Kodak

i1800 Series Scanners

Image Processing Guide

1 Introduction

The *Kodak* i1800 Series Scanners are high-volume production scanners which include image processing technology that can improve image quality and sometimes make the reproduction better than the original.

You can use the ISIS Driver or TWAIN Datasource (both are available on the CD that is included with the scanner) or *Kodak* Capture Software to enable image processing.

Other popular scanning applications are also compatible with these scanners, however these applications may not be able to access all of the image processing options. Please refer to your vendor's documentation for specific information.

The *Kodak* i1800 Series Scanners provide both color/grayscale and black and white scanning simultaneously with throughput speeds up to 200 ppm.

About this manual

This manual provides the following:

Chapter 1, Introduction includes a brief summary of the *Kodak* i1800 Series Scanners.

Chapter 2, Best Practices includes information to use when setting up applications, recommendations on how to handle jam recoveries, image addressing information, controlling print streams, electronic color drop-out and much more.

Chapter 3, Using the TWAIN Datasource includes information on using the dialog boxes presented by the TWAIN Datasource and an explanation of the fields on each tab.

Chapter 4, Using the ISIS Driver includes information on using the tabs presented by the ISIS driver and an explanation of fields on each tab.

Appendix A, TWAIN Image Processing Terminology — the TWAIN Datasource for the *Kodak* i1800 Series Scanners have been updated to include new terminology for traditional Kodak image processing functions. See this appendix for a comparative chart to map between terms.

NOTE: The scanned images used in this guide were selected for the challenges presented to a typical scanner due to the low-contrast characteristics of the images.

Image outputs

The i1800 Series Scanners are duplex scanners. This means both the front and the rear side of each document may be captured. For each side captured, the scanner creates a black and white and color/grayscale image. The host application controls which of these images is transferred to the host to be stored as an image file.

The *Kodak* i1800 Series Scanners can return black and white, grayscale or color images to the host. Below is a description of the valid combinations.

- **Front black and white**: FB.tif. This image file represents the contents of the front side of the document using one-bit per pixel.

- **Front color:** FC.jpg. This image file represents the contents of the front side of the document using 24-bits per pixel.

- **Back black and white**: BB.tif. This image file represents the contents of the rear side of the document using one-bit per pixel.

- **Back color**: BC.jpg. This image file represents the contents of the rear side of the document using 24-bits per pixel.

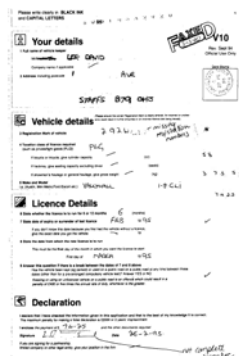NOTE: Actual file formats are determined by the host application.

These image files can be controlled through the application independently.

FB.tif	FC.jpg	BB.tif	BC.jpg (
(front black and white)	(front color)	(back black and white)	back color)

Another example of a simultaneous output where all four images are returned to the host would create the following four files:

- **Front grayscale**: FG.jpg. This image file represents the contents of the front side of the document using 8-bits per pixel.

- **Front black and white:** FB.tif. This image file represents the contents of the front side of the document using 1-bit per pixel.

- **Back grayscale**: BG.jpg. This image file represents the contents of the rear side of the document using 8-bits per pixel.

- **Back black and white**: BB.tif. This image file represents the contents of the rear side of the document using 1-bit per pixel.

NOTE: Actual file formats are determined by the host application.

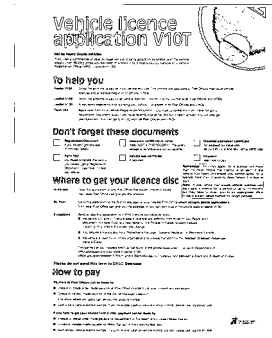These image files can be controlled through the application independently.

FG.jpg
(front grayscale)
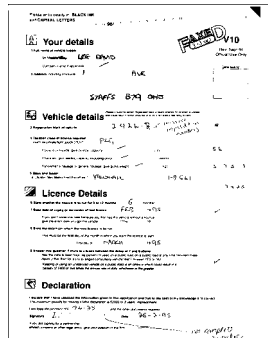
FB.tif
(front black and white)

BG.jpg
(back grayscale)

BB.tif
(back black and white)

2 Best Practices

This chapter provides you with recommendations for program logic, which will allow you to interact efficiently with the i1800 Series Scanners. This high-level information is not intended to be used as a coding guide. The following information is provided in this chapter:

- Basic image capture
- Switching between color/grayscale and black and white
- Jam recovery
- Image file storage locations
- Bar code recognition
- Controlling print strings
- Electronic Color Dropout (form design, drop-out colors)
- Available image header information and its uses
- Zone processing (recombining images, especially for viewing)
- Programmable keys
- Starting image addresses
- Patch reading
- Batching

NOTE: The term *host* in the sections that follow refers to either the driver or application.

Basic image capture

Basic image capture is a high-level logic flow for retrieving images from the scanner.

Follow this sequence to scan documents:

- set up the scanner,
- enable scanning,
- initiate polling,
- feed documents
- and disable scanning.

Scanner setup

To set up the scanner:

1. Set up your scanner operating conditions:

   - simplex/duplex
   - image order
   - lamp timeout
   - transport timeout
   - transport timeout response
   - length detection status and response
   - multi-feed detection status and response
   - starting document count
   - printing parameters (printing status, print font, orientation and strings)
   - programmable keys
   - batching parameters (batch level, count, start and end-of-batch functions)*
   - patch parameters (patch types to recognize, transfer patch definition)*
   - starting image address*
   - level to follow level rules*
   - image address formats*

   *These items are only available when Image Addressing is enabled.

   For information on programming these conditions, see Chapters 3 or 4 (depending on your driver). For other vendor tool kits, refer to their documentation.

2. Select your Document Type/Color Correction as appropriate for color document scanning. See Chapters 3 or 4 (depending on your driver). For other vendor tool kits, refer to their documentation.

3. Determine if any changes to the Image Processing parameters need to be made for the current application.

   NOTE: This check needs to occur for up to four separate images from the six available options depending on your application: Front Color, Front Black and white, Front Grayscale, Back Color, Back Black and white, Back Grayscale.

   Image Processing parameter changes remain in effect until one of the following conditions occur:
   - The scanner is powered down using the power switch.
   - New imaging parameters are sent from the host.

4. Prepare documents according to the instructions found in the *Kodak* i1860 User's Guide.

Enable scanning	The host must issue a Scan command to enable scanning before documents can be transported through the scanner. If scanning has not been enabled, the feeder and transport system will not turn on.
Initiate polling	Initiate host system polling of the scanner to ensure scanned document images are transferred from the image buffer to the host system. Polling should continue until scanning is disabled.
	For more information see the sections entitled, "Controlling image transfer order" and "Image header information" later in this chapter.
Feed documents	Feed documents according to the instructions found in the *Kodak* i1800 Series Scanners User's Guide.
Disable scanning	Scanning is disabled to allow the host to download configuration/setup changes between jobs and to handle certain types of errors.
	Scanning is also disabled when one of the following conditions occur:

- The scanner is first powered on using the power switch.
- An End-of-Job indicator is sent by the operator from the operator control panel touchscreen.
- A scanner-unique End-of-Job command is issued by the host computer.
- An error occurs requiring fault recovery.

NOTE: When scanning is disabled, documents cannot be scanned until the host enables scanning.

Error handling

The scanner recognizes and reports a variety of error conditions.

Some errors are reported to either the host or the touchscreen, while others are reported to both the host and the touchscreen.

An error is defined as either a current or deferred error.

A current error results from a problem in processing the current command. This can include sending an invalid command, trying to read from an empty image buffer, or an end-of-job condition. Since one or more errors may be pending at any time, current errors are reported first.

A deferred error results from an error condition within the scanner, such as a document jam. Deferred errors that may have occurred are reported after current errors.

NOTE: Low level commands and information will be handled by your device driver. The following information is provided for reference only.

When an error occurs, the host will receive a Check Condition Status. This indicates to the host that there may be one current error and potentially one or more deferred errors. The host must follow a Check Condition Status with a Request Sense command. The Sense data will indicate the type of error that has occurred.

To receive subsequent pending errors, the host must execute a Test Unit Ready command. If a deferred error is pending, the Test Unit Ready command will terminate with a Check Condition Status. The host follows with a Request Sense command. The combination of Request Sense followed by Test Unit Ready must be repeated until a "good" status is returned on the Test Unit Ready command. A "good" status indicates no errors (current or deferred) are pending.

IMPORTANT: If at any point the host receives a Check Condition for a command and fails to issue a subsequent Request Sense command, the scanner will clear all (current and deferred) Sense data.

Some error conditions disable scanning and cause the document transport to stop. These errors are reported on the touchscreen. This is done to prevent additional images from entering the image buffer while allowing the host to perform fault recovery activities.

NOTE: The scanner cannot determine exactly which images were affected by the error and which images were not.

If an error occurs that disables the scanner, the host can continue to read images from the image buffer without enabling the scanner. However, when the image buffer has been emptied, an error will be generated indicating fault recovery is required. This differentiates between an end-of-job disable and a disable caused by an error. The operator may continue scanning documents after the host enables the scanner.

Controlling image transfer order

This section provides job stream examples which can be used in scanning applications.

The host application is responsible for determining the order in which the scanner returns images. Front images must always be retrieved before back images.

Black and white only - duplex

1. Prepare documents.
2. Start the scanner to do black and white duplex scanning (front black and white and back black and white).
3. Setup the scanner to retrieve black and white images.
4. Enable the scanner and start polling.

   Loop
   Read front black and white image header
   Read front black and white image
   Read back black and white image header
   Read back black and white image
   End loop

Color only - duplex

1. Prepare documents.
2. Start the scanner to do color duplex scanning (front color and back color).
3. Setup the scanner to retrieve color images.
4. Enable the scanner and start polling.

   Loop
   Read front color image header
   Read front color image
   Read back color image header
   Read back color image
   End loop

Grayscale only - duplex

1. Prepare documents.
2. Start the scanner to do grayscale duplex scanning (front grayscale and back grayscale).
3. Setup the scanner to retrieve grayscale images.
4. Enable the scanner and start polling.

   Loop
   Read front grayscale image header
   Read front grayscale image
   Read back grayscale image header
   Read back grayscale image
   End loop

Dual stream - simplex

1. Prepare documents.

2. Start the scanner to do dual stream simplex scanning (front black and white and front color).

3. Setup the scanner to retrieve black and white images first.

4. Enable the scanner and start polling.

   Loop
   Read front black and white image header
   Read back black and white image
   Read front color image header
   Read back color image
   End loop

Dual stream - duplex

1. Prepare documents.

2. Start the scanner to do dual stream duplex scanning (front black and white, front color, back black and white and back color).

3. Setup the scanner to retrieve black and white images first.

4. Enable the scanner and start polling.

   Loop
   Read front black and white image header
   Read back black and white image
   Read front color image header
   Read back color image
   Read front black and white image header
   Read black and white image
   Read back color image header
   Read color image
   End loop

Single-stream duplex alternating between black and white and color/ grayscale using the scanner Toggle patch

The Toggle patch is a type 4 patch that is used to trigger the scanner to switch from the current image stream (black and white) to the alternative image stream (color/grayscale).

1. Prepare documents with a patch Type 4 before and after any color/ grayscale documents.

2. Configure image processing parameters for all four images. Before enabling the scanner, select only the front and back black and white images to be retrieved.

3. Configure the scanner to alternate both sides when a toggle patch is detected.

4. Start scanning.

Images will begin in black and white and will change to color/grayscale when the first toggle patch is detected. Images will remain color/ grayscale until the next toggle patch is detected. Images of the toggle patch sheet will not be returned to the host unless you also enable patch reading and select the Type 4 patch.

Single-stream duplex alternating between black and white and color/grayscale using automatic color detection

1. Configure image processing parameters for all four images. Before initiating the scanner, select only the front and back black-and-white images to be retrieved.

2. Enable **Auto Color Detection** by choosing **Low**, **Medium**, **High** or **Custom**.

3. Start scanning.

The scanner will determine if it should return a black-and-white or color/ grayscale image based on a document-by-document analysis of the color content.

Jam and fault recovery

This section provides recommendations for application logic associated with scanner jam and fault recovery.

If your scanner is enabled and you are polling when a document jam or other fault occurs, use the following procedure to restart scanning.

IMPORTANT: Before beginning fault recovery, make sure all the headers and images have been transferred from the image buffer to the host system.

When a document jam or other fault occurs, the feeder and the transport will stop and the scanner will be disabled.

1. When all images have been retrieved from the scanner (image buffer empty), display the last image retrieved for operator viewing.

2. Use the image header of the last image retrieved to determine the image address and sequential counter.

3. Use the information above +1 to seed the next image address and sequential counter before re-enabling the scanner.

4. Instruct the operator to sort through the stack of documents being scanned to find the document that produced the last successfully scanned image. They must rescan all of the documents that follow the last successfully scanned document.

5. Enable the scanner.

Image file storage locations

This section provides general recommendations regarding the impact of image file storage locations on the overall throughput of the scanner.

You can receive up to four image files per document. Decisions about where to write these files when retrieving them from the scanner could impact the overall throughput of the scanner. In order to prevent overwriting data the scanner stops feeding paper when the internal image buffer reaches two-thirds capacity. Scanning will not resume until buffer memory reaches one-third. In order to minimize the number of times this condition might occur, it is recommended that image files are written to a local hard drive in order to avoid the potential overhead of transferring files across the network to remote drives during scanning.

Bar code recognition

This section provides general information about bar code recognition and read rates.

The i1800 Series Scanners does not include a bar code accessory. The host system provides bar code functionality. The main imaging parameter, which may affect bar code read rates, is *resolution*. Either black and white, grayscale or color images may be used for bar code applications. Refer to your software documentation for their recommendations and/or requirements for image quality to achieve desired read rates.

Image addressing

Image address information only applies when the scanner is configured with Image Address enabled via the operator control panel touchscreen.

The i1800 Series Scanners receive all image address functionality from the host. This includes index format, starting image address, image address format and level rules.

Image address format

The image address format can be from one to four fields. Each field may be up to 9 characters. Total image address length with delimiters is 30 characters. Each field may use level 1, level 2, level 3, and fixed fields, and must be explicitly defined by the application. See Chapter 3 or 4 (depending on your driver) for more information.

The order of importance for the fields (from highest to lowest) is fixed, level 3, level 2, level 1. When defining an image address, the field with the highest importance must always be to the left. For example, F321 is a valid format. F123 is not a valid format.

You are not required to use all four fields. If you chose to use fewer than four fields, you must specify a field width of 0 for any unused field. 0 width fields may not be between two non-zero width fields.

When defining fields, you can only have one field assigned to each individual level. For example, F21 is a valid format. F11 is not a valid format.

Starting image address/ next image address

The host application must always seed the scanner with the starting image address. The scanner will return the image address associated with each image in the image header. The application can track this image address for use in setting the next image address when restarting the scanner.

Indexing schemes

Documents are scanned to record the information in an easily accessible form. The scanner offers the following indexing schemes:

• Single level
• Two level
• Two level offset
• Three level
• Three level offset

Single level indexing

When using single level indexing, the image address assigned to each document is defined as follows:

• Field D is defined as a Level 1 field having a field length greater than 0.

  For example, if you scan a book with 50 pages and do not want a fixed field in the image address, the image address is defined as follows:

• Field D has a field length of 2 characters and is defined as a Level 1 field.

• Fields A, B and C have 0 characters.
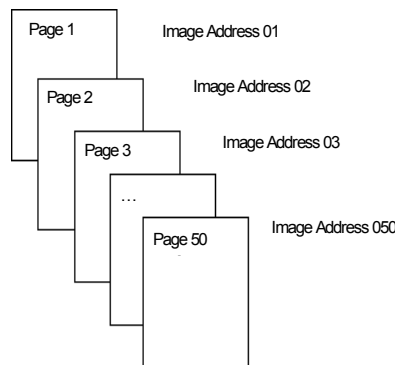
The first page is assigned image address 01. The second page is assigned image address 02, and so on, through the remainder of the book.

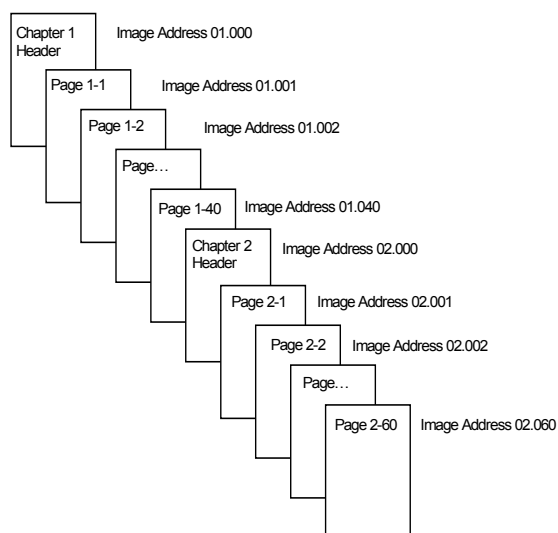Any one of the 50 pages may later be located and retrieved using its unique image address.

Two level indexing

When using two level indexing, the image address assigned to each document is defined as follows:

- Field D (Level 1) defined as having a field length greater than 0.

- Field C (Level 2) defined as having a field length greater than 0.

  For example, if you scan a book with 2 chapters (Chapter 1 has 40 pages and Chapter 2 has 60 pages) and the image address has been defined as:

- Field D has 3 characters

- Field C has 2 characters

- Field B has 0 characters

- Field A has 0 characters

```
Chapter 1   Image Address 01.000
Header
    Page 1-1    Image Address 01.001
        Page 1-2    Image Address 01.002
            Page…
                Page 1-40   Image Address 01.040
                    Chapter 2   Image Address 02.000
                    Header
                        Page 2-1    Image Address 02.001
                            Page 2-2    Image Address 02.002
                                Page…
                                    Page 2-60   Image Address 02.060
```

The header page for Chapter 1 is assigned image address 01.000. The first page of Chapter 1 is assigned image address 01.001; the second page is assigned image address 01.002, and so on through Chapter 1.

The header page for Chapter 2 is assigned image address 02.000. The first page of Chapter 2 is assigned image address 02.001; the second page is assigned image address 02.002, and so on through Chapter 2.

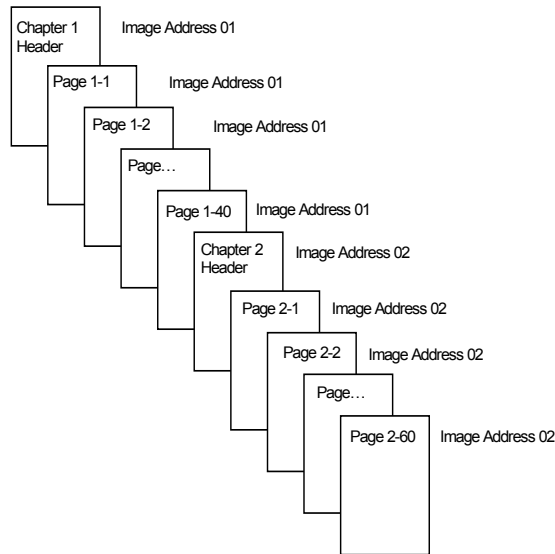Any one of the pages may later be located and retrieved using its unique image address.

Two level offset indexing

When using two level offset indexing, the image address assigned to each document is defined as follows:

- Field D (Level 2) defined as having a field length greater than 0.

  For example, if you scan a book with 2 chapters (Chapter 1 has 40 pages and Chapter 2 has 60 pages), and the image address has been defined as:

- Field D has 2 characters

- Field C has 0 characters

- Field B has 0 characters

- Field D has 0 characters

The header page for Chapter 1 is assigned image address 01. The remaining pages of Chapter 1 are also assigned image address 01.

The header page for Chapter 2 is assigned image address 02. The remaining pages of Chapter 2 are also assigned image address 02.

Either one of the chapter header pages may later be located and retrieved using its unique image address. Pages within a chapter may be located and retrieved by first finding the chapter header and then manually scrolling through the remaining pages of the chapter.

