

Translation of Original Driver Manual



XINO*scan*

**Special Scanner Options
for XINOScan S700 Series**

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The Internet version of this manual is found on the Web at the following address:

http://www.xinoscan.com/dn/XinoS700_DriverManual.pdf

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1 Scanner Driver Settings

In the scanner dialog, the following buttons are displayed at the bottom edge of the scanner dialog:

Test Scan	Fetches the next image from the scanner. Eventually, a new paper original is fed.
OK	Closes the dialog box and saves all definitions to disk
Apply	Saves the actual parameters without closing the dialog
Cancel	Closes the dialog box without saving
Help	Opens the Help screen

1.1 Property Page: General

This page allows to select Resolution, Scan Mode (One Side or Two Sides), the color channels and the scanner driver.

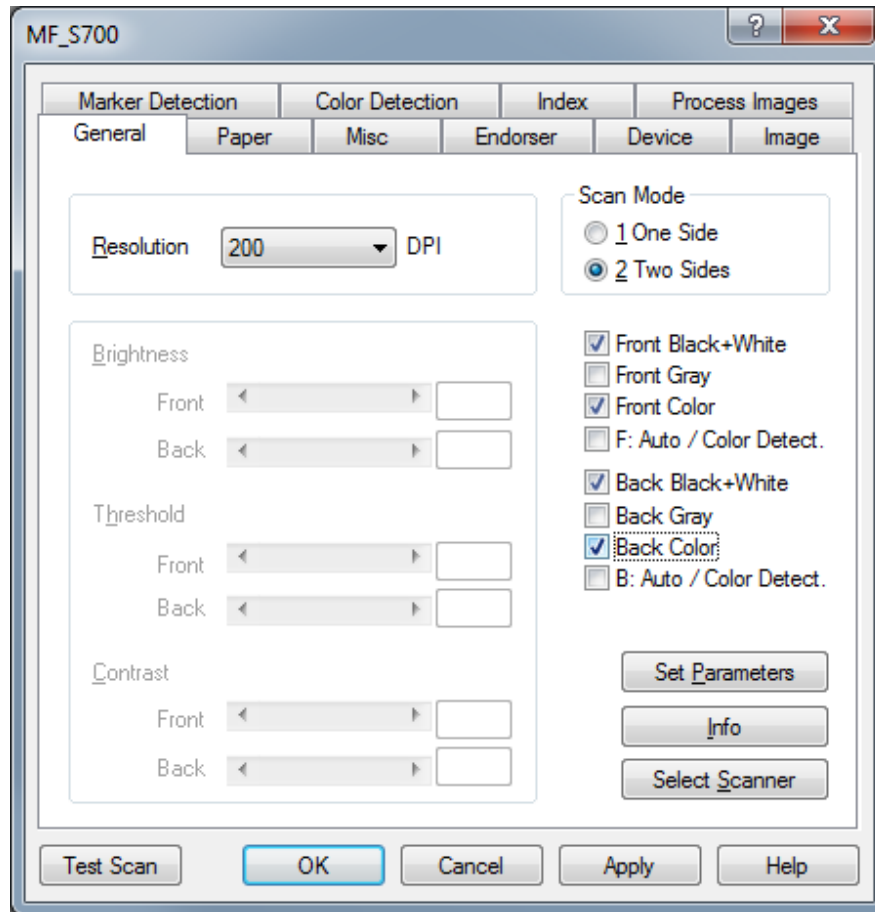


Illustration 1 – Property Page General

Resolution

Selects the resolution in DPI (Dots Per Inch). A low resolution (like 200 DPI) reduces the data amount to be saved, but it may lead to worse results for barcode or OCR processing.

The following resolutions are available for a XINO Scanner: 75, 100, 150, 200, 300, 400 dpi, (optionally 600 dpi)

Scan Mode

Please select:

- One side** to scan only the front side of each document,
- Two sides** to scan front page and back page each.

Color Output Format

- Front Black&White** Delivers a black&white image for the front side
- Front Gray** Delivers a gray image for the front side
- Front Color** Delivers a color image for the front side
- F:Auto/Color Detect.** Activates the automatic color detection
- Back Black&White** Delivers a black&white image for the back side
- Back Gray** Delivers a gray image for the back side
- Back Color** Delivers a color image for the back side
- B: Auto/Color Detect.** Activates the automatic color detection

- Send Parameters** Sends the actual scanner settings to the connected scanner
- Info** Opens a window with the driver information (Illustration 2)
- Select Scanner** Opens the scanner selection dialog (Illustrations 3+4)

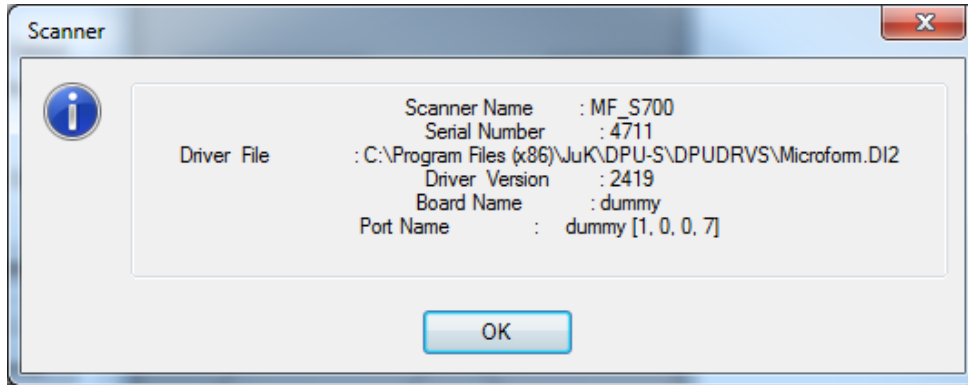


Illustration 2 – Scanner Driver Info

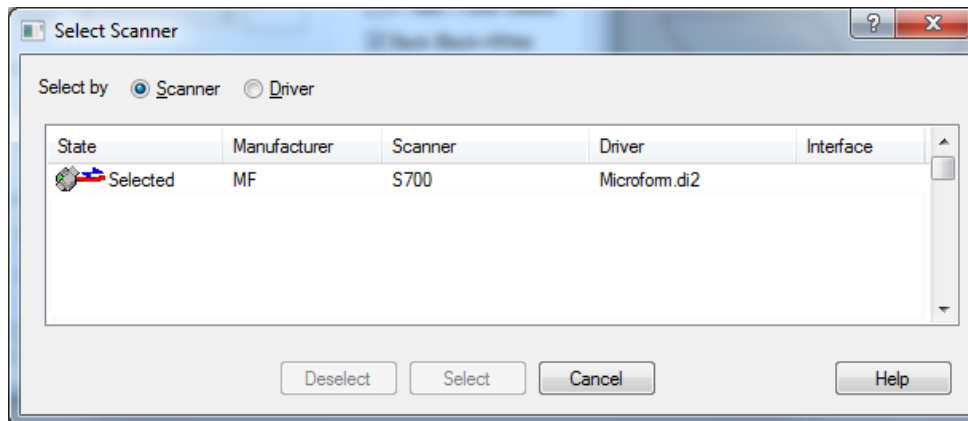


Illustration 3 – Select Scanner

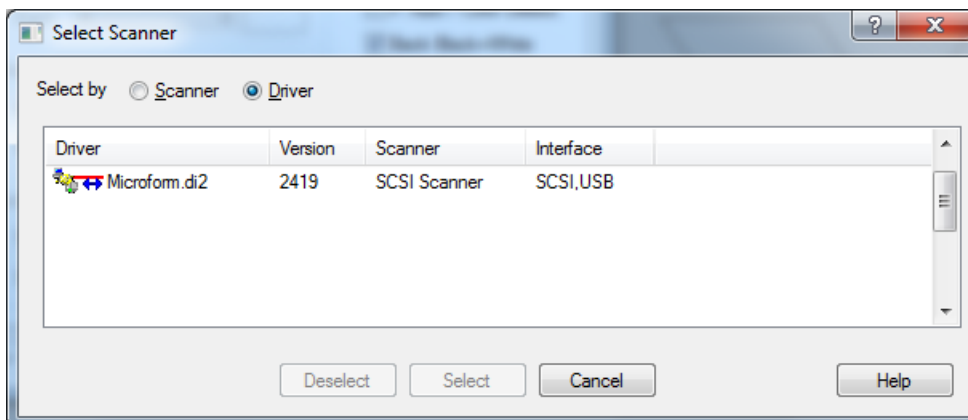


Illustration 4 – Select Scanner Driver

1.2 Property Page: Paper

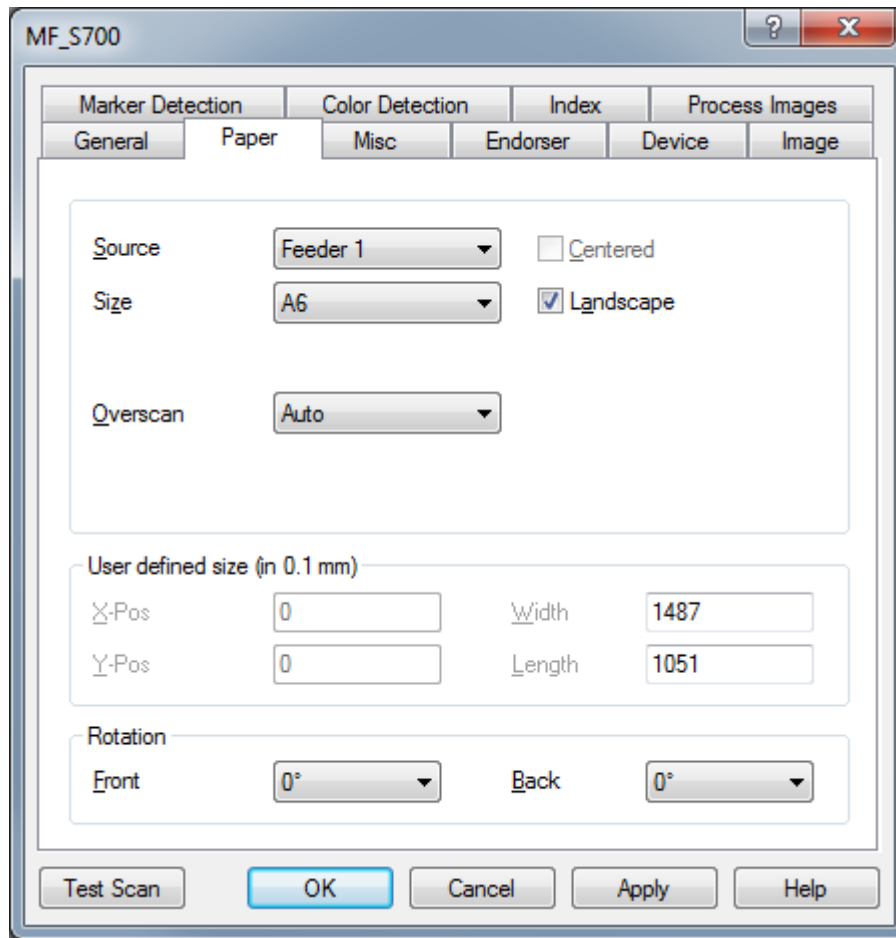


Illustration 5 – Property Page: Paper

1.2.1 Paper Format and User-Defined Paper Size

- Source** Scanners of the XINO Series offer no selection here.
- Centered** This function is enabled only with user-defined formats. If activated, and selected, the image is scanned in the center part of the feeder. The value X-Pos indicates the shift (+/-): between the center of the image and the center of the feeder. If not enabled, the X-Pos value states the shift from the left edge.
- Size** Select one of the standard formats from the list, or a free format (User #). If you want a free format, you have to enter the wanted position and size of the scan area in the following edit fields.
- Landscape** The formats in the Size list are defined in Portrait format. Check this box if you want to feed your documents in Landscape format.

