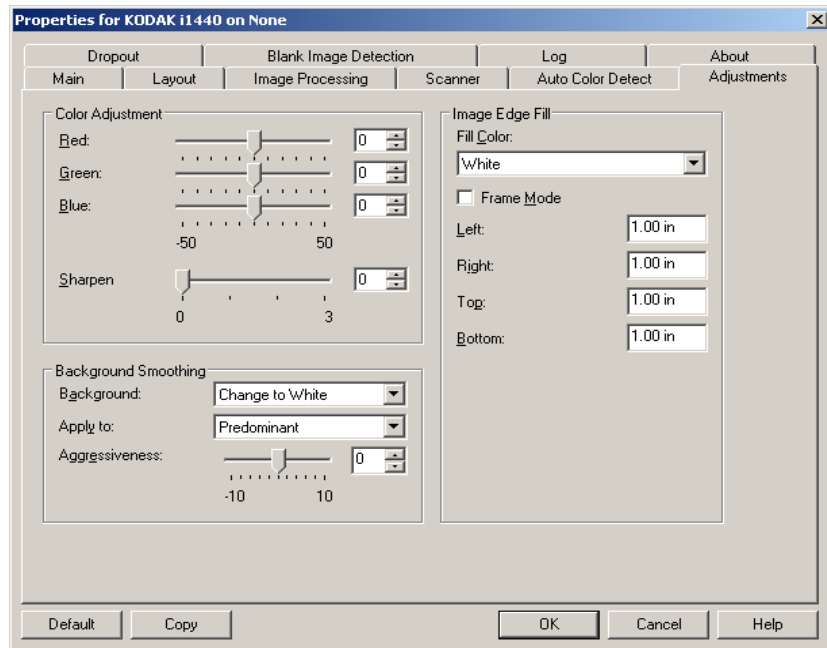
1. Click **Learn** and follow the prompts.

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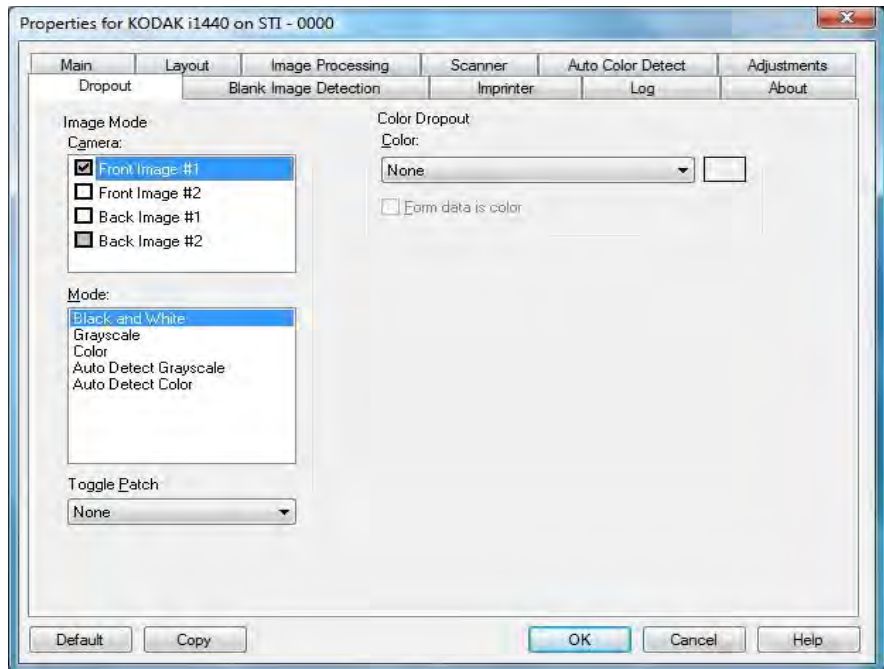
Image Edge Fill — fills the edges of the final electronic image by covering the area with the specified color. Image Edge Fill is performed after all other image processing options have been applied.

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.
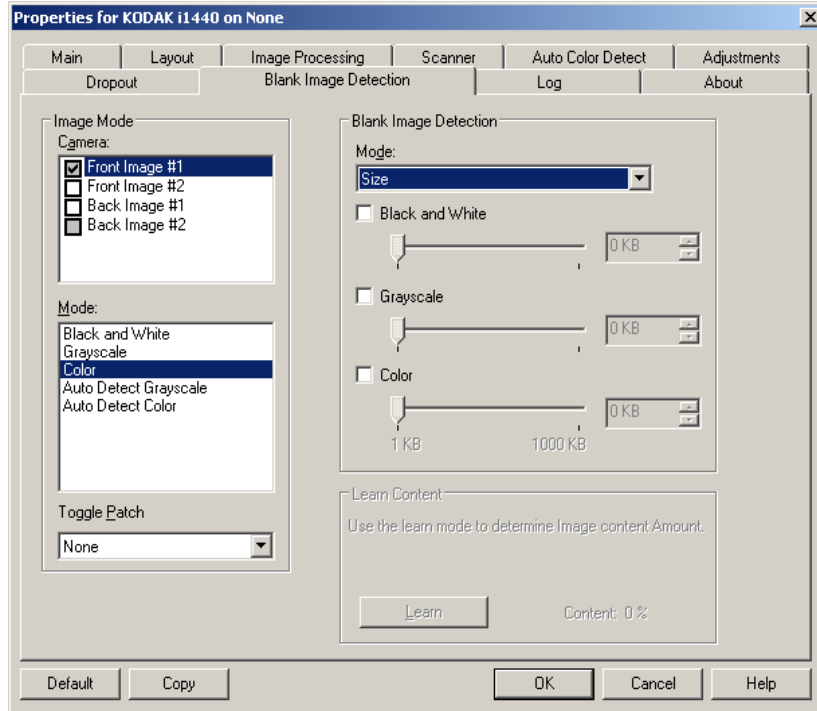