Three level indexing

When using three level indexing, the image address assigned to each document is defined as follows:

- Field D (Level 1) defined as having a field length greater than 0.

- Field C (Level 2) defined as having a field length greater than 0.

- Field B (Level 3) defined as having a field length greater than 0.

- Field A may be defined as fixed field if desired.

  For example, if you scan a book with two sections (Section 1 contains 2 chapters, each having 40 pages; Section 2 contains only 1 chapter, having 120 pages) and the image address has been defined as:

- Field D has 3 characters

- Field C has 2 characters

- Field B has 1 character

- Fixed field has 0 characters
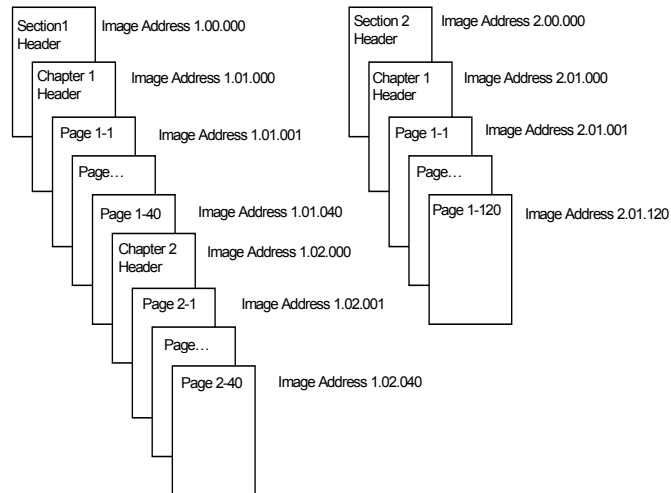
The header page for Section 1 is assigned image address 1.00.000. The header page for Chapter 1 of the section is assigned image address 1.01.000. The pages within the Chapter are assigned image address(es) 1.01.001 through 1.01.040. The header page for Chapter 2 of the section is assigned image address 1.02.000. The pages within the chapter are assigned image address(es) 1.02.001 through 1.02.040.

The header page for Section 2 is assigned image address 2.00.000. The header page for Chapter 1 of the section is assigned image address 2.01.000. The pages within the chapter are assigned image address(es) 2.01.001 through 2.01.120.

Any one of the pages may later be located and retrieved using its unique image address.

Three level offset indexing

When using three level offset indexing, the image address assigned to each document is defined as follows:

• Field D (Level 2) defined as having a field length greater than 0.

• Field C (Level 3) defined as having a field length greater than 0.

  For example, if you scan a book with two sections (Section 1 contains 2 chapters, each having 40 pages; Section 2 contains only 1 chapter, having 120 pages) and the image address has been defined as:

• Field D has 2 characters

• Field C has 1 characters

• Field B has 0 character

• Field A has 0 characters
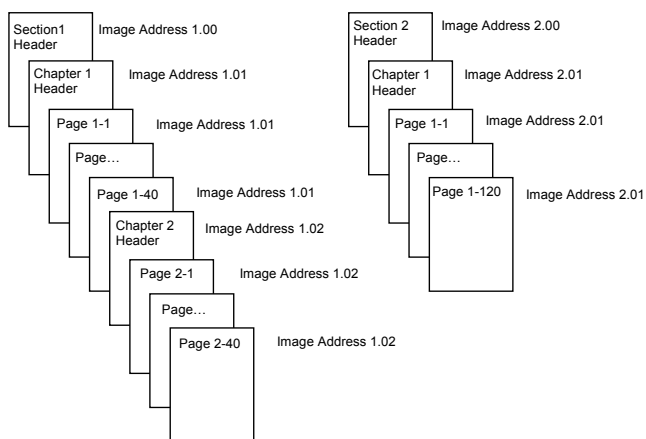
The header page for Section 1 is assigned image address 1.00. The header page for Chapter 1 of the section is assigned image address 1.01. The remaining pages of Chapter 1 are also assigned image address 1.01. The header page for Chapter 2 of the section is assigned image address 1.02. The remaining pages of Chapter 2 are also assigned image address 1.02.

The header page for Section 2 is assigned image address 2.00. The header page for Chapter 1 of the section is assigned image address 2.01. The remaining pages of Chapter 1 are also assigned image address 2.01.

Either one of the section header or chapter header pages may later be located and retrieved using its unique image address. Pages within a chapter may later be located and retrieved by first finding the chapter header and then manually scrolling through the remaining pages of the chapter.

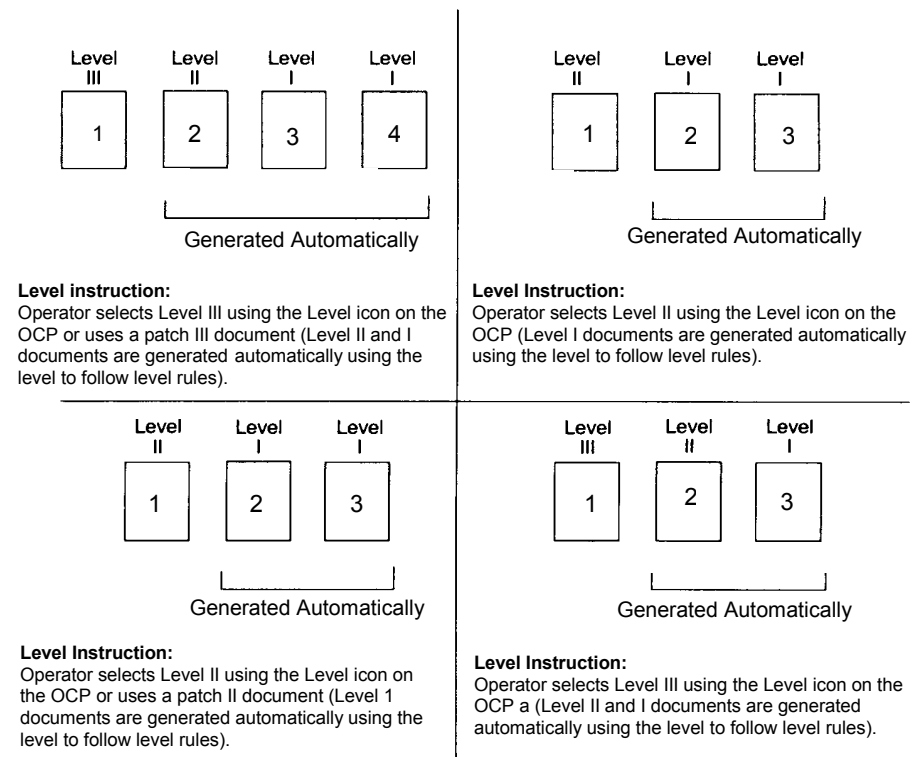**Controlling document level changes**

The previous Indexing Scheme examples illustrated how document levels change within a single group of documents. There are four document image levels: 3, 2, 1, and 0.

There are several ways you can set or change the document level:

- You can change image address level on the touchscreen. Touching the appropriate Level button increments the image address level to Level 1, Level 2 or Level 3.

- You can send a new image address from the host PC.

- You can use the Patch Reader; feeding a document containing a particular type of patch can change document levels.

- Starting a new batch can cause the image address level to change depending on the application.

If you do not set or change the document level using one of the methods listed, the document level will be set automatically based upon the level rules (i.e., Level 2 is followed by Level 1, etc.) defined during scanner setup.

The following diagram illustrates how document levels are set or changed:

Level III	Level II	Level I	Level I
1	2	3	4

Generated Automatically

Level instruction:
Operator selects Level III using the Level icon on the OCP or uses a patch III document (Level II and I documents are generated automatically using the level to follow level rules).

Level II	Level I	Level I
1	2	3

Generated Automatically

Level Instruction:
Operator selects Level II using the Level icon on the OCP (Level I documents are generated automatically using the level to follow level rules).

Level II	Level I	Level I
1	2	3

Generated Automatically

Level Instruction:
Operator selects Level II using the Level icon on the OCP or uses a patch II document (Level 1 documents are generated automatically using the level to follow level rules).

Level III	Level II	Level I
1	2	3

Generated Automatically

Level Instruction:
Operator selects Level III using the Level icon on the OCP a (Level II and I documents are generated automatically using the level to follow level rules).

Document level information is transmitted in each image header.

Level rules

Level rules are an automated way to control document image addressing based on the level of the previous document. For a level 3 indexing scheme, the application must define the Level to Follow Level rules for Level 3, Level 2, and Level 1 For example:.

Level	Level to Follow Level
3	2
2	1
1	1

Level to follow level rules are used to automatically drop to a lower level. Returning to a higher level is generally done through patch or application control of the next image address.

Controlling print strings

Full control and access to the scanner's print string functionality is available to the host application. In addition, the print string information is returned to the host in the image header.

Print string formatting

• Maximum character length — 40.

• Character set — full alphanumeric, including special characters.

NOTE: To view 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/ms download/iebuild/ime5_win32/en/ime5_win32htm.

• Distance from lead edge — a minimum of a .035-inch.

• Can print to within ½-inch of the trial edge.

Electronic color dropout

The i1800 Series Scanners provide the ability to create dropout images without changing lamps. Red, green, blue dropout functionality can be selected. Only one color can be dropped out at a time. This dropout performance is equivalent to color dropout functionality when using the traditional color lamp technique.

Electronic color dropout is used with OCR and ICR applications. See your vendor's documentation for recommendations on image quality characteristics.

Electronic color dropout is applied to the black and white image only.

There are four imaging parameters, which effect electronic color dropout: Threshold Value/Filter Threshold, Background Value/Background, Contrast %, and Threshold.

The tables that follow provide Pantone colors that may be used with the red, green and blue dropout option.

Two categories of performance are provided or each color: Colors that can be completely dropped out and colors that are very close to complete dropout. These values were established by using standard Pantone Matching System® Colors guide (uncoated, 175-line screen). If the background of the document you are using is not bright white the results may vary. The default settings are:

Contrast% = 0

Threshold = 90

Color Filter = 175

Background = 245 — this value should be set to match background color of your document.

Resolution = 200 dpi

If the values above do not give you the desired results, you may need to vary these values accordingly.

Red dropout

Following is a list of Pantone colors which may be used with the red dropout option

Red Dropout — Complete Dropout.

100U	114U	1225U	1365U	169U	210U	2562U	395U
101U	115U	1235U	141U	176U	217U	372U	3935U
102U	116U	127U	148U	1765U	223U	379U	3945U
Yellow U	120U	128U	149U	1767U	230U	380U	3955U
106U	121U	129U	150U	182U	236U	386U	
107U	122U	134U	1485U	189U	2365U	387U	
108U	123U	135U	155U	1895U	243U	388U	
109U	1205U	1345U	1555U	196U	250U	393U	
113U	1215U	1355U	162U	203U	256U	394U	

Red Dropout — Near Complete Dropout

130U	1505U	165U	177U	184U	199U	225U	2395U
136U	Orange 021 U	166U	178U	185U	204U	Rubine Red U	Rhodamine Red U
137U	156U	1625U	179U	190U	205U	226U	244U
138U	157U	1635U	1775U	191U	206U	231U	245U
1375U	158U	1645U	1785U	192U	211U	232U	246U
142U	1565U	1655U	1788U	1905U	212U	237U	251U
143U	1575U	1665U	1777U	1915U	213U	238U	252U
144U	1585U	170U	1787U	1925U	218U	239U	257U
151U	163U	171U	Red 932U	197U	219U	2375U	365U
1495 U	164U	172U	183U	198U	224U	2385U	396U

Green Dropout — Complete Dropout

100U	109U	1215U	318U	352U	375U	388U	3945U
101U	113U	127U	324U	358U	379U	389U	3955U
102U	114U	134U	3245U	365U	380U	393U	3965U
Yellow U	115U	135U	331U	366U	381U	394U	
106U	120U	1345U	332U	372U	382U	395U	
107U	121U	148U	3375U	373U	386U	396U	
108U	1205U	317U	351U	374U	387U	3935U	

Green Dropout — Near Complete Dropout

122U	1355U	2705U	2975U	304U	3242U	337U	344U
128U	141U						

Blue Dropout — Complete Dropout

100U	230U	256U	2716U	283U	3205U	3248U	3945U
101U	236U	2562U	2707U	290U	317U	331U	
102U	2365U	263U	2717U	2905U	318U	393U	
106U	243U	2635U	2708U	297U	324U	386U	
217U	250U	2705U	277U	2975U	3242U	394U	
223U	251U	2706U	278U	304U	3245U	3935U	

Blue Dropout — Near Complete Dropout

Yellow U	2572U	2645U	284U	2925U	305U	3115U	372U
2375U	2563U	270U	291U	298U	306U	319U	387U
244U	2567U	271U	292U	2985U	310U	3252U	
257U	264U	279U	2915U	2995U	311U	332U	

Image header information

An image header is associated with every image captured by the scanner. Following is a list of information available in the image header.

Image length — size of the image.

Image identifier — indicates whether the image is front black and white, back black and white, front color or back color.

Resolution — the scanner records the selected scanner image resolution in dots per inch.

X-axis upper left — pixel horizontal offset to upper left corner of the image. For more information, see the next section entitled "Zone processing".

Y axis upper left — pixel vertical offset to upper left corner of the image. For more information, see the next section entitled "Zone processing".

Width — the scanner records the number of pixels-per-line in the image. Width is also referred to as *line length*.

Length — the scanner records the lines-per-page in the image. Length is also referred to as *page length.*

Bits-per-pixel — bits-per-pixel can equal 1 for black and white imaging. 8 for grayscale or 24 for color imaging. Bits-per-pixel is also referred to as *pixel depth.*

Compression type — the scanner records the compression type used. Values for black and white images are: No Compression, Group III, Group III 2D or Group IV. The values for grayscale or color images are No Compression or JPEG.

Polarity — the scanner records image polarity. White pixels can be indicated as 0 or 1.

Deskew — the image header reflects whether or not the scanner was asked to perform deskew. If deskew is enabled, the image header also indicates whether or not the document was deskewed. The maximum angle the scanner will deskew is 44.9 degrees.

Skew angle — image header records the skew angle which was determined for the scanned image. A severe skew angle may result in no deskew being performed.

If the scanner is unable to determine a skew angle, the image will not be deskewed. The skew angle field of the image header will be set to 0.

Image address level (Document level) — the document level is assigned by the operator by using:

- the level key,
- a patch if the Patch Reader is enabled,
- the host application to set the next image address, or
- the Level to Follow Level rules.

The value returned in the image header reflects the level of the document. This value will be level 1, level 2, level 3 or level 0.

NOTE: Level 0 is assigned to documents containing patch types T, 1, 4 and 6.

Document levels may be used by the host application to sort or discard images. For example, if all level 0 documents are patch sheets, these images can be deleted.

Image address — the scanner assigns an image address to the scanned document. The image address is based upon the index format defined through the host application. See Chapters 3 or 4 (depending on your driver) for more information about image addressing and formats.

Print string — the actual character string printed on the document is returned in the image header. This string may be up to 40 characters in length. Print strings are defined in the host application. This information can be used to verify that the image address assigned to this document matches the text which appears printed on the page.

Sequential counter — the scanner assigns a unique Sequential ID Number to each document which is returned in the image header. The host application controls the setting of the starting value for this counter.

Patch Type —— the scanner indicates if a patch type was recognized on the document in the image header. If no patch type was recognized, or if patch reading is not enabled, this value will be zero. Transfer patch types return a value of 99. Values 1 through 6 are returned respectively for patch types 1 - 6.

NOTE: If the Toggle patch image is returned to the host, the image header will indicate a Type 4 patch.

Zone processing   Some applications have a requirement to store part of an image in color or grayscale and the rest of the image in black and white format (this saves storage space by not storing the entire image in color or grayscale). Zone processing is a fixed crop window (the zone) located relative to the upper left corner of a document. It allows the operator to select via the host application an area on the document to be delivered in color, grayscale or black and white format (a separate window for both black and white and color/grayscale may be defined). Different zones may be selected for both the front and back of the image.

This feature may be used in conjunction with auto cropping.

Following is an example of producing a color zone.

Original
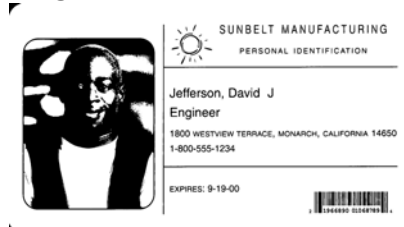
Black and white image

Relative Cropping

1. Prepare documents.

2. Start the scanner to do dual stream simplex scanning (front black and white and front color).

3. Setup the scanner to retrieve black and white images first.

4. Setup front black and white to be auto cropping.

5. Setup front color to be relative cropping.

6. Enable the scanner and start polling.

Loop

    Read front black and white image header
    Read back black and white image (will return full image)
    Read front color image header
    Read back color image (will return only the color zone)

End loop

Programmable keys

Programmable keys are available for use by the operator when the scanner is enabled. The touchscreen displays the functions that are associated with these programmable keys. The programmable keys can be assigned the following functions:

- No scanner functionality (default)
- End Batch
- Omit Multi-feed
- Omit Printing
- Omit Patch

Patch reading

Patch Reading information, associated with image addressing, only applies when the scanner is configured with Image Address enabled via the operator control panel touchscreen.

Patch reading allows you to change image address (IA) information for a document on the fly, without any host PC or touchscreen intervention. All documents with patch codes are imaged and cannot be automatically deleted by the scanner.

Patch code types

A patch code can change the IA level of the document that the patch code occurs on (or the following document in the case of a Transfer patch). These changes then override the IA calculated using the Level to Follow Level rules.

Type 3 Patch Code

The image header reflects when a Type 3 patch code is detected on a document. A document containing a Type 3 patch code is considered to be a Level 3 document. The IA for that document is recalculated by incrementing the Level 3 field and setting the Level 2 and Level 1 fields to 0 (if the Level 2 and 1 fields are defined as having a field width greater than 0). In the image header, document level and patch type will be returned as a 3.

Type 2 Patch Code

The image header reflects when a Type 2 patch code is detected on a document. A document containing a Type 2 patch code is considered to be a Level 2 document. The IA for that document is recalculated by incrementing the Level 2 field and setting the Level 1 field to 0 (if the Level 1 field is defined as having a field width greater than 0). In the image header for this document, document level and patch type will be returned as a 2.

Transfer Patch Code

The image header reflects when a Transfer patch code is detected on a document. A document containing a Transfer patch is considered to be a Level 0 document. The IA level for the next document following the Transfer patch is assigned to the level (Level 2 or Level 3) that has been previously set. The scanner cannot print on documents containing Transfer patches. In the image header for the document containing the Transfer patch, the document level is returned as *0* and the patch type returned as *T* to reflect the Transfer patch definition. For the document following the Transfer patch document the image header will contain a document level of 2 or 3 depending on the Transfer patch type definition and will reflect no patch detected.

Toggle Patch

The Toggle patch is a Type 4 patch that is used to trigger the scanner to switch from the current image stream (black and white) to the alternative image stream (color/grayscale). This logic is performed inside the scanner. Images of the toggle patch sheet will not be returned to the host unless you also enable patch reading and select the Type 4 patch. Common uses for this patch would be a document set, which is primarily black and white but has some color content. Placing a Toggle Patch sheet before and after the color document(s) would allow changing from black and white to color and back on-the-fly during scanning with no additional operator action.

NOTE: Toggle patch may also be used to trigger the scanner to switch from black and white to grayscale and vice versa.

Additional Patch Codes

Additional patch codes enable the host to implement any type of workflow-dependent processing to be based on the insertion of these additional patches into the document stack. Additional patches are patch types 1, 4 and 6.

When an additional patch is detected, this document is considered a Level 0 document and will not cause the IA to change. The image header indicates that this is an additional patch document by returning a patch type, which matches the patch detected. The scanner will not print on documents containing these additional patches.

Batching

Batching information only applies when the scanner is configured with Image Address enabled via the operator control panel touchscreen.

Batching provides a way for the scanner to perform a specific function after scanning a designated number of documents at a particular IA level.

Batching can be enabled or disabled through the host software. The host software has control of which level to count and the number of documents to designate a batch.

