Kodak

i4x50 Series Scanners

Scanning Setup Guide
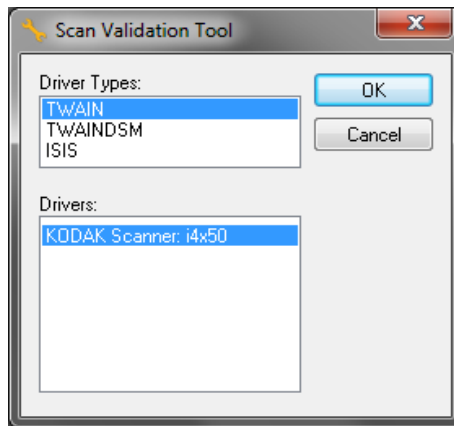for TWAIN Applications

Using the TWAIN Datasource

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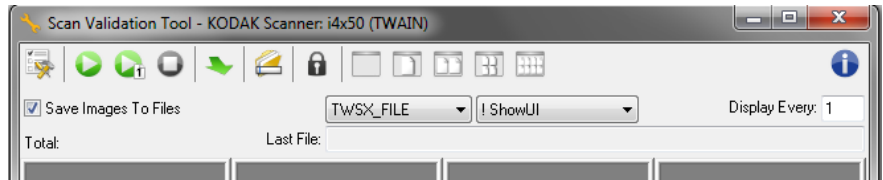
Starting the Scan Validation Tool

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

2. Select **TWAIN** for the Driver Type and the **KODAK Scanner i4x50** as the driver.

   The Scan Validation Tool dialog box will be displayed.

The Scan Validation Tool dialog box

The Scan Validation Tool (SVT) is a diagnostic application provided by Kodak Alaris. 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 TWAIN Datasource.
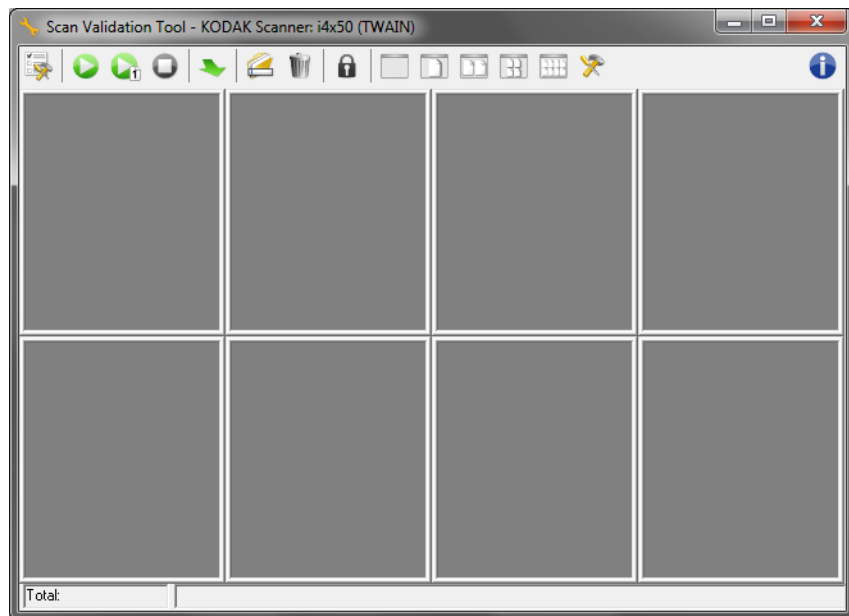
NOTE: The Scan Validation Tool is not intended to be used as a production scanning application. There are many full featured applications that support the *Kodak* i4x50 Scanners. The *Kodak* Capture Pro Software Limited Edition scanning application that is included with this scanner is a good choice 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 only available when **Files to Save on the TWAIN Settings screen** is selected.

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.

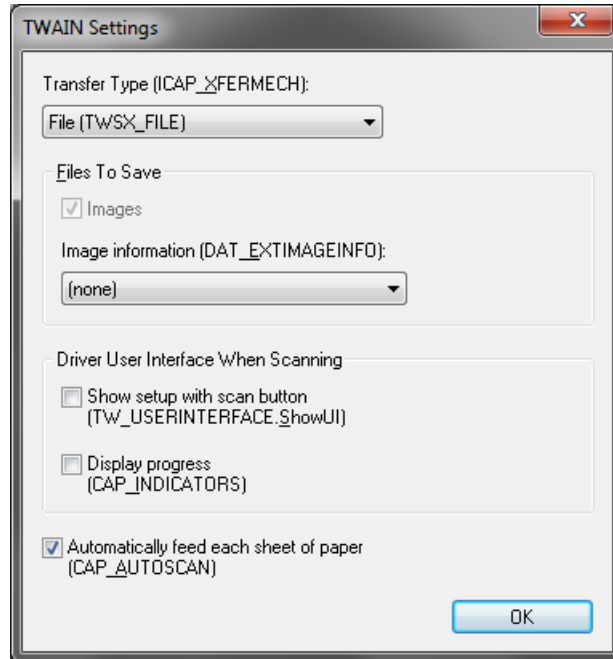**Eight Image Display mode** — displays eight images at a time.

TWAIN Settings — displays the TWAIN Settings screen.

About: displays the scanners' version and copyright information as well as a link to the Kodak Alaris website to download the latest driver updates.

TWAIN Settings screen

When you click the TWAIN Settings icon the following screen is displayed.

Transfer Type (ICAP_XFERMECH) — allows you to select which TWAIN transfer type to use.

- **File (TWSX_FILE)**: the driver saves the image directly to a file. SVT reads the image from that file for display.
- **Memory (TWSX_MEMORY)**: the driver transfers the image into memory created by SVT.
- **Native (TWSX_NATIVE)**: the driver transfers an uncompressed bitmap representation of the image into memory created by the driver and then the memory ownership is given to SVT.

Files To Save

Images — when selected, scanned images will be saved to the specified *Destination* directory with the specified *Destination* prefix.

NOTE: This is not available for *Transfer Type - File (TWSX_FILE)*.

Image information (DAT_EXTIMAGEINFO) — the information is saved in a .xml file. The file will be saved to the specified *Destination* directory with the specified *Destination* prefix and with the associated image number.

- **(none):** no image information is saved.
- **All:** all image information will be saved.
- **Only barcode data:** just barcode related image information will be saved.

Driver User Interface When Scanning

Show setup with scan button (TW_USERINTERFACE.ShowUI) — displays the Main screen of the TWAIN datasource when a scan is initiated.

NOTES:

- Scanning will not start until the Scan button is selected on the Scan Validation Tool dialog box.

- All error and progress messages will be displayed.

Display progress (CAP_INDICATORS) — displays any error and progress messages during scanning.

Automatically feed each sheet of paper (CAP_AUTOSCAN) — during scanning, each document will automatically be scanned; otherwise, the user decides when the scanner will scan the next document (i.e., by using the **Scan One Page** button).

OK — saves any changes and closes the TWAIN Settings dialog box.

Using the TWAIN Datasource

The *Kodak* i4250, i4650 and i4850 Scanners can provide a wide variety of electronic images. This can be done by using the TWAIN Datasource in concert with your scanning application. The TWAIN Datasource is the part of the capture system which links the scanner to your scanning application.

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

How do I begin?

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

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

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

- **Image** Settings: clicking the **Settings** button on the main Scanner window, displays the Image Settings window. From this window you can set your image processing parameters by using the General, Size, Adjust, Enhance and Detect tabs. You can also access the Device settings, by clicking the **Device** button or the Advanced settings by clicking the **Advanced Image Setup** icon.

- **Device** Settings: the Device button is located on the Image Settings window. When you select **Device**, you will have access to the General, Transport, Multifeed and Patch tabs (if you have the Enhanced Printer Accessory installed, the Printer tab will also be available). From the Device Settings window, you can also access Diagnostics.

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

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

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

Creating a new Setting Shortcut

From the main Scanner window:
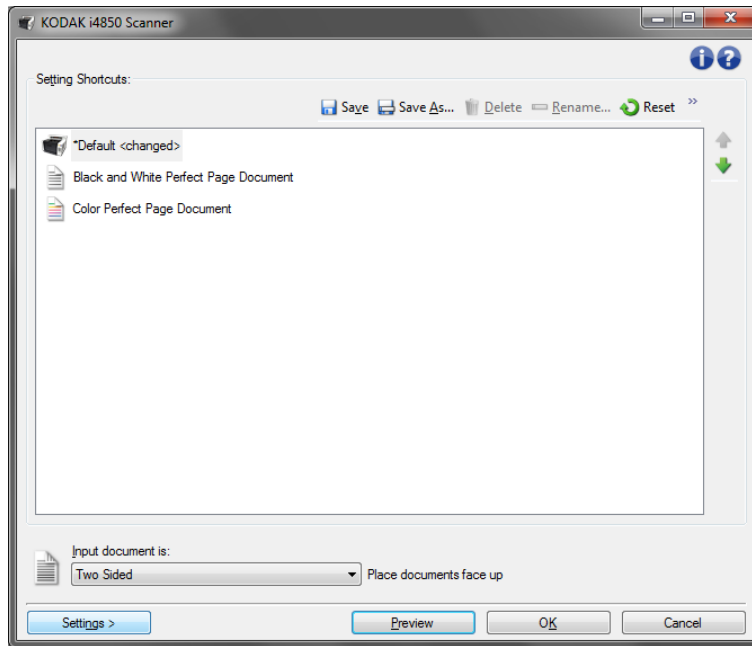
1. Select a Setting Shortcut from the Setting Shortcuts list. It is recommended that you select a Setting Shortcut that best describes the desired image output.

2. Determine if you want to capture an electronic image of the front of your document, back of your document or both sides of your document and make the selection from the *Input document is* drop-down list.

3. Select **Settings** on the main Scanner window. The General tab of the Image Settings window will be displayed.

4. Select the appropriate options on the General tab.

   NOTE: If necessary, review each setting on the other tabs and make any changes.

5. Place one representative document in the input elevator of the scanner.

6. Select **Preview** to review the resulting image.

   NOTE: If the images are not acceptable, you can either select a different predefined Setting Shortcut or make additional changes on the rest of the tabs on the Image Settings window.

7. Define the desired Device settings by selecting **Device** on the Image Settings window to display the Device Settings window.

8. Review each tab and select the appropriate options or actions you want the scanner to perform.

9. Select **Home** to return to the main Scanner window.

10. Select **Save As** to display the Save As window.

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

Changing Image settings

1. From the main Scanner window select a Setting Shortcut from the Setting Shortcuts list that best describes the desired image output.

2. Select an **Input document is** option from the main Scanner window.

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

4. Before making any adjustments, browse through the tabs on the Image Settings window to get familiar with options that are available.

5. For each option you want to use, make the appropriate selections you want the scanner to perform when scanning.

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

Changing Device settings

1. From the main Scanner window select a Setting Shortcut from the Setting Shortcuts list that best describes the desired output.

2. Select **Settings** to access the Image Settings window.

3. Select **Device**. The Device Settings window will be displayed.
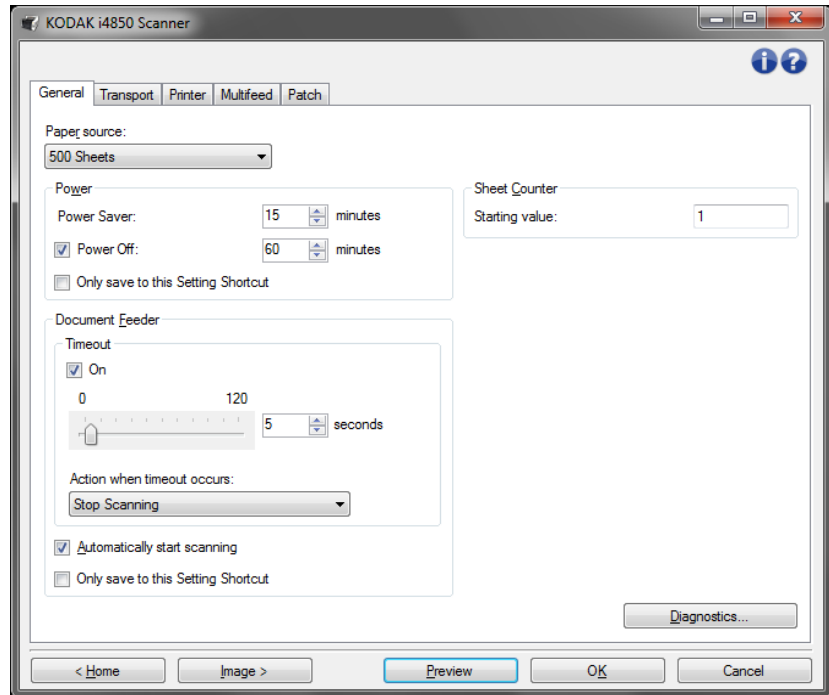
4. Before making any adjustments, click through the tabs on the Device Settings window to get familiar with features that are available. See the section entitled, "The Device Settings window" for information about these features.