The Dropout tab is used to eliminate a form's background so that only the entered data is included in the electronic image (i.e., remove the form's lines and boxes). For black and white images, these settings effect the grayscale version of the document which the scanner analyzes to produce that electronic 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).
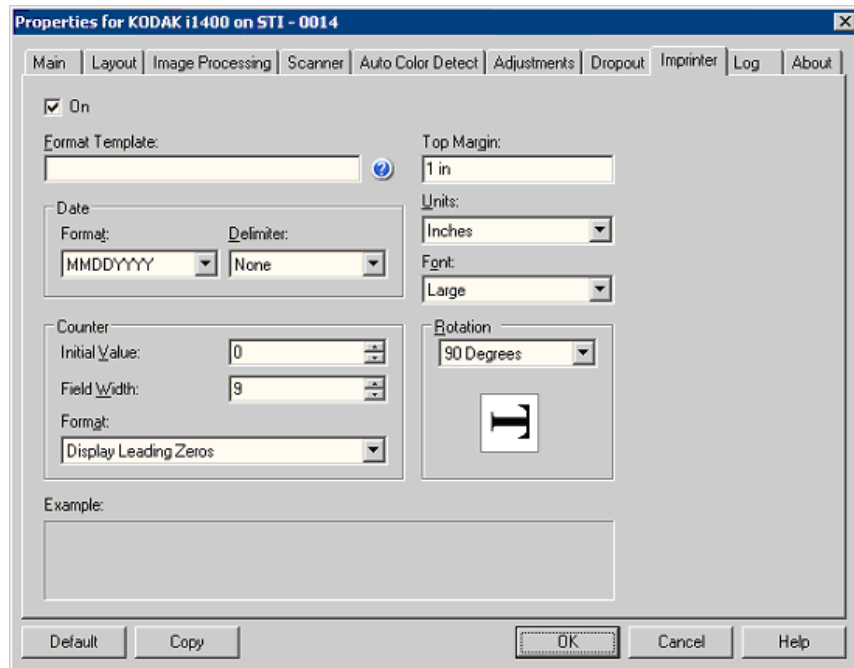
  Learn Content — allows the scanner to determine the content amount based on the documents to be scanned. Click **Learn** to use this function.

  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.

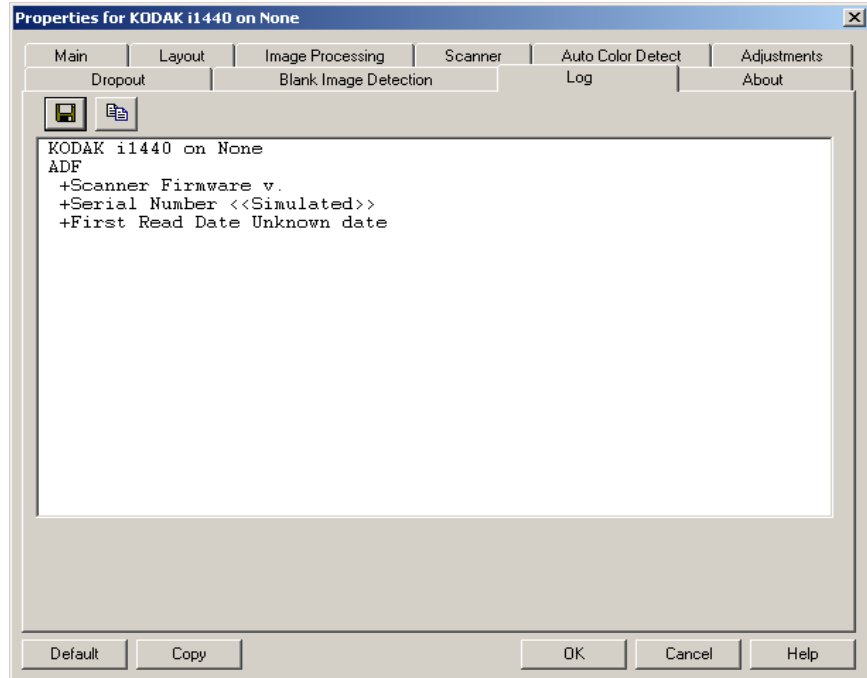**Units** — select **Inches**, **Centimeters** or **Pixels**.

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.