The Start of Batch function is controlled by the host and determines what happens when a new batch is started. This can be setup to go to Level 1, 2 or 3, which then causes the IA to be recalculated. The Start of Batch function can also be set to no function.

The End of Batch function is controlled by the host and determines what happens when the batch count has been reached. The options are to stop the feeder, end of job, or continue and begin a new batch. No functionality can also be assigned.

The host application determines if batching is enabled by defining the number of documents per batch and the image address level to count.

3 Using the TWAIN Datasource

Installation

The TWAIN Datasource is included with the scanner. You can install the Datasource from the CD.

1. Insert the CD into the drive.

2. Double-click the setup.exe file.

3. Follow the instructions on each screen as prompted.

After installation is complete, install your application software on the host PC.

A sample TWAIN Datasource application, called the Scan Validation Tool, is also provided as part of this installation. This application can be used to validate scanner functionality. The screen shots in this chapter (from the Scan Validation Tool) document the TWAIN Datasource graphical user interface which can be one option when creating your own Setting Shortcut.

Overview

All *Kodak* Scanners have the capability of providing a wide variety of electronic images. This can be accomplished by using the provided 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 *Kodak* Scanner window will display a list of Setting Shortcuts. Each Setting Shortcut is a group of specific image and device settings. The supplied Setting Shortcuts represent some common electronic image outputs. If none of the Setting Shortcuts meet your scanning needs, you can create a customized Setting Shortcut.

This chapter provides descriptions of the scanner features using options on the TWAIN Datasource tabs. If you are using the TWAIN Datasource, follow the procedures in this chapter to set up your scanner. If you are using the ISIS driver, see Chapter 4, *Using the ISIS Driver*.

Terminology and features

If you have used previous scanners from Kodak, you may be familiar with many of the image processing features already. With the new graphical user interface in the TWAIN Datasource, some of the names of those features have changed. Refer to *Appendix A, TWAIN Image Processing Terminology* for a cross reference of previous names with new names.

Accessing the Scan Validation tool

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

2. From the Driver Types box, select **TWAIN**.

3. From the Drivers box, select **Kodak Scanner: i1800** and click **OK.**
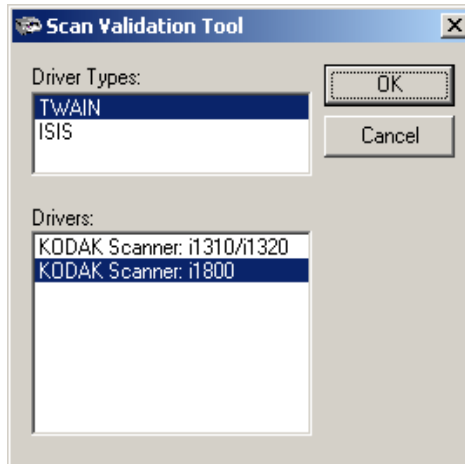
4. Select the Scanner icon.
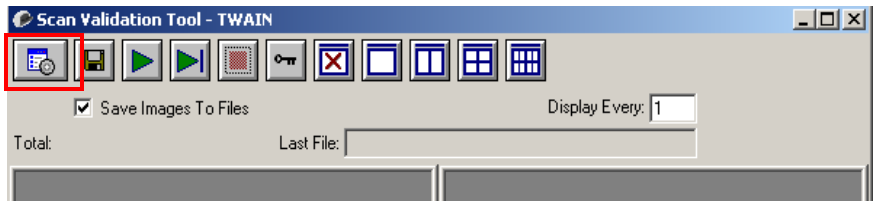
The main *Kodak* Scanner screen will be displayed.
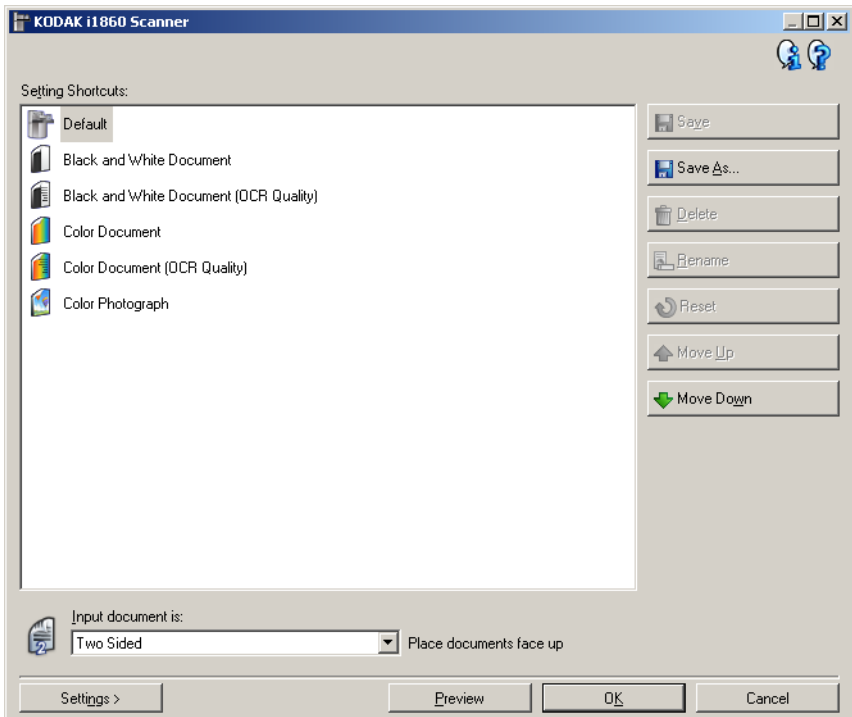
The TWAIN interface is divided into three main sections:

- **Image** Settings: clicking the Settings button on the main *Kodak* Scanner window, displays the Image Settings window. From this window you can set your image processing parameters by using the General, Size, Adjustments and Enhancements tab.

- **Device** Settings: the Device button is located on the Image Settings window. From this window you can set all scanner control functions by using the General, Printer, Multifeed, Image Address, Batch, Patch and OCP tabs.

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

The main *Kodak* Scanner window

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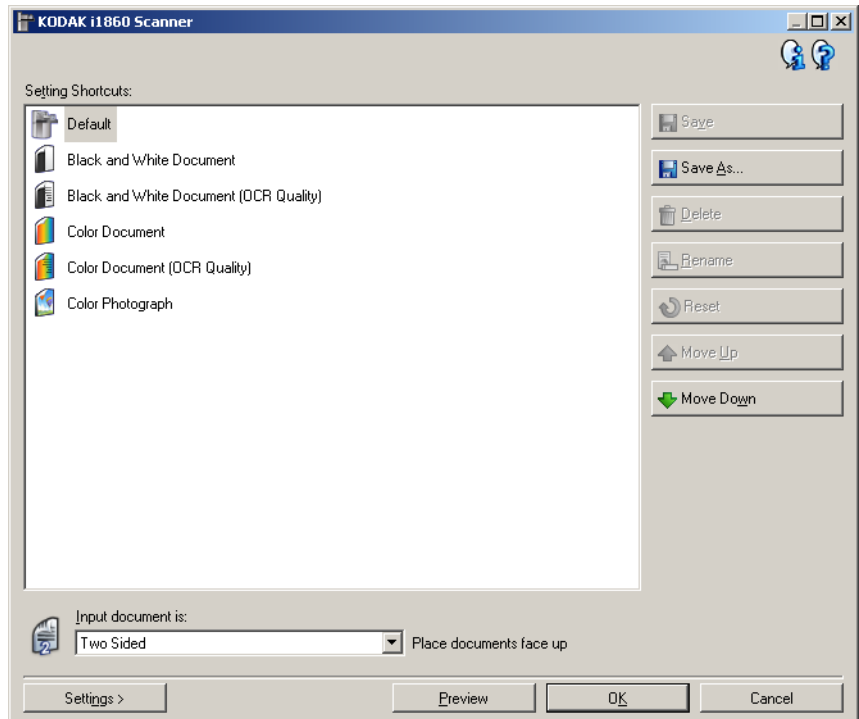
Setting Shortcuts — provides a list of the Setting Shortcuts. The supplied shortcuts are:

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

NOTES:

- Select an OCR Quality shortcut if you want to have the electronic images processed by an OCR application.

- 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.

NOTES:

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

Save — saves any changes made on the selected Setting Shortcut. This is only available for shortcuts you have created.

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

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 a Setting Shortcut. This is only available for shortcuts you have created.

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

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

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

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

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 affect for the current scan session.

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

Information icons

About: displays the scanner's version and copyright information.

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

The Image Settings window

The Image Settings window allows you to define image processing options by using the available tabs. The values used in Image Settings are saved in the selected Setting Shortcut. The Image Settings window includes the following tabs: General, Size, Adjustments, and Enhancements.
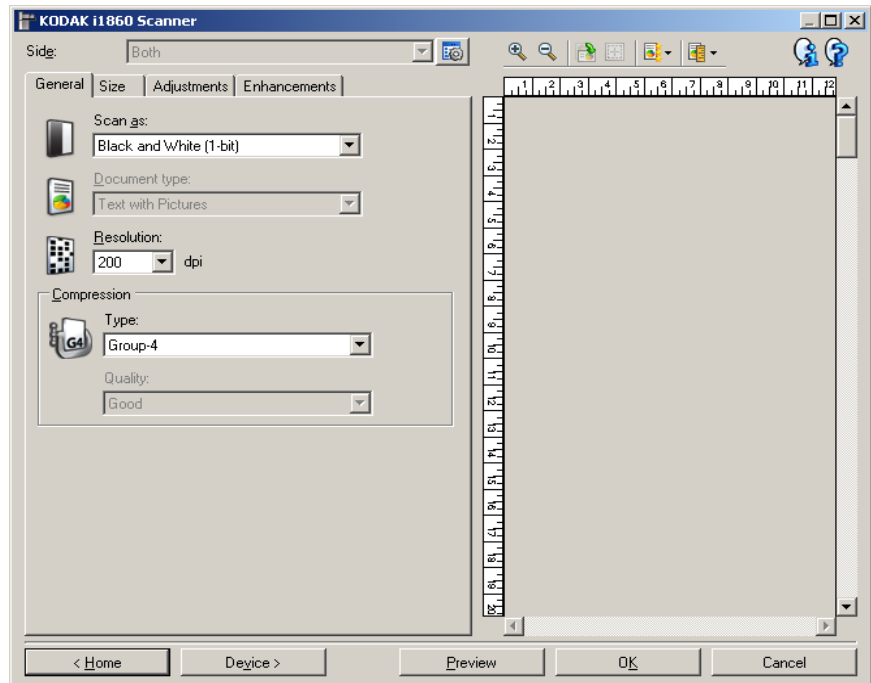
Side — allows you to select which side and image to configure (e.g., Front, Back: Color (24-bit), etc.). All image settings will be applied to the selected image.

This option is only available when advanced settings have been selected on the Advanced tab.

Advanced Image Setup: displays the Advanced tab. For more information see the section entitled, "Advanced tab" later in the chapter.

Toolbar buttons

🔍➕	**Zooms In**: enlarges the image that is currently being displayed in the preview area.
🔍➖	**Zooms Out**: reduces the image that is currently being displayed in the preview area.
	Rotate Outline: rotates the outline 90 degrees. This is only available if the rotated outline will fit 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 scanned image. **Normal**: displays acceptable image quality at a lower resolution. **High**: displays the most accurate representation of the actual image. The image displayed in the preview area is a good representation of what the final image will look like.
	Units: selects the unit of measurement for the scanner; this includes the preview area and any size-related options. The Units options are: **Inches, Centimeters** and **Pixels**.

Preview area

The main purpose of the preview area is to display a sample image that is based on your current shortcut setting. An image will be displayed in this area after a preview scan has been performed.

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

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

Device — displays the Device Settings window.

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

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

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

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

Information icons

About: displays the scanner's version and copyright information.

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

Image Settings - General tab

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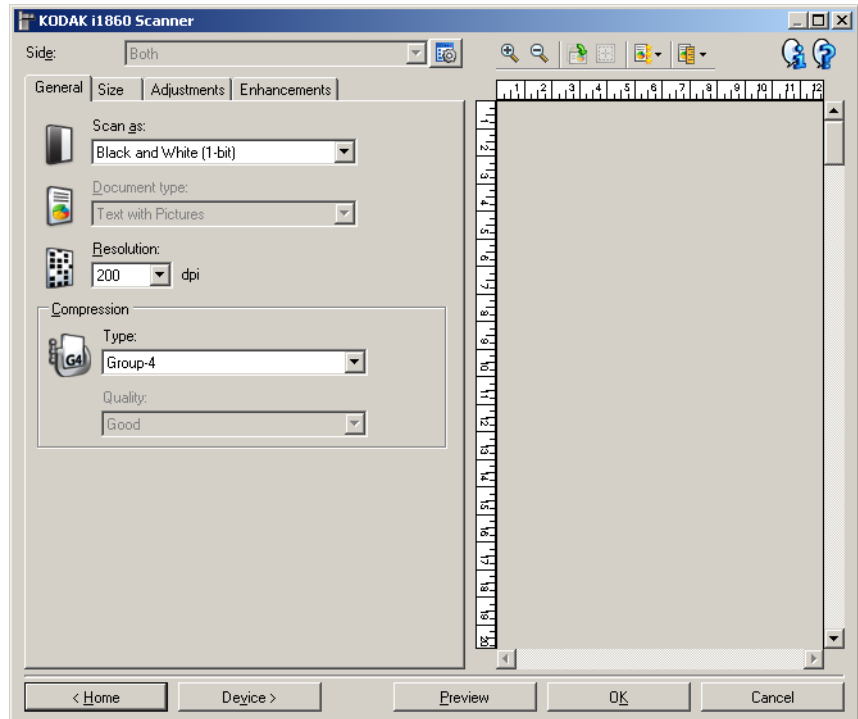
Scan as — allows you to select the electronic image format.

- **Color (24-bit)**: the scanner will produce a color version of your document.

- **Grayscale (8-bit)**: the scanner will produce a grayscale version of your document.

- **Black and white (1-bit)**: the scanner will produce 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 Pictures**: the documents contain a mix of text, business graphics (bar graphs, pie charts, etc.) and line art.

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

- **Pictures**: the documents contain mostly photos.

Resolution — allows you to select the dots per inch (dpi), which largely determines the quality of the scanned image. While scanning at a greater resolution produces a better quality image, it may also increase scanning time and image size. The options are:

Color/grayscale: 100, 150, 200, 240, and 300 dpi
Black-and-white: 200, 240, 300 and 400 dpi

Compression — allows you to reduce your electronic image size.

- **Type**: the scanner will produce a color version of your document.

    - **(none)**: no compression, which may produce a large image size.

    - **Group-4:** uses CCITT standard to compress the image, often used in conjunction with TIFF files.

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

    - **JPEG:** uses JPEG techniques to compress the image.

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

    - **(none) - Internal on**: the scanner will compress the image, however, an uncompressed image will be returned to the scanning application.

- **Quality** — allows you to select the quality of the compressed JPEG image.

    - **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.

Image Settings - Size tab   The Size tab provides the following options.
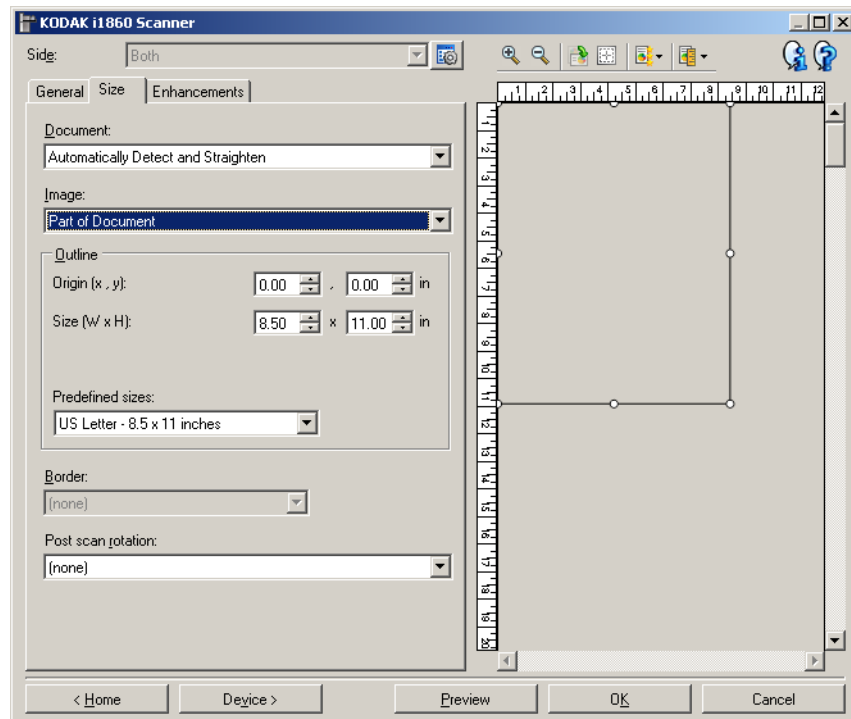
Document — allows you to select how the scanner will detect your document as it is being fed through the scanner.

- **Automatically Detect and Straighten**: the scanner will automatically find each document (regardless of size) and 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 Detect**: the scanner will return an image based on the area you specify with the *Outline* options. It is suggested that you only use this option for scan jobs that contain same-sized documents.

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

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

  - if you select **Document**: **Manually Select,** (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 Selec**t, 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.

- **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 this list.

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

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

- **(none)**

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

  NOTE: This option is only available for **Document: Automatically Detect and Straighten** 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 — allows you to select any rotation to be applied to the electronic image after it has been scanned.

- **(none)**

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

  NOTES:

  - There must be a sufficient amount of text on the page for this option to work properly.
  - This option is designed to work best with Latin-based characters (e.g., English, Dutch, French, German, Italian, Spanish).

- **90, 180, 270 degrees:** the amount of rotation.

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

Landscape Feed Orientation	90 degrees	180 degrees	270 degrees
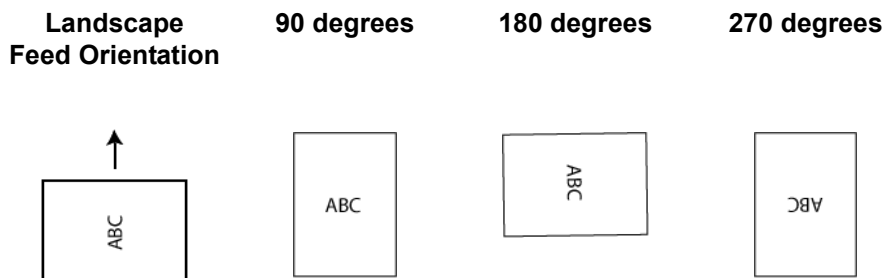
Image Settings - Adjustments tab

The options available on the Adjustments tab depend on the *Scan as* selection on the General tab. The following options are based on a *Scan as* selection of **Black and White**.
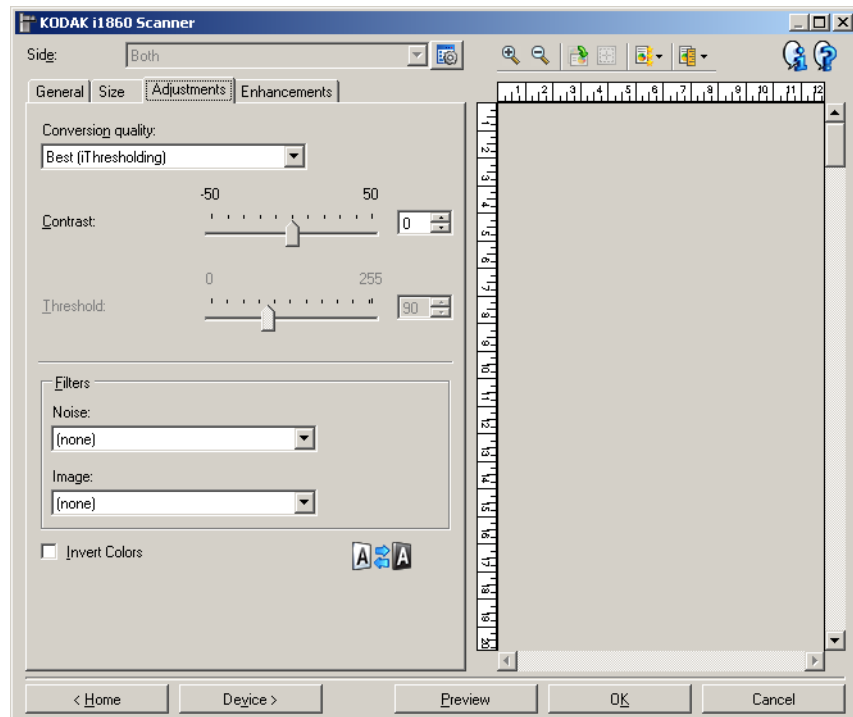
Conversion quality — these settings effect how the scanner analyzes a grayscale version of the document which is used to produce the black and white electronic image.