5. For each option you want to use make the appropriate selections you want the scanner to perform when scanning.

6. When finished, select **Home** to return to the main Scanner window and click **Save** to save your selections to the Setting Shortcut.

The main Scanner window

The main Scanner window is the home window of the scanner's user interface. You can scan by simply selecting a Setting Shortcut and then selecting **OK/Scan**.
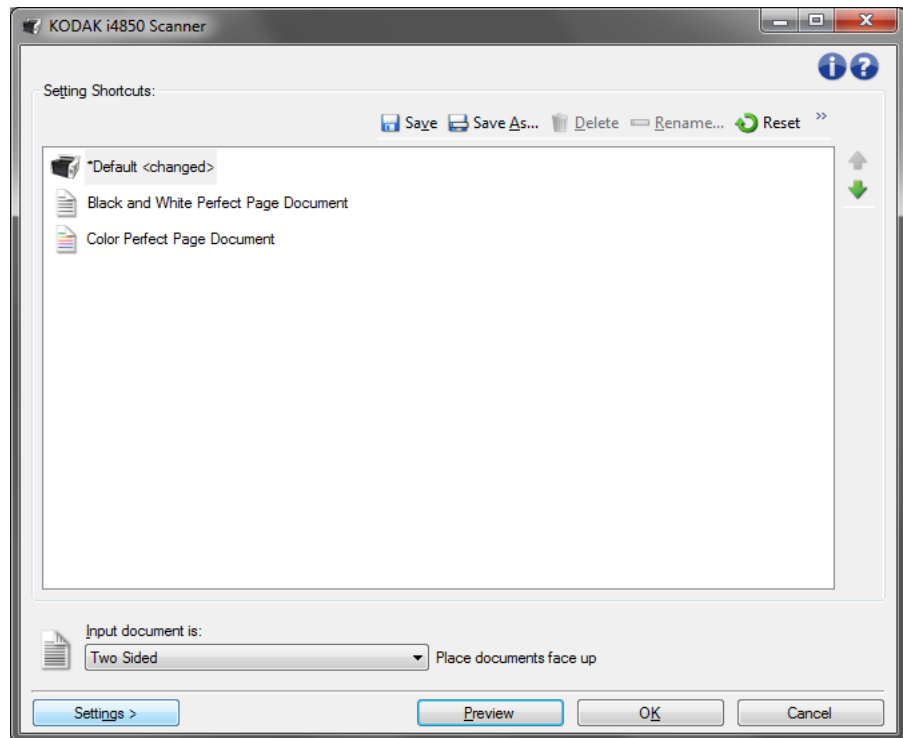
Setting Shortcuts — provides a listing of the Setting Shortcuts currently set up. The supplied shortcuts are:

- **Default** — the scanner's default settings
- **Black and White Perfect Page Document**
- **Color Perfect Page Document**

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

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

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

NOTE: Be sure to place your documents face down in the input elevator.

Icons

🖫	**Save** — saves any changes made to the selected Setting Shortcut.
🖫	**Save As** — displays the Save As window allowing you to save your current settings as a new Setting Shortcuts.
🗑	**Delete** — deletes the selected Setting Shortcut; you will be prompted for confirmation. This is only available for shortcuts you have created.
▭	**Rename** — allows you to rename the selected Setting Shortcut. This is only available for shortcuts you have created.
↺	**Reset** — allows you to undo any unsaved changes that have been made to the selected Setting Shortcut (e.g., name is in italics and appended with *<changed>*).
↻	**Restore** — displays the Restore window allowing you to undo any changes that have been made to the shortcuts supplied with the scanner. This is only available when one or more supplied shortcuts have been changed or removed.
📥	**Import** — imports a set of Setting Shortcuts by replacing all current shortcuts. When selected, you will be prompted for confirmation and the operating system's File Open window is displayed allowing you to select the shortcut set you want to import.
📤	**Export** — exports all the current Setting Shortcuts to a shortcut set. When selected, the operating system's File Save window is displayed allowing you to select the folder and file name for the shortcut set.
⬆	**Move Up** — moves the selected Setting Shortcut up one position in the Setting Shortcut list. When you move a Setting Shortcut, it will stay in that position until you move it again.
⬇	**Move Down** — moves the selected Setting Shortcut down one position in the Setting Shortcut list.

NOTES:

• **Delete, Rename, Restore, Import** and **Export** are not available if the selected Setting Shortcut is being changed (e.g., name is in italics and appended with *<changed>*).

• When you move a Setting Shortcut, it will stay in that position until you move it again.

• If you want to transfer Setting Shortcuts to another PC: select **Export** on the PC that has the shortcuts you want to transfer and then select **Import** on the other PC.

  - If you want to add a Setting Shortcut to an existing shortcut set:
    1. Select **Import** to load the shortcut set.

    2. Create the new Setting Shortcut.

    3. Replace the shortcut set by selecting **Export** and save using the same name.

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

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

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

NOTE: If you don't save, changes will remain in effect for the current scan session.

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

Information Icons

About: displays the scanners' version and copyright information. The About dialog box also provides a link to the Kodak Alaris website to download the latest driver updates.

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

The Image Settings window

From this window you can define image processing options by using the available tabs. The values used in Image Settings are saved in the selected Setting Shortcut. The Image Settings window includes the following tabs: General, Size, Adjust, (color/grayscale and black and white), Enhance and Detect.

Side — allows you to select which side and image to configure (e.g., Front, Back, Both: Color (24-bit), etc.). All image settings will be applied to the selected image.
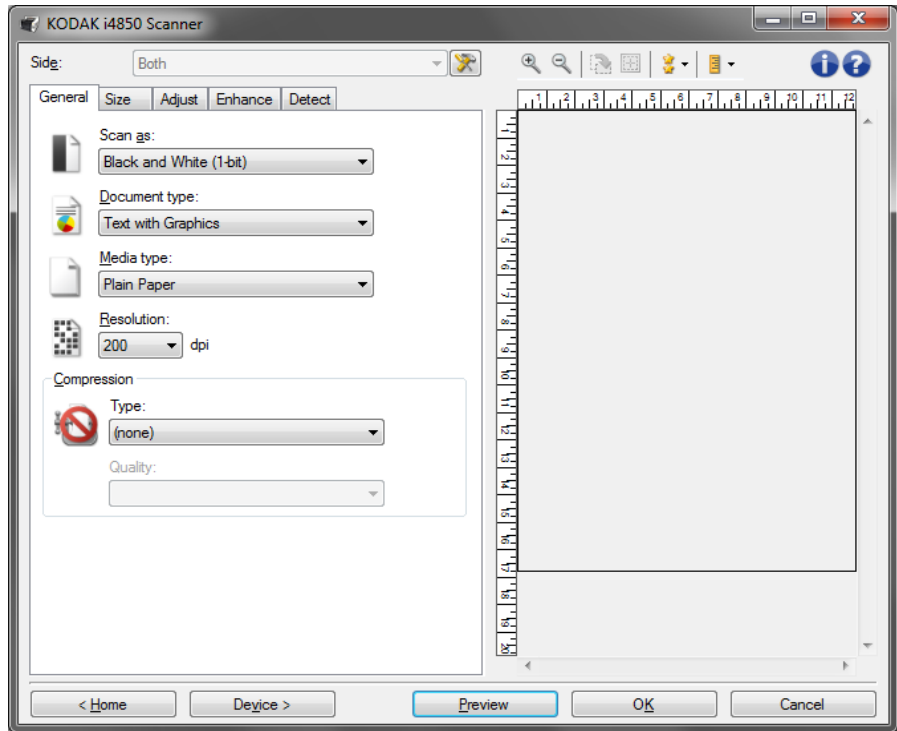
NOTE: The *Side* option is only available when advanced settings have been selected on the Advanced tab.

Advanced Image Setup: displays the Advanced tab.

Toolbar buttons

|	
🔍➕	**Zoom In**: enlarges the image that is currently being displayed in the preview area.
🔍➖	**Zoom Out**: reduces the image that is currently being displayed in the preview area.
🔄	**Rotate Outline**: rotates the outline 90 degrees. NOTE: This is only available if the rotated outline fits in the scanner's maximum width.
⊡	**Center Outline**: adjusts the X origin of the outline such that the outline is centered within the scanner's maximum width.
⭐▾	**Preview Quality:** selects the quality of the scanning image. • **Normal**: displays acceptable image quality at a lower resolution. • **High**: displays the most accurate representation of the actual image. The image that is displayed in the preview area is a good representation of what the final image will look like. NOTE: Depending on the document content, you may need to zoom in to see a true representation of the image.
▤▾	**Units**: selects the unit of measurement for the scanner; this includes the preview area and any size-related options. The Units options are: **Inches, Centimeters** and **Pixels**.

Preview area

The preview area displays a sample image that is based on your current shortcut settings. An image will be displayed in this area after a preview scan has been performed.

Outline — if you select **Document: Manually Select** or **Image: Part of document** on the Size tab, the preview area will also show the current Outline selections. If the outline does not align with your preview image, you may use the mouse to adjust the size and location of the outline. As the mouse cursor moves around the outline, the cursor will change indicating that you can adjust the outline by pressing and holding the left mouse button.

• **Move**: place the mouse cursor within the outline to adjust the location of the outline.

• **Corner**: place the mouse cursor over one of the corner graphics to adjust two sides at the same time.

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

- **Rotate**: place the mouse cursor over the rotate graphic to adjust the angle of the outline.

Home — returns you to the main Scanner window.

Device — displays the Device Settings window.

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

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

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

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

Information Icons

About: displays the scanners' version and copyright information. The About dialog box also provides a link to the Kodak Alaris website to download the latest driver updates.

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

General tab

The General tab contains commonly used image options. In most cases, you will not have to change options on other tabs.
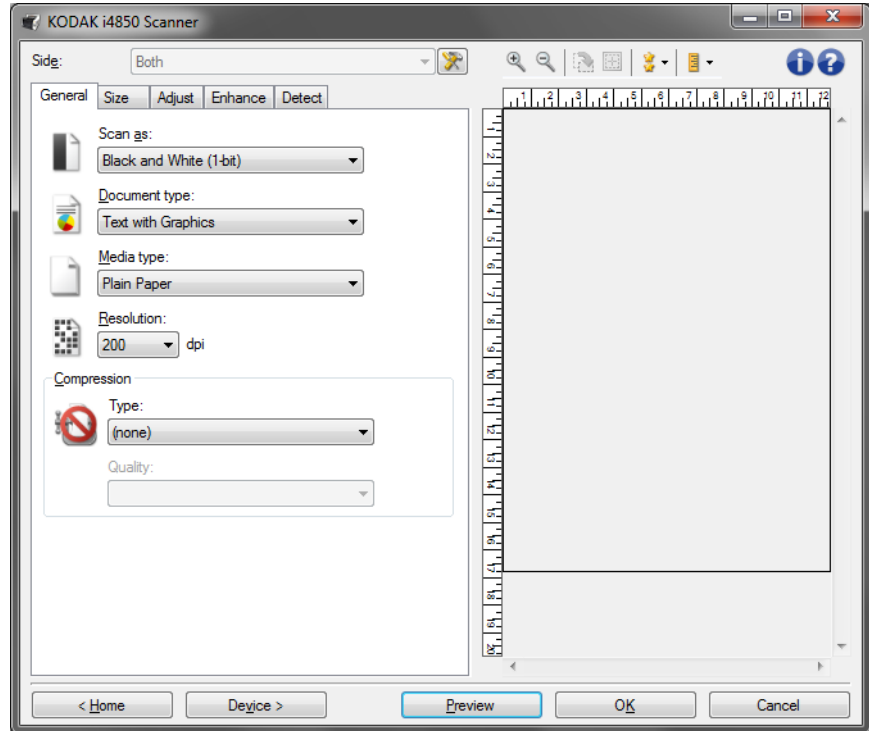
Scan as — allows you to select the electronic image format.

