

Guidelines for demonstrating iThresholding with *Kodak* i800 Series Scanners

Perfect Page *now with* iThresholding

Overview

More of the challenging documents that stopped work in the past — including those with highlights and low contrast — are now sailing through without the need for manual adjustments. Perfect Page scanning with iThresholding handles more of these tough imaging problems automatically. Often with the same, or better, readability than the original document.

Perfect Page with iThresholding captures images and optimizes them at full processing speed. Edges are sharper. Images are deskewed. OCR read rates are excellent. And, in many cases, file sizes are smaller, too.

ATP (Adaptive Threshold Processing) — 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).

Adaptive Thresholding works on gray scale images and outputs a bi-tonal image. Its 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. If mixing documents of different colors, paper qualities and textures and print quality, the Adaptive Thresholding features optimize each image automatically.

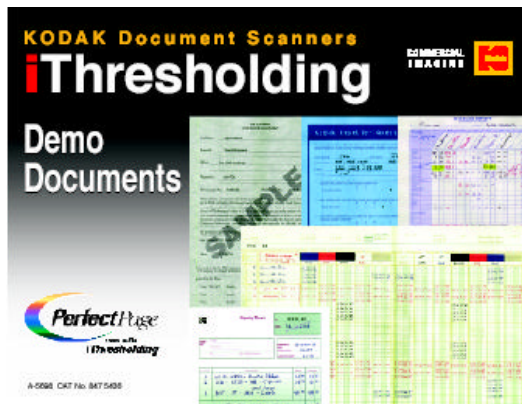
What is iThresholding?

iThresholding is an enhancement to Kodak's Perfect Page Scanning. iThresholding reduces presorting, rescans and post-image processing by automatically adjusting for highlighting, low contrast and light-weight paper situations that previously required manual adjustments.

Perfect Page with iThresholding captures images and optimizes them at full processing speed. Edges are sharp, images are deskewed and borders removed without loss of information. Imaging problems that iThresholding can solve are: bad photocopies, multi-shaded documents, dot-matrix images, low contrast originals, and carbonless forms.

Demo documents

The iThresholding Demo Document Kit includes 5 blue folders (A-5698). Each folder contains 6 demo documents.

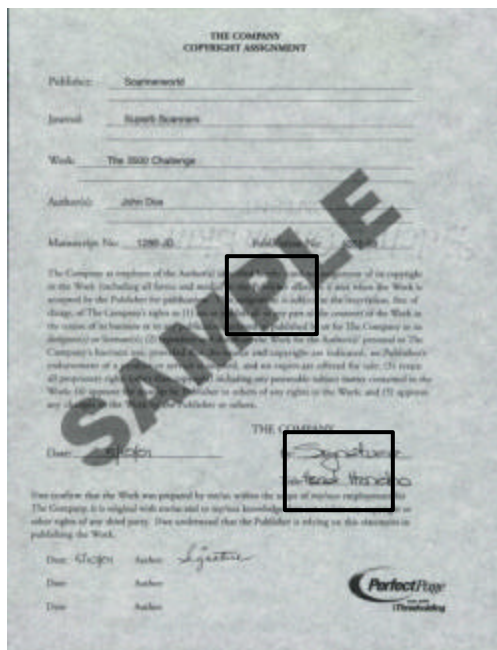
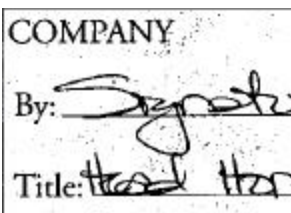
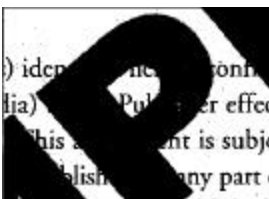


- ◆ Copyright document (white background)
- ◆ Copyright document (gray background)
- ◆ Questionnaire
- ◆ Shipping ticket
- ◆ Expense Report
- ◆ General Ledger

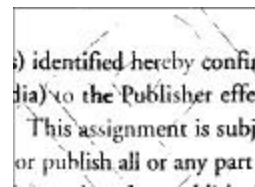
The following images were scanned from a *Kodak i800 Series Scanner* at 200 dpi. Areas of the documents are highlighted to illustrate the benefits of iThresholding.