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

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

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

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

NOTE: This is 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.

The options range from 0 to 255. The default is 90.

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

Filters
- **Noise**

    - **(none)**

    - **Lone Pixel:** reduces random noise by converting a single black pixel to white when it is completely surrounded by white pixels or by converting a single white pixel to black when it is completely surrounded by black pixels.

    - **Majority Rule**: sets each pixel based on its surrounding pixels. The pixel will become white if the majority of the surrounding pixels are white and visa versa.
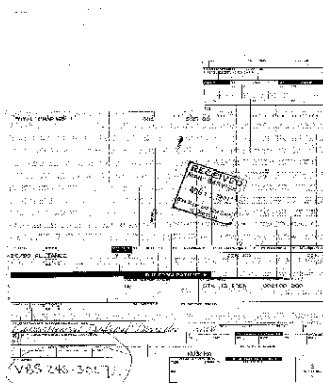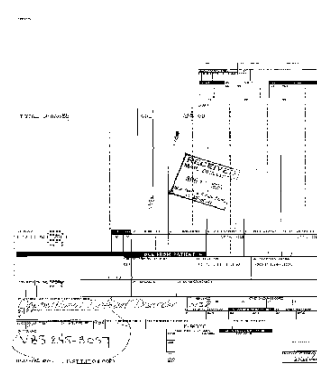
No Noise Filter Used **Lone Pixel**

- **Image**

    - **(none)**

    - **Halftone Removal**: enhances dot matrix text and images made 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.

Image Settings - Enhancements tab

The options available on the Enhancements tab depend on the *Scan as* selection on the General tab.
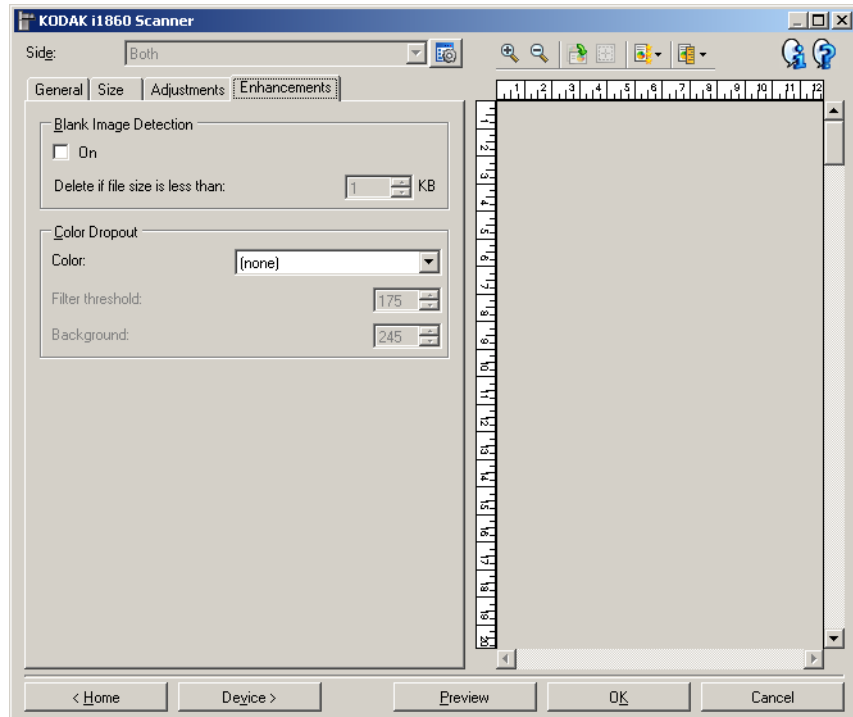
Blank Image Detection — allows you to configure the scanner to eliminate blank images.

- **On**: turns Blank Image Detection on and makes the rest of the Blank Image Detection options available.

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

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

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

- **Filter Threshold:** allows you to adjust how the scanner identifies the color to be dropped. The values range from 0 to 255. Default: 175.

- **Background:** allows you to select the grayscale value to replace the dropped color with. It is suggested that this value be higher than the Threshold value selected on the Adjustments tab in order for the dropped color to appear to be part of the background. The values range from 0 to 255. Default: 245.

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

Advanced Image Setup

The Advanced Image Setup is accessed via the icon located next to the **Side** option at the top of the Image Settings window.
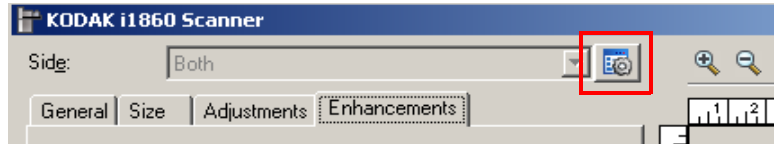
When you select the Advanced Image Setup icon, the Advanced tab will be displayed.
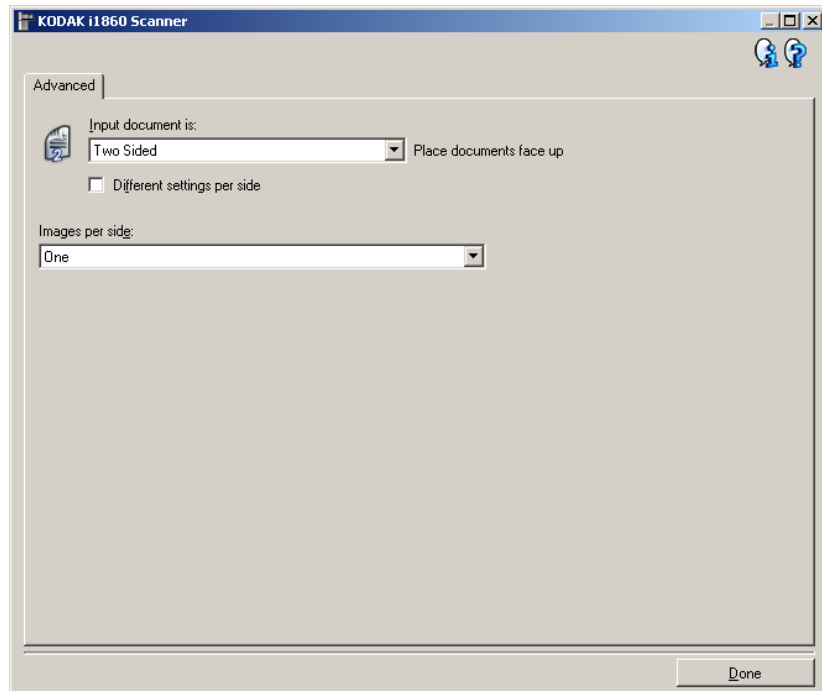
Done — returns you to the Image Settings window.

Information icons

 About: displays the scanner's version and copyright information.

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

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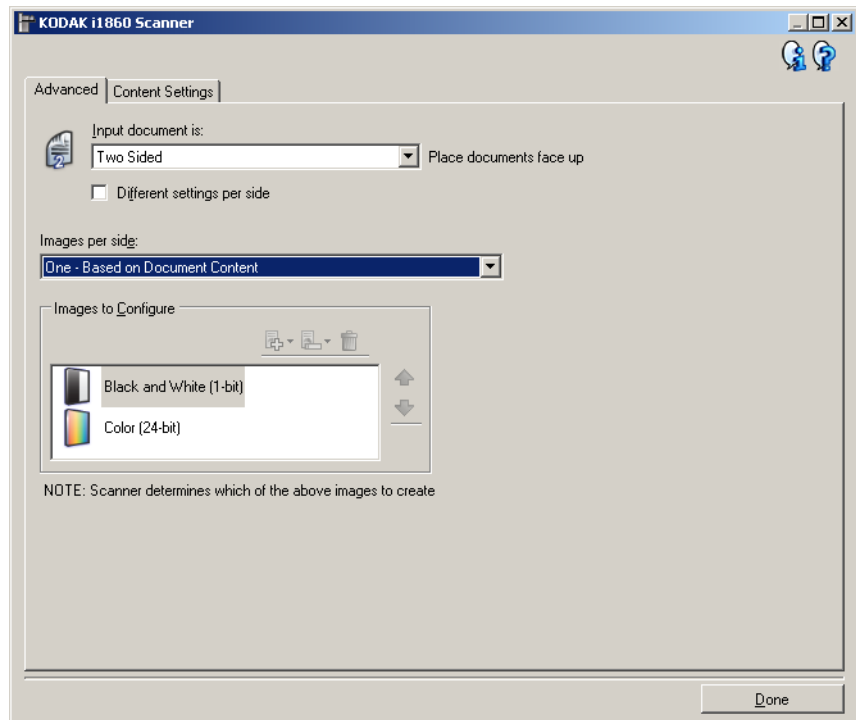
Input document is — select **Two Sided, One Sided - Front,** or **One Sided - Back** depending on what side(s) you want to configure.

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

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

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.
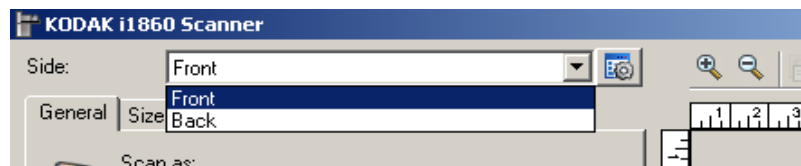
Now that you have turned on **Different settings per side**, your selections will apply only to the front side of the document you are scanning. After you have made your selections for the front side, use the Side option to select the back side and then make the settings you want to apply to the back.

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

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

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

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

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

- **Multiple**: indicates you want the scanner to create more than one image.
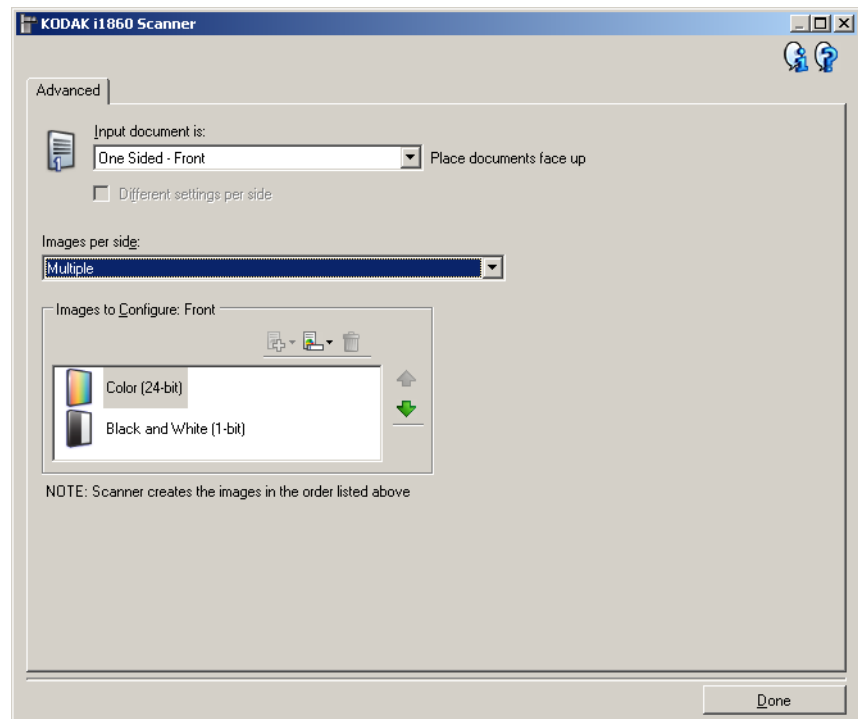
NOTE: If you select **One - based on Document Content** from the *Images per side* option, the Content Settings tab will be displayed.

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

NOTE: This is only available if you select anything other than **One** from the *Images per side* option.

Refer the examples later in this chapter for procedures on how to configure advanced options.

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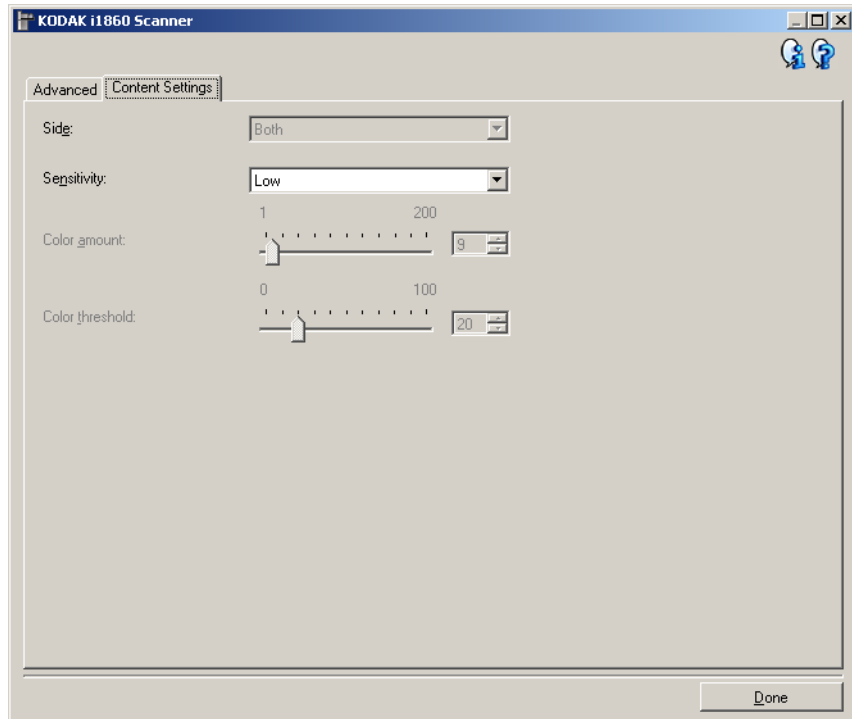
Side — determines which side the *Sensitivity* settings are applied to. This option is only available if **Different settings per side** is turned on from the Advanced tab.

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 color/grayscale. As the value of Color amount increases, more color pixels are required. The options range from **1** to **200**.

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

Learn — allows you to calculate your settings based on representative color documents scanned. Before clicking **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 adjust the Color threshold manually.

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

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 a black and white image based on that.

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

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

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

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

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

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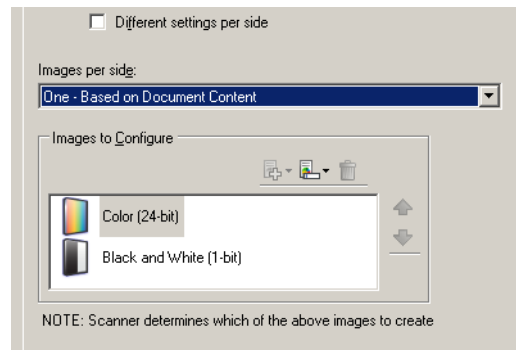

6. If you want a grayscale image instead of a color image, when enough color is detected in the document:
   • make sure *Color (24-bit)* is selected
   • select **Change** to display a list of options
   • select **Grayscale**

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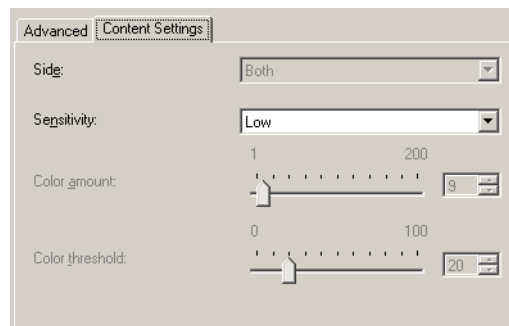
8. Select a **Sensitivity** option.

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)**.

Side:	Both: Color (24-bit)	▼	🖾
General	Size	Both: Color (24-bit)	
		Both: Black and White (1-bit)	
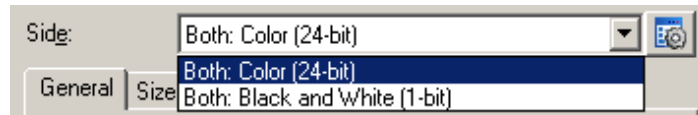
10. Select **Sides: Both: Color (24-bit)**.

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

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

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 *Kodak* Scanner window and then select **Save** to save your selections to the shortcut.

Creating multiple images for each side of a document

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

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

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

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

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

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

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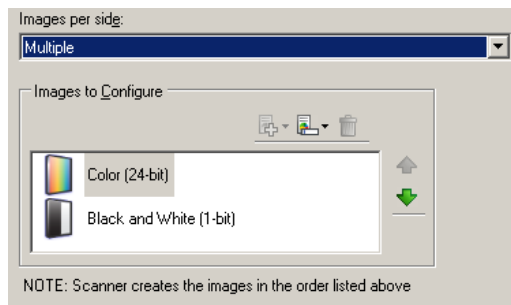
6. If you want a grayscale image instead of a color image, when enough color is detected in the document:

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

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

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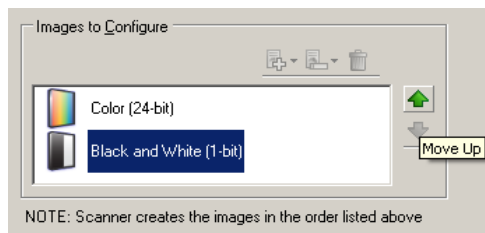
8. Select **Done** to return to the Image Settings window.

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

9. Select **Sides: Both: Color (24-bit)**.
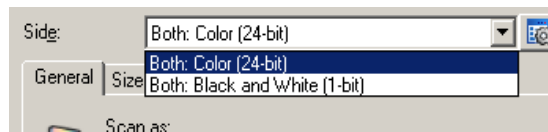
   Make any other adjustments to the color image settings on the rest
   of the tabs on the Image Settings window.

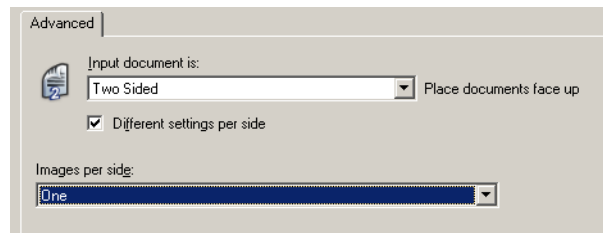10. Select **Sides: Both: Black and White (1-bit)**.

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

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

Creating different settings for each side of a document

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

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

    *   Select a **Setting Shortcut** from the main *Kodak* Scanner window that closely describes your desired output.
    *   Select **Settings** to display the Image Settings window.
    *   Select **Advanced Image Setup** icon on the Image Settings window to display the Advanced tab.