- **Color (24-bit)**: produces a color version of your document.

- **Grayscale (8-bit)**: produces a grayscale version of your document.

- **Black and white (1-bit)**: produces a black and white version of your document.

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

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

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

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

- **Text with Photographs**: the documents contain a mix of text and photographs.

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

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

Resolution — allows you to select the dots per inch (dpi), which is a determinant of a better quality image. It may also increase scanning time and image size. The options are: 100, 150, 200, 240, 250, 300, 400, 500 and 600 dpi.

Compression — allows you to reduce your electronic image size.

- **Type**: you can select to scan images into several different formats.

    NOTE: The **Group-4** option is only available for *Scan as: Black and White (1 bit)*.

    - **(none)**: no compression, which may produce a large image size.
    - **Group-4**: uses a CCITT standard to compress a black and white image, often used in conjunction with TIFF files.
    - **JPEG**: uses JPEG techniques to compress a color/grayscale image.

- **Quality** — if you choose JPEG compression, select one of the quality options:

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

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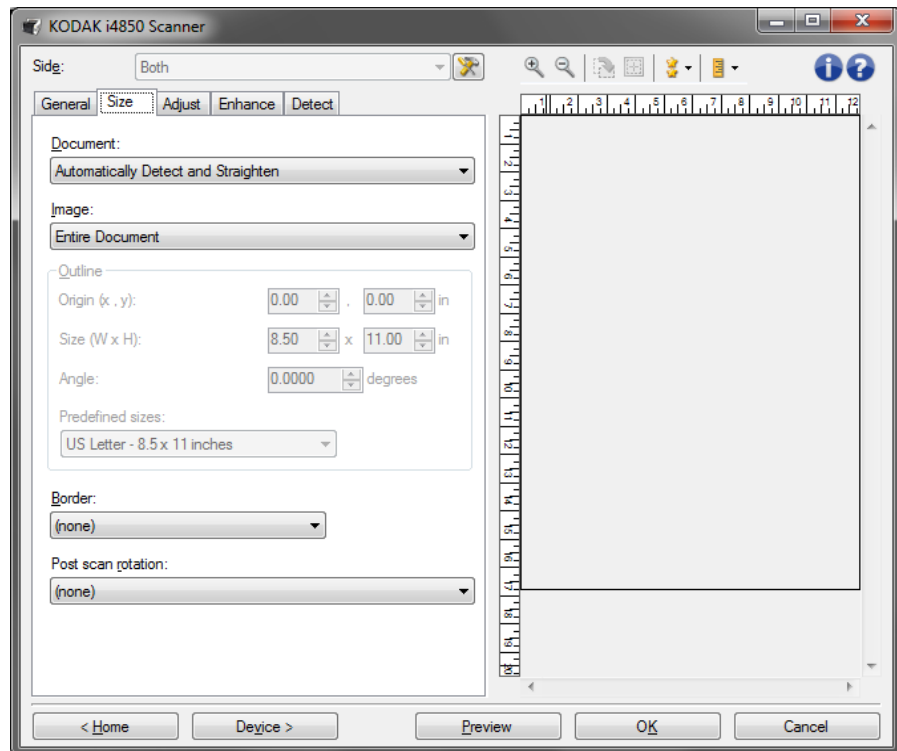
Document — allows you to select how the scanner will crop your document as it is being fed through the scanner.

- **Automatically Detect and Straighten**: the scanner will automatically find each document (regardless of size) and will straighten any document that may have been fed crooked.

- **Automatically Detect**: the scanner will automatically find each document (regardless of size). If a document is fed crooked, it will not be straightened.

- **Manually Select**: the scanner will return an image based on the area you specify with the Outline options. It is suggested that you only use this option for scan jobs that contain same-size documents.

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

- **Entire document**: if you select **Document: Automatically Detect and Straighten, Document: Automatically Detect** or **Document: Manually Select**, returns the entire document.

- **Part of the document**: if you select **Document: Automatically Detect and Straighten**, returns the portion of the document which you specify with the Outline options.

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

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

  - if you select **Document: Automatically Detect and Straighten** or **Document: Photograph, (x)** this is the distance from the left edge of the document and (y) is the distance from the top edge of the document.

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

- **Size (w, h)**: if you select **Document: Automatically Detect and Straighten** or **Document: Manually Select**, this is the width and height of the electronic image.

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

- **Angle**: allows you to select the angle of the outline.

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

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

Border — allows you to select what action to perform on the edges of your electronic image. This option is not applied to the preview image.

- **(none)**

- **Add**: includes up to approximately 0.25 cm (0.1 inches) of border around all of the image edges.

  NOTE: This option is only available for **Document: Automatically Detect** or **Document: Manually Select**.

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

  NOTES:
  - While this option will not remove large amounts of residual border, there is a possibility that a small amount of the document will be lost.

  - This option is only available when both **Document: Automatically Detect and Straighten** and **Image: Entire Document** are selected.

Post-scan rotation options — allows you to select any rotation to be applied to the electronic image after it has been scanned. This option is not applied to the preview image.

- **(none)**

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

- **90, 180, 270 degrees** — the amount of rotation that will be performed.

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

Landscape Feed Orientation	90 degrees	180 degrees	270 degrees
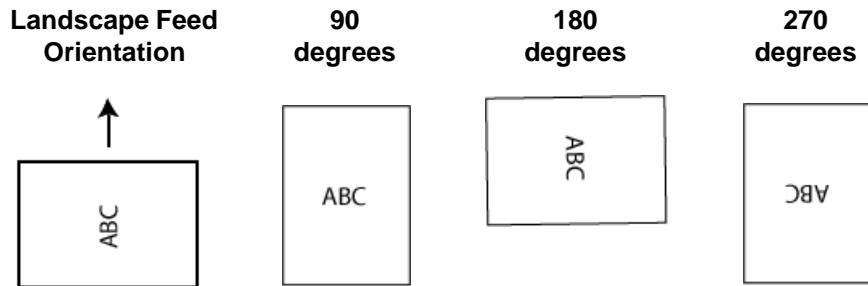
Adjust tab: black and white The options available on the Adjust tab depend on the *Scan as* selection on the General tab. The following options are based on a *Scan as* selection of **Black and White**.

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

- **Best - Intelligent QC:** this performs the same analysis as **Best** with the additional benefit of Intelligent QC (Quality Control). For challenging documents the grayscale version of the document is produced, allowing you final control over image quality within your application software.

   NOTE: This option is not available with *Kodak* Capture Pro Software. Limited Edition.

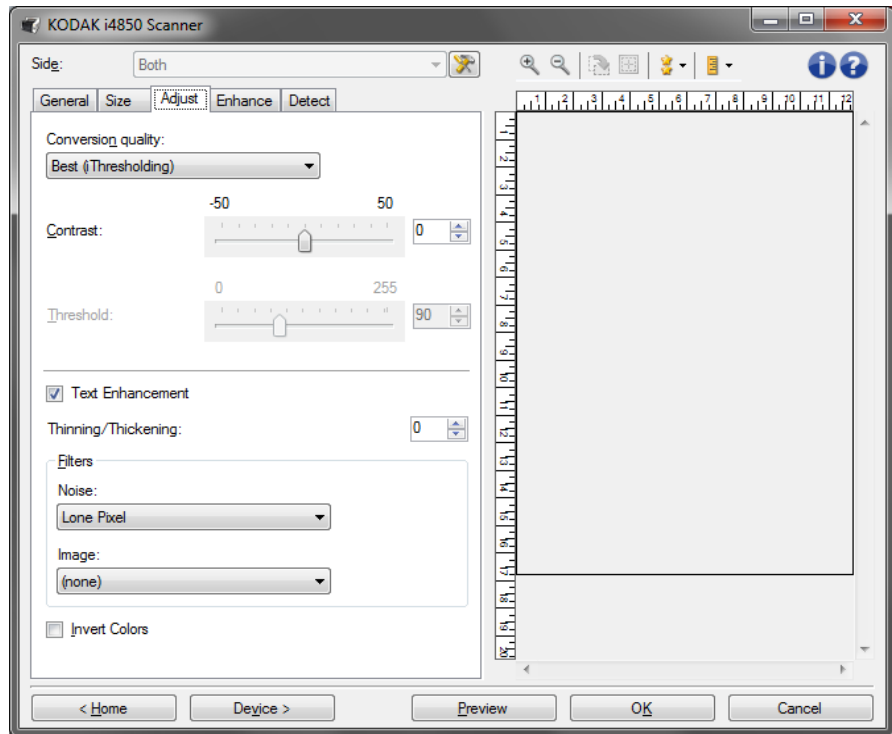- **Best (iThresholding)**: the scanner analyzes each document to produce the highest quality image. This option allows scanning of mixed documents with varying quality (e.g., faint text, shaded backgrounds, color backgrounds) and when scanning with consistent document sets.

- **Normal (ATP)**: allows you to determine the optimal settings to produce the desired image quality. This option works best when scanning with consistent document sets. You may also want to use this option if you have difficult documents such that you cannot find a *Contrast* setting for *Best* that produces the desired quality.

- **Draft (Fixed)**: allows you to select the grayscale threshold used to determine if a pixel is black or white. This option works best for high contrast documents.

Contrast — allows you to increase or decrease the difference between darker and lighter areas of the image. Decreasing this setting will make the image softer and reduce noise in the image. Increasing this setting will make the image clearer and make light information more visible. The options range from **-50** to **50**. The default is 0.

NOTE: This is only available for *Conversion quality: Best and Conversion quality: Normal.*

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

NOTE: This is only available for *Conversion quality: Normal and Conversion quality: Draft.*

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.

Filters
- **Noise**

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

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

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

Adjust tab: color or grayscale

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

NOTE: Most options have additional settings. Those settings will only be visible when the option is turned on. If all of the settings do not fit on the screen, a scroll bar will be displayed giving you access to all settings.
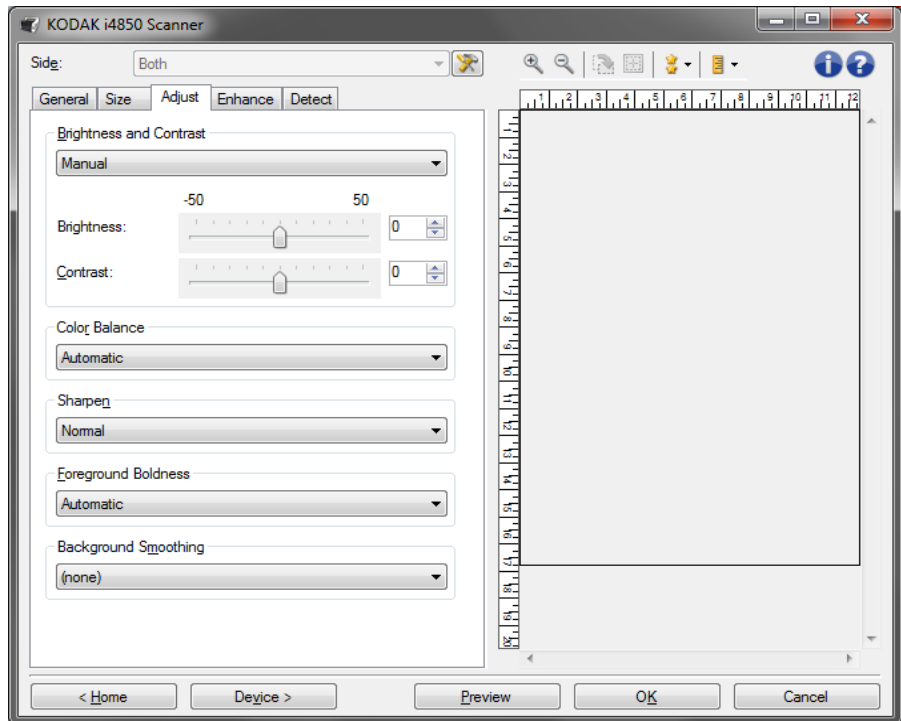
Brightness and contrast

- **(none)**

- **Automatic**

- **Manua**l: allows you to se specific values that will be used for all images:
  - **Brightness** — changes the amount of white in the color or grayscale image. The values range from **-50** to **50**.
  - **Contrast** — when increased, makes dark areas darker and light areas whiter. The values range from **-50** to **50**.