Copyright document (white background)

With Adaptive Threshold Processing (default)



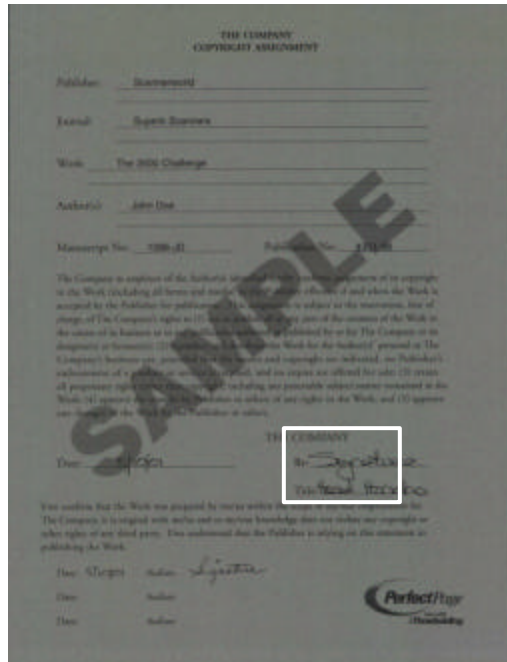
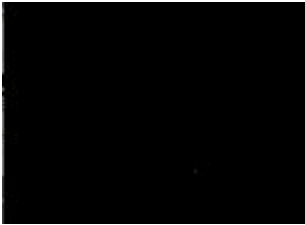
With iThresholding



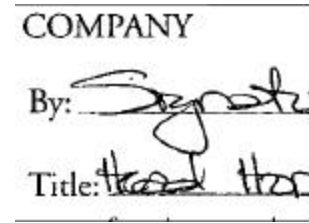
NOTE: You can't read the words under "SAMPLE". There is more noise and speckling in the document.

Copyright document (gray background)

With Adaptive Threshold Processing (default)



With iThresholding



NOTE: Image is black, you are unable to read anything.

Questionnaire (blue background)

With Adaptive Threshold Processing (default)



With iThresholding



NOTE: Image is black, you are unable to read anything.

Shipping Ticket (green)

With Adaptive Threshold Processing (default)

Company	GAC EQUIPMENT CO
Street Address	500 UNIVERSITY A
City	ROCHESTER

499	95	499	95
TOTAL		600	75
2003			

Shipping Ticket

NO: 0372-32
DATE: Feb 16 2003
RECEIVED: 2003

SHIP TO: GAC EQUIPMENT CO
500 UNIVERSITY A
ROCHESTER

ORDER NO: A1526-3
INVOICE NO: 52197
SALESPERSON: ZJM

QUANTITY	DESCRIPTION	PRICE	AMOUNT
1	WLJ-41800-Printer Ribbons	63.00	63.00
2	LED-LS20-MB-Clip-on desk lamps	18.75	37.50
1	BRT-PT-580C-Labels	499.95	499.95
TOTAL			600.75

SPECIAL INSTRUCTIONS: Ship to customer at no charge.
AUTHORIZED BY: Frank Smith DATE: Jan. 15, 2003

With iThresholding

Company	GAC EQUIPMENT CO
Street Address	500 UNIVERSITY A
City	ROCHESTER

499	95	499	95
TOTAL		600	75
2003			

NOTE: Either image processing works well for this document.

Expense Report

With Adaptive Threshold Processing (default)