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

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

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

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

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

6. Select **Sides: Front**.

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

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

8. Select **Sides: Back.**

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

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

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

    NOTE: If you selected any option other than *Images per side: One* in Step 4, two *Images to Configure* options groups would 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 Settings window includes the following tabs: General, Printer, Multifeed, Image Address, Batch, Patch, and OCP.
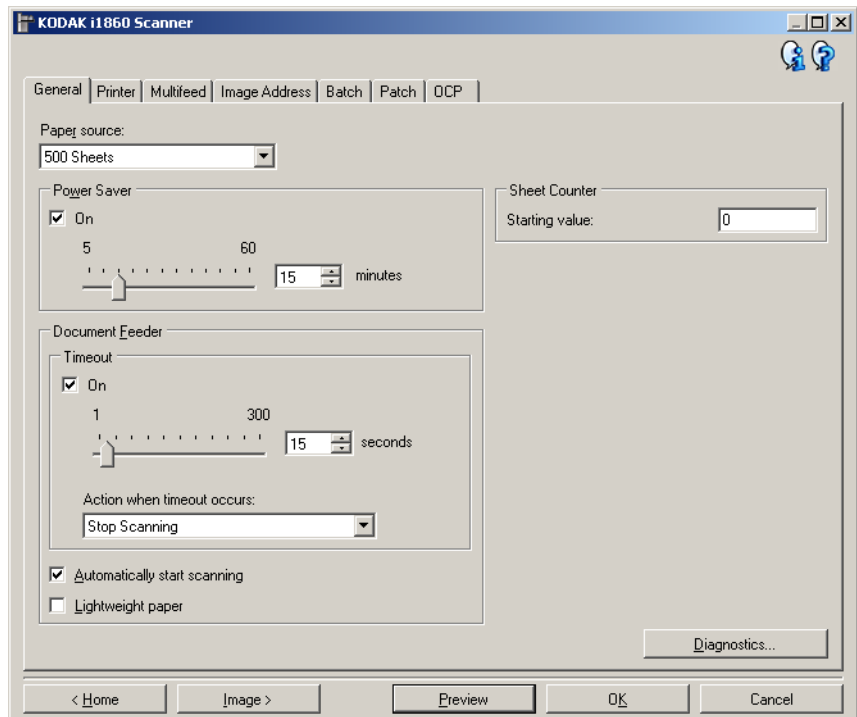
Home — returns you to the main *Kodak* Scanner window.

Image — displays the Image Settings window.

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

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 affect for the current scan session.

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

Information icons

About: displays the scanner's version and copyright information.

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

Device - General tab

The General tab allows you to set scanner-specific options and provide access to scanner diagnostics.
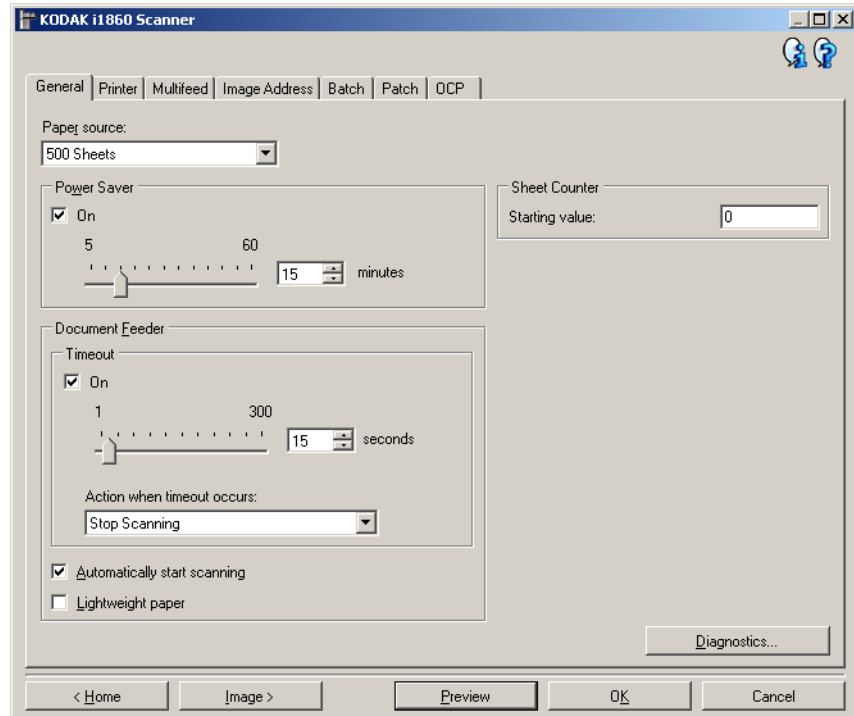
Paper source

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

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

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

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

Power Saver — allows you to set the amount of time the scanner has to be inactive before going into power saver mode. You can turn this option off or set a time from **5** to **60** minutes.

Document Feeder

- **Timeout**: allows you to select the amount of time the scanner will wait once the last document enters the feeder before the timeout occurs. You can turn this option off or set a time from **1** to **300** seconds.

- **Action when timeout occurs**: indicates the action that will be taken when the document feeder timeout has been reached.

    - **Stop Scanning**: scanning will stop and control will return to the scanning application (i.e. ends the job).

    - **Pause Scanning:** scanning will stop but the scanning application will be waiting for additional images (i.e. stops the feeder). Scanning may be resumed by touching **Resume** on the touchscreen. Scanning may be stopped by touching **End Job** on the touchscreen or via the scanning application.

- **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, once the input elevator has been emptied, the scanner will automatically resume scanning when paper is placed in the input elevator. The scanner will wait the amount of time specified by the document feeder timeout.

- **Lightweight paper**: improves output stacking when scanning lightweight paper. When selected, the scanner will increase the gap between documents in order to allow each document to settle in the output tray before the next document gets to the output tray.

    NOTE: Using this option will decrease overall throughput.

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

Diagnostics — displays the Diagnostics tab.

Device - Printer tab

The Enhanced Printer provides a vertical print capability and supports alphanumeric characters, date, image address, time, document count and custom messages. All print information is captured in the image header of each document.
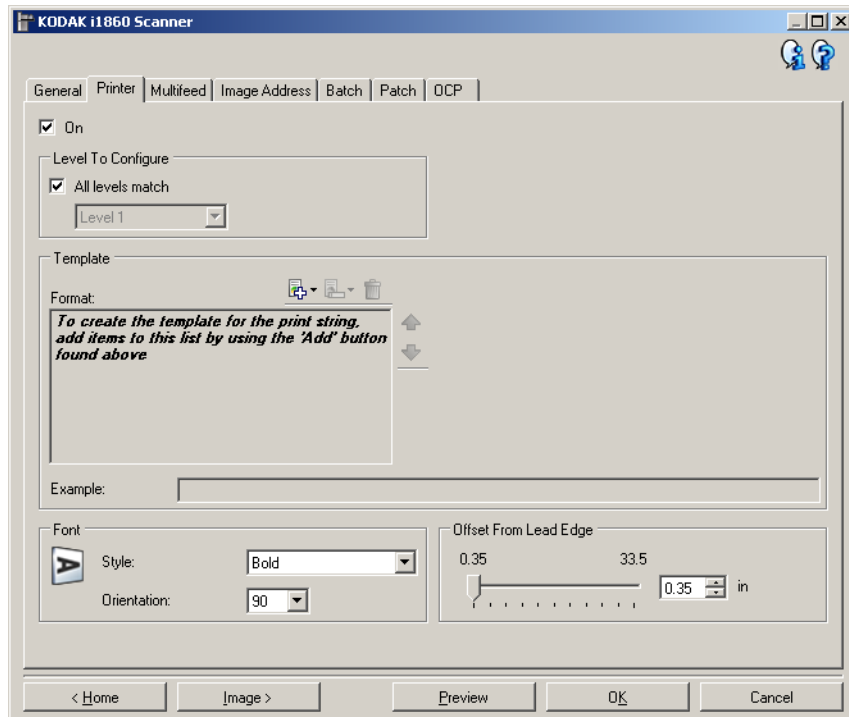
On — turns printing on and makes the rest of the options on this tab available.

Level to configure — choose the level of the document that you want the specified print string to be printed on. For example, if you use three level image addressing, you can print the date on your level 3 document, nothing on level 2 and document count on level 1. Image addressing must be enabled for this option to be available.

• **All levels match**: turn this option on if you want all the print strings to be the same for all levels.

   NOTES:

   - This option is only available when the scanner is in Image Address mode.

   - Image Address mode is not available for all models.

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

🖼️	**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.

As you build your print string, only items that will fit in the 40-character limit will be available from the *Add* and *Change* lists.
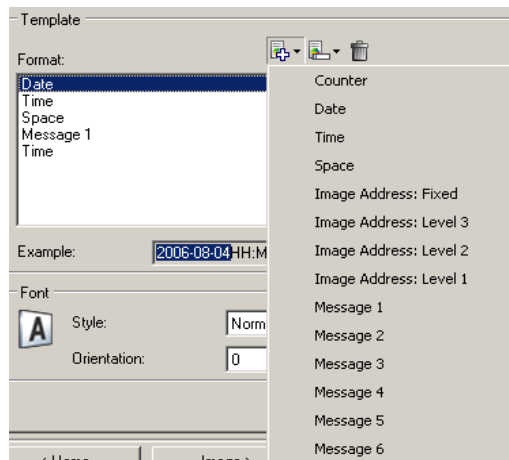
Items — when an item is selected, any associated options will be displayed to the right of the *Format* list.

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

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

  - **Field width**: allows you to configure the width of the counter from 1 - 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).

    - Display: "004"
    - Do Not Display: "4"
    - Display As Spaces: " 4"

- **Date**

  - **Format**:

    - **MMDDYYYY**
    - **DDMMYYYY**
    - **YYYYMMDD**
    - **DDD** (Julian)
    - **YYYYDDD** (Julian)

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

    - **None**
    - **Slash**: 2007/08/24
    - **Hyphen**: 2007-08-24
    - **Period**: 2007.08.24
    - **Space**: 2007 08 24

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

- **Time**: the format is HH:MM.

  - **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.

- **Image Address: Fixed** and **Image Address: Levels**: these are defined on the Image Address tab. Only the levels currently defined will be available.

- **Message**: allows you to specify custom text to be included in your print string. A maximum of 20 characters is allowed. You can have up to 6 unique messages per messages.

  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.

- **Format:**

  - **Normal**: prints a single vertical line of characters (one character per horizontal line).

  - **Block**: prints a block of characters (6 characters per horizontal line).

NOTE: This option is only available when the High-Resolution Printer Accessory is installed.

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

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

| Feed Direction | 0 | 90 | 180 | 270 |
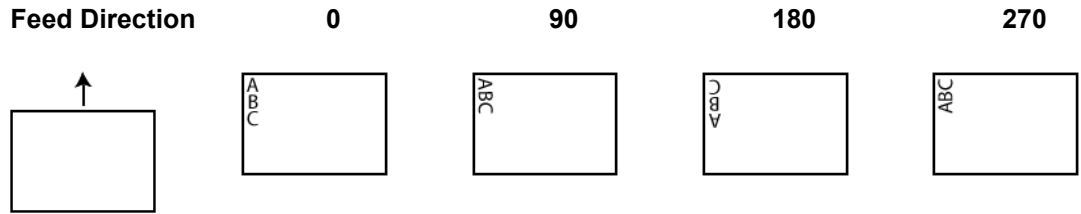
Offset from lead edge — select a value from **0.35** to **33.5** inches to determine how far the printed information will appear from the leading edge of the document.

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 set manually on the scanner. See Chapter 4, *The Enhanced Printer and Patch Readers*, in the User's Guide for information on changing the horizontal print position.

Device - Multifeed tab

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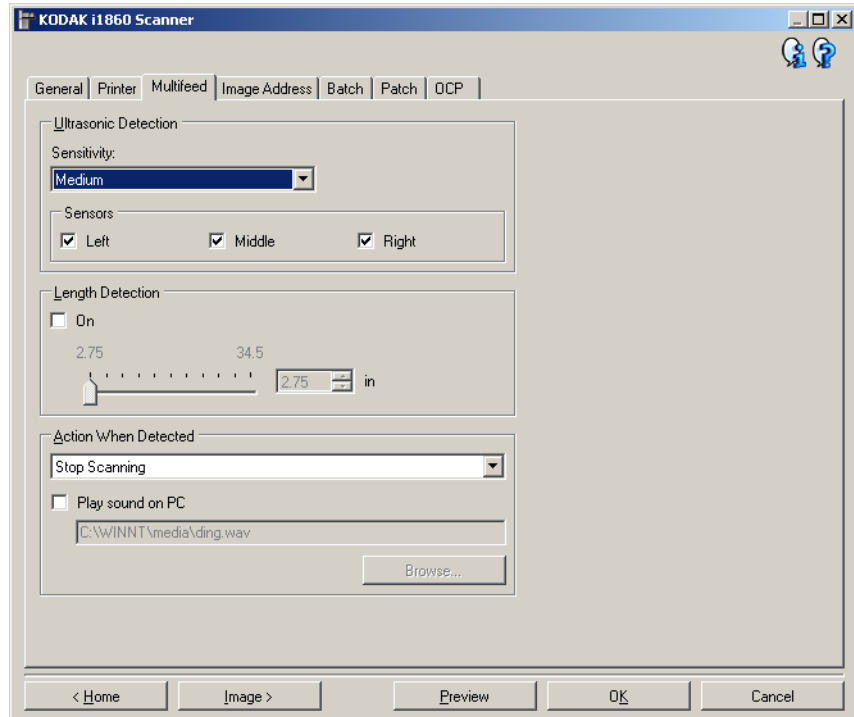
Ultrasonic detection

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

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

NOTE: Regardless of the setting, "sticky" notes will be detected as multi-fed documents.

Sensors — three sensors cover the width of the paper path. In order for multi-fed documents to be detected correctly, they must pass under one of these sensors.

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

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

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

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

- **Continue Scanning**: the scanner will continue to scan.

- **Pause Scanning**: scanning will stop but the scanning application will be waiting for additional images (i.e., stops the feeder). Scanning may be resumed by touching **Resume** on the touchscreen. Scanning may be stopped by touching **End Job** on the touchscreen or via the scanning application.

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 - Image Address tab

Image addressing is used for document tracking, batch control and image management. The Image Address tab allows you to set an image address starting point. The scanner will increment the image address based on how you set up the image address rules on this tab.
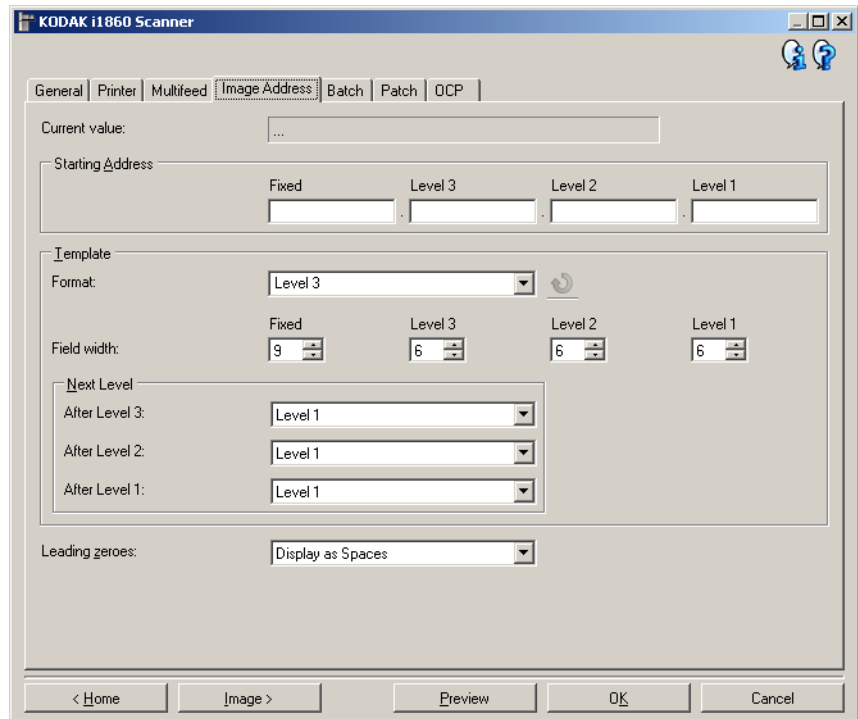
NOTES:

- This tab is only available when the scanner is in Image Address mode.

Current value — displays the scanner's current image address. This value is used by the scanner as the next image address which is assigned to the next document scanned.

Starting Address — allows you to enter a starting image address which overrides the *Current value*. You can enter a value for each available field, up to the maximum allowed characters for that field. The number of available fields, the field types, and the number of characters allowed per field are based on the Template settings for *Format* and *Field width* (see below).

Template

- **Format**: allows you to select the format of the image address. The examples below indicate the available fields.
  - **Fixed**: Fixed
  - **Level 3**: Fixed.Level 3.Level 2.Level 1
  - **Level 2**: Fixed.Level 2.Level 1
  - **Level 1**: Fixed.Level 1
  - **Level 3 Offset**: Fixed.Level 3.Level 2
  - **Level 2 Offset**: Fixed.Level 2

NOTES:

- When you make a *Format* selection, the *Field width* and *Next Level* settings will automatically be set to the defaults for that format.

- If you made a change to the *Field width* or *Next Level* settings, the Format will be appended with the text *<changed>*, and the name will be displayed in italics (e.g., **Level 3 <changed>*).

- ↻ **Reset**: allows you to undo any changes that have been made to the format. This is only available when you have modified the format (e.g., are in italics and appended with *<changed>*).

- **Field width** — allows you to configure the width of each field from **1 - 9**. However, the sum total of all the field widths cannot exceed 27, therefore, the field width may be limited to a value less than 9.

- **Next Level**: the level to assign to the next document.

    - **After Level 3**: allows you to select what level to assign to the document that follows a level 3 document.

    - **After Level 2**: allows you to select what level to assign to the document that follows a level 2 document.

    - **After Level 1**: allows you to select what level to assign to the document that follows a level 1 document.

    The options for all three of the above are: Level 1, Level 2, and Level 3. However, the available options are based on the image address format. For example, if the *Format* does not have Level 3 as one its fields, then *Level 3* will not available.

    NOTE: While scanning, a document can also be assigned a level by inserting a patch sheet (when turned on via the Patch tab) or selecting a level field on the scanner's touchscreen. For more information refer to the User's Guide which is included with your scanner.

Leading zeros — allows you to configure the format of the level address fields when the width of the value is less than the field width (the examples indicate a field width of 3 and the image address at A.3.2.1).

- **Display** (e.g., A.003.002.001)

- **Do Not Display** (e.g., A.3.2.1)

- **Display as Spaces** (e.g., A. 3. 2. 1)

Device - Batch tab

Batching is the operation of counting pages or documents.

NOTE: This tab is only available when the scanner is in Image Address mode.
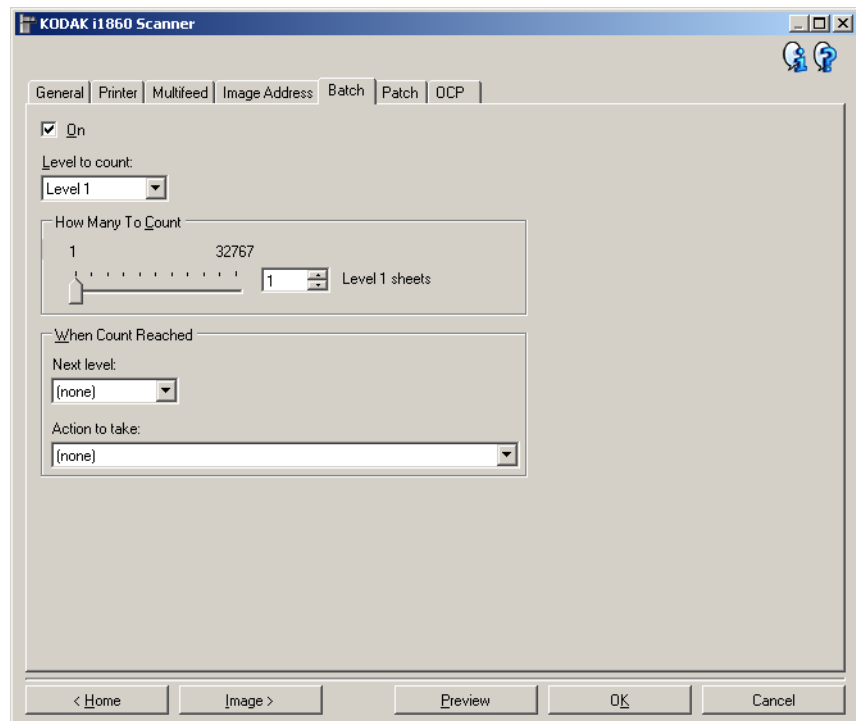
On — turns batching on and makes the rest of the options on this tab available.

Level to count — sets the level to count. The options are **Level 1, Level 2,** and **Level 3**.

NOTE: The level you want to count must exist in the image address template as defined on the Image Address tab.

