Kodak

i5000 Series Scanners

Patch Code Information

Patch Code Information

Contents

Patch codes are patterns of bars that are printed on pages that, when scanned by a *Kodak* scanner, instruct the scanner or scanning application to trigger a feature of the scanner or scanning application. Document separation is a common use of patch pages. Commonly, patch pages are separate physical pieces of paper with patch patterns printed on them that are inserted into a stack of pages to be scanned. The features that are triggered by the patch page are determined by the specific scanner or scanning application. Following are the requirements for creating patch pages that work reliably with the *Kodak* i5000 Series Scanners. There are very specific requirements for the size and location of the patch patterns so care should be taken to ensure that the patch pages are created correctly. The scanner features that are enabled using patch pages are described in the Scanning Setup Guides for TWAIN and ISIS or your scanning application documentation.

Kodak i5000 Series Scanners are **not** equipped with physical patch reader sensors. The i5000 Series Scanners perform patch reading by using imaging sensors to scan the front and back of scanned pages for a patch pattern and have enhanced firmware and driver capabilities to allow the scanner to sense all 6 patch patterns.

NOTE: A firmware and driver update may be required for this feature.

Other *Kodak* Scanners, such as the *Kodak Imagelink* 9500 Scanner or *Kodak* i800 or i1800 Series Scanners use physical patch sensors to read patch patterns on the scanned pages. Other scanners, such as the *Kodak* i600, i700 or i4000 Series Scanners, use the imaging sensors to read patch patterns but are limited to reading color toggle patches.

Because the *Kodak* i5000 Series Scanners use a different method for reading patch pages, the composition of the patch pages should be adjusted to allow the most consistent patch recognition as possible.

The most important difference between the patch reading system of the i5000 Series Scanners and other *Kodak* Scanners, is that only patches with bars that are in line with the lead edge of the document are recognized.

i800/i1860
Scanners

i5000
Scanners
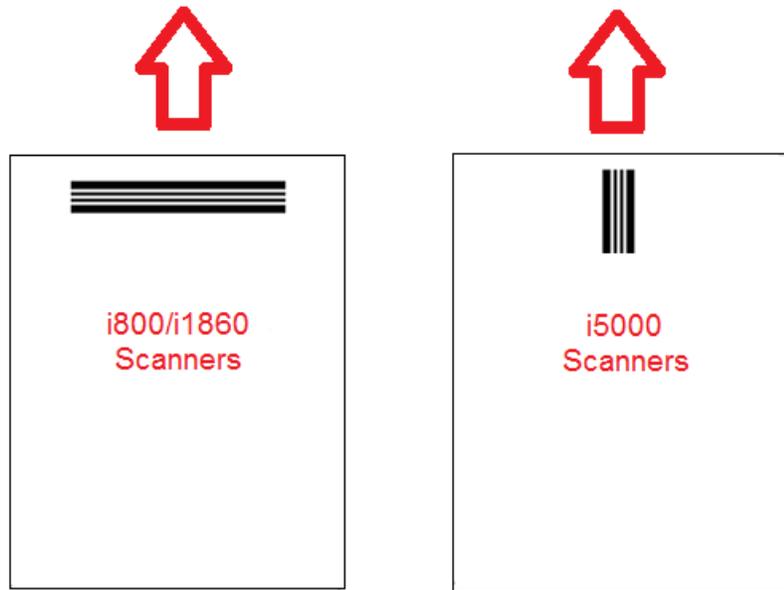
To enable feeding in any direction it is common that patch pages are created with patch patterns on each edge of the page.