112	62	--	-
484	00	249	00
17	21	12	00
-	-		

SPENT FOR LEGITIMATE COM

Mike How

APPROVAL

EXPENSE REPORT
DATE: 3/19/99
BY: Mike Howard

DATE	DESCRIPTION	AMOUNT	TOTAL
3/19/99	Travel - New Jersey	197.28	197.28
3/19/99	Travel - Rochester	4.00	201.28
3/19/99	Travel - Eagan MN	12.00	213.28
3/19/99	Travel - Rochester	17.21	230.49
3/19/99	Travel - Rochester	15.00	245.49
3/19/99	Travel - Rochester	5.50	250.99
3/19/99	Travel - Rochester	1.00	251.99
3/19/99	Travel - Rochester	15.00	266.99
3/19/99	Travel - Rochester	12.00	278.99
3/19/99	Travel - Rochester	2.25	281.24
3/19/99	Travel - Rochester	5.00	286.24
3/19/99	Travel - Rochester	3.00	289.24
3/19/99	Travel - Rochester	3.00	292.24
3/19/99	Travel - Rochester	3.00	295.24
3/19/99	Travel - Rochester	3.00	298.24
3/19/99	Travel - Rochester	3.00	301.24
3/19/99	Travel - Rochester	3.00	304.24
3/19/99	Travel - Rochester	3.00	307.24
3/19/99	Travel - Rochester	3.00	310.24
3/19/99	Travel - Rochester	3.00	313.24
3/19/99	Travel - Rochester	3.00	316.24
3/19/99	Travel - Rochester	3.00	319.24
3/19/99	Travel - Rochester	3.00	322.24
3/19/99	Travel - Rochester	3.00	325.24
3/19/99	Travel - Rochester	3.00	328.24
3/19/99	Travel - Rochester	3.00	331.24
3/19/99	Travel - Rochester	3.00	334.24
3/19/99	Travel - Rochester	3.00	337.24
3/19/99	Travel - Rochester	3.00	340.24
3/19/99	Travel - Rochester	3.00	343.24
3/19/99	Travel - Rochester	3.00	346.24
3/19/99	Travel - Rochester	3.00	349.24
3/19/99	Travel - Rochester	3.00	352.24
3/19/99	Travel - Rochester	3.00	355.24
3/19/99	Travel - Rochester	3.00	358.24
3/19/99	Travel - Rochester	3.00	361.24
3/19/99	Travel - Rochester	3.00	364.24
3/19/99	Travel - Rochester	3.00	367.24
3/19/99	Travel - Rochester	3.00	370.24
3/19/99	Travel - Rochester	3.00	373.24
3/19/99	Travel - Rochester	3.00	376.24
3/19/99	Travel - Rochester	3.00	379.24
3/19/99	Travel - Rochester	3.00	382.24
3/19/99	Travel - Rochester	3.00	385.24
3/19/99	Travel - Rochester	3.00	388.24
3/19/99	Travel - Rochester	3.00	391.24
3/19/99	Travel - Rochester	3.00	394.24
3/19/99	Travel - Rochester	3.00	397.24
3/19/99	Travel - Rochester	3.00	400.24
3/19/99	Travel - Rochester	3.00	403.24
3/19/99	Travel - Rochester	3.00	406.24
3/19/99	Travel - Rochester	3.00	409.24
3/19/99	Travel - Rochester	3.00	412.24
3/19/99	Travel - Rochester	3.00	415.24
3/19/99	Travel - Rochester	3.00	418.24
3/19/99	Travel - Rochester	3.00	421.24
3/19/99	Travel - Rochester	3.00	424.24
3/19/99	Travel - Rochester	3.00	427.24
3/19/99	Travel - Rochester	3.00	430.24
3/19/99	Travel - Rochester	3.00	433.24
3/19/99	Travel - Rochester	3.00	436.24
3/19/99	Travel - Rochester	3.00	439.24
3/19/99	Travel - Rochester	3.00	442.24
3/19/99	Travel - Rochester	3.00	445.24
3/19/99	Travel - Rochester	3.00	448.24
3/19/99	Travel - Rochester	3.00	451.24
3/19/99	Travel - Rochester	3.00	454.24
3/19/99	Travel - Rochester	3.00	457.24
3/19/99	Travel - Rochester	3.00	460.24
3/19/99	Travel - Rochester	3.00	463.24
3/19/99	Travel - Rochester	3.00	466.24
3/19/99	Travel - Rochester	3.00	469.24
3/19/99	Travel - Rochester	3.00	472.24
3/19/99	Travel - Rochester	3.00	475.24
3/19/99	Travel - Rochester	3.00	478.24
3/19/99	Travel - Rochester	3.00	481.24
3/19/99	Travel - Rochester	3.00	484.24
3/19/99	Travel - Rochester	3.00	487.24
3/19/99	Travel - Rochester	3.00	490.24
3/19/99	Travel - Rochester	3.00	493.24
3/19/99	Travel - Rochester	3.00	496.24
3/19/99	Travel - Rochester	3.00	499.24
3/19/99	Travel - Rochester	3.00	502.24
3/19/99	Travel - Rochester	3.00	505.24
3/19/99	Travel - Rochester	3.00	508.24
3/19/99	Travel - Rochester	3.00	511.24
3/19/99	Travel - Rochester	3.00	514.24
3/19/99	Travel - Rochester	3.00	517.24
3/19/99	Travel - Rochester	3.00	520.24
3/19/99	Travel - Rochester	3.00	523.24
3/19/99	Travel - Rochester	3.00	526.24
3/19/99	Travel - Rochester	3.00	529.24
3/19/99	Travel - Rochester	3.00	532.24
3/19/99	Travel - Rochester	3.00	535.24
3/19/99	Travel - Rochester	3.00	538.24
3/19/99	Travel - Rochester	3.00	541.24
3/19/99	Travel - Rochester	3.00	544.24
3/19/99	Travel - Rochester	3.00	547.24
3/19/99	Travel - Rochester	3.00	550.24
3/19/99	Travel - Rochester	3.00	553.24
3/19/99	Travel - Rochester	3.00	556.24
3/19/99	Travel - Rochester	3.00	559.24