How Many To Count — defines the number of documents to be counted prior to performing the action to take when the count has been reached.

When Count Reached

• **Next Level:** defines the level for the next document after the count is reached. Options are: **(none), Level 1, Level 2,** and **Level 3**.

NOTE: The level you want to count must exist in the image address template as defined on the Image Address tab.

- **Action to take**: defines the action to be taken after processing the last document in the batch.

  - **Pause Scanning**: scanning will stop but the scanning application will be waiting for additional images (i.e. stops the feeder). Scanning may be resumed by touching **Resume** on the touchscreen. Scanning may be stopped by touching **End Job** on the touchscreen or via the scanning application.

  - **Stop Scanning**: scanning will stop and control will return to the scanning application (i.e. ends the job). Restart the scan session from the scanning application.

  - **Continue Scanning and Restart Count**: the scanner will continue to scan and automatically start a new batch by resetting *How Many to Count*.

NOTE: You can also end a batch before the *How Many To Count* is reached by using the touchscreen on the scanner. This can be accomplished by setting up a function key via the OCP tab to be *End Batch*.

Device - Patch tab

The Patch tab provides choices of what patch type to recognize. One or more patches can be selected at a time. The type of patch recognized is returned in the image header.

See the Kodak publication A-61599, *Patch Code Information for Kodak Document Scanners* for complete information.
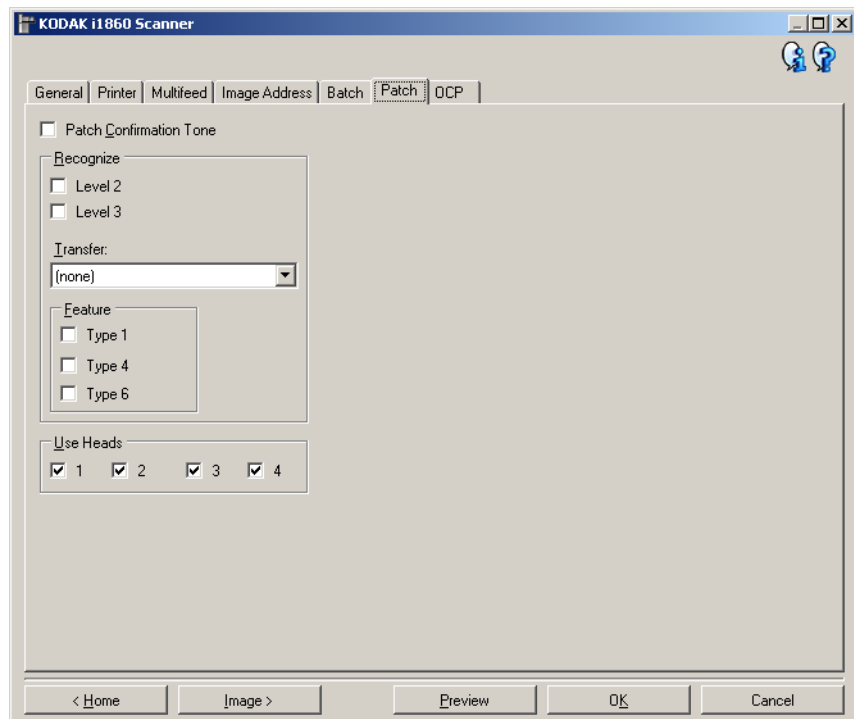
Patch Confirmation Tone — the confirmation tone may be used to signal that a patch has been recognized by the scanner. The default is no confirmation tone.

Recognize — select which patch type(s) to recognize.

• **Level 2:** assigns a Level 2 to the current document (whether it is your document with a patch on it or a Level 2 patch sheet).

• **Level 3:** assigns a Level 3 to the current document (whether it is your document with a patch on it or a Level 3 patch sheet).

• **Transfer**: assigns a level to the next document (after the Transfer patch sheet).

  - **None**: select this if you do not want to recognize transfer patches.

  - **As Level 2**

  - **As Level 3**

NOTE: The Transfer patch will be treated as Level 0.

Feature

- **Patch Types 1, 4 and 6** these patch types can be used by the scanning application for post-scan image control (they are not used for image addressing). For example, use these patch types for workflow control or changing between black and white and color/grayscale imaging.

  NOTE: This option is only available when the scanner is in Image Address mode.

Use Heads — select which patch heads/readers you would like to use. Each patch head/reader can be turned on and off independently. The default is for all patch heads/readers to be turned on.

NOTE: This option is only available when the scanner is in Image Address mode.

Device - OCP tab

The OCP tab is used to setup options on the scanner's Operator Control Panel (i.e., touchscreen).
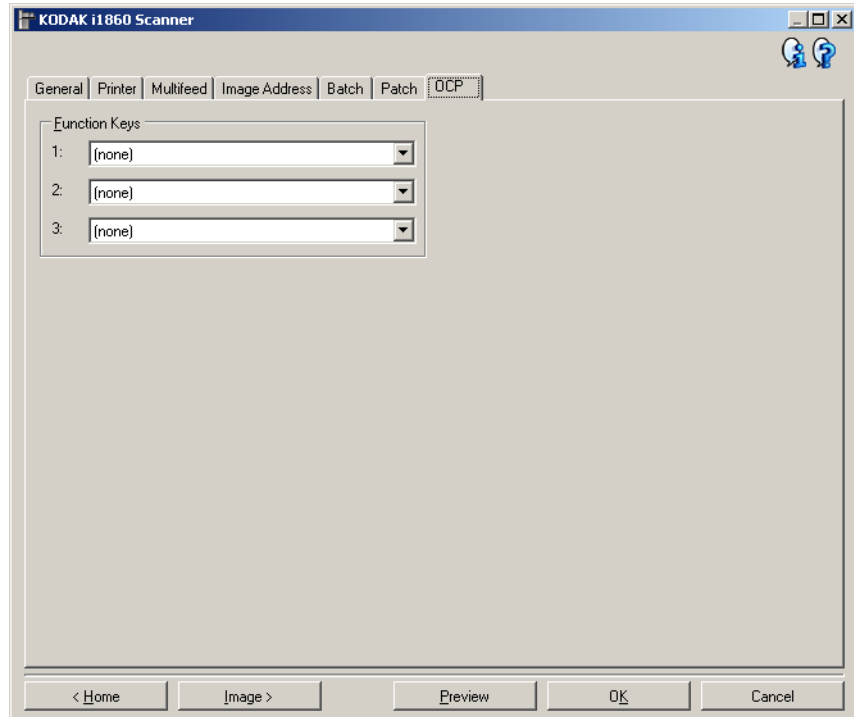
Function Keys — available functions for each key are:

- (**none**)

- **Stop Scanning**: scanning will stop and control will return to the scanning application (i.e., ends the job). Restart the scan session from the scanning application.

- **End Batch**: start a new batch by resetting the batch count (i.e. How Many to Count) and continue to scan.

- **Omit Multifeed**: turn off multifeed detection only on the next document that is fed.

- **Omit Print**: turn off printing only on the next document that is fed.

- **Omit Patch**: turn off patch recognition only on the next document that is fed.

- **Lower Elevator**: moves the elevator to the lowest position.

NOTE: The **End Batch** and **Omit Patch** options are only available when the scanner is in Image Address mode.

Creating a new Setting Shortcut

Setting Shortcuts are separately named and contain all scanner settings required to do a certain scanning job. By default, the i1800 Scanner comes with predefined Setting Shortcuts for the most common scanner tasks. You can use these default Setting Shortcuts or use them as a template to create your own Setting Shortcut.

You cannot modify the default Setting Shortcuts.

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

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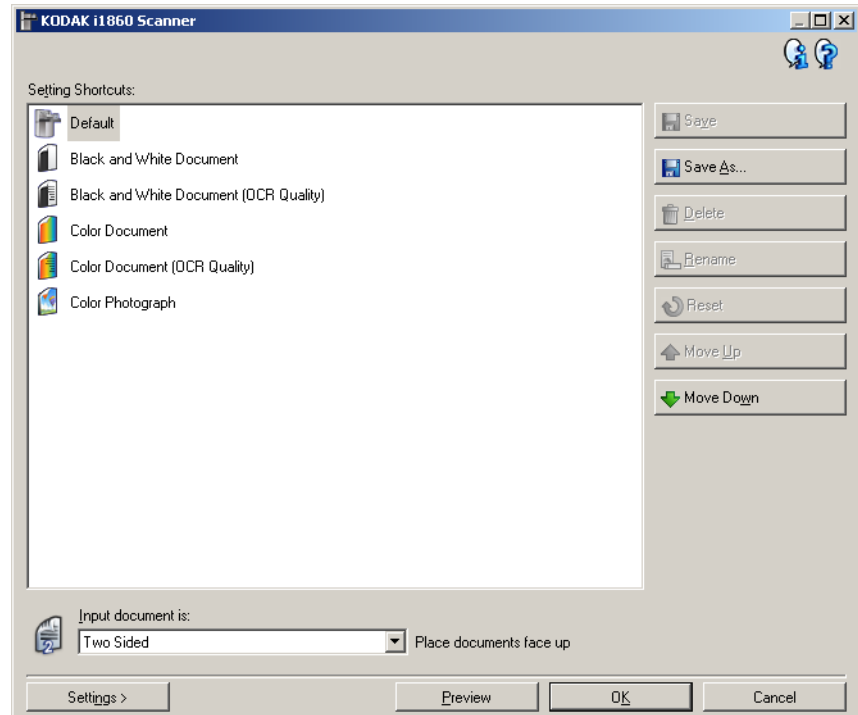
1. From the main *Kodak* Scanner window, select a Setting Shortcut from the list. It is recommended that you select a shortcut that beset describes the desired image output.

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

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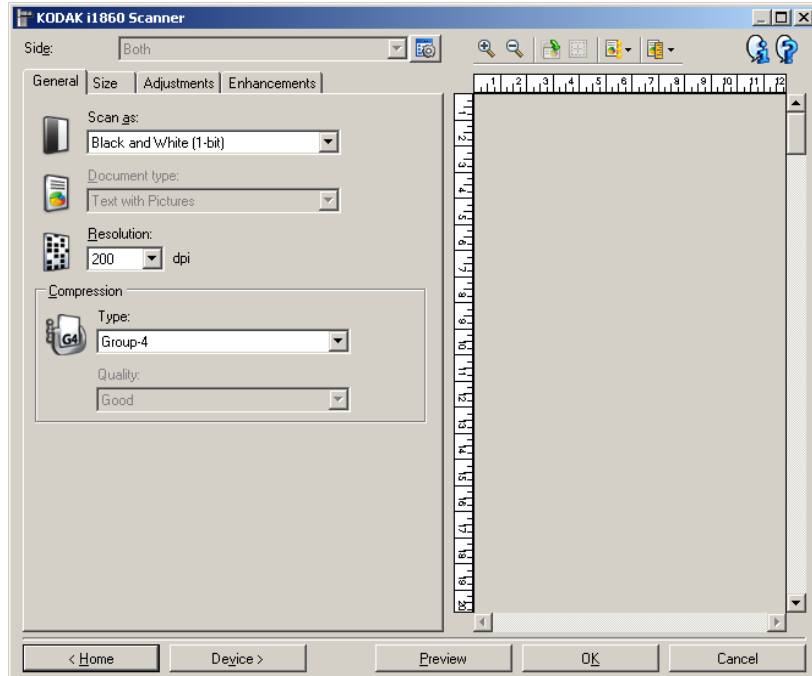

4. Select the appropriate options on the General tab.

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

5. Place a representative document in the input elevator.

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

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

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

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

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

10. Select **Save As**. The Save As window will be displayed.
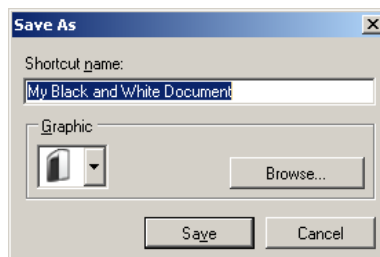
11. Enter a new Setting Shortcut name that is meaningful to you and click **Save**.

Changing Device settings

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

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

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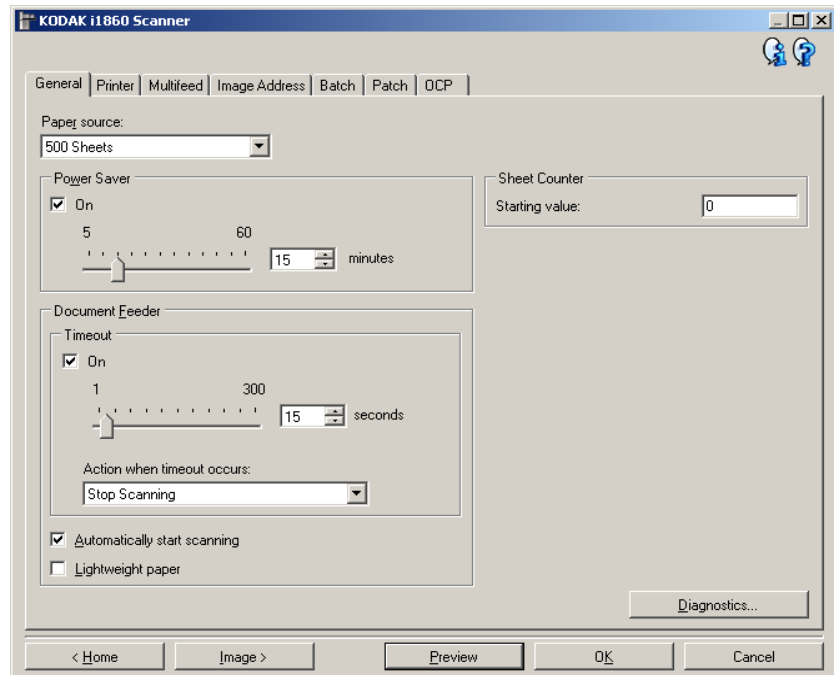
4. Before making any adjustments, browse through the tabs on the Device Settings window to get familiar with features that are available. See the section entitled, "The Device Settings window" for information about these features.

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 *Kodak* Scanner window and then select **Save** to save your selections to the shortcut.

4 Using the ISIS Driver

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

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

See the section entitled, "Starting the Scan Validation Tool" in Chapter 3 to access the main ISIS Driver window.

The main ISIS Driver window

The main ISIS Driver window provides a set of 12 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.
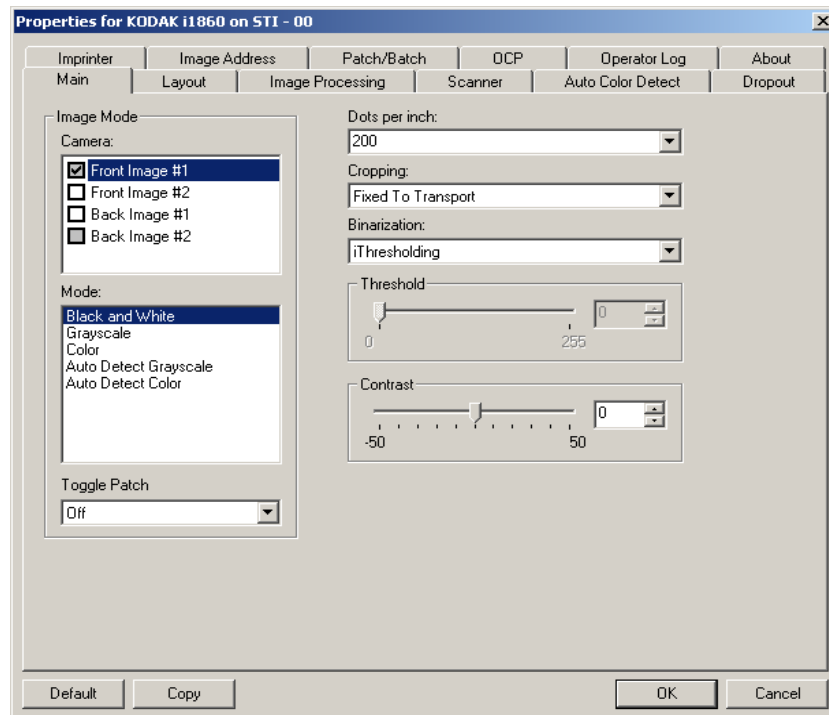
**Default** — the values on all tabs will be reset to the factory defaults.

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:
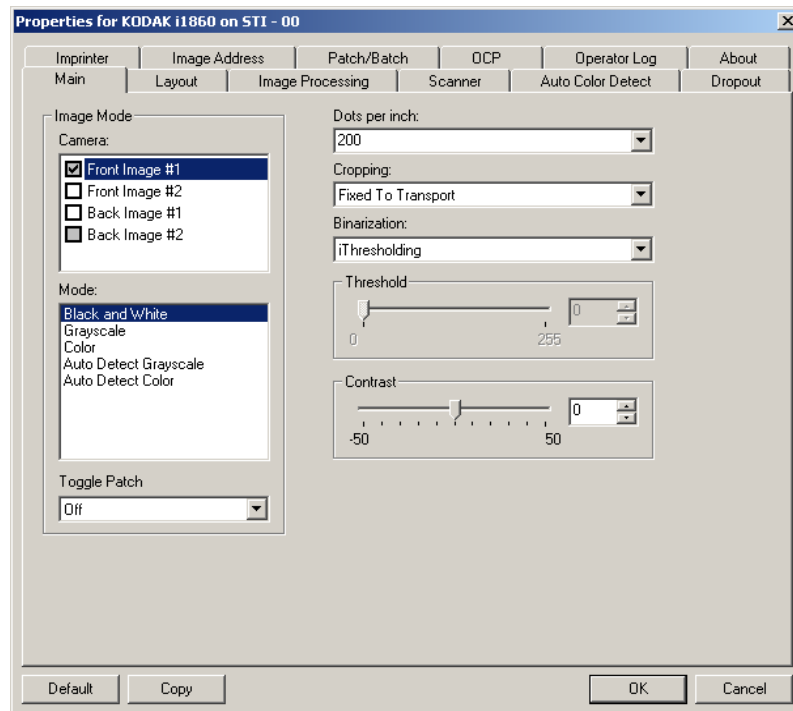
Image Mode

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 — provides the following options:

• **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 — the toggle patch is a type 4 patch that is used to trigger the scanner to change from the current image stream (black and white) to the alternative image stream (color/grayscale). This provides color-on-the-fly functionality for customers who want to scan the majority of their documents black and white with the option to switch to color and back when desired. When a toggle patch is detected, this determines the side(s) whose image output is toggled between black and white and color/grayscale. Select either **Off, Same Side, Both Sides** or **Detect Only**.

- **Off**: no patches will be used.

- **Same Side**: only the side which recognizes the patch sheet will toggle. For example, if a patch sheet contains a patch on the front side only, the front stream will toggle but the rear stream will not.

- **Both Sides:** if a patch is recognized on either the front or the rear, both front and rear streams will toggle.

- **Detect Only:** this option should be used when the capture application software (not the scanner) is responsible for determining when to toggle. When using this option, information in the image header will indicate that the scanner has recognized a type 4 patch. The scanner will not take any other action.

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.

Choose a resolution value from the drop-down list. The default is 200 dpi. Available resolutions are:
- **Color/Grayscale:** 100, 150, 200, 240 and 300
- **Black and white:** 200, 240, 300 and 400

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. Select one of the following options:

- **Automatic:** dynamically adjusts the cropping window for different document sizes based on the edges of the image.

- **Aggressive:** eliminates any residual black border on any image edges. In order to achieve this, there is a possibility that a small amount of image data from the edge of the document may be lost.

- **Fixed to Transport:** (used for batches of same-sized documents) allows you to define the area to be imaged. Fixed to Transport cropping is used in conjunction with paper size and page layout and assumes you are center-feeding your documents. If you are not using center feeding, you must select the Layout tab to define your scan area. See the section entitled "Layout tab" later in this chapter.

- **Relative to Document** (zone processing): used for batches of same-sized documents, zone processing is a floating fixed crop window (the zone) located relative to the upper left corner of a document. It allows you to select an area on the document to be delivered in either color/grayscale or black and white format (a separate window for both black and white and color/grayscale may be defined). Different parameters may be selected for both the front and back of the image.