i800/i1860
Scanners

i5000
Scanners
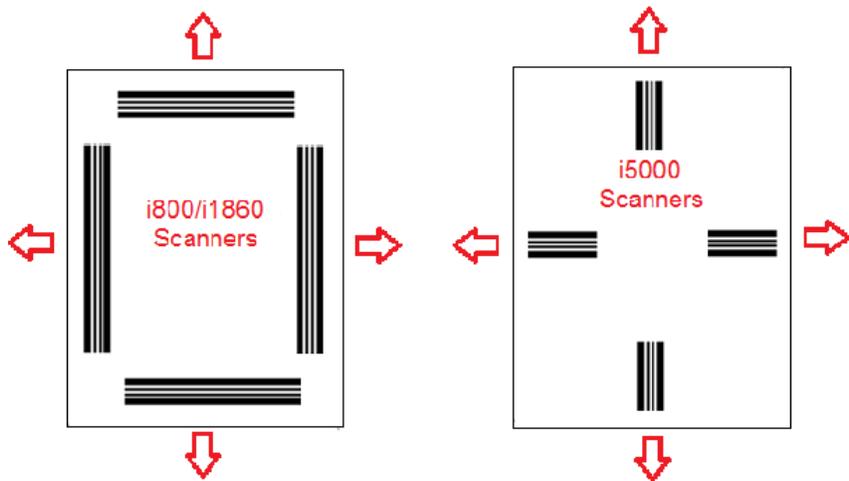
It is also possible to create a patch sheet that can be used on any *Kodak* Scanner with bar patterns that will be read consistently with camera patch reading or sensor patch reading.
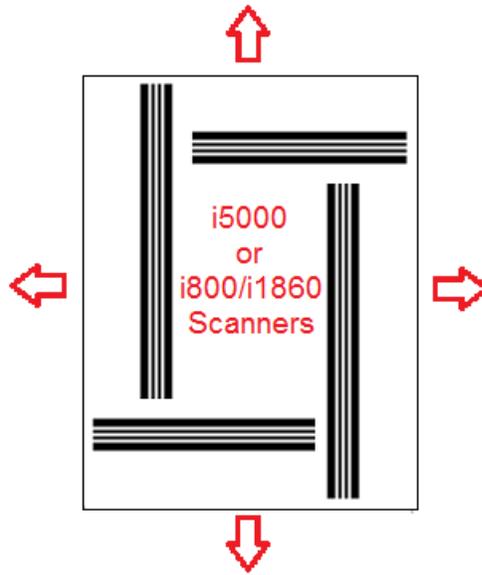

Sample PDF files of the combined patch patterns are available for download from the Kodak website in the **Kodak i5000 Scanner>Support>User Manual** area.

NOTE: There are PDF versions that are sized for printing on A4 and US lettersize paper. There are also TIFF source files that can be used to customize the patches for your business. Follow the instructions provided to ensure that the pages print accurately on your printer.

Patch pattern details

There are two patch classifications:

- **Document/Batch separation patches** (sometimes referred to Image Address patches): — these patches are traditionally used for scanning many different documents at one time with patch pages as separators. These patches are Type 2 (Document Separation) Type 3 (Batch Separation) and Type T which can be used for either Document or Batch Separation).

Type 2	Type 3	Type T (5)
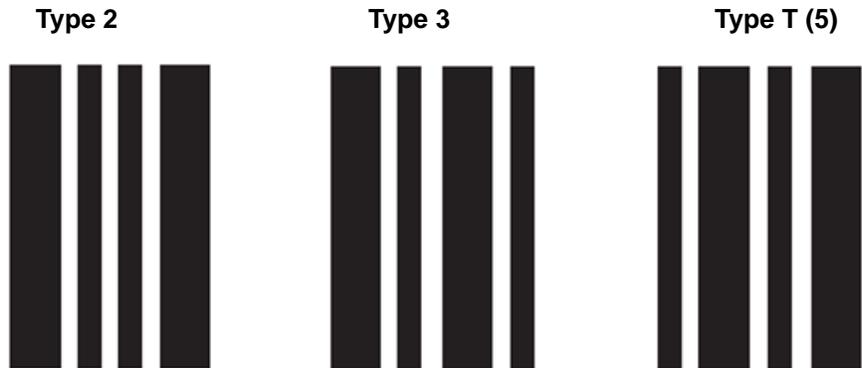
- **Feature patches** — these patch pages traditionally are not used for document separation. These patches may be used to trigger scanner features (such as Color Toggling or Multifeed Detection control) or can be used to trigger software features. These patches are Type 1, Type 4 (Color Toggle) and Type 6.

| Type 6	Type 1	Type 4 (color toggle)
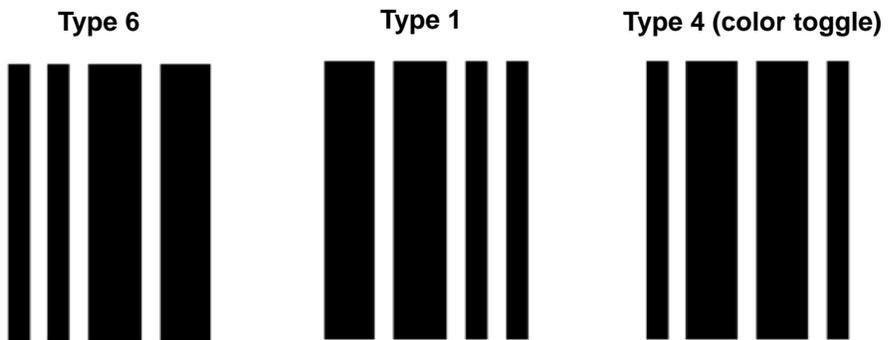
NOTE: Do not print the above patch patterns for use in a scanner. These example patterns are not correctly sized for production use. Printable PDF versions are available for download from the Kodak website.