3/19/99	Travel - Rochester	3.00	562.24
3/19/99	Travel - Rochester	3.00	565.24
3/19/99	Travel - Rochester	3.00	568.24
3/19/99	Travel - Rochester	3.00	571.24
3/19/99	Travel - Rochester	3.00	574.24
3/19/99	Travel - Rochester	3.00	577.24
3/19/99	Travel - Rochester	3.00	580.24
3/19/99	Travel - Rochester	3.00	583.24
3/19/99	Travel - Rochester	3.00	586.24
3/19/99	Travel - Rochester	3.00	589.24
3/19/99	Travel - Rochester	3.00	592.24
3/19/99	Travel - Rochester	3.00	595.24
3/19/99	Travel - Rochester	3.00	598.24
3/19/99	Travel - Rochester	3.00	601.24
3/19/99	Travel - Rochester	3.00	604.24
3/19/99	Travel - Rochester	3.00	607.24
3/19/99	Travel - Rochester	3.00	610.24
3/19/99	Travel - Rochester	3.00	613.24
3/19/99	Travel - Rochester	3.00	616.24
3/19/99	Travel - Rochester	3.00	619.24
3/19/99	Travel - Rochester	3.00	622.24
3/19/99	Travel - Rochester	3.00	625.24
3/19/99	Travel - Rochester	3.00	628.24
3/19/99	Travel - Rochester	3.00	631.24
3/19/99	Travel - Rochester	3.00	634.24
3/19/99	Travel - Rochester	3.00	637.24
3/19/99	Travel - Rochester	3.00	640.24
3/19/99	Travel - Rochester	3.00	643.24
3/19/99	Travel - Rochester	3.00	646.24
3/19/99	Travel - Rochester	3.00	649.24
3/19/99	Travel - Rochester	3.00	652.24
3/19/99	Travel - Rochester	3.00	655.24
3/19/99	Travel - Rochester	3.00	658.24
3/19/99	Travel - Rochester	3.00	661.24
3/19/99	Travel - Rochester	3.00	664.24
3/19/99	Travel - Rochester	3.00	667.24
3/19/99	Travel - Rochester	3.00	670.24
3/19/99	Travel - Rochester	3.00	673.24
3/19/99	Travel - Rochester	3.00	676.24
3/19/99	Travel - Rochester	3.00	679.24
3/19/99	Travel - Rochester	3.00	682.24
3/19/99	Travel - Rochester	3.00	685.24
3/19/99	Travel - Rochester	3.00	688.24
3/19/99	Travel - Rochester	3.00	691.24
3/19/99	Travel - Rochester	3.00	694.24
3/19/99	Travel - Rochester	3.00	697.24
3/19/99	Travel - Rochester	3.00	700.24
3/19/99	Travel - Rochester	3.00	703.24
3/19/99	Travel - Rochester	3.00	706.24
3/19/99	Travel - Rochester	3.00	709.24
3/19/99	Travel - Rochester	3.00	712.24
3/19/99	Travel - Rochester	3.00	715.24
3/19/99	Travel - Rochester	3.00	718.24
3/19/99	Travel - Rochester	3.00	721.24
3/19/99	Travel - Rochester	3.00	724.24
3/19/99	Travel - Rochester	3.00	727.24
3/19/99	Travel - Rochester	3.00	730.24
3/19/99	Travel - Rochester	3.00	733.24
3/19/99	Travel - Rochester	3.00	736.24
3/19/99	Travel - Rochester	3.00	739.24
3/19/99	Travel - Rochester	3.00	742.24
3/19/99	Travel - Rochester	3.00	745.24
3/19/99	Travel - Rochester	3.00	748.24
3/19/99	Travel - Rochester	3.00	751.24
3/19/99	Travel - Rochester	3.00	754.24
3/19/99	Travel - Rochester	3.00	757.24
3/19/99	Travel - Rochester	3.00	760.24
3/19/99	Travel - Rochester	3.00	763.24
3/19/99	Travel - Rochester	3.00	766.24
3/19/99	Travel - Rochester	3.00	769.24
3/19/99	Travel - Rochester	3.00	772.24
3/19/99	Travel - Rochester	3.00	775.24
3/19/99	Travel - Rochester	3.00	778.24
3/19/99	Travel - Rochester	3.00	781.24
3/19/99	Travel - Rochester	3.00	784.24
3/19/99	Travel - Rochester	3.00	787.24
3/19/99	Travel - Rochester	3.00	790.24
3/19/99	Travel - Rochester	3.00	793.24
3/19/99	Travel - Rochester	3.00	796.24
3/19/99	Travel - Rochester	3.00	799.24
3/19/99	Travel - Rochester	3.00	802.24
3/19/99	Travel - Rochester	3.00	805.24
3/19/99	Travel - Rochester	3.00	808.24
3/19/99	Travel - Rochester	3.00	811.24
3/19/99	Travel - Rochester	3.00	814.24
3/19/99	Travel - Rochester	3.00	817.24
3/19/99	Travel - Rochester	3.00	820.24
3/19/99	Travel - Rochester	3.00	823.24
3/19/99	Travel - Rochester	3.00	826.24
3/19/99	Travel - Rochester	3.00	829.24
3/19/99	Travel - Rochester	3.00	832.24
3/19/99	Travel - Rochester	3.00	835.24
3/19/99	Travel - Rochester	3.00	838.24
3/19/99	Travel - Rochester	3.00	841.24
3/19/99	Travel - Rochester	3.00	844.24
3/19/99	Travel - Rochester	3.00	847.24
3/19/99	Travel - Rochester	3.00	850.24
3/19/99	Travel - Rochester	3.00	853.24
3/19/99	Travel - Rochester	3.00	856.24
3/19/99	Travel - Rochester	3.00	859.24
3/19/99	Travel - Rochester	3.00	862.24
3/19/99	Travel - Rochester	3.00	865.24
3/19/99	Travel - Rochester	3.00	868.24
3/19/99	Travel - Rochester	3.00	871.24
3/19/99	Travel - Rochester	3.00	874.24
3/19/99	Travel - Rochester	3.00	877.24
3/19/99	Travel - Rochester	3.00	880.24