Color Balance
- (**none**)
- **Automatic**
- **Manual**: allows you to set specific values that will be used for all images:
  - **Red** — changes the amount of red in the color image. The values range from **-50** to **50**.
  - **Blue** — changes the amount of blue in the color image. The values range from **-50** to **50**.
  - **Green** — changes the amount of green in the color image. The values range from **-50** to **50**.

NOTE: Color Balance is not available for grayscale images.

Sharpen — increases how noticeable the edges within the image are.
- (**none**)
- **Normal**
- **High**
- **Exaggerated**

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.

Carter H. Selwick Carter H. Selwick Supervising Architect	*Carter H. Selwick* Carter H. Selwick Supervising Architect
Before	**After**

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

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**.

Enhance tab

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

NOTE: Most options have additional settings. Those settings will only be visible when the option is turned on. If all settings do not fit on the screen, a scroll bar will appear giving you access to all settings.
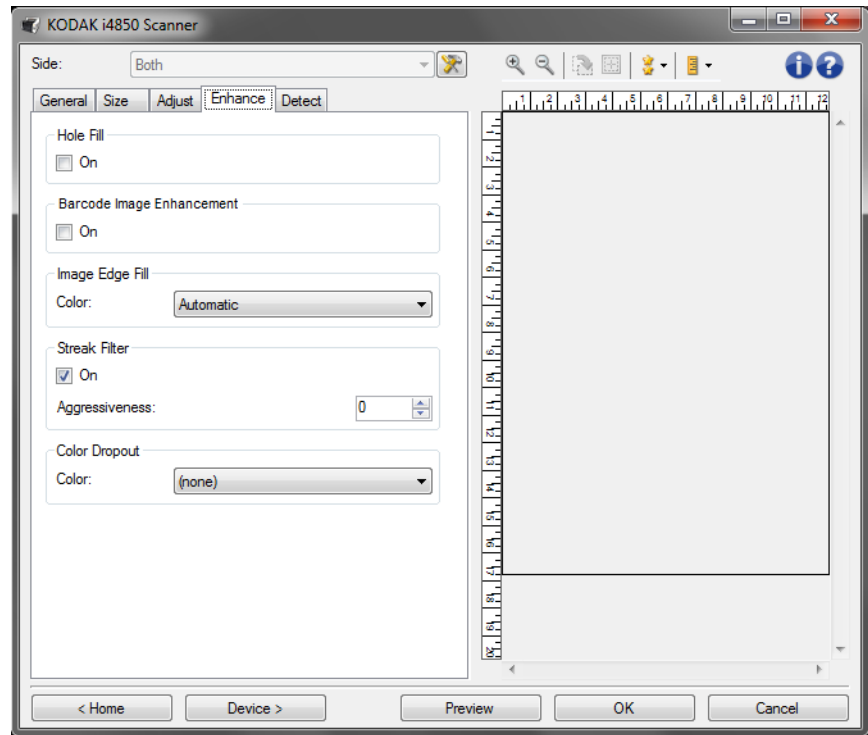
Hole Fill — allows you to fill in the holes that are around the edges of your document. The types of holes that are filled include: round, rectangular, and irregularly shaped (e.g., double-punched or those having a slight tear that could have occurred when the document was removed from a binder).

• **On**: turns hole fill on.

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

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 TWAIN Datasource and ISIS Driver, as the barcode reading functionality that Kodak Alaris provides is performed using high resolution grayscale data during image processing.

• **On**: turns barcode optimization on.

Image Edge Fill — fills the edges of the final electronic image by covering the area with the specified color. This option is not applied to the preview image.

- (none)
- **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.

> NOTE: **Automatic** and **Automatic - include tears** are only allowed when Automatically Detect and Straighten is set for cropping.

- **Color**: allows you to select the color to fill the edges with.
  - White
  - Black
- **All sides match**: when turned on, an equal amount will be filled in on all sides.

  > NOTE: This option is applied to all edges when **All sides match** is turned on.

- **Top**: determines how much of the top edge will be filled in.

- **Left/Right:** the option on the left will determine how much of the left edge will be filled in and the option on the right will determine how much of the right edge will be filled in.

- **Bottom**: determines how much of the bottom edge will be filled in.

  > NOTE: When using **Image Edge Fill,** be careful not to enter a value too large as it could fill in image data that you want to keep.

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.

- **On**: turns streak filter on.

- **Aggressiveness**: allows you to adjust the extent at which the streaks are filtered. The values range from -2 to 2. The default is 0.

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 effect the grayscale version of the document which the scanner analyzes to produce that electronic image.

- **Color**: select the desired dropout color.
  - **(none)**
  - **Multiple**: drops colors other than dark shades (e.g., black or dark blue ink)
 - **Predominate**: drops the predominant color

- **Red**
- **Green**
- **Blue**
- **Orange**
- **Orange and Red**

• **Aggressiveness**: allows you to adjust the extent at which colors are dropped. The values range from **-10** to **10**. The default is 0.

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

Detect tab

The Detect tab provides the following options.

NOTE: Some options have additional settings. Those settings will only be visible when the option is turned on. If all settings do not fit on the screen, a scroll bar will appear giving you access to all settings.
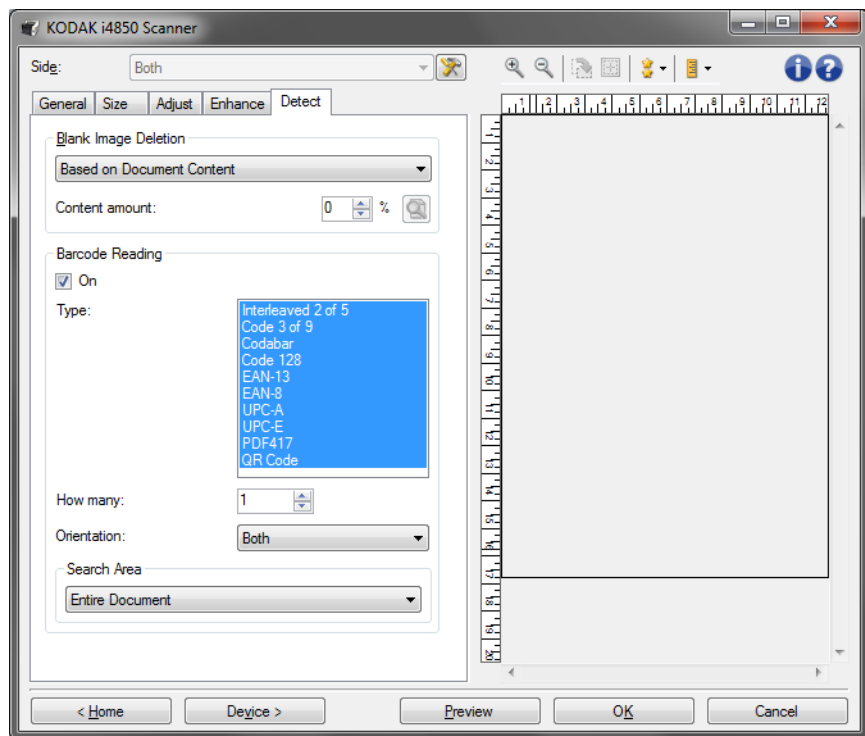
Blank Image Deletion — allows you to configure the scanner to not give blank images to the scanning application.

• **(none)**: all images are given to the scanning application.

• **Based on Document Content**: images will be considered blank based on the document content within the image.

  - **Content amount**: allows you to select the maximum amount of content that the scanner will consider to be blank. Any image that has more content than this value will be considered non-blank and will be given to the scanning application. The values range from 0 to 100 percent.

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

  NOTE: This option is only available when there is a preview image.

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

  - **Final image size:** allows you to select the minimum image size that the scanner will consider to be non-blank. Any image that is less than this value will be considered blank and will not be given to the scanning application. The values range from 1 to 1000 KB (1 KB equals 1024 bytes).

Barcode Reading — allows you to configure the scanner to search your images for barcodes and return the information to the scanning application. The barcodes will be read starting from top left to bottom right and returned to your application in that order.

- **On**: turns barcode reading on.

- **Type**: select one or more barcode types you want the scanner to search for:

  - Interleaved 2 of 5
  - Code 3 of 9
  - Codabar
  - Code 128
  - EAN-13
  - EAN-8
  - UPC-A
  - UPC-E
  - PDF417
  - QR Code

- **How many:** select the number of barcodes the scanner will search for. If more barcodes are on the page than are selected to be read, the first barcodes to be found, searching from top left to bottom right, will be read.

- **Orientation:** select the orientation of the barcodes to search for. Selections are: **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**
    - **Origin (x, y)**: (x) is the distance from the left edge of the image and (y) is the distance from the top edge of the image.
    - **Size (w, h)**: 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 to 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.
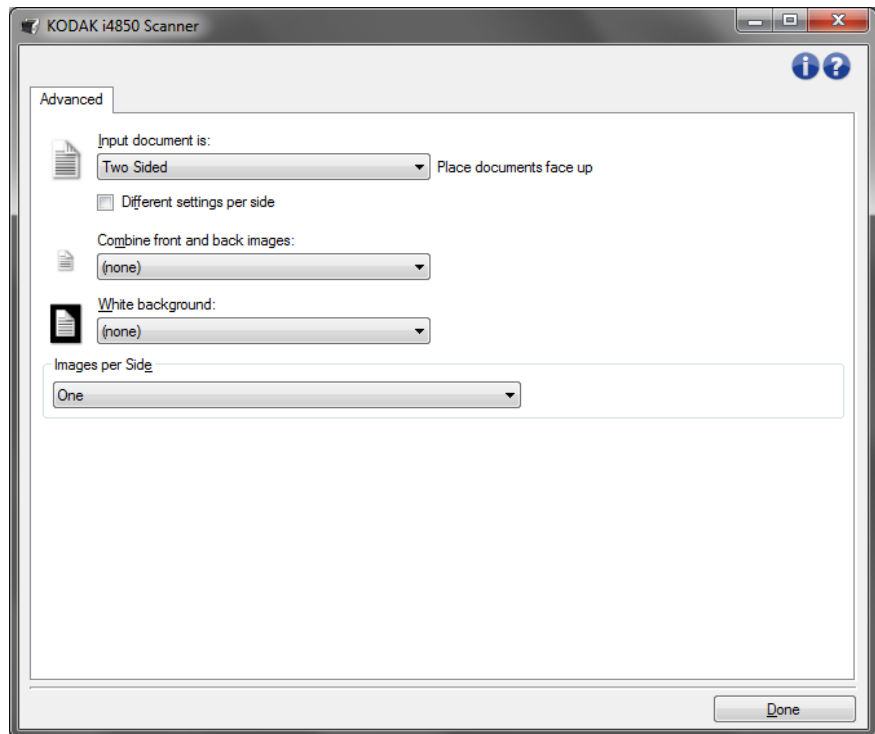
Advanced Image Setup

Advanced tab

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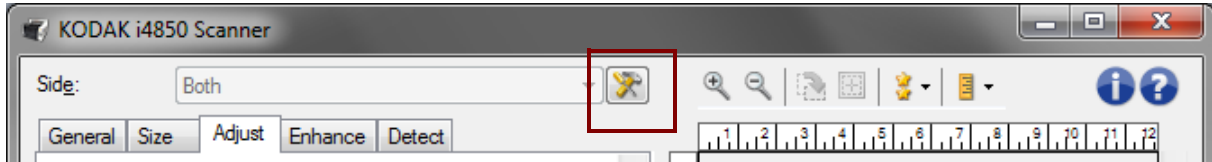

When you select the Advanced Image Setup icon, the Advanced tab will be displayed.