Patch pattern orientation

The orientation of the patch patterns is important. The Type 3 patch is the inverse of the Type T patch and the Type 1 patch is the inverse of the Type 6 patch. If patch pages are not formatted correctly, this can cause incorrect patch pattern reading because only the first patch pattern that is read by the front or rear camera will be used.

For example, many patch pages designed for scanners that read patches with physical patch reader sensors (*Kodak* i800/i1800 Series Scanners) will have bars that extend to the edges of the page on more than one side. While this worked well on *Kodak* i800/i1800 Series Scanners there is a potential problem when reading patch pages like this on the *Kodak* i5000 Series Scanners.
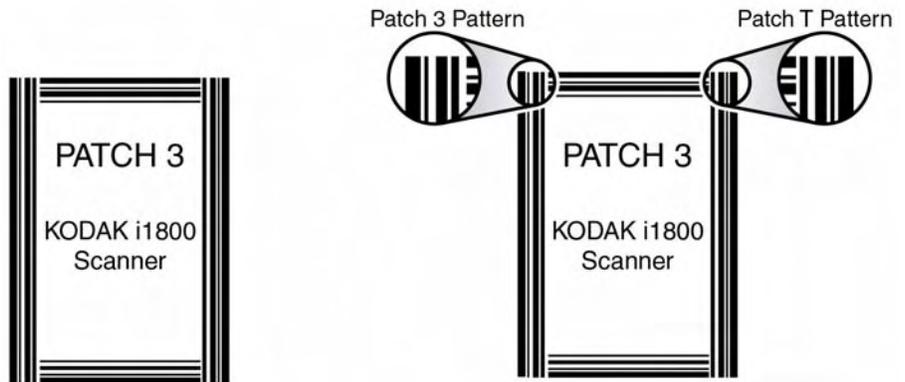
If the page is skewed during scanning such that the right edge of the page passes over a camera first, then the patch page will be read as a Type T patch rather than a Type 3 patch.
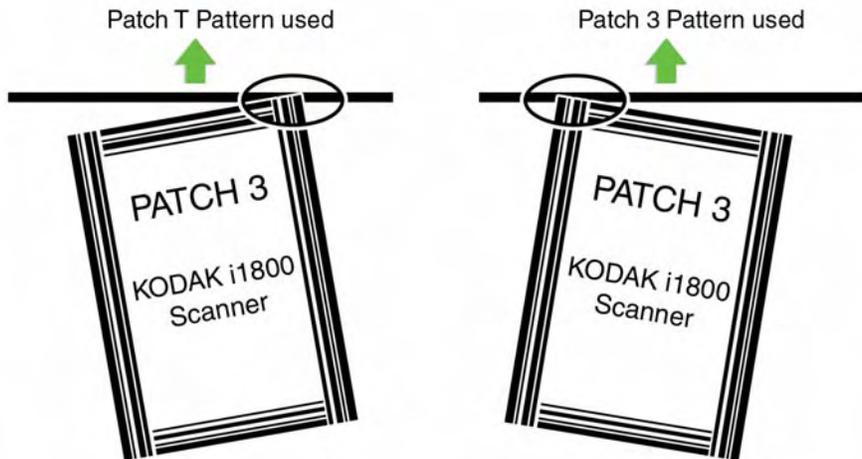
To prevent this potential issue you should construct your patch patterns such that only one bar pattern can be read even if the patch page is skewed.
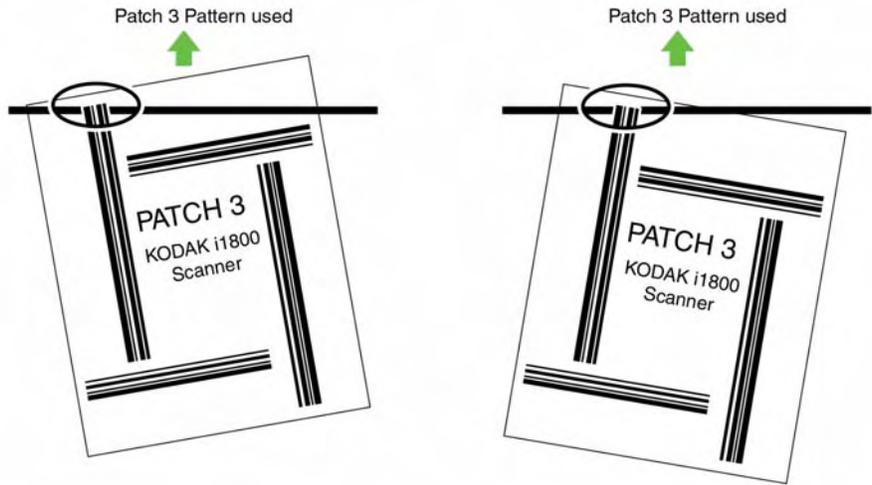
Bar pattern details