General Ledger

With Adaptive
Threshold Processing
(default)

3			Handwritten
4			
5	B		Handwritten
6	OLA		Handwritten
7	07A R		Handwritten
8	08A		Handwritten

PerfectType iThresholding			
HP 70100	0-60		
RUBBER STAMP			
LEGIBILITY			
	BLACK	RED	BLACK
3	Handwritten Blue	123456789	123456789
4	Handwritten Blue	123456789	123456789
5	Handwritten Blue	123456789	123456789
6	Handwritten Blue	123456789	123456789
7	Handwritten Blue	123456789	123456789
8	Handwritten Blue	123456789	123456789
9	Handwritten Blue	123456789	123456789
10	Handwritten Blue	123456789	123456789
11	Handwritten Blue	123456789	123456789
12	Handwritten Blue	123456789	123456789
13	Handwritten Blue	123456789	123456789
14	Handwritten Blue	123456789	123456789
15	Handwritten Blue	123456789	123456789
16	Handwritten Blue	123456789	123456789
17	Handwritten Blue	123456789	123456789
18	Handwritten Blue	123456789	123456789
19	Handwritten Blue	123456789	123456789
20	Handwritten Blue	123456789	123456789
21	Handwritten Blue	123456789	123456789
22	Handwritten Blue	123456789	123456789
23	Handwritten Blue	123456789	123456789
24	Handwritten Blue	123456789	123456789
25	Handwritten Blue	123456789	123456789
26	Handwritten Blue	123456789	123456789
27	Handwritten Blue	123456789	123456789
28	Handwritten Blue	123456789	123456789
29	Handwritten Blue	123456789	123456789
30	Handwritten Blue	123456789	123456789