Overscan

You can select whether the size of the output images shall be enlarged at certain edges. Such increase is useful if Deskew shall later be used, as black borders will appear which are required for finding the edges. This will also prevent that paper corners are not captured due to an extreme skew.

- Off:** (Standard) No enlarged scan area.
Auto: All possible image edges are increased.
Horizontal only: Only the left and right edges are enlarged.
Vertical only: Only the upper and lower edge are increased.

User defined size

If a "User #" format was selected under **Size**, you must enter the wanted dimensions here:

- X-Pos:** Horizontal position of the image scan areas. If centered feed is supported and "Centered" is active, you must enter the shift (+/-) from the center, or the distance from the left feeder edge.
Y-Pos: Position of the upper edge of the image scan area.
Width/Length : Size of the scan area. The minimum width of 600mm and the minimum size of 15mm may not be underpassed.
With XINO scanners, the maximum size is 317.5mm, and the maximum length, at 200dpi, is about 4m.

Rotation

You can set a rotation angle (for the front page, in clock-direction) if you want to display and to save your scanned documents in another direction:

- 90°** rotate one quarter to the right,
180° make a half rotation,
270° rotate a quarter to the left.

1.3 Property Page: Misc (Options)

This tab allows settings for image processing, flow control, and for handling of error codes:

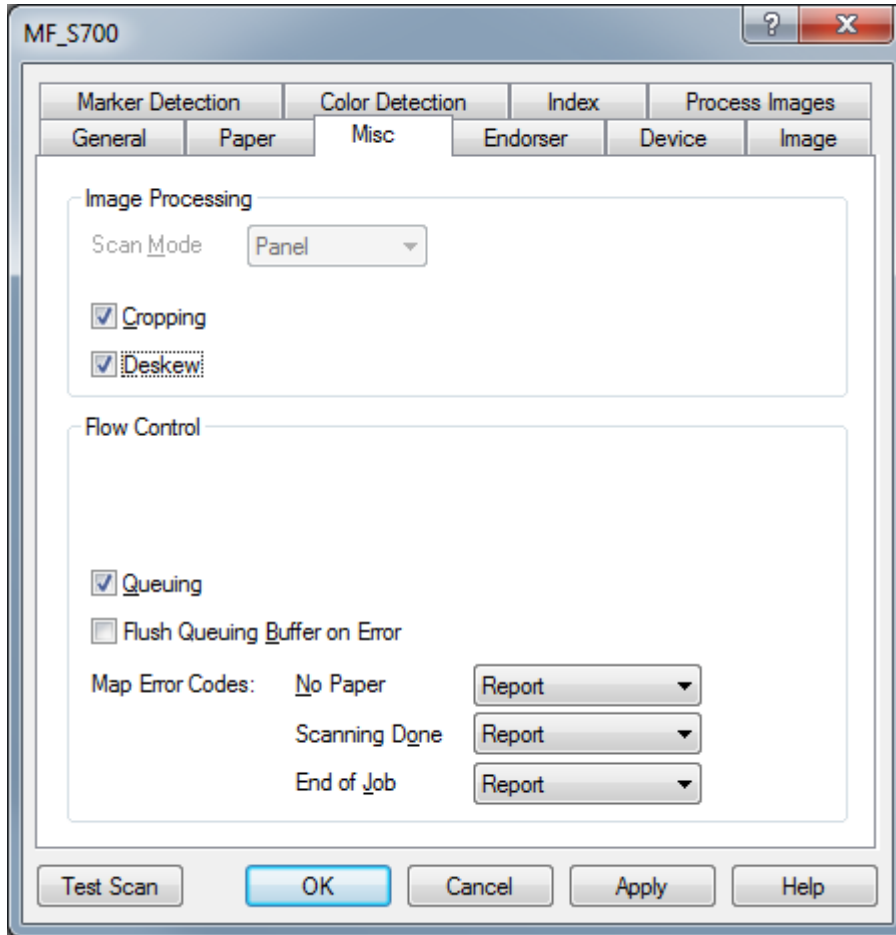


Illustration 6 – Property Page: Options

1.3.1 Image Processing

Scan Mode Void for XINO Scanners

Cropping Check this box if you want to delete the vertical (black!) borders from your scanned images.

Deskew Mark this field if the scanned images shall be deskewed.

1.3.2 Flow Control

Queuing With this option enabled, documents will be scanned in reserve and saved temporarily. (This option is recommended, as it will increase the throughput.)

Flush Queuing Buffer on Error Check this box if, in case of a scanner error, the images scanned in reserve shall be deleted from the temporary memory. This way, the images will not be delivered to the scan PC.

1.3.3 Map Error Codes

Some error codes of the scanner can invoke certain actions in the application. Sometimes, such action is not wanted, or another action shall be invoked instead. Here, it is possible to determine for some scanner error codes as which error they shall be reported to the application:

No paper

If the scanner reports "No paper" and you have set ...

Report (Default): "No paper" is reported to the application.

Ignore The application will not be informed but the scanner will try to continue as soon as paper is available again.

End of Job The message "End of Job" is reported to the application

End of Scan

If the scanner reports "No paper" and you have set ...

Report (Default): "No paper" is reported to the application.

Ignore The application will not be informed but the scanner will try to continue as soon as paper is available again.

Paper out The message "Paper out" is reported to the application.

End of Job The message "End of Job" is reported to the application

End of Job

If the scanner reports "End of Job" and you have set ...

Report (Default): "End of Job" is reported to the application.

Ignore: The application will not be informed but the scanner will try to continue as soon as paper is available again.

No Paper: The message "No paper" is reported to the application.

End of Scan: The message "End of Scan reported to the application.

1.4 Property Page: Endorser

This tab allows settings for an Endorser, Imprinter or paginator. All these expressions explain a print head that prints the original while it is scanned, so that you can recognize visually on the paper that it has been scanned.

If this print head is placed behind the scanner camera, it is mostly called Endorser; if it is found before the camera, it is called Imprinter. In the latter case, you can also see its print on the images. Depending on its equipment, the text to be printed may contain numbers and even incremental numbers for pages, mostly called pagination. But these expressions may vary, at different manufacturers. The XINO scanner is always equipped with an imprinter that prints before scanning, and an endorser, which means a print head behind the scanner camera.

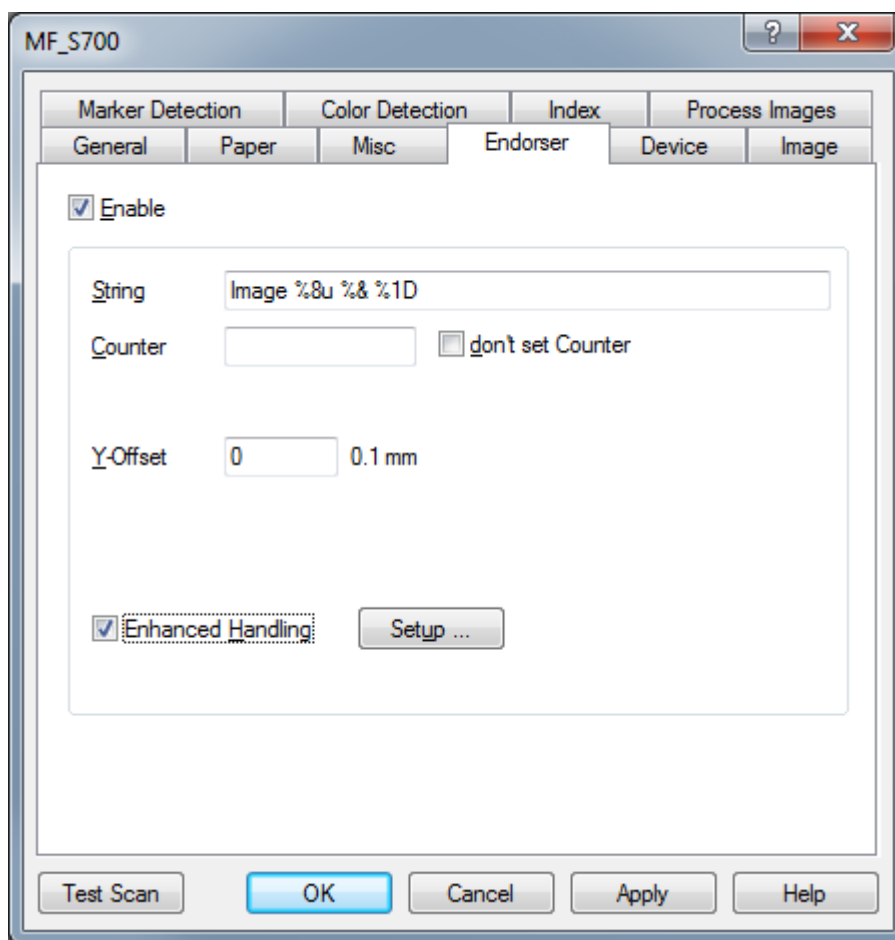


Illustration 7 – Property Page Endorser

1.4.1 Setting the Endorser Text

- Enable** Check this box if the set text string shall be printed on every scanned document.
- String** Enter the text to be printed on the scanned originals. This string normally also contains formatting instructions.
- Counter** Here you can define the start value for a counter that may be part of the text.
If this field is empty, the actual count of the scan counter will not be overwritten at the next start.

Y-Offset

You can move the printed text from its standard position towards the end of the sheet.

Enhanced Handling

If enabled, the following dialog (Illustration 8) will display after the click on the Setup button. Here you can define how to continue endorser / imprinter printing after a certain event.