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

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

- **iThresholding:** allows the scanner to dynamically evaluate each document to determine the optimal threshold value to produce the highest quality image. This allows scanning of mixed document sets with varying quality (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 Threshold 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, Threshold and Contrast can be adjusted.

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.

The options range from 0 to 255. The default is 90.

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

Layout tab

The Layout tab provides these options:
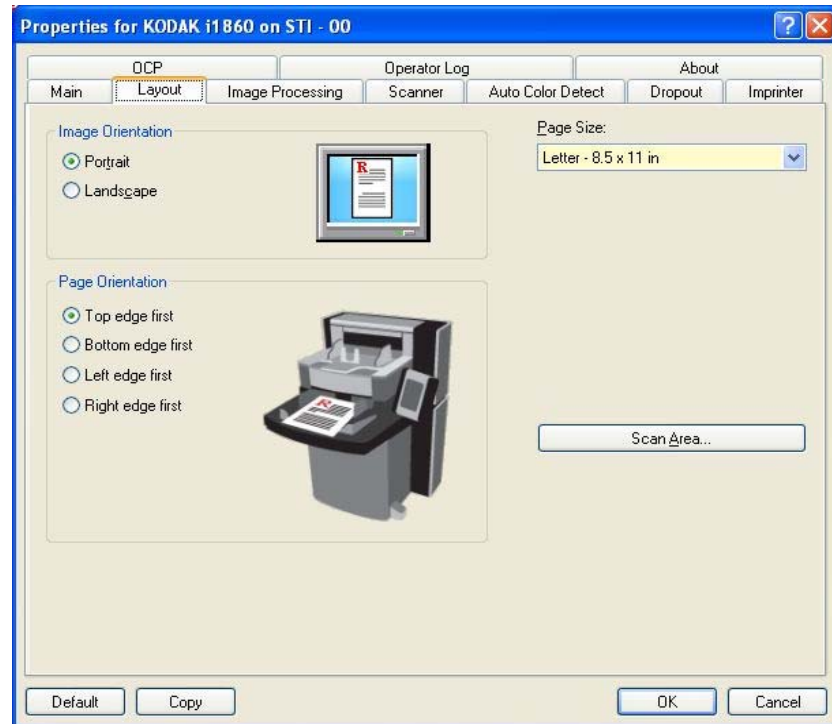
Image Orientation

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

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

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**.

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 box.

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

Image Processing tab

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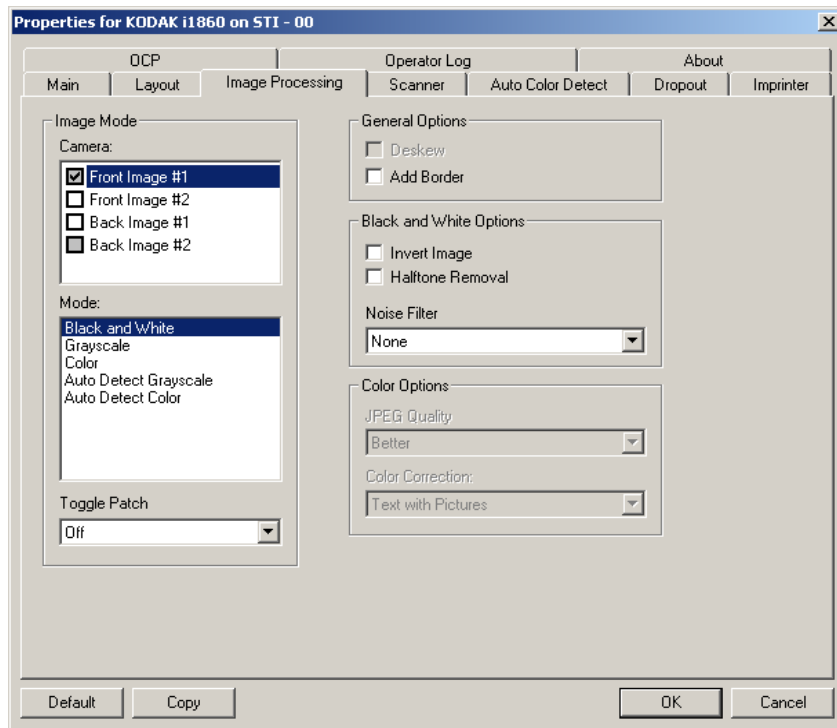
General options

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

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

- **Add Border** — allows you to add a fixed amount of border to the left, right, top and bottom edge of the image.

Black and White options

- **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.

- **Halftone Removal** — enhances dot matrix text and images made with halftone screens (e.g. newspaper photographs).

Noise Filter — select one of the following: **None, Lone Pixel or Majority Rule.**

- **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.
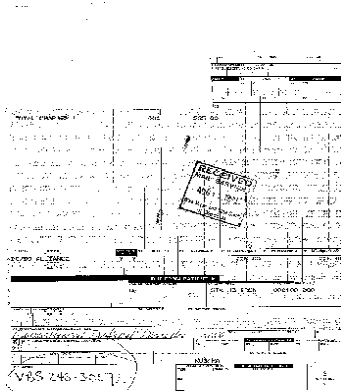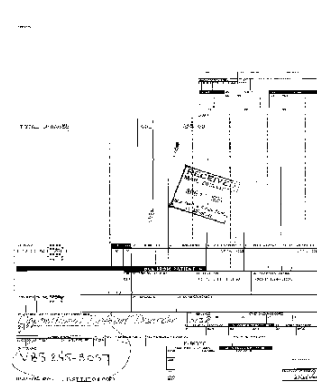
No Noise Filter Used   **Lone Pixel**

Color options

JPEG — uses JPEG techniques to compress the image. JPEG compression offers a JPEG quality of **Draft**, **Good, Better, Best** and **Superior**.

- **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.

Color Correction — select one of the following based upon the documents you are scanning:

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

Scanner tab

The Scanner tab provides the following options.
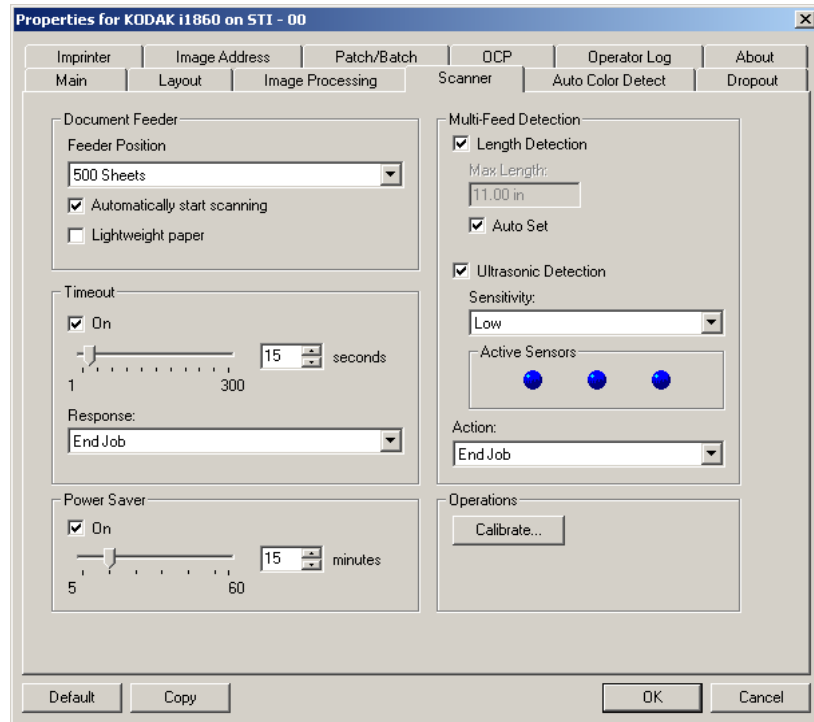
Document Feeder

Feeder Position — select the desired paper source.

- **Normal**: select when you are scanning a stack of documents of 25 sheets or less. The input elevator is in its highest position.
- **100 Sheets**: select when you are scanning a stack of documents between 100 and 25 sheets.
- **250 Sheets:** select when you are scanning a stack of documents between 250 and 100 sheets.
- **500 Sheets:** select when you are scanning a stack of documents between 500 and 250 sheets.

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, once the input elevator has been emptied, the scanner will automatically resume scanning when paper is placed in the input elevator. The scanner will wait the amount of time specified by the document feeder timeout.

Lightweight paper: improves output stacking when scanning lightweight paper. When selected, the scanner will increase the gap between documents in order to allow each document to settle in the output tray before the next document gets to the output tray.

NOTE: Using this option will decrease overall throughput.

Timeout	**On** — allows you to select the amount of time the scanner will wait once the last document enters the feeder before the timeout occurs. You can turn this option off or set a time from **1** to **300** seconds. **Response** — allows you to specify the action that will be taken when the transport timeout has been reached. • **End Job:** stops the feeder and the transport but leaves the scanner enabled. Scanning may be resumed by touching the **Scan** button on the touchscreen. • **Stops Feeder and Transport:** scanning will stop and control will return to the scanning application (i.e. ends the job).
Power Saver	This option allows you to set the amount of time the scanner has to be inactive before going into power saver mode. You can turn this option off or set a time from **5** to **60** minutes.
Multi-feed Detection options	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 **Length Detection** — if you enable this option, select the minimum length of the document that can be scanned with a multi-feed being detected. A value of 0 indicates no length detection. Length detection can be used when scanning same-size documents. The maximum value is 34.5 inches. • **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 scanner. Multifeeds are triggered by detecting air gaps between documents. This allows multifeed detection to be used with job sets containing documents with mixed thicknesses. • (**none**) • **Low**: least aggressive setting and is less likely to detect labels, poor quality, thick or wrinkled documents as multi-fed documents. • **Medium**: use if your job set has varying document thicknesses or labels attached to the document. Depending on the label material, most documents with labels should not be detected as a multi-fed document. • **High**: most aggressive setting. This is a good setting to use if all documents are similar in thickness to 20-lb. bond paper. NOTE: Regardless of the setting, "sticky" notes will be detected as multi-fed documents.

- **Low**: 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 Settings Shortcut 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**: most aggressive setting. This is a good setting to use if all documents are similar in thickness to 20-lb. Bond paper.

Active Sensors — three sensors cover the width of the paper path. In order for multi-fed documents to be detected correctly, they must pass under one of these sensors.

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

Action — select an option of how you want the scanner to perform if it detects a multi-fed document.

- **Detect Only:** the scanner will beep (if the scanner volume is on) and the condition will be logged in the scanner and continue to scan.

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

- **Stop Feeder and Transport:** scanning will stop but the scanning application will be waiting for additional images (i.e., stops the feeder). Scanning may be resumed by touching **Resume** on the touchscreen. Scanning may be stopped by touching **End Job** on the touchscreen or via the scanning application.r

Operations

Calibrate — displays the Calibrate dialog box which allows you to perform an Image Chain or UDDS calibration. Only calibrate the scanner when prompted to do so.
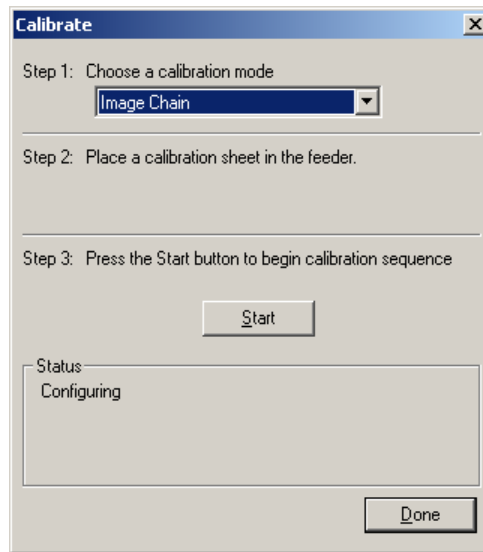
- **Image Chain**: optimizes your scanner to achieve the best image quality and feeding performance. Frequent calibration is not necessary or recommended.

- **UDDS**: ensures that the ultrasonics system that detects multi-feeds and document edges is properly adjusted for best performance.

Use the calibration target provided with your scanner.

1. Click **Calibrate**. The Calibrate dialog box will be displayed.

2. Select **Image Chain** or **UDDS** from the drop-down box.

   • If you select **Image Chain,** use the calibration target provided with your scanner. Be sure to use a good, clean calibration target. Place the calibration target in the input elevator face up and click **OK**.

   IMPORTANT:If the White Background Accessory is installed, it must be replaced with the black background strips, and the scanner must be restarted prior to calibration.

   • If you select **UDDS,** place a 20 lb. or 75 g/m^2 bond sheet of paper in the input elevator. **Do not use the calibration target** and click **OK**.

3. Click **Start**. While calibration is being performed a status will be provided in the Status box.

4. Click **Done** when the calibration is successful.

Auto Color Detect tab

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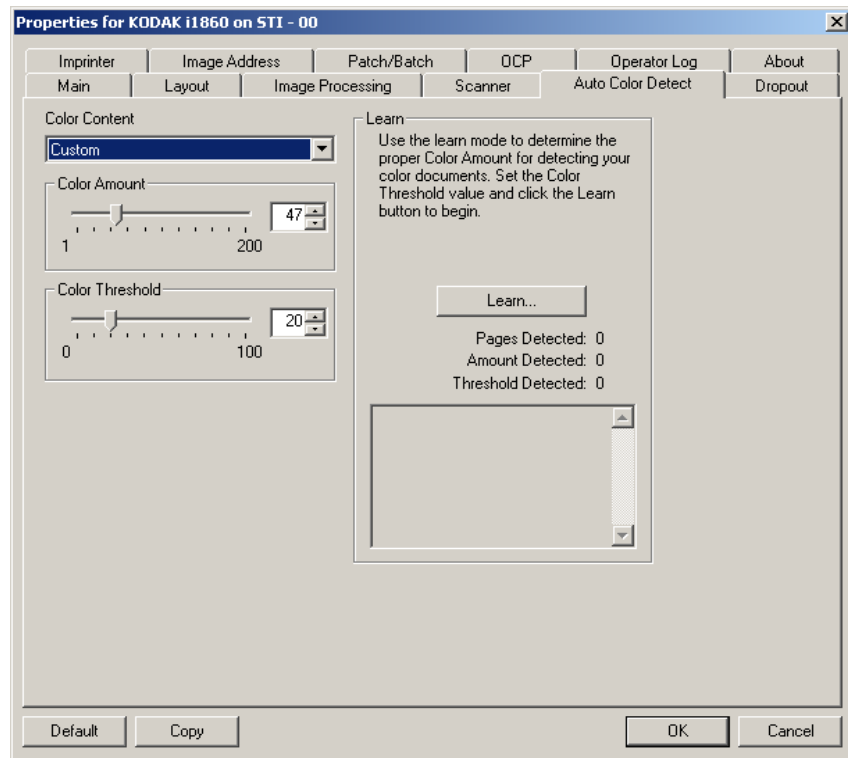
Color Content

Select one of the following options for automatic color detection.

- **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 Amount or Color Threshold 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, 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.

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 elevator and click **OK**. These documents will be analyzed and the recommended color amount will be calculated.

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.

NOTE: 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**.

Dropout tab

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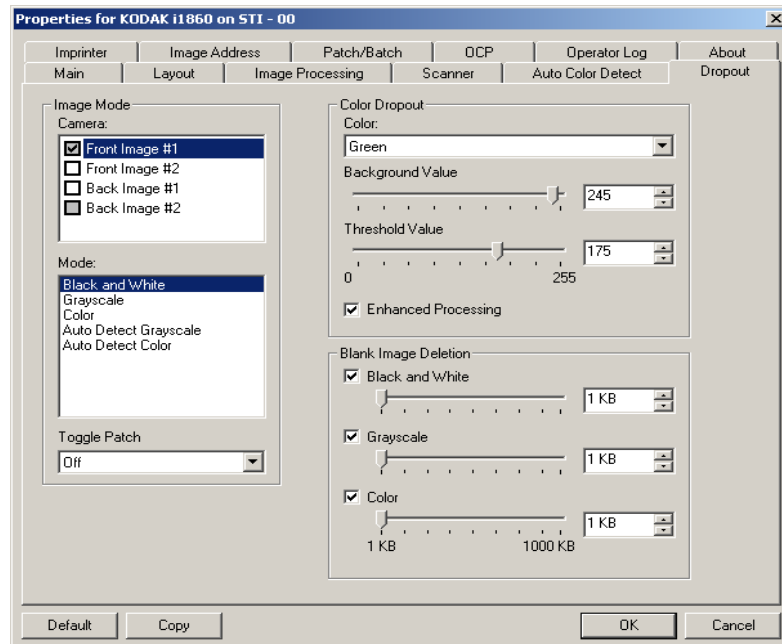
Color Dropout

Color dropout 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. You can select a **Red**, **Green** or **Blue** dropout color.

Background Value: allows you to select the grayscale value to replace the dropped color with. It is suggested that this value be higher than the Threshold value selected on the Adjustments tab in order for the dropped color to appear to be part of the background. The values range from 0 to 255. Default: 245.

Threshold Value: allows you to adjust how the scanner identifies the color to be dropped. The values range from 0 to 255. Default: 175.

Enhanced Processing — enable or disable this option to achieve the highest read rate for your production OCR processing. The default is **Enabled**. For example, if you enable **Enhanced Processing** and achieve an 87% read rate, and achieve a 93% read rate with this option disabled, then you would disable this option. Compare these percentages with identical image processing parameters and the same document samples.

Blank Image Detection

Use the slider bar 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). You must specify a blank image size for each image type (**Black and White, Grayscale,** and **Color**) you want to delete. The default is None, which means you keep all images.

Imprinter tab

The Enhanced Printer provides a vertical print capability and supports alphanumeric characters, date, image address, time, document count and custom messages. All print information is captured in the image header of each document.
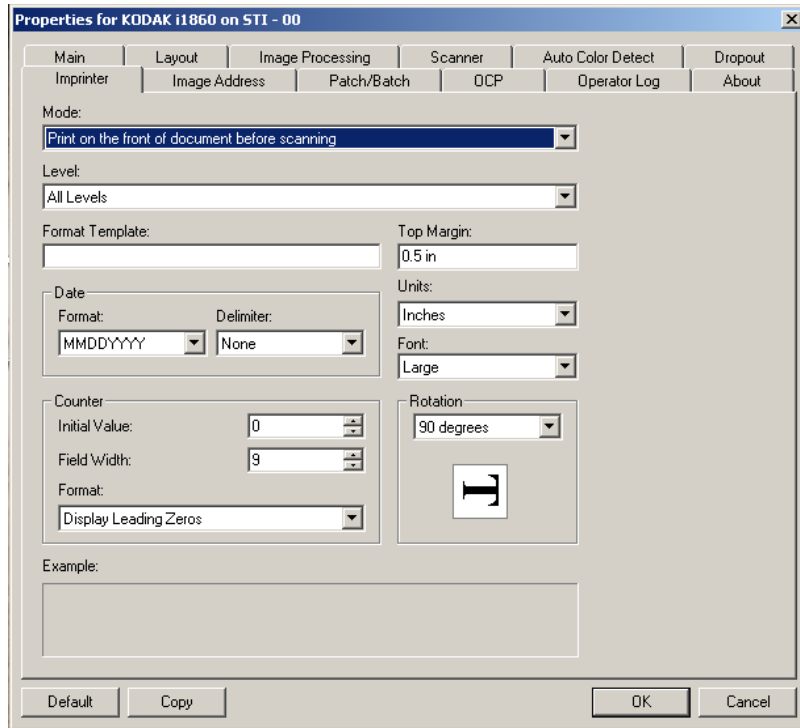
Mode

- **Do not print**: disables the options on the Imprinter tab.

- **Print on the front of document before scanning**: enables the options on the Imprinter tab.

Level — choose the level of the document that you want the specified print string to be printed on. For example, if you use three level image addressing, you can print the date on your level 3 document, nothing on level 2 and document count on level 1. Image addressing must be enabled for this option to be available.