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

Different settings per side — by default, the settings you select apply to both sides of the image. Turn this option on if you want to select different image processing settings for each side of the document you are scanning. For example, if you want the front side to be color and the rear side to be black and white, first make sure that you have selected the **Two Sided** option from the *Input document is* drop-down list, then select the *Different settings per side* checkbox.
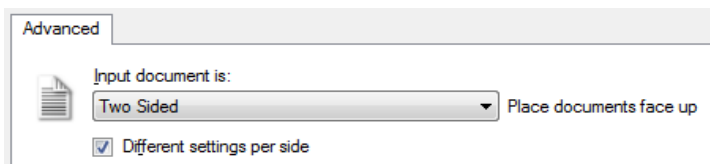
Once you have done this, the *Side* option on the Image Settings window will no longer be grayed out and you can select different settings for each side. Now that you have enabled **Different settings per side**, your initial selections will apply only to the front side of the document you are scanning. After you have made your selections for the front side, use the *Side* option to select the back side and then make the settings you want to apply to the back.
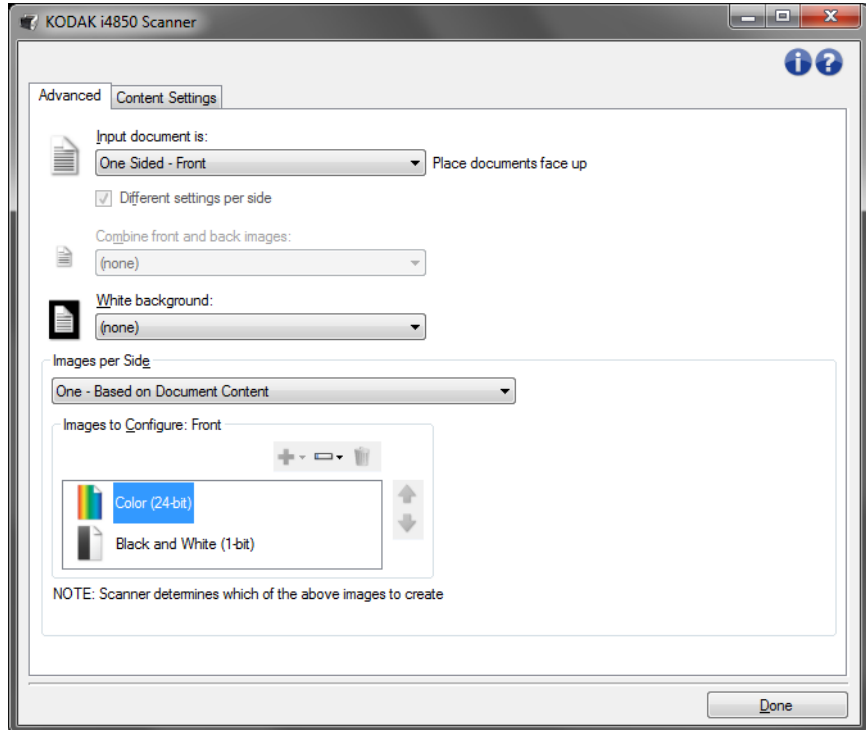
Combine front and back images — typically, for a document, one image is created for the front side and another image is created for the back side. Turn this option on if you want one image that contains both the front side and back side of the document. The selections are:

- **Front 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 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 of the front side within the image.

NOTES:

- This option is only available when **Input document is** is set to *Two Sided*, **Different settings per side** is turned off and **Images per side** is set to *One*; and the document is scanned from the *Document Feeder*.

- This option is not applied to the preview image.

- Scanner throughput will be reduced when this option is enabled. The reduction will be affected by the capability of the host PC.

White background — when turned on, indicates which side(s) of the document will see white instead of black where there is no paper.

- **(none)**: uses the black background for the front and back sides.

- **Both Sides**: uses the white background for the front and back sides.

- **Front Only**: only available when **Input document is** is set to *One Sided - Front.*

- **Back Only**: only available when **Input document is** is set to *One Sided - Back.*

The following are examples of when white background is used:

- Scanning non-rectangular documents and, in the final image, you want the area outside the document to be white instead of black.

- Scanning lightweight or thin paper, with printing on one side, and you do not want the black background to bleed through the document and appear in the final image.

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

- **One**: indicates you want the scanner to create one image.

- **One - Based on Document Content**: indicates you want the scanner to automatically detect if the document is color/grayscale or black and white.

- **One - Based on Toggle Patch**: indicates you want to tell the scanner, via a toggle patch document, if the document is color/grayscale or black and white.

- **Multiple**: indicates you want the scanner to create more than one image.

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

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

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

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

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

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

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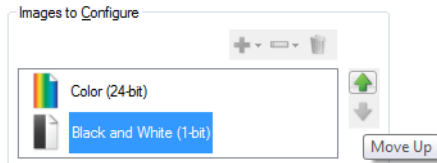
Toolbar buttons:

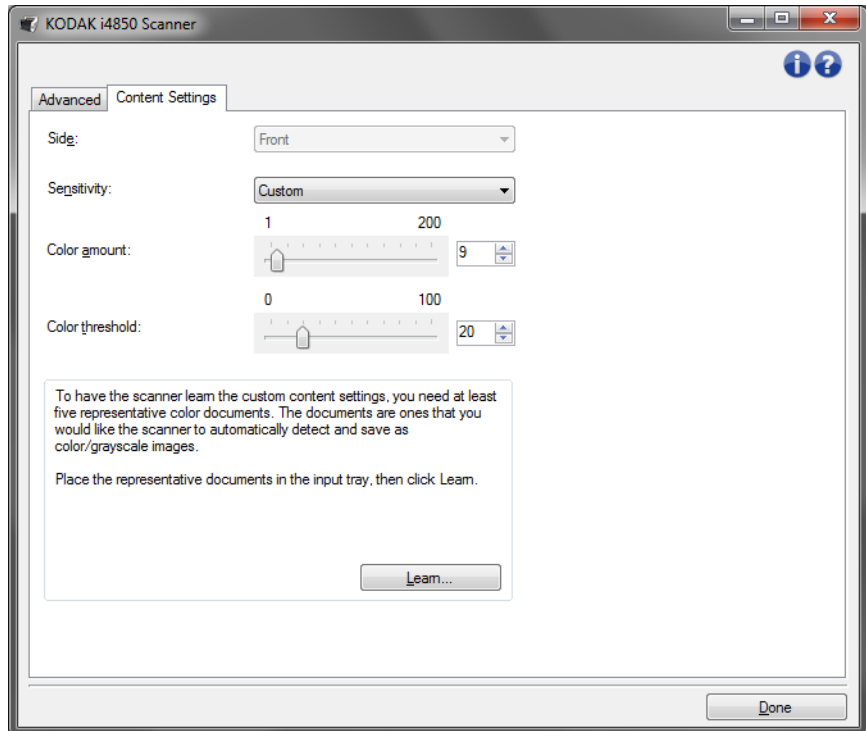|	
	Add: adds an image type to the bottom of the configuration list.
	Change: allows you to change the currently selected image type.
	Delete: removes the selected image type.

Done — returns you to the Image Settings window.

Content Settings tab

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

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

Sensitivity

- **Low**: documents requiring only a small amount of color to be saved as color/grayscale images. Used for capturing documents that are primarily black text with small logos, or contain small amounts of highlighted text or small colorful photos.

- **Medium**: documents requiring more color, as compared with the Low option, before they are saved as color/grayscale images.

- **High**: documents requiring more color, as compared with the Medium option, before they will be saved as color/grayscale images. Used for distinguishing documents containing medium- to large-size colorful photos from plain black text. Photos with neutral colors may require adjustments to the *Color Threshold* or *Color Amount* values in order to be captured correctly.

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

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

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

Color threshold — the color threshold or saturation (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 job set, you may need to manually adjust the *Color Threshold*.

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

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

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

2. Select **Settings** to display the Image Settings window.

3. Select the **Advanced Image Setup** icon on the Image Settings window to display the Advanced tab.

4. Select **Input document is: Two Sided.**

5. Select **Images per side: One – based on document content.**

   NOTE: The *Images to Configure* area will now be displayed on the Advanced tab and will contain a color image item and a black and white image item. The Content Settings tab will also be displayed.
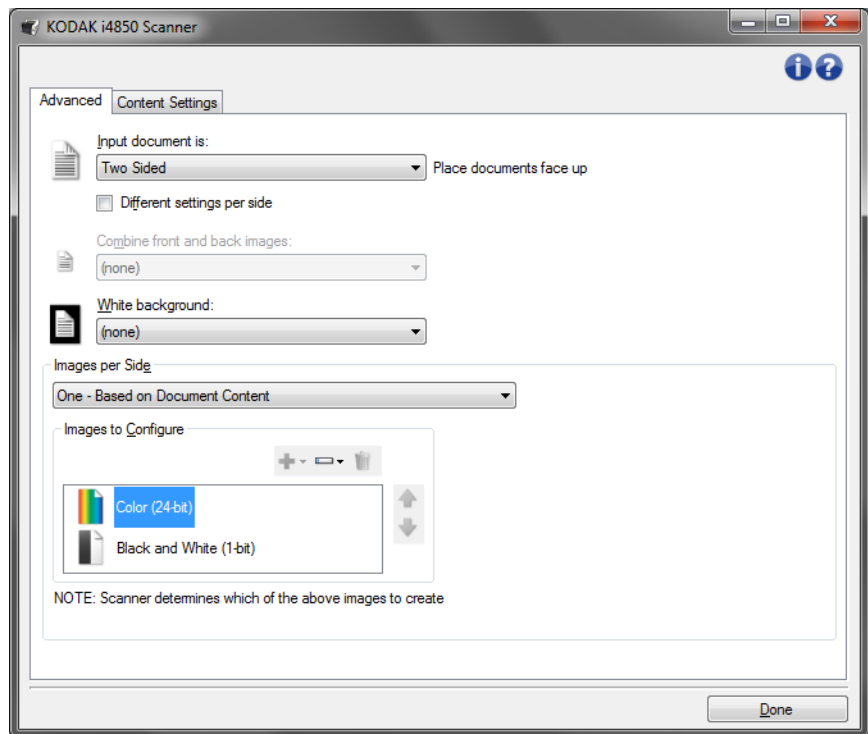
6. If you want a grayscale image instead of a color image, when enough color is detected in the document:

   • make sure *Color (24-bit)* is selected
   • select **Change** to display a list of options
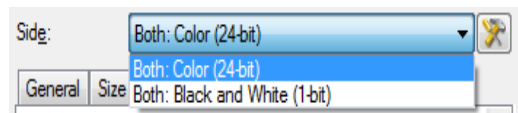   • select **Grayscale**