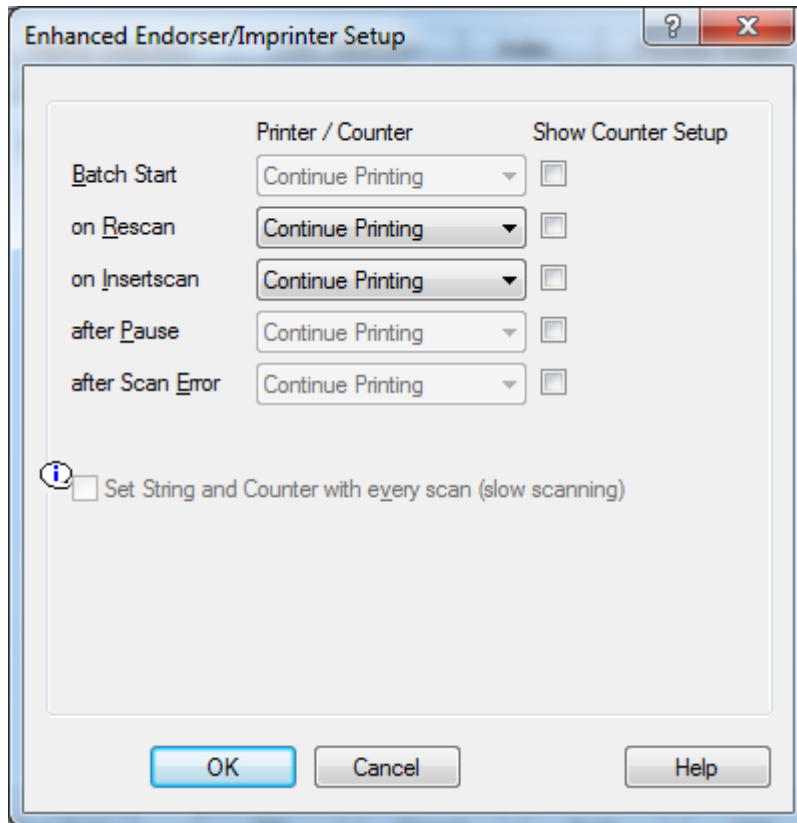


Illustration 8 – Advanced Printer Control

Batch Start	Continue Printing	Increments the counter without alteration This setup is fix and cannot be modified.
on Rescan	Continue Printing	Increments the counter without alteration
	Restore Counter	The sheet is printed with the same counter value as for the replaced image.
	Disable Printing	The sheet is not printed again. The actual counter is not modified.
on Insertscan	Continue Printing	Increments the counter without alteration
	Disable Printing	The sheet is not printed again. The actual counter is not modified.

after Pause

Continue Printing Increments the counter without alteration

Set Start Value The next original will be printed with the start value as defined in the dialog (refer Illustration 115)

Last Image The next original will be printed with the counter value that follows the one of this last original.

after Scan Error	Continue Printing	Increments the counter without alteration
	Set Start Value	The next original will be printed with the start value as defined in the dialog (ref. Illustration 115)
	Last Image	The next original will be printed with the counter value that follows the one of this last original.
Show Counter Setup	When you activate this function in the relative line, a counter setup dialog will open on the event, to eventually correct the counter	
Set String and Counter with every scan	Here, the driver will send a new value to the scan, for every scan. This reduces the scanning throughput, because queuing is not possible then.	

1.4.2 Format of the Endorser Text

There are special format instructions for the XINO Scanners of the S700 series, concerning form and contents of the printed text string:

%0F	This command serves to load the XINO Standard font	
%1F	This command loads another, optional font (must be installed by the technical service)	
%n&	The command allows to toggle between Imprinter / Endorser n=0 Toggle n=1 The text is printed by the endorser n=2 The text is printed by the imprinter	
%0nu	n-digit counter with leading zeros (n=[1..10])	
%nu	n-digit counter without leading zeros (n=[1..10])	
%u	6-digit counter without leading zeros	
%nmi	Print index counter I n=0 print with leading zeros without n print without leading zeros m defined the number of digits for the counter	
%nmj	Print index counter J n=0 with leading zeros printen without n without leading zeros printen m defined the number of digits for the counter	
%nmk	Print index counter K n=0 with leading zeros printen without n without leading zeros printen m defined the number of digits for the counter	
%nml	Print index counter L n=0 with leading zeros printen without n without leading zeros printen m defined the number of digits for the counter	
%0D	Date DD.MM.YYYY	

%1D	Date DD.MM.YY
%2D	Date MM/DD/YYYY
%3D	Date MM/DD/YY
%4D	Day of the year
%0T	time (24h) HH:MM
%1T	time (24h) HH:MM:SS
%2T	time (12h) HH:MM a.m./p.m.
%3T	time (12h) HH:MM:SS a.m./p.m.
%%	Prints the % character
%I	Prints the index as defined in the scanner, according to the counter sequence (L:K:J:I)as defined in the Index dialog
%0N	Prints the user name
%1N	Prints the scanner ID (see Chapter 3.2.4. of the Scanner User Manual)

If the utilized scan software interprets the endorser text by itself, it may be necessary to add a second percent code: for example to write %%1B instead of %1B!

1.4.2.1 Print Check Digits

By means of expanded control codes, Imprinter and Endorser can create a checksum for a text area. The creation of such a checksum is client-specific and normally requires an adapted firmware for the Endorser.

The following control codes exist for the checksum:

%nnM	Select checksum mode (nn 00-99 selected checksum type)
%S	Starts the range for creating the checksum
%E	Completes the range for creating the checksum
%P	Inserts the checksum

The control characters **%nnM**, **%S**, **%E**, **%P** must be part of the text string in this sequence!

1.4.2.1.1 Check Digits Type 00:

The check digit is created from all digits between %S and %E. Other characters are ignored for the check digit creation, but they are printed normally.

Calculation of the check digit:

Raw number: 1 1 1 7 1 0 8 2 7

Weighting: 1 3 2 1 3 2 1 3 2

Products digit * weighting: 1 3 2 7 3 0 8 6 14

Sum of products: 44

Difference: $11 - (44 \text{ modulo } 11) = 11$

Check Digit: Difference

If difference = 10 or 11

The check digit is 0

1.4.2.1.2 Check Digits Type 01:

Check digit according to barcode type Code39 (Modulo 43)

1.5 Property Page: Device

This page serves to make settings for the flow control of the XINO scanner.

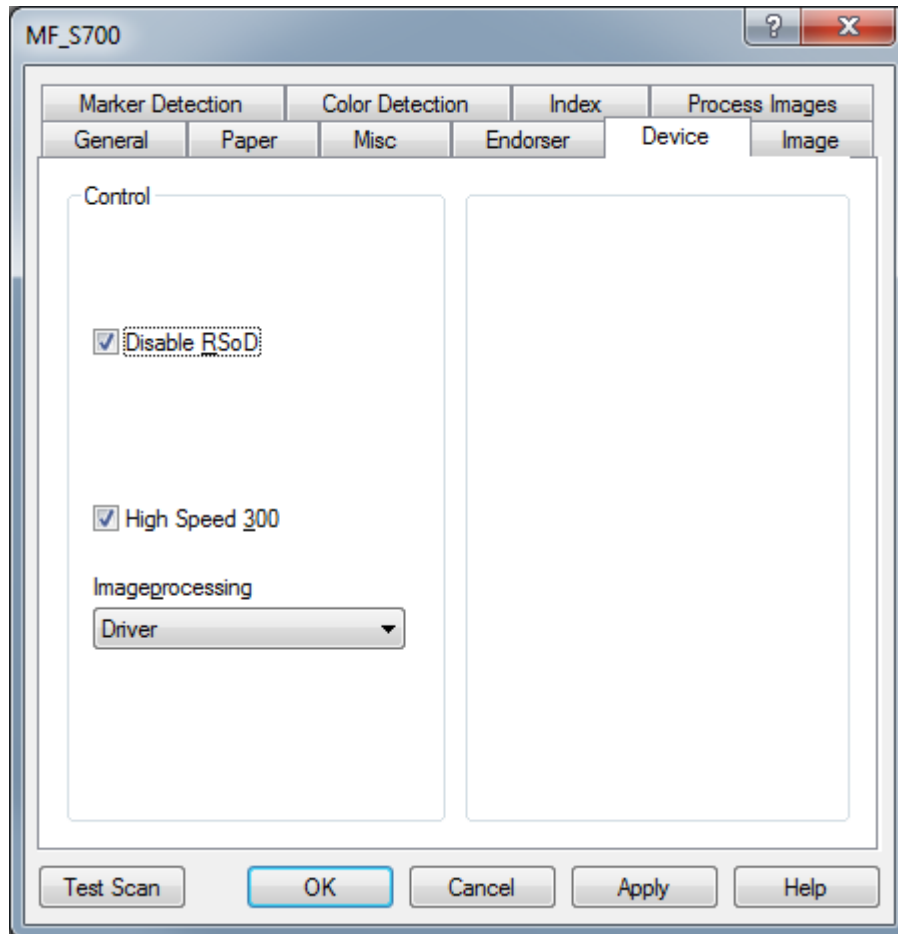


Illustration 9 – Property Page Device

Disable RSoD

The "Rescan on Demand" (**RSoD**) method allows to save the images latest captured by the camera. The amount of images depends, among others, on the camera type and the set camera mode. Scan programs that support this option can call these camera images again in due case and can get a different image quality by using modified parameters. (So you can scan without feeding the paper again.)

As **RSoD** usually has no effect on the speed or on the quality during scanning, the option should remain enabled also for programs that do not support this method.

With **RSoD** enabled, image parameters can be tested in the setting dialog with different images, without the need to always rescan the originals. Here, **RSoD** is useful to set the optimum image parameters in the scanner driver.

High Speed 300

When this option is selected, scanning at 300dpi is done in the same speed as at 200 dpi.

Image Processing

Only in the scanner All image improvement processes are executed by the hardware in the scanner.

Scanner/Driver All image improvement processes are distributed to and executed by the scanner and the driver.

Only in the Driver All image improvement processes are executed in the driver. With Multi Core CPUs in the PC, this raises the performance of the system because additional threads can be used in the computer.

1.6 Property Page: Image

Use this tab to set all parameters that influence the image quality. Before the images are forwarded to the scan application, these process steps are taken:

- Capturing by the camera with Gamma correction or blind color
- Filtering and Gamma correction of the color images
- Creating the gray image by gray filtering and/or usage of the color channel weighting
- Creating the b+w image

At a suitable moment in this process, the processing steps Rotation and Deskew/Cropping are executed, in parallel.

The tree view on this tab describes – seen from top to bottom – the influencing possibilities to the individual processing steps, in the above described sequence.