A patch is a pattern of parallel, alternating black bars and spaces that is printed on a document. In order to prevent other document data from being detected as a patch, the scanner will only recognize a correctly formed bar pattern as a patch. The width of bars and spaces between the bars need to be very tightly controlled to ensure that the scanner detects the bar pattern.

The wide bars should be 0.20 (5 mm) wide $\pm$ 0.01 inches (0.25 mm). The narrow bars and spaces should be 0.08 inches (2.03 mm) wide + 0.01 inches (0.25 mm). The maximum width of the patch code is 0.80 inches (20 mm) + 0.01 inches (0.25 mm). The minimum overall length of the patch bars is 2 inches (50 mm).
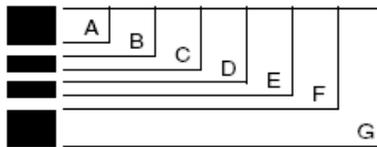
Patch Codes

Patch code specifications

Patch 2

Assigns image level 2 to the *current* document.

Patch 2

Zone	Inches		Millimeters	
	Low Range	High Range	Low Range	High Range
A	0.19	0.21	4.83	5.33
B	0.27	0.29	6.86	7.37
C	0.35	0.37	8.89	9.40
D	0.43	0.45	10.92	11.43
E	0.51	0.53	12.95	13.46
F	0.59	0.61	14.99	15.49
G	0.79	0.81	20.01	20.57

Patch 3

Assigns image level 3 to the *current* document.

Patch 3
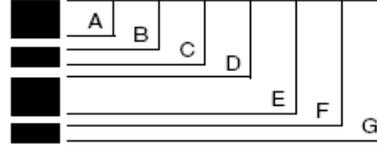
Zone	Inches		Millimeters	
	Low Range	High Range	Low Range	High Range
A	0.19	0.21	4.83	5.33
B	0.27	0.29	6.86	7.37
C	0.35	0.37	8.89	9.40
D	0.43	0.45	10.92	11.43
E	0.63	0.65	16.00	16.51
F	0.71	0.73	18.03	18.54
G	0.79	0.81	20.07	20.57

Patch T / Transfer Patch

Patch T / Transfer Patch
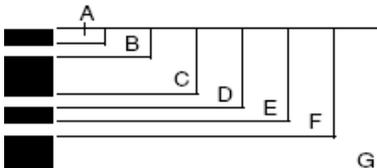
Zone	Inches		Millimeters	
	Low Range	High Range	Low Range	High Range
A	0.07	0.09	4.83	5.33
B	0.15	0.17	6.86	7.37
C	0.35	0.37	8.89	9.40
D	0.43	0.45	10.92	11.43
E	0.51	0.53	16.00	16.51
F	0.59	0.61	18.03	18.54
G	0.79	0.81	20.07	20.57

Patch Codes

Patch 1

Patch 4 / Toggle Patch
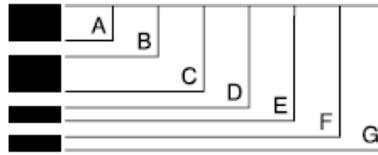
Patch 6

Patch code specifications

Patch 1

Zone	Inches		Millimeters	
	Low Range	High Range	Low Range	High Range
A	0.19	0.21	4.83	5.33
B	0.27	0.29	6.86	7.37
C	0.47	0.49	11.94	12.45
D	0.55	0.57	13.97	14.48
E	0.63	0.65	16.00	16.51
F	0.71	0.73	18.03	18.54
G	0.79	0.81	20.07	20.57