7. Go to the **Content Settings** tab.
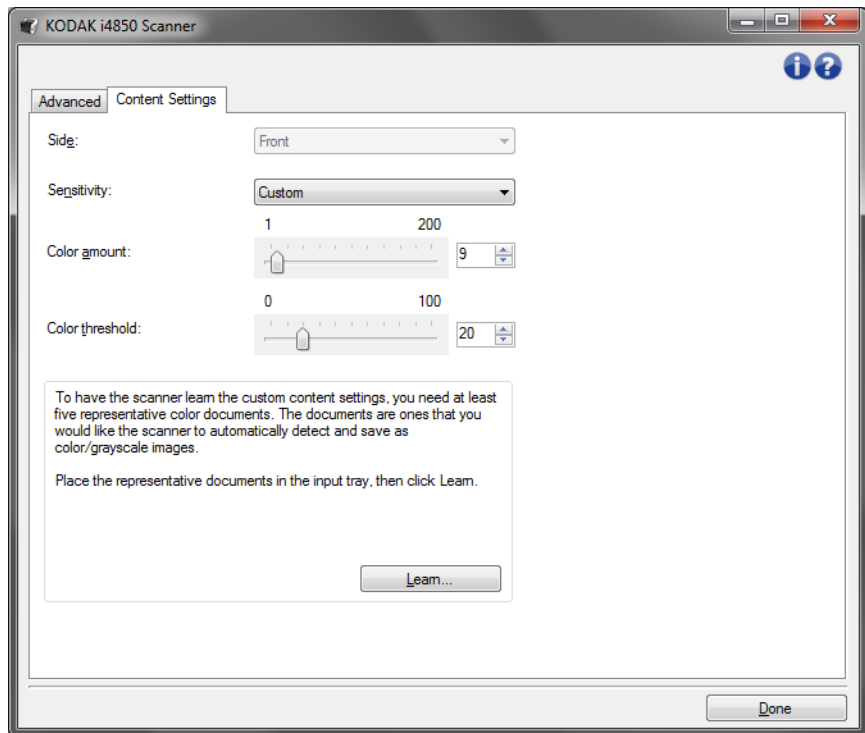
8. Select a **Sensitivity** option.

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

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

10. Select **Side: Both: Color (24-bit)**.

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

11. Select **Side: Both: Black and White (1-bit)**.

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

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

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

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

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

2. Select **Settings** to display the Image Settings window.

3. Select the **Advanced Image Setup** icon on the Image Settings window to display the Advanced tab.

4. Select **Input document is: Two Sided**.

5. Select **Images per side: Multiple**.

   NOTE: The *Images to Configure* area will now be displayed on the Advanced tab and will contain a color image item and a black and white image item.
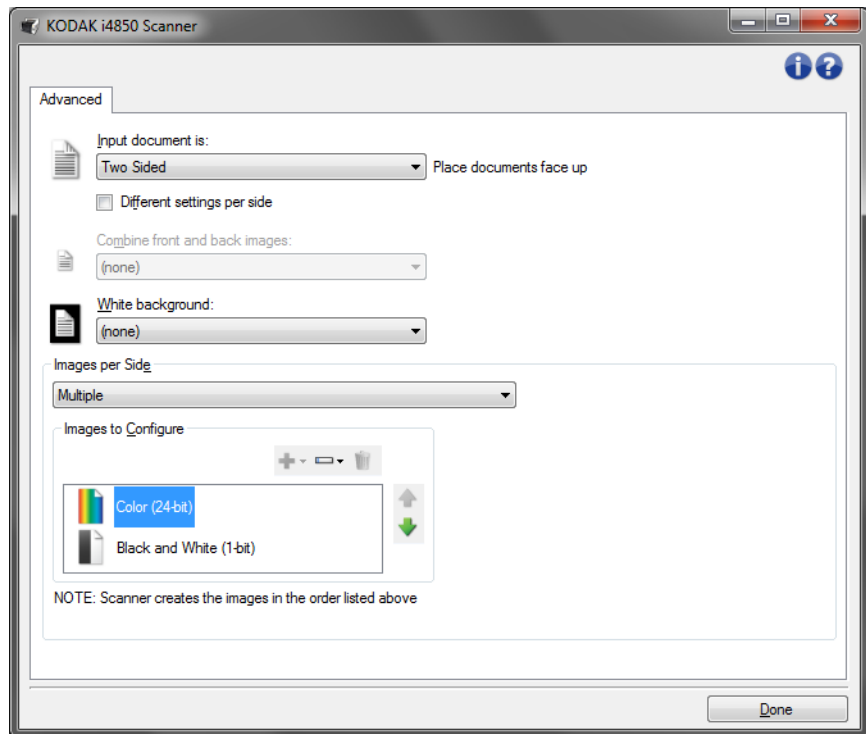
6. If you want a grayscale image instead of a color image, when enough color is detected in the document:

   • make sure *Color (24-bit)* is selected
   • select **Change** to display a list of options
   • select **Grayscale**

7. By default the scanner will produce the color/grayscale image first and deliver it to the scanning application, then it will produce and deliver the black and white image. If you want the black and white image to be produced and delivered first:

- make sure *Black and White(1-bit)* is selected
- select **Move up** to place the black and white image first in the list.
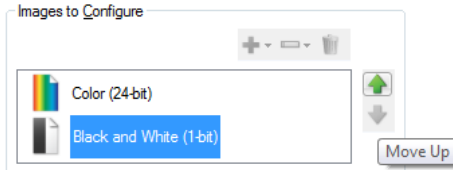
8. Select **Done** to return to the Image Settings window.

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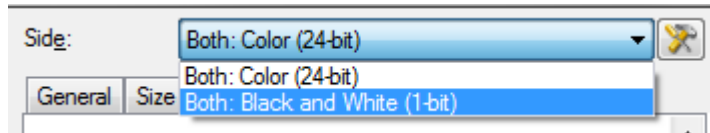
9. Select **Side: Both: Color (24-bit)**.

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

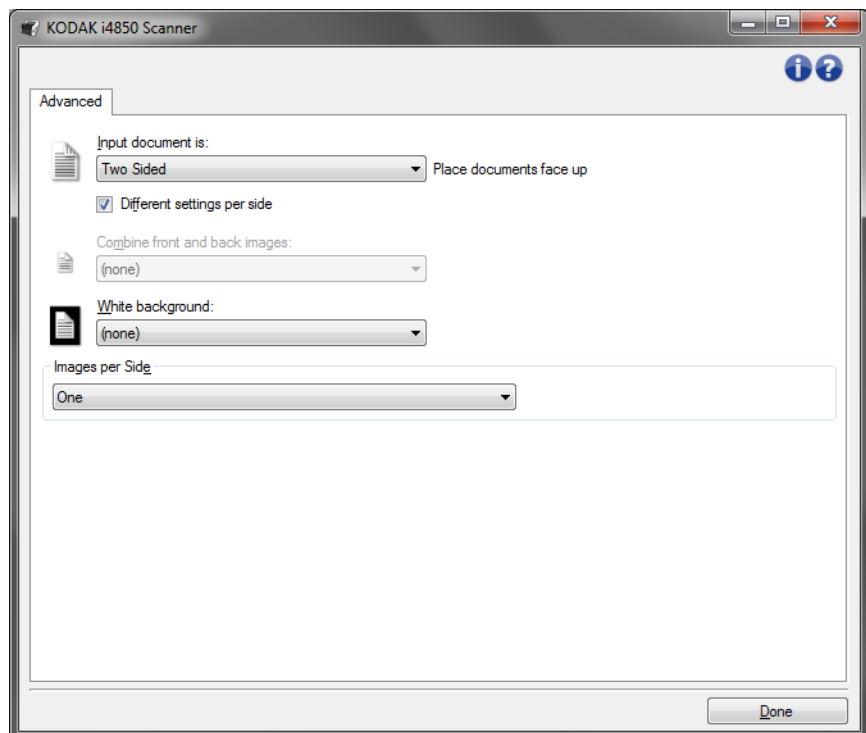10. Select **Side: Both: Black and White (1-bit)**.

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

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

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

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

1. If you are not already on the Advanced tab:

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

   - Select **Settings** to display the Image Settings window.

   - Select the **Advanced Image Setup** icon on the Image Settings window to display the Advanced tab.

2. Select **Input document is: Two Sided**.

3. Turn on the **Different settings per side** option.

4. Select **Images per side: One**.

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

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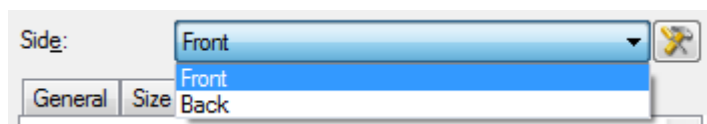
6. Select **Side: Front**.

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

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

8. Select **Side: Back**.

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

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

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

NOTE: If you selected any option other than *Images per side: One* in Step 4, two *Images to Configure* option groups will become available. You can then individually setup the images that will be produced for each side of the document.
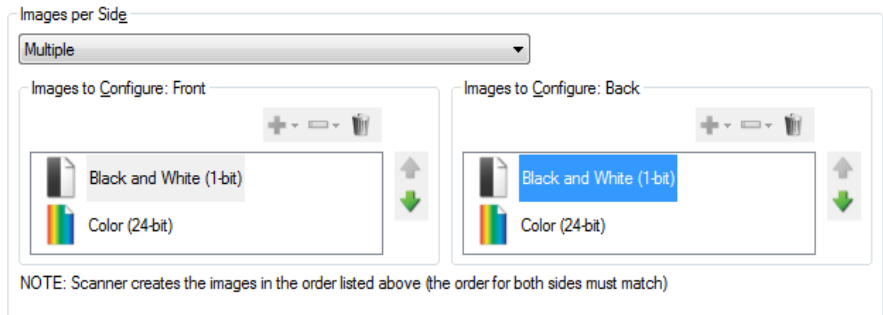
The Device Settings window

From this window you can set all scanner-specific options, as well as diagnostics, by using the available tabs. The values used in Device Settings are saved in the selected Setting Shortcut. The Device Setting window includes the following tabs: General, Transport, Printer (if you have an Enhanced Printer Accessory installed), Multifeed and Patch.
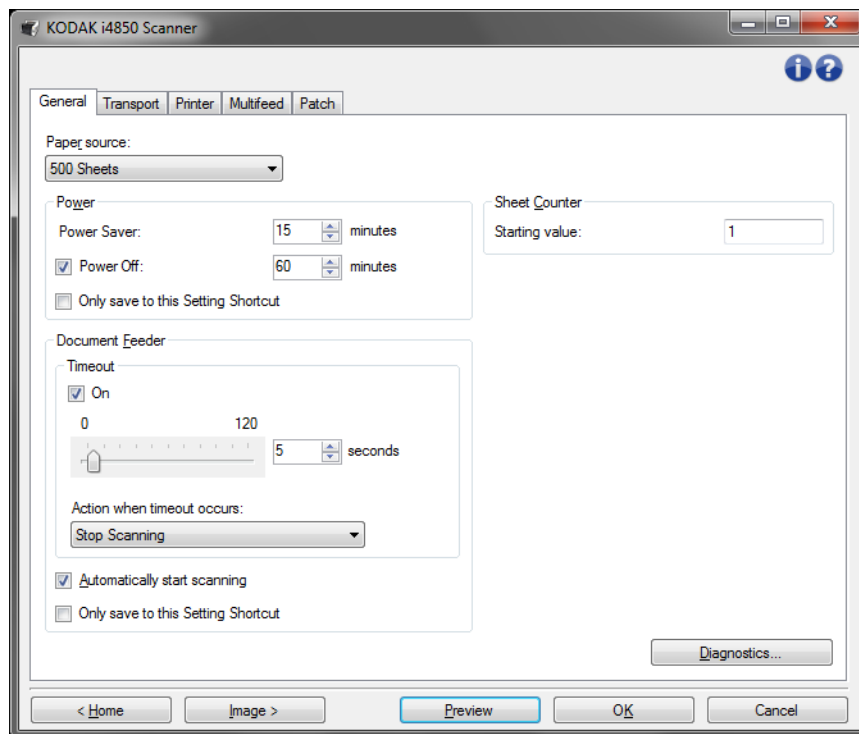
Home — returns you to the main Scanner window.

Image — displays the Image Settings window.

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

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

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

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

Information Icons

About: displays the scanners' version and copyright information. The About dialog box also provides a link to the Kodak Alaris website to download the latest driver updates.

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

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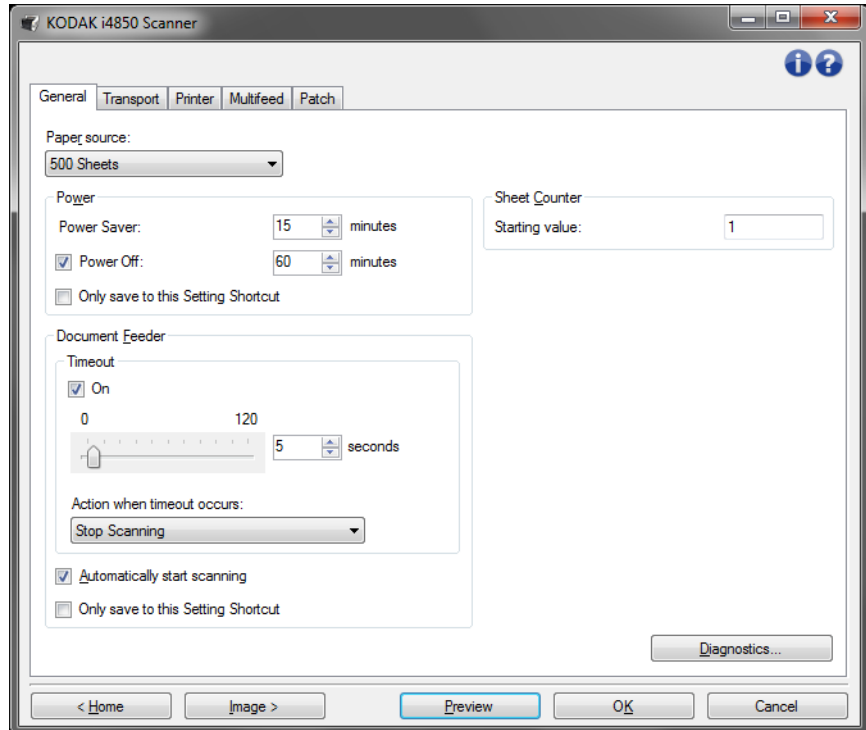
Paper Source

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

- **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.