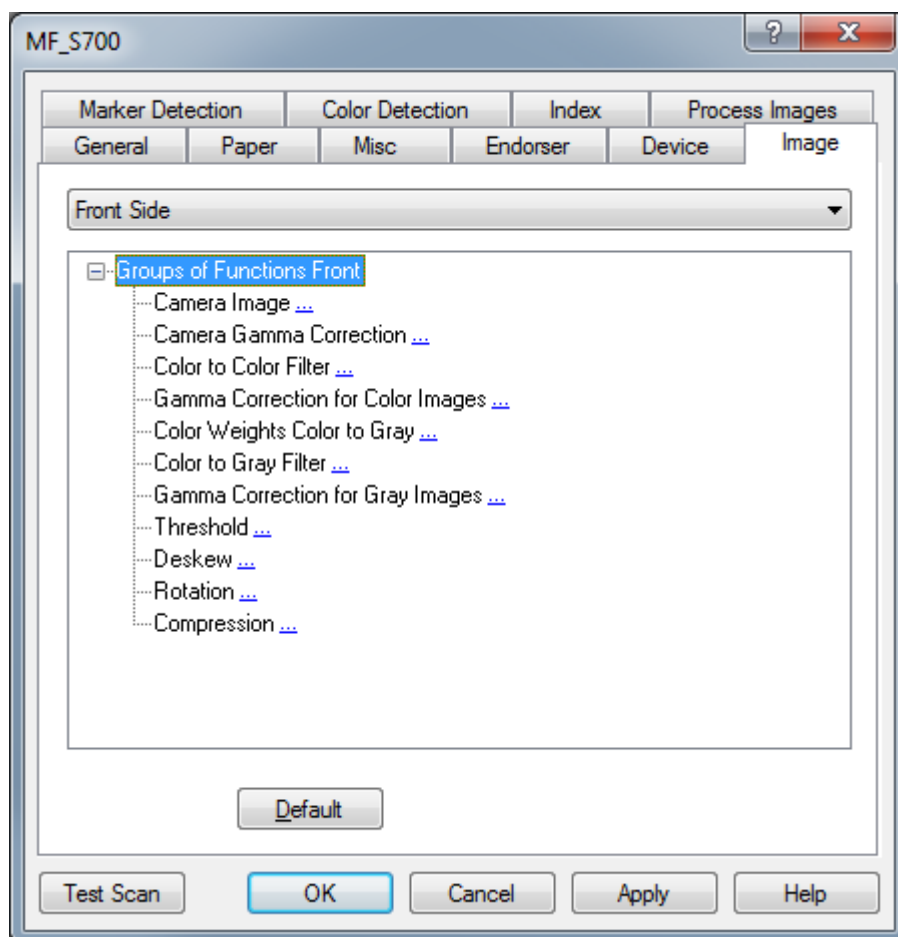


Illustration 10 – Property Page Image

The dialog displays, at its upper edge, a dropdown list field where you can set the relation of the data in the tree structure beneath it: **Front page**, **Back page** or **Both sides**.

When you switch over to "Both sides", the settings made for the front page are also taken for the back page.

1.6.1 Camera Image

It is possible here to take the color image as created by the CCD camera and to turn it, already in the camera, into a gray image.

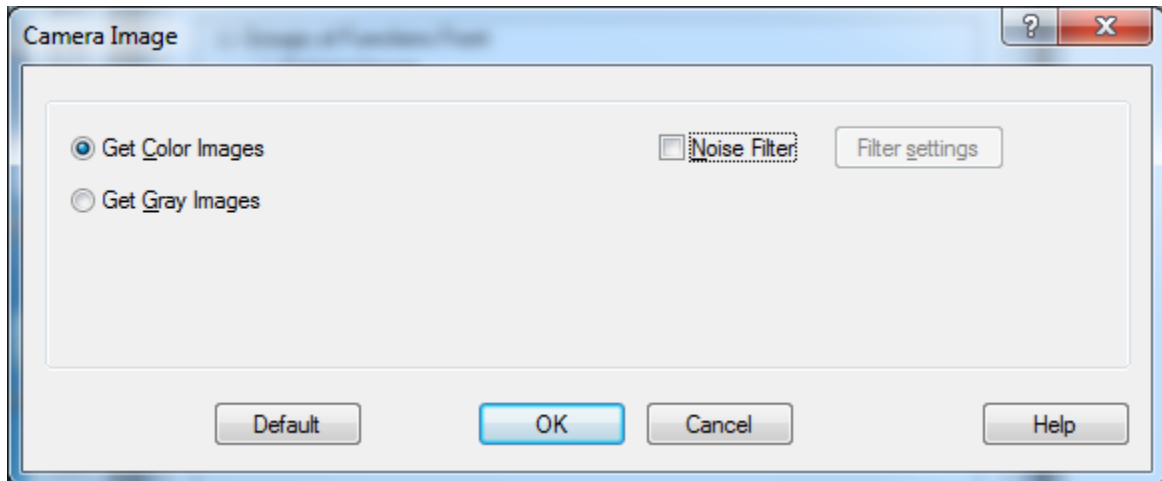


Illustration 11 – Camera Image

Get Color images

Normal operating mode that creates color images

Get Gray Images

Switches the color scanner so that the cameras deliver gray images.

When getting the gray image, less data (only 8 instead of 24 Bits per pixel) must be sent from the camera to the scanner; therefore the scan speed may be increased.

This method is recommended for pure bitonal scanning of good originals where no special image pre-processing is required, basing on the color image.

The gray image is gained directly from the color camera data by weighted addition. No color image will be created. Also, it is not possible to use color images in the Preview.

Noise Filter

Activates the settings for the noise filter. The neighboring button opens the configuration dialog for this filter.

Default

Restores the Default settings.

1.6.1.1 Color Noise Filter

Here, you can influence the colored background on the image. Color line by color line, a mean value is created, of pixels with the same color. This serves for a better compression of the color images.

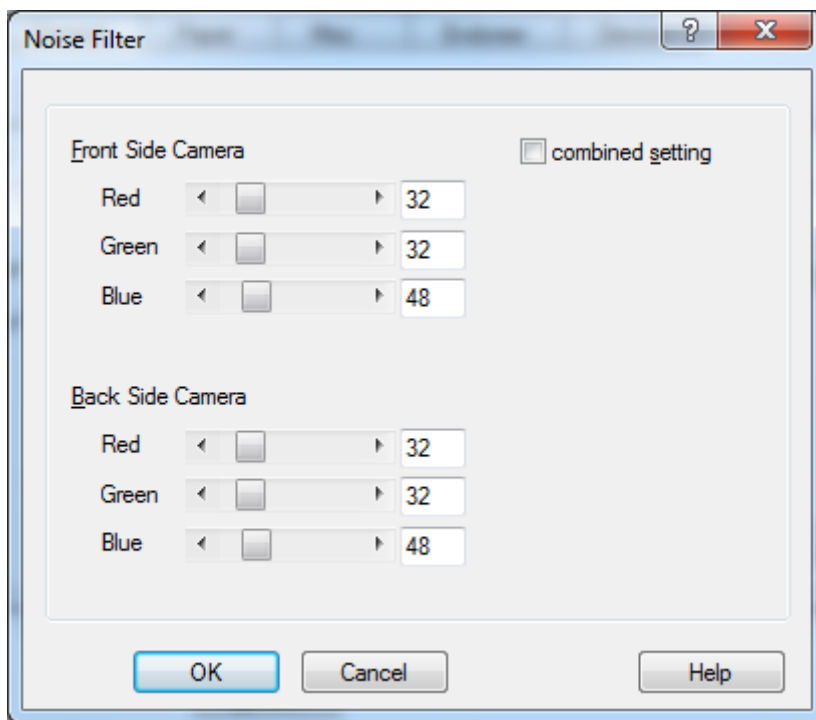


Illustration 12 – Dialog Noise Filter

1.6.2 Camera Gamma Correction

With XINO scanners it is possible to immediately apply a Gamma correction on the incoming color signals. By Gamma correction, the (initially equally proportioned) contrast differences are shifted towards the center of the color area where they become better visible to the human eye. Usually it is not required to modify these parameters.

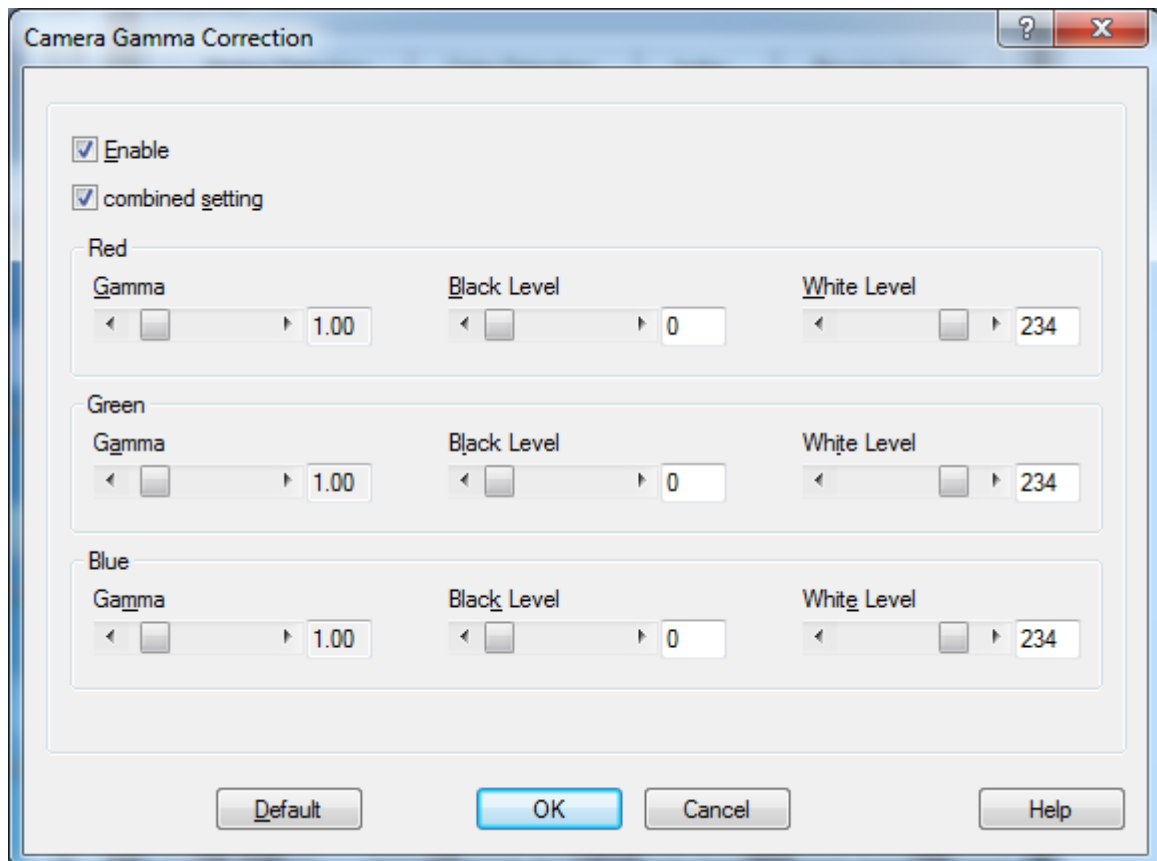


Illustration 13 – Camera Gamma Correction

Enable	Activates, or disables Gamma correction for the color camera
combined setting	Select this option if you want to set the color channels in parallel, basing on the Red channel; otherwise the values can be set individually.
Gamma	This parameter rules the non-linear intensity flow of the color channel. The higher this value, the lighter the color will appear.
Black Level	This parameter works like a threshold: All colors "below" the threshold are transformed to black.
White Level	Alle colortöne oberhalb dieses Wertes werden zu Weiß transformiert, bzw. zur höchsten colorintensität.
Default	Restores the default settings

1.6.3 Color to Color Filter

The XINO Scanners allow to use a color filter for the color image. These filters generally determine, which colors will be transformed from background colors to white and will thus become invisible, and which colors shall be kept as foreground colors. This way, for example, the gray tone of recycled paper, the brown tone of old technical drawings on parchment, or also the line pattern of coordinate paper can be filtered out, without losing the other colors.