Patch 4 / Toggle Patch
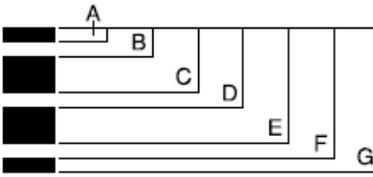
Zone	Inches		Millimeters	
	Low Range	High Range	Low Range	High Range
A	0.07	0.09	1.78	2.29
B	0.15	0.17	3.81	4.32
C	0.35	0.37	8.89	9.40
D	0.43	0.45	10.92	11.43
E	0.63	0.65	16.00	16.51
F	0.71	0.73	18.03	18.54
G	0.79	0.81	20.07	20.57

Patch 6
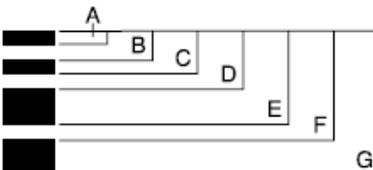
| Zone	Inches		Millimeters	
	Low Range	High Range	Low Range	High Range
A	0.07	0.09	1.78	2.29
B	0.15	0.17	3.81	4.32
C	0.23	0.25	5.84	6.35
D	0.31	0.33	7.87	8.38
E	0.51	0.53	12.95	13.46
F	0.59	0.61	14.99	15.49
G	0.79	0.81	20.07	20.57

Patch positioning

Horizontal and vertical placement of the patch code is critical for reliable patch reading. If the patch code is placed improperly on the document, the patch may fail to read the patch.

Patches should appear with the bars perpendicular to the lead edge of the document (fed into the transport first).

There must be at least 0.25 inches (6 mm) of space between the patch code and any other printed information.

Patch codes must be at least 0.25 inches (6 mm) from the left and right edge of the document and must appear at least 0.5 inches (12.7 mm) from the lead edge of the document.

The patch reading area ends 2.0 inches from the lead edge of the document. At least 0.75 inches of the patch code must appear within the patch reading area.

Leading Edge of Document
(fed into transport first)

2 inches (50.8 mm)

Patch Reading Area
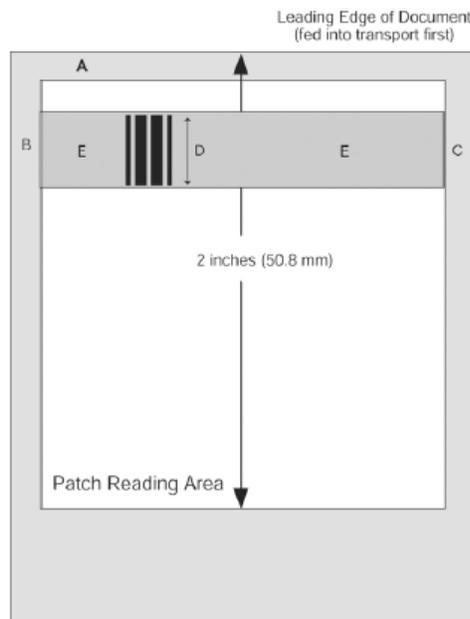
A = greater than or equal to 0.5 inches (12.7 mm)
B, C = greater than or equal to 0.25 inches (6 mm)
D = minimum of 0.75 inches (19 mm)
E = no printed information to the left/right of the patch

Paper details

- **Paper stock color** — white paper is the most reliable choice for patch code reading. If you want to make the patch pages more visible to operators or people who prepare the documents for scanning, then you can use bright colors for the paper stock. Light yellow paper or a light pastel color that reflects at least 65% of the light source should work well. Use of dark color paper stock for patch pages may lead to unreliable patch reading.

- **Print** — the patch bars should always be printed in black. The printed black bars must reflect less than 20% of the light source. Avoid photocopying patches. Photocopiers tend to increase the size of the black bars while simultaneously reducing the white space, thus altering the print specifications.

- **Paper size** — the length and width of the patch pages should at least 5.5 inches (139.7 mm).

- **Paper weight** — if you want to reuse the patch pages after outsorting, then the paper weight needs to be stiff enough to successfully fly into Stack #2. For more information refer to the section entitled, "Recommended paper specifications" in Chapter 5 of the User's Guide.

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