- **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.

- **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.

- **Document Feeder**: 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.

- **Flatbed**: scanner will scan from the flatbed.

NOTE: **Automatic** and **Flatbed** options are only available if you had the flatbed accessory attached to the scanner when the scanning application was started.

Power

Power Saver — allows you to set the amount of time, in minutes, the scanner has to be inactive before going into power saver mode.

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.

NOTE: The Power Saver setting is shared with all Setting Shortcuts. Any changes will affect other shortcuts unless you turn on the **Only save to this Setting Shortcut** option.

Document Feeder
- **Timeout**: allows you to select the amount of time, in seconds, the scanner will wait when the last document enters the feeder before the timeout occurs. This option can be turned **off**.
- **Action when timeout occurs**: indicates the action that will be taken when the document feeder timeout has been reached.
    - **Stop Scanning**: scanning will stop and control will return to the scanning application (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.
    - **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.

Automatically Start Scanning — 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, when 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.

NOTE: The Document Feeder settings are shared with all Setting Shortcuts. Any changes will affect other shortcuts unless you turn on the **Only save to this Setting Shortcut** option.

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.

NOTE: Changing this will affect the **Counter** option on the Device - Printer tab.

Diagnostics — displays the Diagnostics tab.

Device - Transport tab

The Transport tab allows you to set options for how your documents are managed by the scanner's transport area.
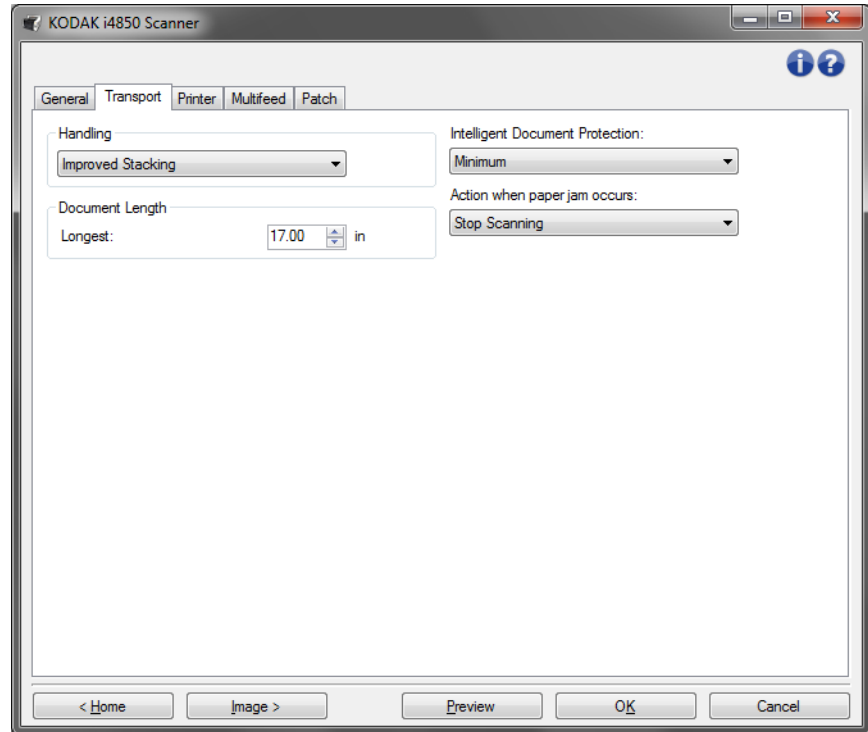
Handling — allows you to select how the scanner transports documents through the scanner. This affects how the documents are fed into the scanner and how they are placed in the output tray.

- **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.

Document Length

- **Longest** — select a value that indicates the length of the longest document in your document set.

  NOTES:

  - Changing this value will affect the maximums for the following settings: *Image Size - Outline; Printer - Offset From Lead Edge; Multifeed - Length Detection.*
  - 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.

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)**
- **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.

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

- **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.

Device - Printer tab

The Enhanced Printer provides a vertical print capability and supports alphanumeric characters, date, time, document count and a custom message. All print information is captured in the image header of each document. You can choose to print on the physical sheet of paper, on the digital image, or both. For printing on the physical paper: .
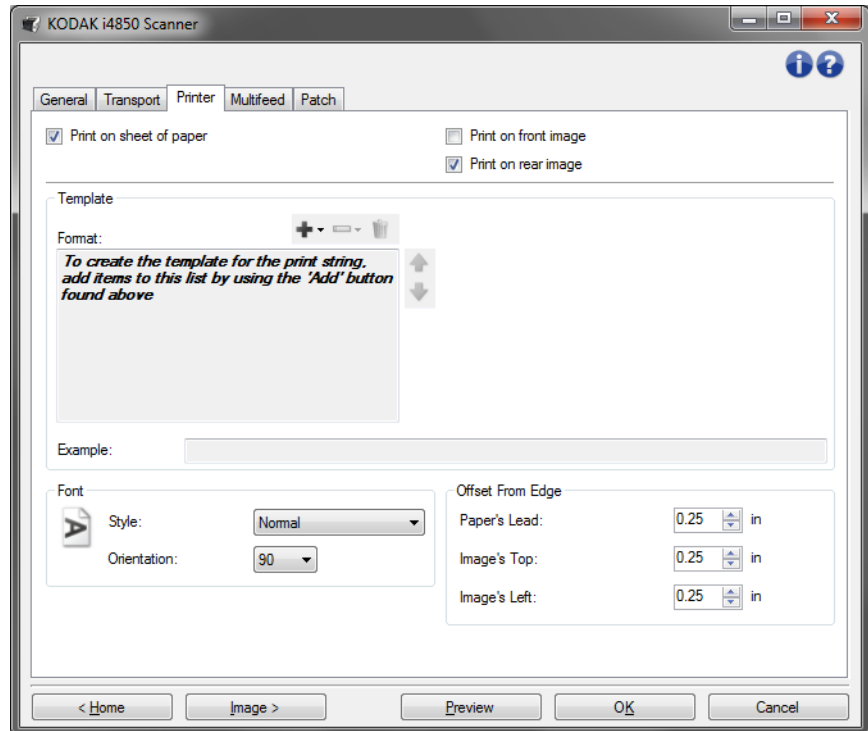
Print on sheet of paper (*physical print*) — turns printing on for the physical sheet of paper.

For stamping on the digital image:

Print on front image (*digital print*) — turns digital printing on for all front images.

Print on rear image (*digital print*) — turns digital printing on for all rear images.

NOTES:

- Digital print is applied to the image *after* it has been cropped and rotated. Therefore, if **Print on sheet of paper** and **Print on front (or rear) image** are both enabled, the print may be printed on different edges of the document.

- Digital printing is applied before **Image Merge** so if **Print on rear image** is enabled, the digital print will be printed on the merged image twice.

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

Toolbar buttons

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

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

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

- **Counter**: this value is incremented sequentially for each sheet of paper scanned and is returned in the image header.

  - **Starting value**: allows you to set the number for the next sheet of paper that will be scanned.

    NOTE: Changing this value will affect the **Sheet Counter** option on the Device - General tab.

  - **Field width**: allows you to configure the width of the counter from 1 to 9. However, if for example, you only have 6 characters left in the print string, then the field width would be limited to 6.
  - **Leading zeroes**: allows you to configure the format of the counter when the width of the value is less than the field width (the examples indicate a field width of 3 and the counter at 4). Options are:
    - Display: "004"
    - Do Not Display: "4"
    - Display As Spaces: " 4"

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.

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.

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

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

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

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

NOTES:

- **HH** is 24 hours, from 00 to 23; **hh** is 12 hours, from 01 to 12; **mm** is minutes from 00 to 59, **ss** is seconds from 00 to 59; **xx** is a counter from 00 to 99; and **tt** is **AM** or **PM**.

- Use the **hhmmss.xx** option to generate a unique date and time stamp for every page scanned.

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

- **Space**: adds a space.

- **Message**: allows you to specify custom text to be included in your print string. A maximum of 40 characters (including spaces) is allowed.

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

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

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

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

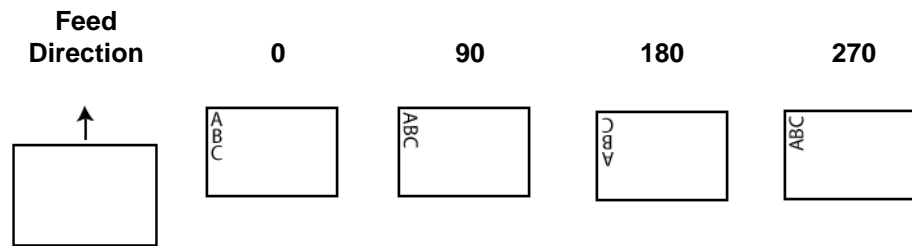| Normal: 90° rotation | Bold: 90° rotation | Extra Bold: 90° rotation |

- **Digital Print examples**

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

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

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

- **Paper's Lead:** select a value for the distance from the leading 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.

- **Image's Top:** select a value for the distance from the top edge of the image after rotation.

- **Image's Left**: select a value for the distance from the left edge of the image after rotation.

  NOTE: The **Image's Top** and **Image's Left** options are only available when digitally printing on images.

Device - Multifeed tab

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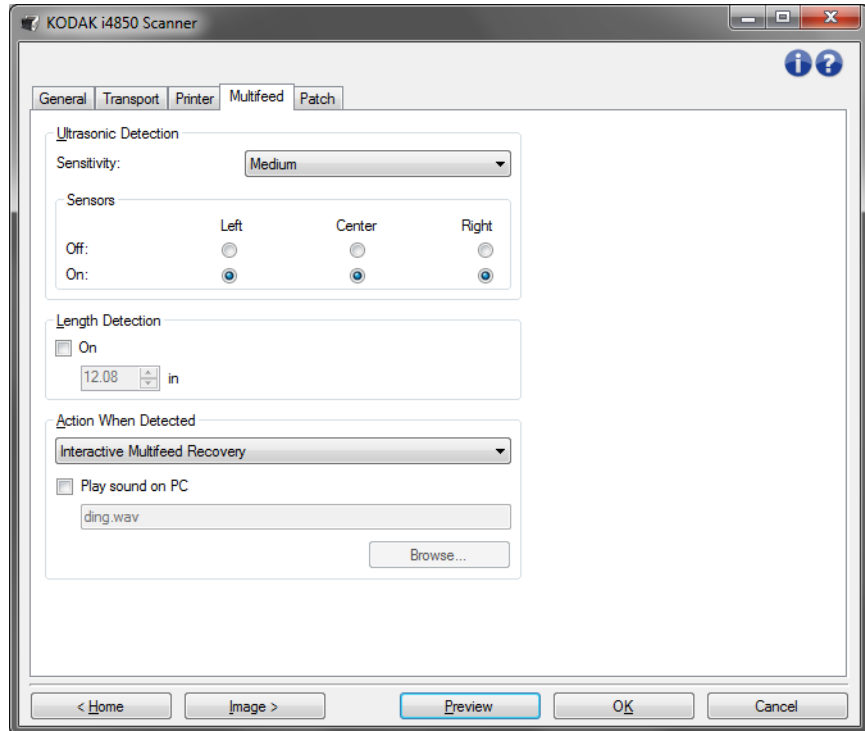
Ultrasonic Detection

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

- **(none)**

- **Low**: least aggressive setting and is less likely to detect labels, poor quality, thick or wrinkled documents as multifed documents.

- **Medium**: use if your job set has varying document thicknesses or labels attached to the document. Depending on the label material, most documents with labels should not be detected as a multifed document.

- **High**: the most aggressive setting. This is a good setting to use if all documents have a thickness no greater than 75.2 g/m^2 (20 lb.) bond paper.

  NOTE: Regardless of the setting, "sticky" notes may still be detected as multifed documents.

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

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

- **Stop Scanning**: scanning will stop and control will return to the scanning application (i.e., ends the job). 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 scanner. 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 by using the Operator Control Panel. 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**.