Use this dialog to set the filter:

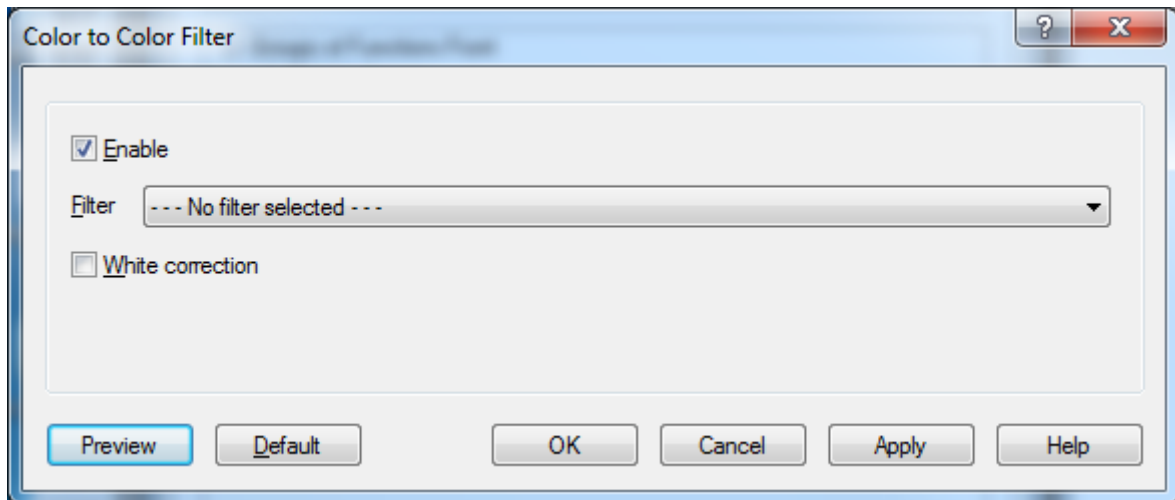


Illustration 14 – Color to Color Filter

Enable	Switches filtering on or off, respectively
Filter	You can set which filter shall be used. Make your choice from the color filter files *.DD (128KByte); those are placed in the sub-directory FIL of the driver.
White correction	When activated, the color value for light color tones will be improved. This option, however, requires additional calculation time and retards the scanning process.
Preview	Opens a Preview window where the influence of the settings to the image are directly displayed.
Default	Restores the default settings

1.6.4 Gamma Correction for Color Images

XINO Scanners can, further to the color filtering (refer above) execute also a Gamma correction auf the color image. Use the according dialog to set the Gamma values and the Black Level.

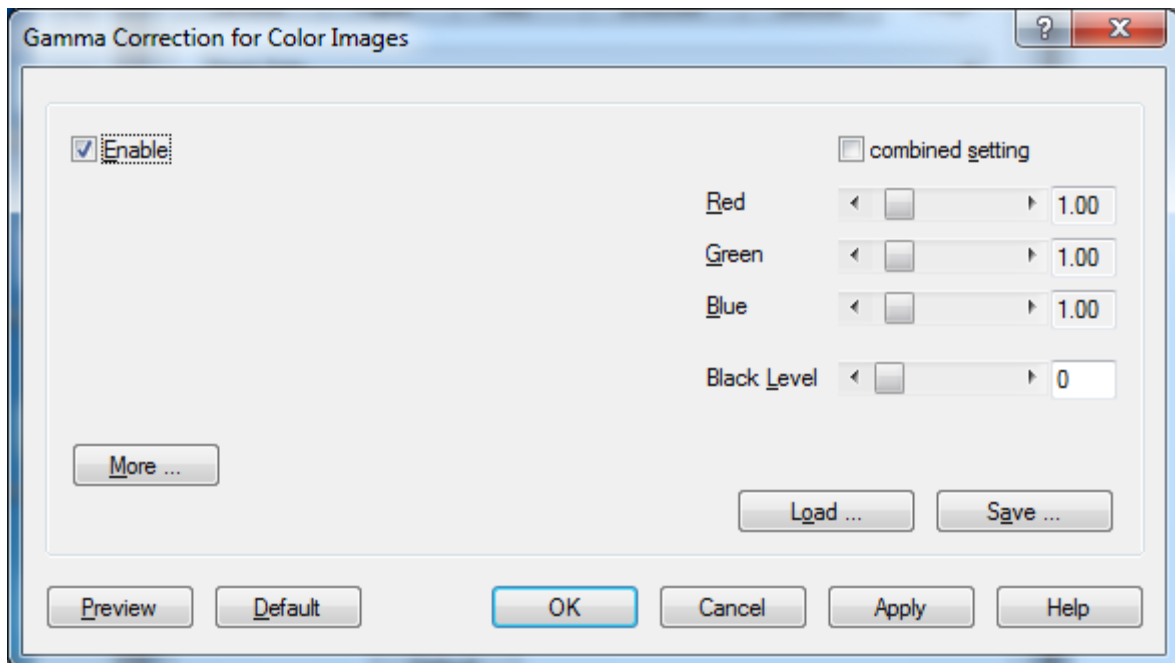


Illustration 15 – Gamma Correction for Color Images

Enable	Enables the gamma correction. As long as the option is disabled, the latest set parameters are saved in the computer, but are not forwarded to the scanner
combined setting	Select this option if you want to set the color channels in parallel, basing on the Red channel; otherwise the values can be set individually.
Red, Green, Blue (Gamma)	This parameter rules the non-linear intensity flow of the color channel. The higher this value, the lighter the color will appear.
Black Level	All color shades below this value will be transformed to black, or to their lowest color intensity.
Load ...	Loads an existing gamma configuration; only the color tables of the corresponding side are taken.
Save ...	Saves the entire Gamma configuration, so also the gray table and the tables for the reverse side.
More ...	Opens the module with the editor for Gamma tables
Preview	Opens preview window. By means of one or several scans, you can directly check the effects of the settings.
Default	Restores the default settings.

1.6.5 Color Weighting Color to Gray

When a color image is transformed to gray, the gray value is determined by the weighted sums of the individual color brightness. At color images, you can determine the influence of the individual color channels Red, Green, and Blue for the conversion into a gray image.

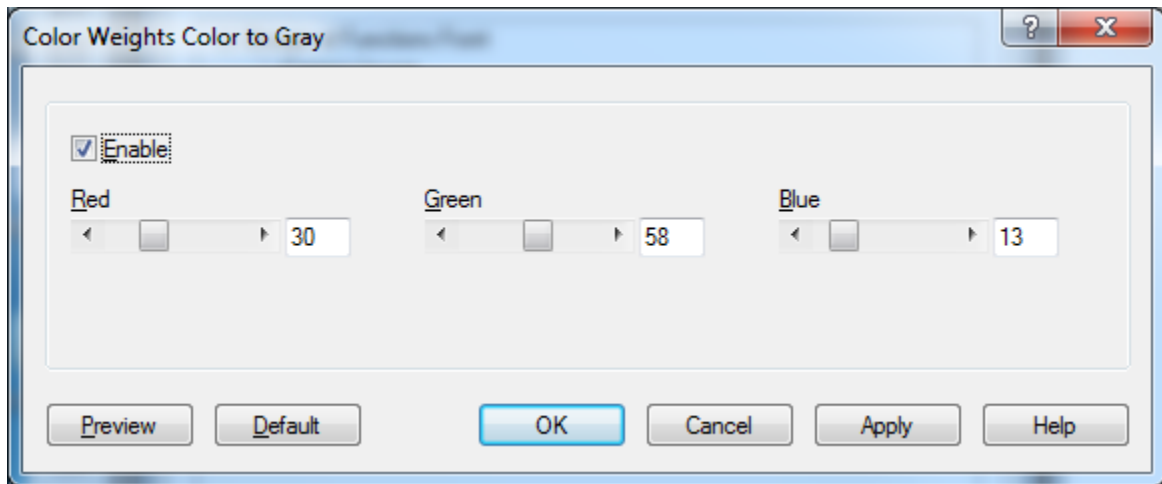


Illustration 16 – Color Weighting Color to Gray

Enable

Activates, or disables this function

Red, Green, Blue

Use the slides to determine, for color images, the relative influence of the individual color channels Red, Green or Blue for automatic converting of a color image to a gray image.

The brightness values Y for the items (RGB) are determined to the following rule:

$$Y = (\text{Red} * R + \text{Green} * G + \text{Blue} * B) / (\text{Red} + \text{Green} + \text{Blue})$$

Preview

Opens a preview window where the influence of the settings on the image is directly displayed.

Default

Restores the default settings.