With iThresholding

3			Handwritten
4			
5	B		Handwritten
6	OLA		HANDWRITTEN
7	07A R		Handwritten
8	08A		HANDWRITTEN

NOTE: Characters are broken and unreadable.

Set-up instructions for demonstration with i800 Series Scanners

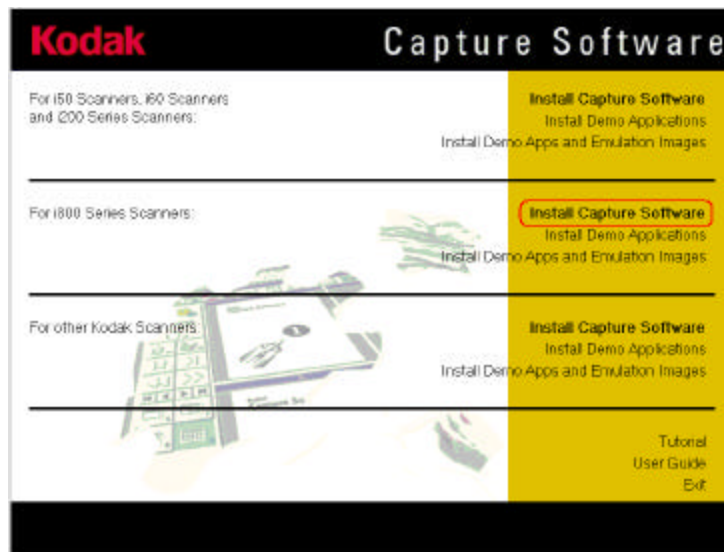
Use these instructions to set-up iThresholding demonstrations with *Kodak Capture Software* for the *Kodak i800 Series Scanner*.

When demonstrating iThresholding with an i800 Scanner attached, you need to have *Kodak Capture Software*, Version 6.1 or higher installed on your PC. Follow the instructions below to install this version.

- ◆ If downloading from the Kodak website (www.kodak.com/go/capturesoftware), select the link for Demo Software for i800 Series Scanners.



- ◆ If installing from a Capture Software CD, select the **Install Capture Software** option *For i800 Scanners*:



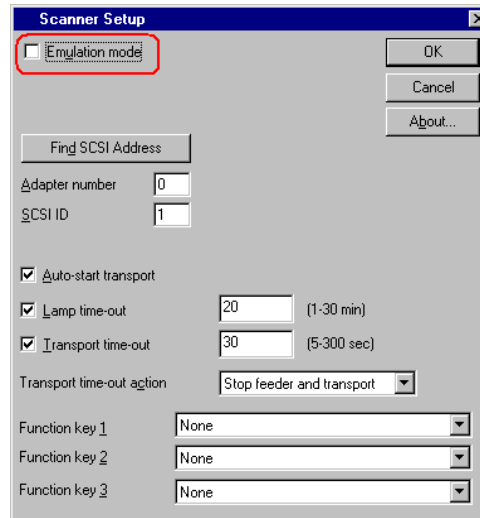
2. Run the **iThresholding_Demo_Apps_for_i800** executable (.exe file). This file can be downloaded from the Kodak website (www.kodak.com/go/CSDemoApps). This will install the iThresholding demo applications in your current installation of *Kodak Capture Software* for i800 Scanners.

Demonstrating iThresholding with an i800 Scanner attached

- ◆ Start Capture Software (in the *Kodak Capture Software* for i800 Scanners program group) and be sure Emulation mode is disabled.