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

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

Device - Patch tab

Patch Readers can automatically sense predefined patch code(s) and be configured to control document level changes.
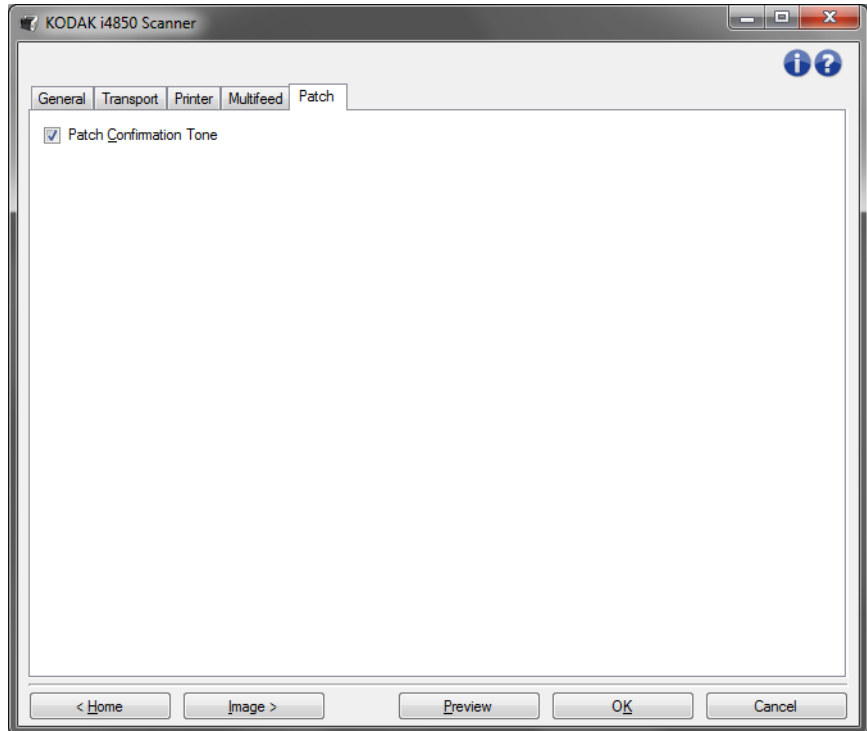
Patch Confirmation Tone — the confirmation tone may be used to signal that a patch has been recognized by the scanner.

The Diagnostics window

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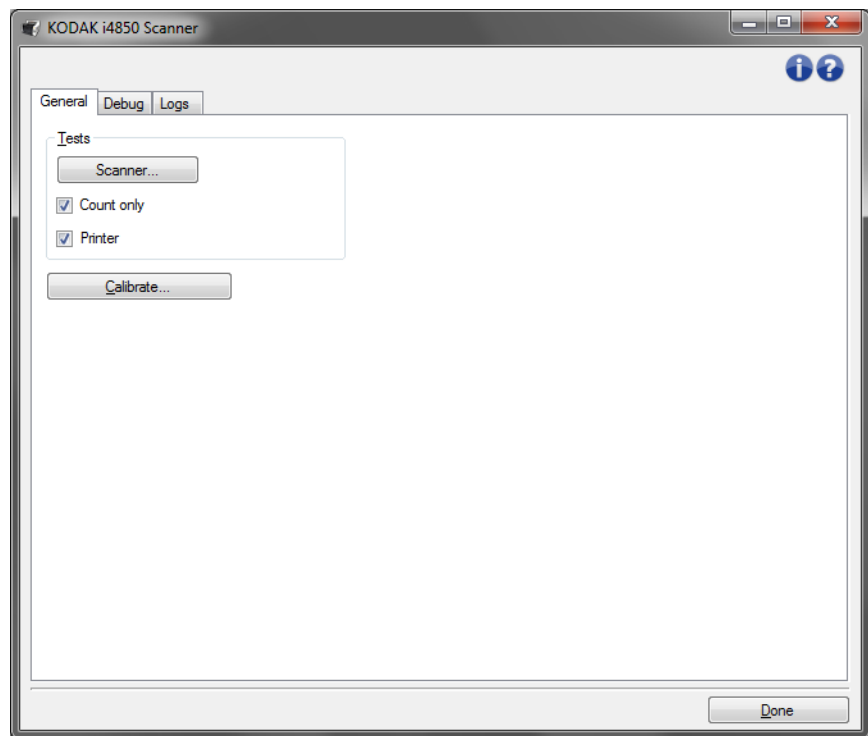
Done — returns you to the Device Settings window.

Diagnostics - General tab   The General tab allows you to perform a scanner test and calibration.
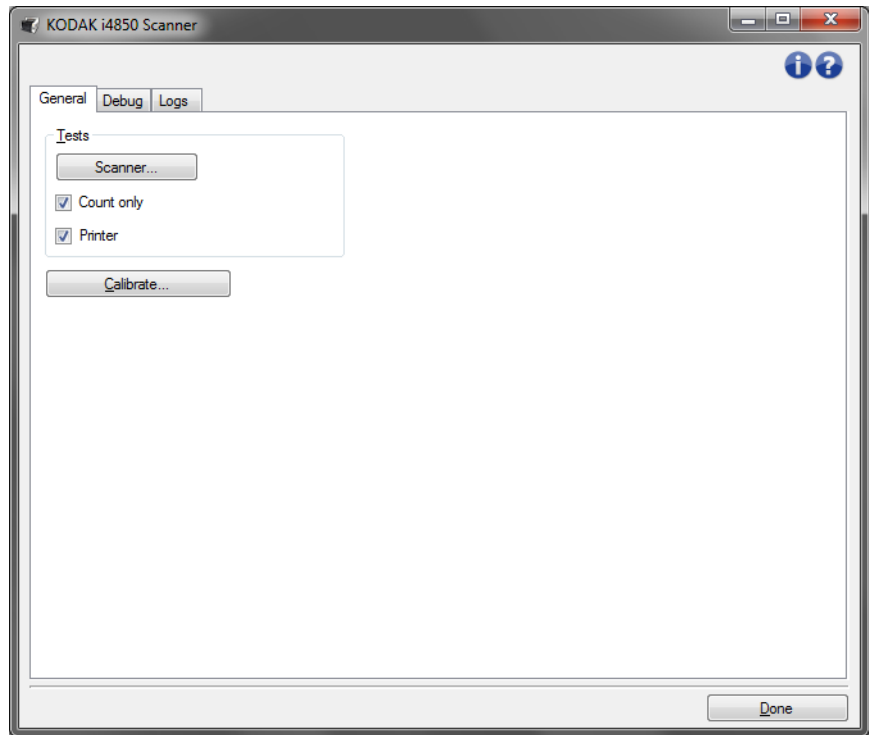
Tests

- **Scanner**: similar to, but more extensive than, a power-on self test. Selecting this will immediately put the device through a series of checks to determine that all the scanner hardware is working.

- **Count only** — counts the number of documents entering the scanner without actually sending the images to the scanning application. This test is performed during any scan session in which this option is turned on.

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

    NOTE: The **Count only** and **Printer** tests are automatically turned off when the scanning application disconnects from the scanner.

Calibrate — displays the Calibration window allowing you to perform Ultrasonic calibration.

NOTE: Frequent calibration is not necessary or recommended. Only perform a calibration when instructed to do so by your support personnel.

Diagnostics - 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 your support personnel.

NOTES:

- All of the options on this tab apply to all Setting Shortcuts, not just the currently selected Setting Shortcut.

- In order for any changes on this tab to take effect, you must restart your application.
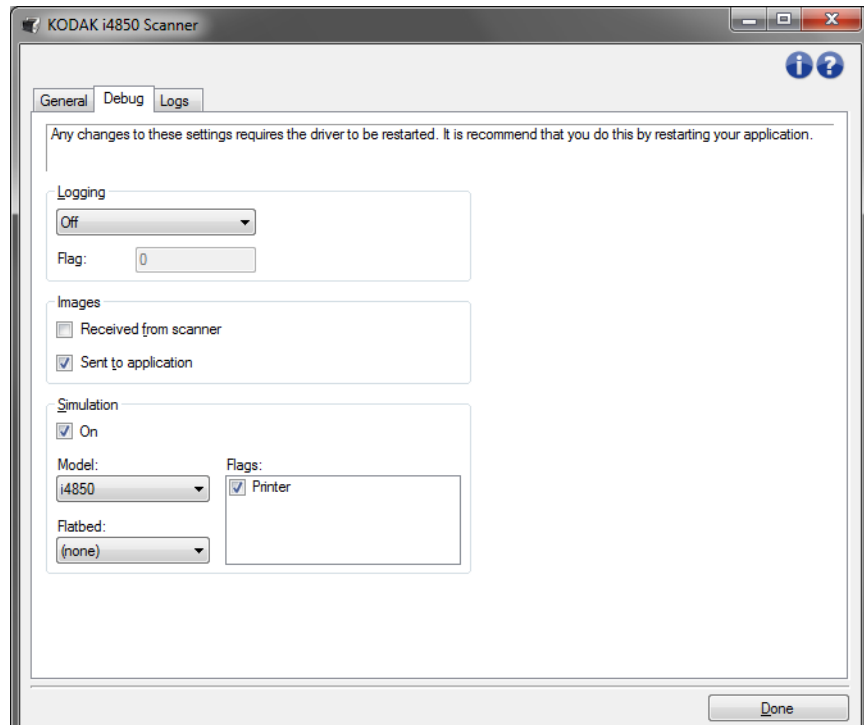
Logging — saves the communications between the scanner and a scanning application. The options are: **Off**, **On** or **Custom**.

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.

Simulation — allows you to use the TWAIN Datasource without using the actual scanner.

- **Model**: allows you to select the specific scanner model to simulate.

- **Flatbed**: allows you to select which flatbed accessory to simulate.

- **Flags**: if supported by your TWAIN Datasource, this will contain a list of accessories your simulated scanner has installed.

Diagnostics - Logs tab   The Logs tab allows you to view scanner information.
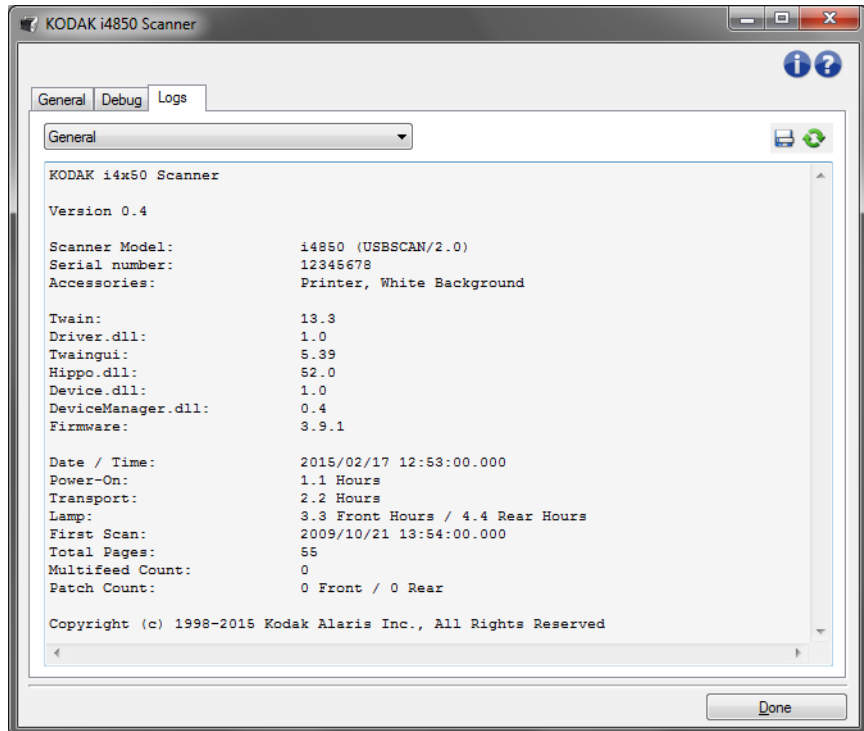
Logs

- **General**: displays the scanner's version information, serial number, attached/installed accessories, meters, etc.

- **Operator**: displays the scanner's log. This log can only be cleared by support personnel.

Toolbar buttons

    Save As: saves all the logs for viewing by support personnel. When selected, a Save As 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 File Open window so you can find the folder that you want to use.

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

- **Save**: saves the logs into a file with the extension .eklog.

    Refresh: refreshes the currently displayed log.