1.6.6 Gamma Correction for Gray Images

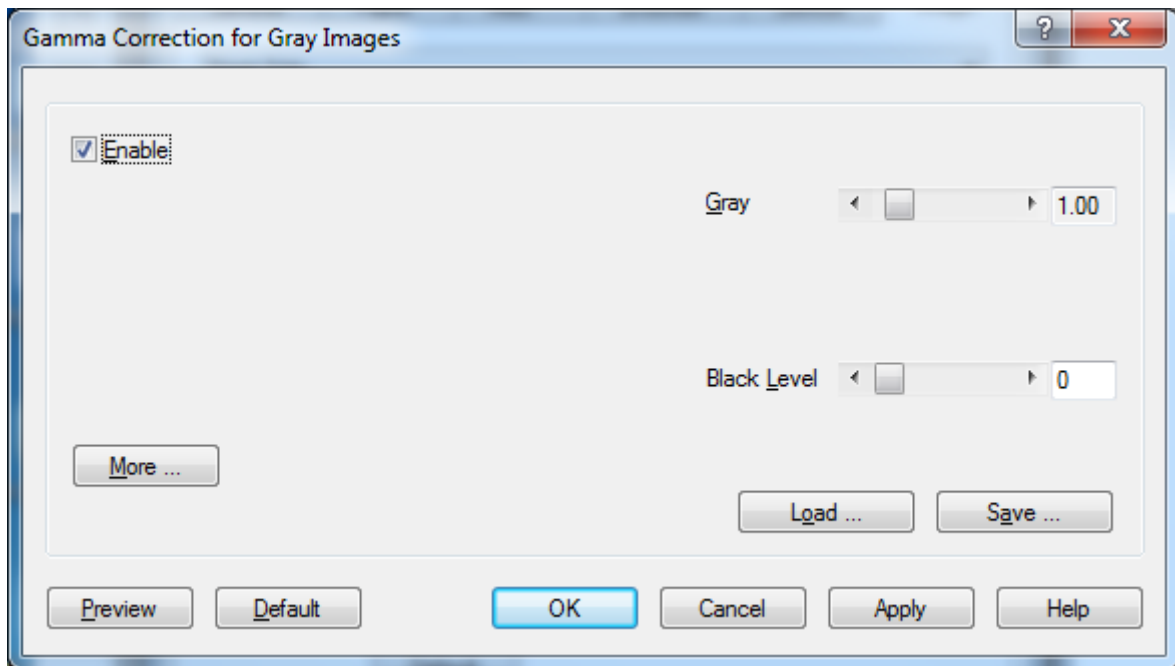


Illustration 17 – Gamma Correction for Gray Images

Enable	Activates the Gamma correction
Gray	This parameter determines the brightness of the grey value. The lighter this value is, the brighter the color will appear.
Black Level	All grey values below this value are transformed into black
More ...	Opens the module with the editor for Gamma tables
Load ...	Loads an existing gamma configuration; only the color tables of the corresponding side are taken.
Save ...	Saves the entire Gamma configuration, so also the gray table and the tables for the reverse side.
Preview	Opens a preview window where the influence of the settings on the image is directly displayed.
Default	Restores the default settings.

1.6.7 Editor for Gamma Tables

This editor allows to alter Gamma tables.

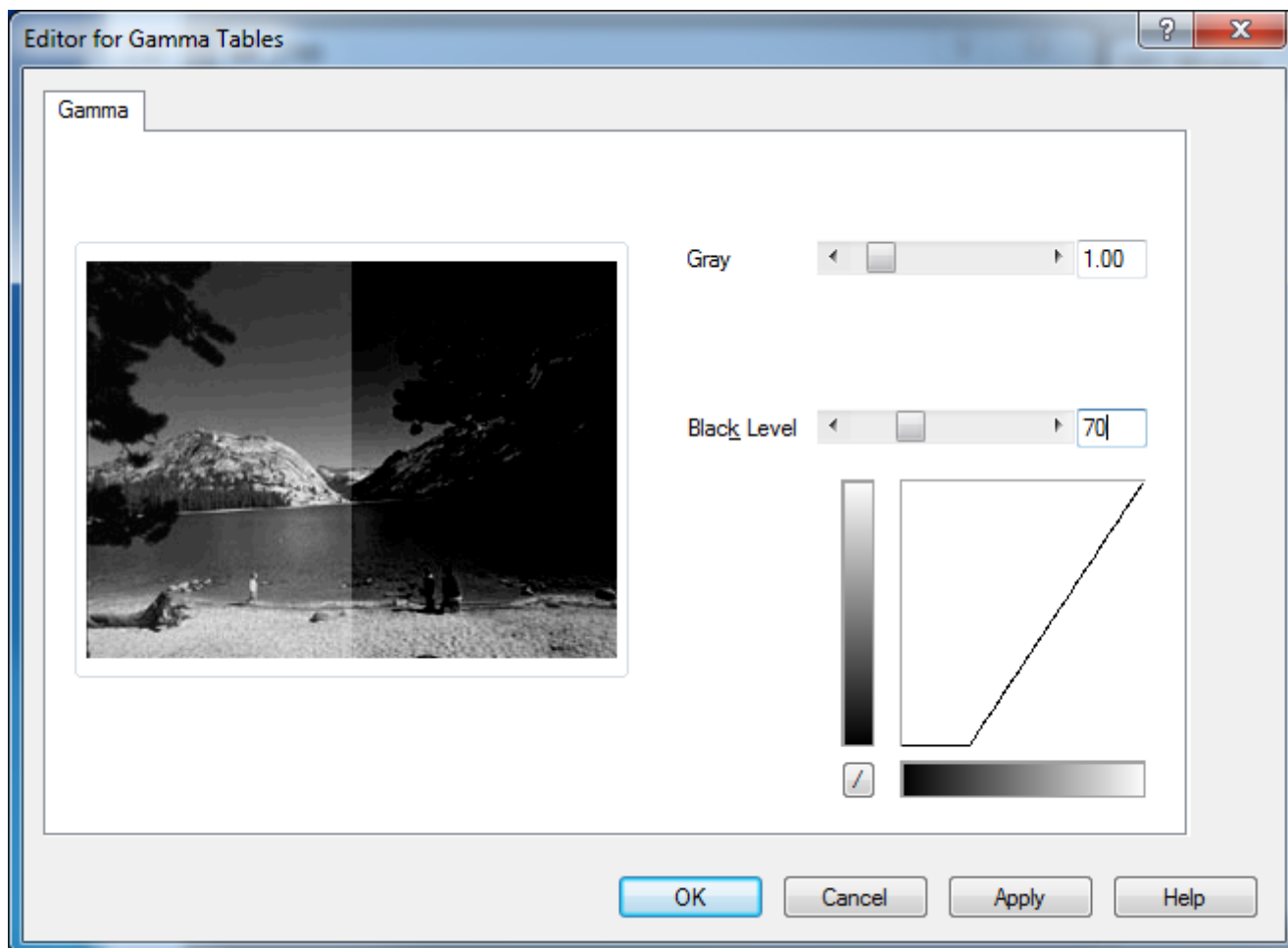


Illustration 18 – Editor for Gamma Tables

Two different editors exist, one as illustrated above for gray scales, and an editor for color images. By means of the displayed image, the Gamma values for the color channel or for the gray channel can be adapted.

1.6.8 MDIT Thresholding

The Multi-Dimensional Intelligent Thresholding method converts a gray image (256 gray tones) into a b+w image. The easiest and fastest way is to define a (static) threshold within the (256 gray scales wide) color range. The static thresholder compares every gray pixel value to this threshold value and then determines whether the target pixel shall be black or white, without regarding the surrounding pixels.

Most of the times, however, a more intelligent method is required. Only if thresholding is oriented "dynamically" at the surrounding image area, also images with different background areas are optimally converted.

MDIT can convert images with both methods.

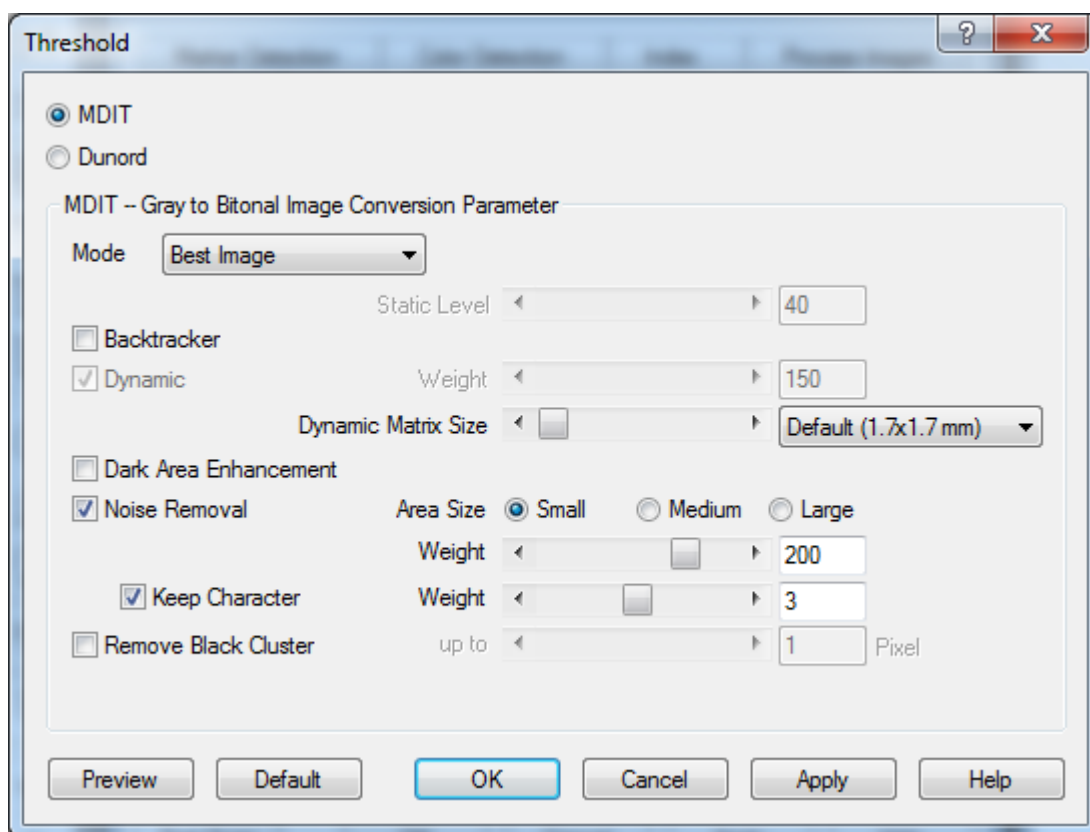


Illustration 19 – MDIT Thresholding

Mode	Manual	Thresholds can be set by hand
	Auto	With this option enabled, the static and the dynamic threshold are determined automatically from the gray distribution of the image.
	Best Image	Improved automatic mode that delivers better results at "noisy" images. If the images must be searched for barcodes, this method should be preferred to the normal Auto mode.
	Barcode optimized	Dabei sind the Gewichtungen noch stärker auf eine korrekte Barcode-Erkennung ausgerichtet.

Static Level	Range [0..255] – All pixel values under this threshold will turn black in the resulting image.
Backtracker	If this function is enabled, the value range for the static threshold is automatically adapted to the actual background color. This eases the processing of images with fluctuating background color tone.
Dynamic	range [0..255] – Determines how strong the dynamic thresholder shall react to local fluctuations in brightness.
Dynamic Matrix Size	<p>Range [0..63] – The matrix size determines the number of pixels that the dynamic thresholder will inspect around the original pixel, in order to determine the mean background gray value.</p> <p>As the dynamic thresholder reacts only to brightness differences, uniform dark areas will be hollowed and display only as frames. This effect may be wanted in order to display text that was marked by a highlighter in a frame. If, however, normal texts are hollowed, the matrix should be enlarged.</p>
Dark Area Enhancement	<p>Switches this function on or off.</p> <p>Normally, all pixels that are darker than the static threshold value are displayed in black. If the dark area detector is enabled, pixels inside such a black area are displayed in reverse color (= white) if the dynamic thresholder has detected local brightness fluctuations.</p>
Noise Removal Area Size	Small, Medium, Large – Use this option to add the "NoiseRemover". This option prevents that the dynamic thresholder reacts to isolated dark pixels. For doing so, it inspects the actual pixels and its surroundings.
Area / Weight	Range [0..255] – If the "NoiseRemover" is added, you can set the value for the pixel cluster removal. This value should be equal to or a bit higher than the dynamic threshold. With higher values, less noise will be filtered out (the images become darker).
Keep Character	Range [1..5] – This option disables the filter next to static pixels. At a value of 1, this is the case only in a small area, with a value of 5 in a large area. This way, you can partly prevent that characters are affected by the filter.
Remove Black Clusters	Range [0..32] –With this setting, all coherent areas (clusters) that consist of up to <n> black pixels will be removed.
Preview	Opens a preview window where the influence of the settings on the image is directly displayed.
Default	Restores the default settings.