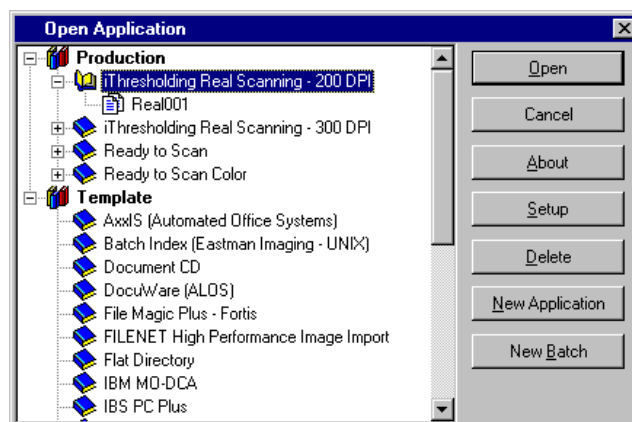
To disable Emulation mode

1. Select **Setup** from the **Scanner** menu and uncheck **Emulation mode**.



NOTE: If you disabled Emulation mode, you must restart Capture Software.

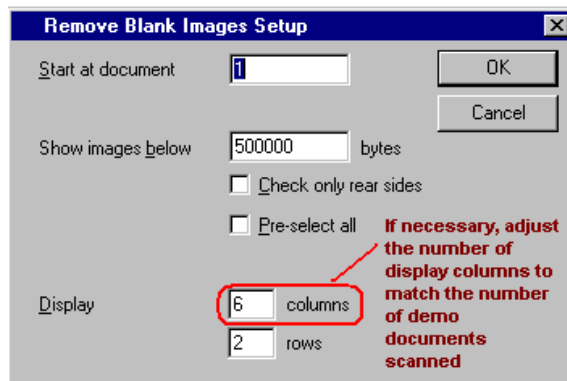
2. From the Open Application window, select one of the iThresholding Real Scanning demo applications and open the **Real001** batch.



3. Using the **200 DPI – Bitonal – Deskew – Simplex** page setup, scan the iThresholding demo documents (6 pages) twice.
 - ◆ Use the default Threshold setting of 90 and scan the demo documents.
 - ◆ Click on the iThresholding button to enable iThresholding and scan the demo documents again.

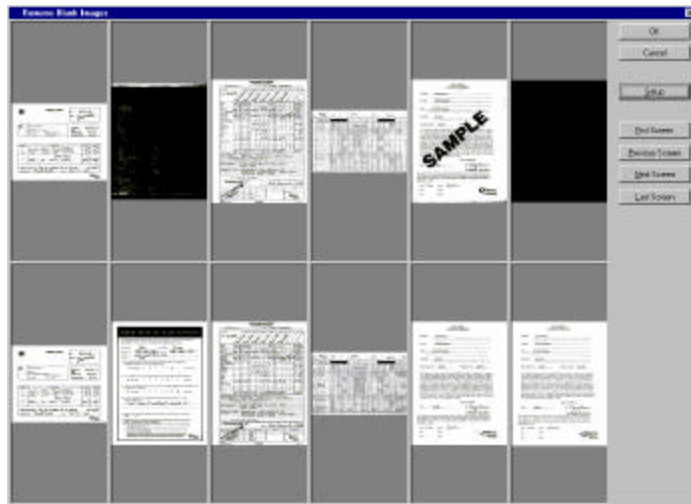


- ◆ When finished, click on the iThresholding button to disable iThresholding.
4. From the Batch menu, select **Remove Blank Images**. The Remove Blank Images Setup window is displayed:



NOTE: Make sure the number of Display columns matches the number of iThresholding demo documents that were scanned. By default, the number of Display columns will be 6 to match the total number of the demo documents. If you decide to scan a subset of the demo document set, adjust the Display columns setting accordingly.

5. Click **OK** to display all the scanned images on the same screen.

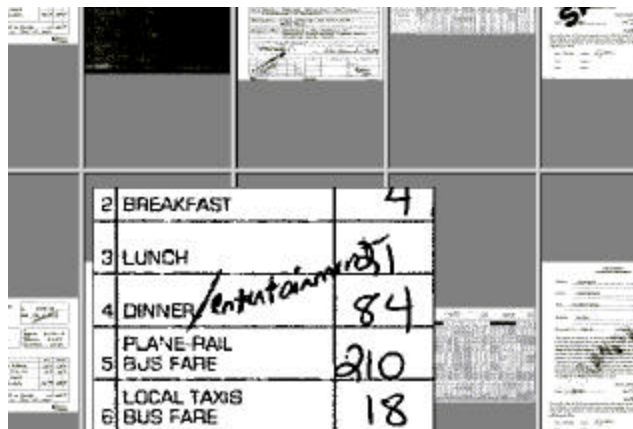


Notice the differences between default ATP scanned images and images scanned with iThresholding.