Defining your print string

Format Template — allows you to define your print string. The maximum amount of characters for the 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: /, Hyphen: -, Period: . , Blank** or **none**. For example: 08/24/2007, 08-24-2007, 08.24.2007 or 08 24 2007 or 08242007 (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:** the format in which the printed image address appears when printed is defined on the Image Address tab. The printed image address may appear in one of three formats:
  - **Display Leading Zeros** format (e.g., 004.003.002.001)
  - **Compress Leading Zeros** format (e.g., 004. 3. 2. 1)
  - **Suppress Leading Zeros** format (e.g., 004.3.2.1)

  NOTE: The format chosen does not effect the fixed field of the image address; it is always displayed and printed in its entirety. In the example above, 004 has been defined as a fixed field.

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.

Rotations — you can select either 90, 180, 270 or Automatic.

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

  NOTES:
  - There must be a sufficient amount of text on the page for this option to work properly.
  - This option is designed to work best with Latin-based characters (e.g., English, Dutch, French, German, Italian, Spanish).

Horizontal print position

The horizontal print position is set manually on the scanner. See Chapter 4, *The Enhanced Printer and Patch Readers*, in the User's Guide for information on changing the horizontal print position.

Image Address tab

Image addressing is used for document tracking, batch control and image management. The Image Address tab allows you to set an image address starting point. The scanner will increment the image address based on how you set up the image address rules on this tab.

Format String — this text field allows you to structure your image address. Fixed field information entered in this field will be reflected in the Image Address area in Fields A through D. To indicate the position of an image address level use the format character (%3L - Level 3, %2L - Level 2, %1L - Level 1), which represents the level. For image address levels the value indicated in Fields A through D will be the start value as defined in the Counters area Start Value field. The format string in the sample screen above represents a fixed field value of address and a 3 level image address.

The i1800 Series Scanners have more options available for image addressing schemes with the following guidelines:

• You may define from 0 to 4 fixed fields. Fixed fields can be a maximum of 9 characters.

• Only one field may be assigned to a level. You are only allowed one Level 1 field, one Level 2 field and one Level 3 field.

• There is no requirement to have any Level field.

Image Address fields — displays the starting image address. The values in this field reflect information from the Format String area and the Start Value field in the Counters area. Each field can have a maximum width of 9 characters. The total image address cannot exceed 27 characters (30 with 3 delimiters).

Presets — you can use the selections in the field to automatically fill in the format string field. The options are:

- **Custom**: enter your desired values.

- **Level 3**: Address%3L%2L%1L

- **Level 2**: Address%2L%1L

- **Level 1**: Address%1L

- **Level 3 Offset**: Address%3L%2L

- **Level 2 Offset**: Address%2L

You can have no fixed field or enter any fixed field value. The default fixed field value is **Address**.

Counters — for each image address level enter a **Start Value**, **Width** and make a **Level to Follow Level** selection.

- **Start Value**: the start value is reflected in the image address in the field designed by the format string.

- **Width**: a value of 0 indicates that no image address level will be used. Widths cannot exceed 9 characters.

- **Level to Follow**: these are the rules the scanner follows to set the next image address level if there are no other inputs. For example, patch sheet or end of batch processing. You will have to define a level to follow level for each of the level fields you defined in your image address.

    NOTE: The total value of the Width column plus the number of characters in all fixed fields cannot exceed 27 characters.

Check Digit — this option is only displayed if the scanner is configured with a Check Digit alteration file.

Pages Per Batch — refer to the Batch/Patch tab for more information. This number is displayed on this tab to be used as a reference while formatting your image address.

Format — select the format of the image address string used by the printer and how it is displayed on the touchscreen. The following choices are available for printing the counter format.

- **Display Leading Zeros** format (e.g., 0009). This is the default.

- **Suppress Leading Zeros** format (e.g.,   9)

- **Compress Leading Zeros** format (e.g., 9)

Batch/Patch tab

The Batch/Patch tab provides batch and patch functionality. Batching is the operation of counting pages or documents. The Patch tab provides choices of what patch type to recognize. One or more patches can be selected at a time.
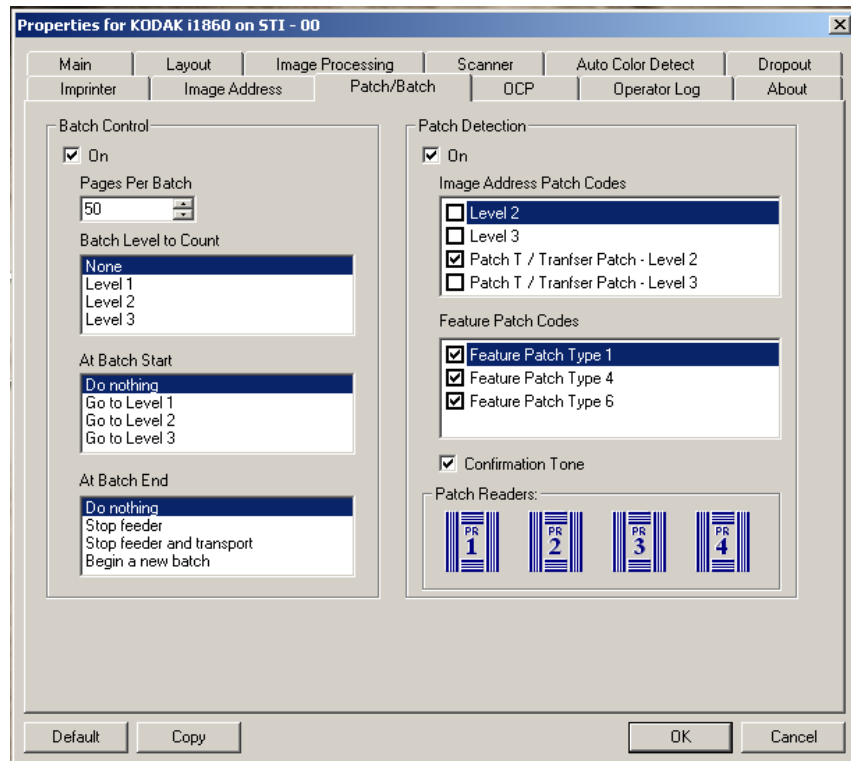
Batch Control

The batch function allows you to define the level to count the number of documents in the batch and any actions to be taken at the beginning and end of a batch.

On — enables batch separation.

Pages per Batch — defines the batch size which is the number of documents to be counted before performing a predefined action.

Batch Level to Count — sets the level to count. You can select Level 1, Level 2 or Level 3. The level you choose to count must exist in the image address template as defined on the Image Address tab.

At Batch Start — defines the action to be taken before processing the first document in a batch. You can select **Go to Level 1, Go to Level 2, Go to Level 3** or no action.

At Batch End — defines the action to be taken after processing the last document in the batch. You can select **Stop Feeder, Stop Feeder and Transport (End of Job), Continue and Begin New Batch** or no action.

Patch Detection

Patch Control allows you to select what patch types to recognize. One or more patches can be selected at a time.

On — check this box to enable patch recognition.

Image Address Patch Codes — these patch types are used for image addressing. When the Patch Reader detects a patch, it automatically assigns a new image address to the new document. This eliminates the task of trying to determine where one document stops and the next starts when an operator is viewing electronic images. It provides a hierarchical document structure and offers an auto-batching alternative.You can select **Level 2, Level 3, Patch T / Transfer Patch - Level 2** or **Patch T / Transfer Patch - Level 3**.

The Patch Reader controls document level changes by automatically sensing a predefined patch code and changing the document level accordingly.

Patch 2 — assigns a Level 2 to the *current* document

(Do not use these patches for production - they are not to spec)

Patch 3 — assigns a Level 3 to the *current* document

(Do not use these patches for production - they are not to spec)

Patch T/Transfer Patch — assigns a predetermined level to the *next* document. Defined by selecting Level 2 or Level 3 in the Definition box.

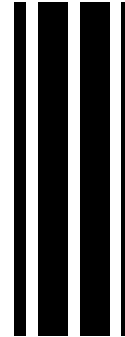*(Do not use these patches for production - they are not to spec)*

Feature Patch Codes — these patch types can be used by the host for post-scan image control (they are not used for image addressing). For example, use these patch types for changing between black and white and color/grayscale imaging or workflow control.

Patch 1

(Do not use these patches for production - they are not to spec)

Patch 4/Toggle Patch

image addressing - disabled

(Do not use these patches for production - they are not to spec)

NOTE: the Toggle patch is a Type 4 patch that is used to trigger the scanner to switch from the current image stream (black-and-white) to the alternative image stream (color/grayscale). When image addressing is disabled, the Patch Readers are also disabled. However, a Toggle patch can still be detected.For more information, see the section entitled, "Controlling image transfer order" in Chapter 2.

Patch 6

(Do not use these patches for production - they are not to spec)

Confirmation Tone — the confirmation tone may be used to signal that a patch has been recognized. The default is no confirmation tone.
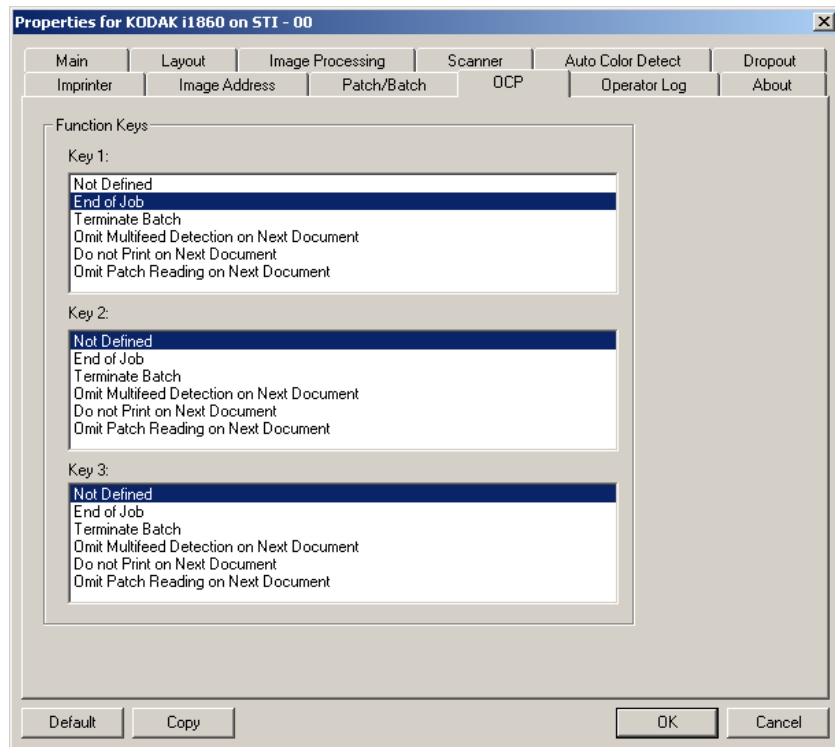
Patch Readers — this graphical representation corresponds to the physical patch reader location in the scanner.

Select up to four patch reader(s) that you want to read patches.

OCP tab

The OCP tab is used to assign actions the operator uses from the Operator Control Panel. Function Key #1, Function Key #2 and Function Key #3.
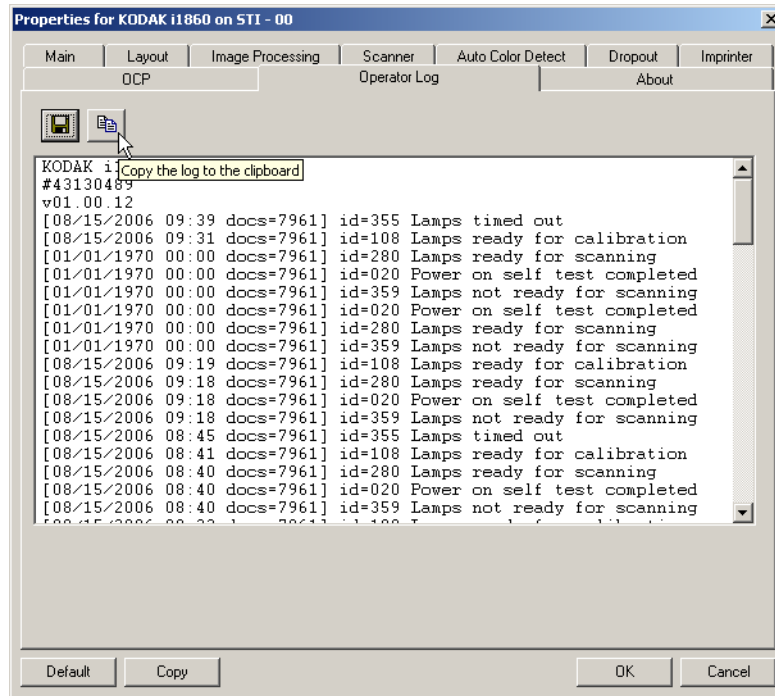

Function Keys — available functions are:

- End of Job
- Terminate Batch
- Omit Multifeed Detection on Next Document
- Do Not Print on Next Document
- Omit Patch Reading on Next Document
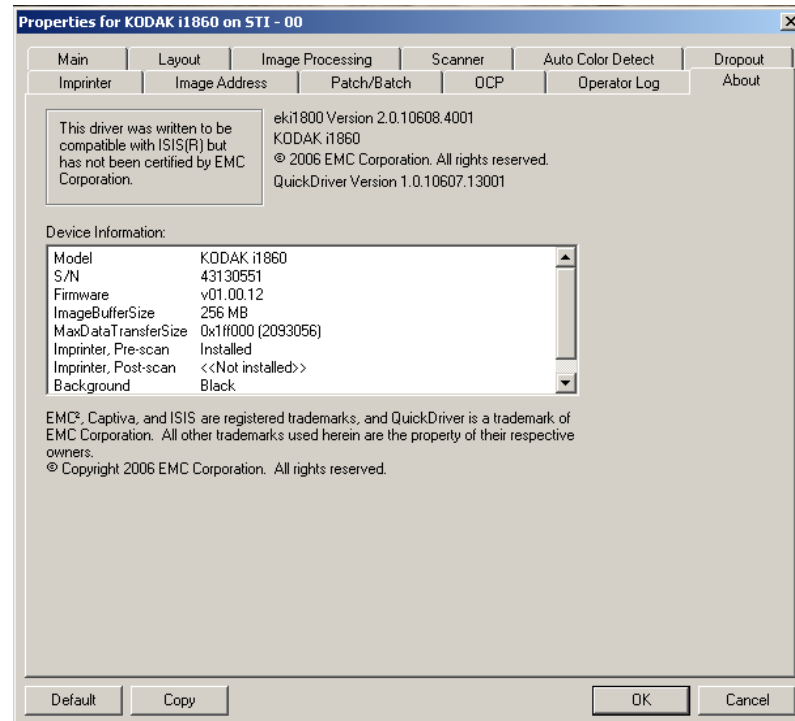
Operator Log tab

The Operator 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 click the Copy icon to copy the information to the clipboard.

About tab

Displays information about your scanner and driver.

Scan Area dialog box

The Scan Area dialog box is only available for images when the Cropping option selected on the Layout tab is either **Fixed to Transport** or **Relative to Document**.

To access the Scan Area dialog box, select **Scan Area** on the Layout tab.
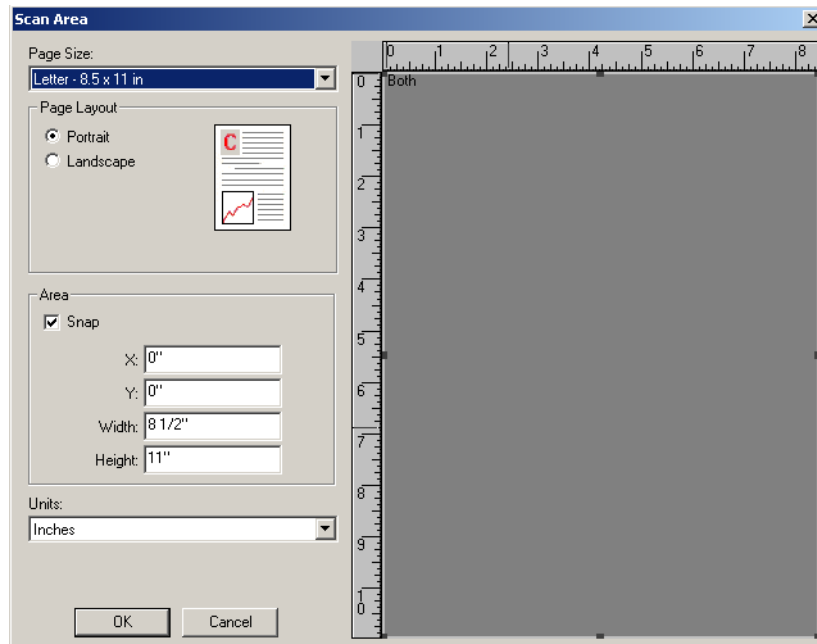
NOTE: Select the side and image to be defined by highlighting **Front Image #1, Front Image #2**, etc. based on the cropping option selected for each of these on the main ISIS Driver tab. The scan areas defined for all camera selections are independent.

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

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

The Page Layout area allows you to select either **Portrait** or **Landscape**.

• **Portrait** will display the image orientation in the shape of a conventional portrait, where height is greater than width.
• **Landscape** will display the image orientation in the shape of a conventional landscape painting, where width is greater than height.
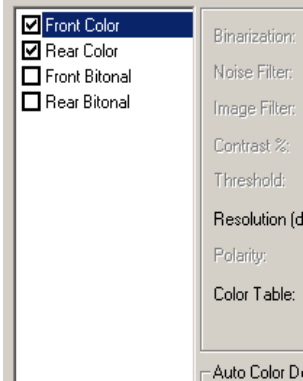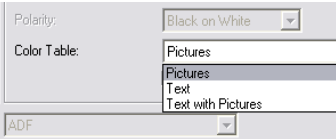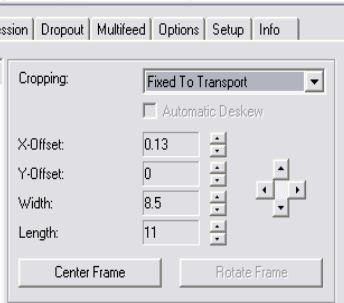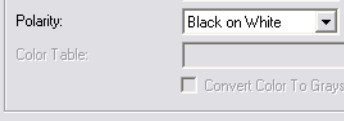

Area

- **Snap** — causes the dimensions of the Area box to be controlled in 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**.

Appendix A   TWAIN Image Processing Terminology

If you have used previous scanners from Kodak, you will notice that the user interface has been updated. Many of the image processing features you are familiar with may have been renamed or moved. The table below will help you to find the feature's new name and/or location.

Previous Location/Name		Current Location/Name
Feature: Camera Selections		
	Location: Imaging tab	**Location**: Advanced tab and Content Settings tab
	Options: • Automatic Color Detect	**Options**: • Images per side: One - based on document content When selected, the Content Settings tab will be displayed which contains the additional options.
	• Duplex Dual Stream (check Front Color, Rear Color, Front Bi-tonal, Rear Bi-tonal)	• Images per side: Multiple When selected, the *Images to Configure* options will be displayed which allows selection of the streams to create.
Feature: Color Tables		
	Location: Imaging tab	**Location**: Image Settings - General tab
	Options: • Text with Pictures	**Options**: • Document Type: Text with Graphics Media type: Plain Paper
	• Text	• Document Type: Text Media type: Plain Paper
	• Pictures or Photographs	• Document Type: Photograph Media type: Glossy Paper

Feature: Cropping		
	Location: Paper tab	**Location**: Image Settings - Size tab
	Options:	**Options**:
	• Automatic with Automatic Deskew	• Document: Automatically Detect and Straighten Image: Entire Document Border: (none)
	• Automatic without Automatic Deskew	• Document: Automatically Detect
	• Aggressive	• Document: Automatically Detect and Straighten Image: Entire Document Border: Remove
	• Fixed to Transport without Overscan	• Document: Manually Select Border: (none)
	• Fixed to Transport with Overscan	• Document: Manually Select Border: Add
	• Relative to Document	• Document: Automatically Detect and Straighten Image: Part of Document

Feature: Polarity		
	Location: Imaging tab	**Location**: Image Settings - Adjustments tab
	Options:	**Options**:
	• Polarity	• Invert colors

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