1.6.9 Dunord Thresholding

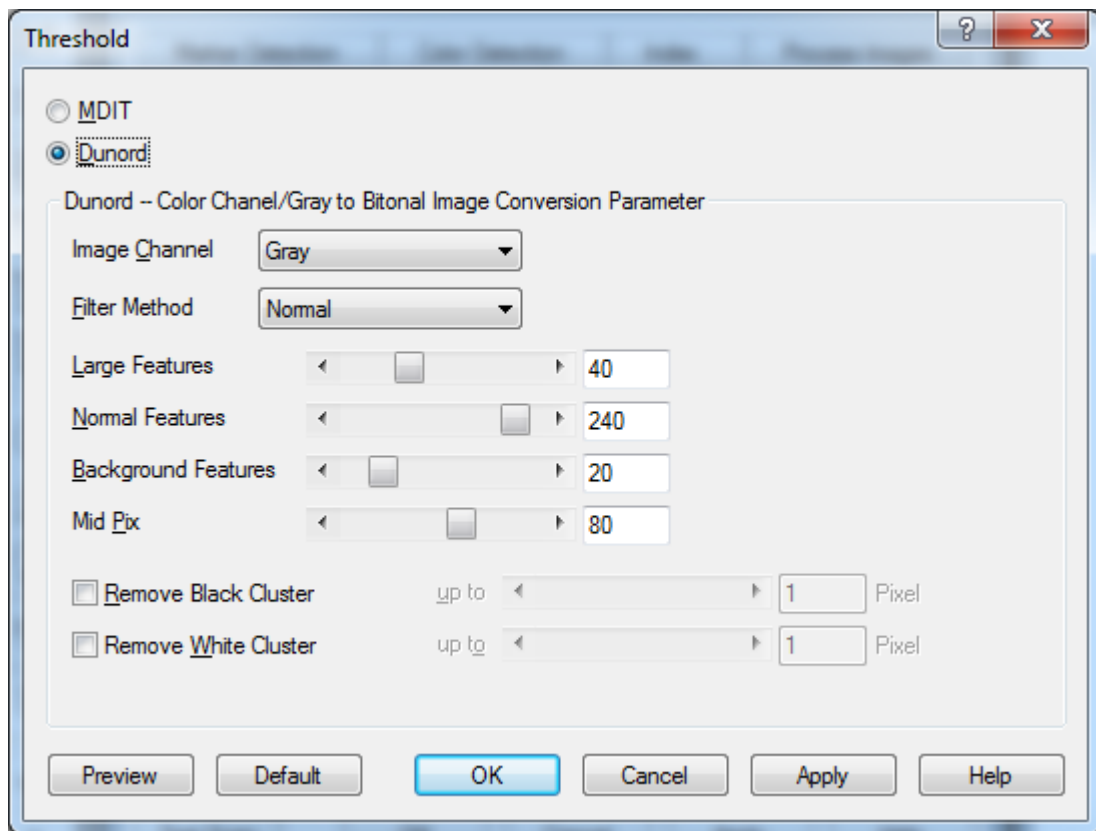


Illustration 20 – Dunord Thresholding

Image Channel	This setting determines which color channel shall be used for the filtering.
Filter Method	Here you can select how strong filtering shall be. Possible settings are: No filtering, light, normal, strong, very strong.
Large Features	This setting influences structures that are larger than normal text elements.
Normal Features	This setting influences structures that match normal text elements, like letters.
Background Structures	This setting influences structures the structures on the background. It includes removal of background noise and isolated small spots.
Mid Pix	Works on fine structures and has only little influence to the conversion
Remove Black Cluster	Range [0..32] – This setting allows to remove small, coherent areas (cluster) that consist of up to <n> black pixels.
Remove White Cluster	Range [0..32] – This setting allows to remove small, coherent areas (cluster) that consist of up to <n> white pixels.

- Preview** Opens a preview window where the influence of the settings on the image is directly displayed.
- Default** Restores the default settings.

1.6.10 Deskew

This dialog offers setting possibilities in three areas for the steps of the deskew process: Border finding, Deskew and Image Adjustment.

Use the tabs to switch over between the parameters for **Color** and **Gray**. Please keep in mind that only the different fill colors may vary, while the other values like the number of borders etc. remain the same.

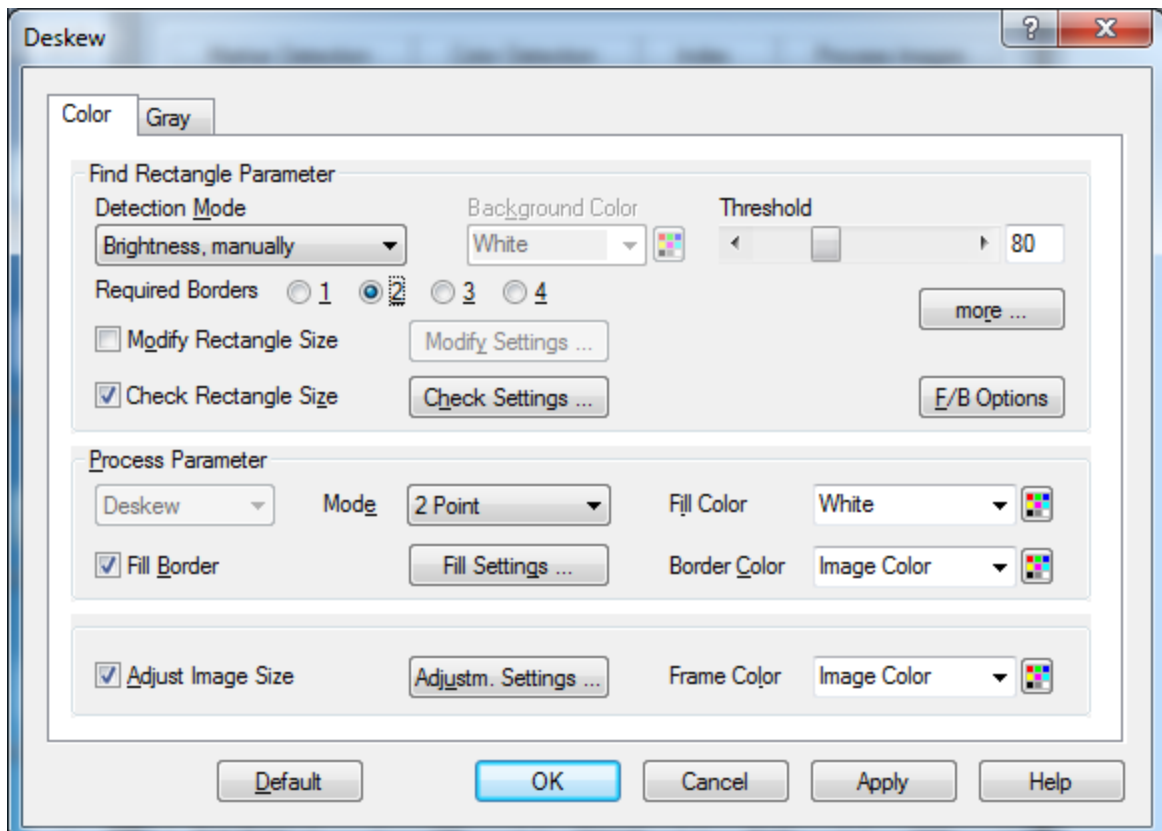



Illustration 21 – Deskew

1.6.10.1 Parameters for Edge Finding

Detection Mode

Determines the **Mode** of border finding, **Background Color** and **Tolerance**

It offers the combinations of **Brightness** and **Color Sensitivity** plus **manual** and **automatic** setting. Use **Brightness** to search for pixels that surpass a certain threshold. **Color Sensitivity** searches for pixels that deviate, in their color, from the background color more than the tolerance value that is set there. The color can be selected from a standard dialog: click on the  button in order to open this selection dialog.

Required Borders

This parameter determines how many borders must be found at least so that the image will be deskewed. Fax flags or receipts often have non-regular rip-off borders that deskew can not recognize.

Further parameters can be set in a separate dialog (see Chapter 1.6.9.1.2)

Modify Rectangle Size

You can adjust the recognized target rectangle before the deskew. It may, for example, be useful to cut off part of an image if the remaining image has darkened. The parameters can be set in another dialog (see Chapter 1.6.9.1.3)

Check Rectangle Size

By means of these settings you can determine when an image shall not be cut in form, for example because it would obviously become too small. The parameters for this check must be set in their own dialog (see Chapter 1.6.9.1.4)

F/B Options

With originals where one side of the paper differs only little from the scanner background it is possible to use information from the reverse paper side in order to detect the borders.

Again, you can set in a separate dialog how differences between front page and back page shall be considered (see Chapter 1.6.9.1.5)

1.6.10.1.1 Color Selection Dialog

To set a user-defined color is useful for example if the documents are scanned in so-called jackets. Jackets are holders consisting of one transparent and a non-transparent paper that are firmly connected at one side. The non-transparent paper thus produces an artificial background that deviates from the normal background that comes from the scanner.