To show some of the benefits of iThresholding up close:

- ◆ Click and hold the right mouse button on any image. The Capture Software magnifying glass becomes activated. While still holding down the right mouse button, move the mouse to view any portion of the magnified image.

NOTE: See the section entitled “Demo documents” for more information regarding highlighting the differences between documents scanned using the default Adaptive Threshold Processing and iThresholding settings.



6. Using the magnifying glass, compare the default ATP image (1st row) with the iThresholded image (2nd row).
7. When finished, click **Cancel** from the Remove Blank Images screen. The following message will be displayed, ***Do you want to quit without removing the blank images?***
8. Click **Yes** to return to the main Capture Software window.

Comparison tables

The following tables compare 200 dpi (Table A) and 300 dpi (Table B) scanned image file sizes for the 6 demo documents using iThresholding at different contrast settings (50 and 65).

The variables that affect scanning are:

- ◆ Different results are possible from scan to scan.
- ◆ The age of the lamps in the scanner.
- ◆ Lamp warm-up time.
- ◆ Frequency of calibration.
- ◆ Condition of the documents being scanned.

Table A — 200 dpi

200 dpi	<i>Kodak i800 Scanner with iThresholding</i>	
Demo Documents	Contrast 50	Contrast 65
Copyright White	33K	36K
Copyright Gray	30K	33K
Questionnaire	30K	30K
Shipping Ticket	24K	24K
Expense Report	51K	51K
Ledger	163K	174K

Table B — 300 dpi

300 dpi	<i>Kodak i800 Scanner with iThresholding</i>	
Demo Documents	Contrast 50	Contrast 65
Copyright White	51K	136K
Copyright Gray	48K	63K
Questionnaire	43K	47K
Shipping Ticket	28K	128K
Expense Report	115K	136K
Ledger	284K	364K

Frequently asked questions

What is iThresholding?

With the new iThresholding feature, both bi-tonal brightness and contrast are automatically adjusted for each individual document in any scan order. iThresholding analyzes the entire gray scale image to optimize the conversion to bi-tonal. iThresholding renders high quality images from a large range of low- to high-contrast documents using minimal or no user intervention.

iThresholding benefits:

- ◆ Reduces pre-sorting, rescans, and post-image processing.
- ◆ Delivers cleaner, sharper image at full speed.
- ◆ Auto deskew and auto cropping combine with iThresholding to maximize throughput.

What kind of improvement can I expect with iThresholding features?

Using the iThresholding feature will result in an overall improvement in productivity, since you can scan a wider range of documents without intervention, often with a smaller file size.

Are there times when iThresholding should not be used?

Using iThresholding is not recommended when scanning documents containing photographs. For these applications, you may wish to use dithering or error diffusion.

Does iThresholding work for color images?

iThresholding is designed to work with bi-tonal images only.

Do I need to update my current version of **Kodak Capture Software** or my application software to get the benefit of these new features?

Capture Software: Version 6.1 is designed to support the iThresholding and Color on the Fly features of the i800 Series Scanners. If you have a software service agreement (or are under warranty) you are eligible to receive the upgrade to Capture Software 6.1 as a benefit of your service agreement. You must call Kodak Service to receive the upgrade.

Other Application Software: New ISIS and TWAIN drivers have iThresholding as a binarization option (in the binarization drop-down menu). If your application works directly with the ISIS or TWAIN GUI (graphical user interface), then you can use iThresholding. However, if you have created your own custom interface under programmatic control, you will have to update your application to access the new feature.

Miscellaneous

Supporting sales documentation

A-5597— Scanner i800 Sell Sheet

A-5697 — Brochure – “Introducing iThresholding, new feature of Perfect Page scanning”

A-5698 — iThresholding Demo Documents

See the Kodak website (www.kodak.com/go/PerfectPage) for additional information on iThresholding.

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