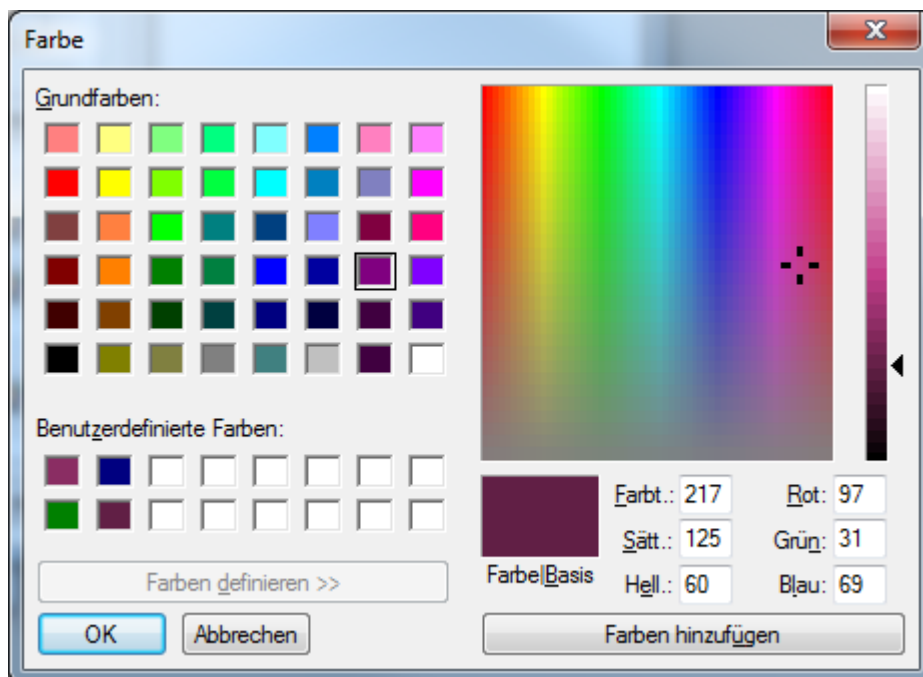


Illustration 22 – Color Selection

1.6.10.1.2 Rectangle Detector

For finding the rectangle, the following parameters can be set by means of this dialog:

Usually, the Deskew algorithm works with its default settings. Therefore these parameters should not be changed.

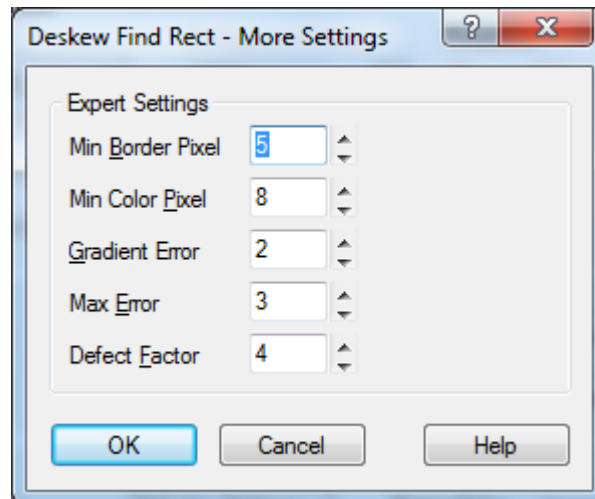


Illustration 23 – Rectangle Detector

Min. Border Pixel

Range [0..255], default value: 5

A border will be recognized at the earliest **Min borders Pix** pixels away from the image border. This helps to suppress the influence of dirt at the edge of the scan area. For images with extremely little border, this value may be smaller.

Min. Color Pixel

Range [1..16], default value: 4

Number of pixels which have to subsequently surpass the threshold so that a border is recognized. Higher values will better filter out background noise.

Gradient Error

Range [1..20], default value: 2

By definition, the target rectangle must be rectangular. Therefore, the standardized angle of all borders found is verified: Borders whose standardized slope shows a larger deviation as the Gradient Error set here are waived and count as "not found". If one or several borders do not appear in the target image as processed because the original image border is crooked or does not allow an exact angle determination as it is fringed, this value may be risen.

Max. Error

Range [1..99], default value: 3

The pixels recognized by border finding are used to mathematically determine, by linear regression, the optimum target border. If all pixels have a distance to the straight which is below the **Max Error**, the straight line has been found. Otherwise, the worst pixel is removed, and a new straight line is formed with the remaining pixels.

All image pixels below this threshold turn black in the target image. At images with improper borders, this value may be increased to facilitate the border finding.

Defect Factor

Range [1..99], default value: 4

If, in the target rectangle, dark image areas reach until the border, border finding will identify "wrong" border pixels which lie already within the searched target rectangle.

So that such inner pixels are preferably removed by the regression control, their distance from the regression straight is stronger valued with the Defect Factor. If too much is cut away from images with dark-edged areas, the Defect Factor may be increased.

1.6.10.1.3 Modify Rectangle Size

If, on the cut image, parts of the borders were removed that still contain information, the recognized rectangle can be enlarged before it is cut out. On the other hand, you can shrink the recognized rectangle in order to, for example, remove shades from the edge that may occur at "wavy" paper. By selecting correspondingly higher values, you can even leap over torn edges or punched borders.

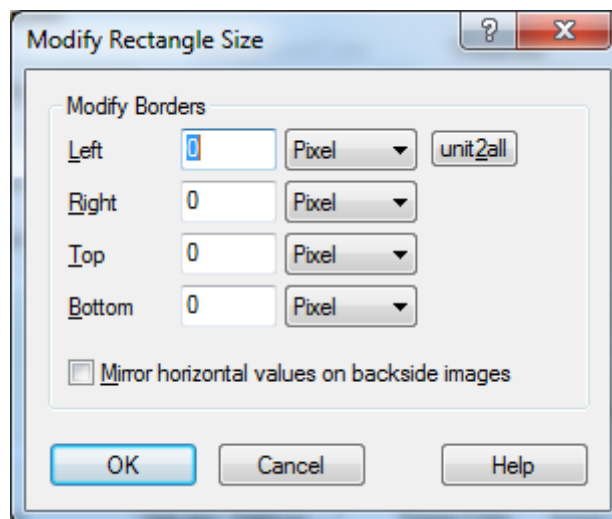


Illustration 24 – Modify Rectangle Size

Left, Right, Top, Bottom

Range [-32768..+ 32768], default value: 0

The found border will be moved by this value before the image is cut.

Positive values move the border to outside and cause a larger rectangle, negative values move them to inside so that the rectangle becomes smaller.

unit2all

Takes over the settings made for **Left** for all other borders or directions.

1.6.10.1.4 Check Deskew Rectangle Size

If you have originals with different colors, but all of the same size, and some of these documents have areas at their border in background color, it may happen that the deskew algorithm also cuts these areas. To prevent this action, you can indicate in this dialog when no cut is wanted:

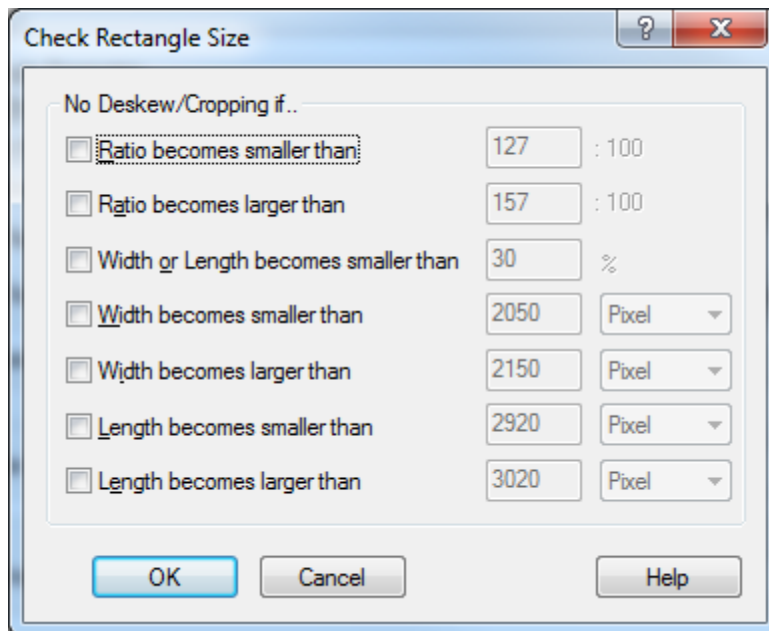


Illustration 25 – Check Rectangle Size

Ratio becomes smaller than

These values indicate the limits for the resulting side ratio for cutting the image. Default is about ±10% of the normal side ratio.

Ratio becomes larger than

Example 1: DIN Format

A sheet in A4 form has a side ratio of 210,22 mm (short border) to 297.30 mm (long border), which corresponds 1 to 1.4142.

You want to avoid that sheets which deviate about 10% from this form will be cut, and therefore you will set a minimal value of 127 and a maximal value of 157.

If you scan a batch of originals that contains, besides A4 sheets, also sheets in A5 format, or even business cards (A7), those will be deskewed and cut. A receipt, 5 cm wide and 30 cm however would not be cut.

Example 2: US Formats

The US-Letter format is 215.9mm by 279.40mm, which approximately corresponds to 1 to 1.6471. As tolerance, you may set 149 and 182.

Width or length becomes smaller than..

This percentage indicates up to which remaining border length shall be cut. This means it will not be cut if one of the borders would be shorter than this value, after the cut.

Default = 30%.

Example:

The scan area is A3 (297.3 mm x 420.5 mm). With the default value of 30%, an image would not be deskewed if it became smaller than 89.2mm or shorter than 126.2mm.

Width becomes smaller / larger than..., In addition to the relative value, you can also set an absolute upper limit and lower limit for each direction.

Length becomes smaller / larger than...,

1.6.10.1.5 Deskew Options for Front and Back Side

You have the following setting possibilities:

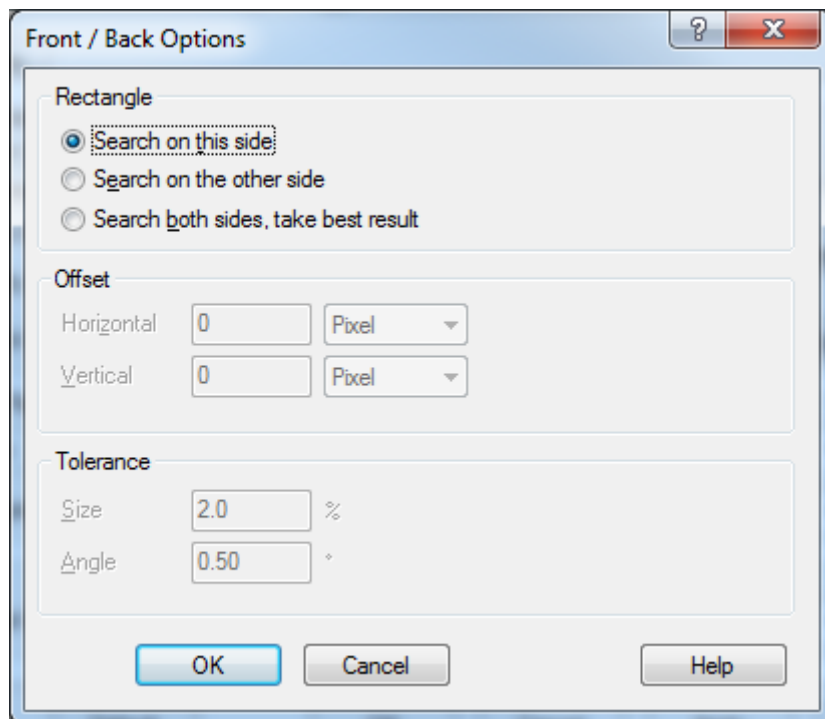


Illustration 26 – Deskew Front/Back Options

Rectangle

Search on this side

The borders of the actual side are used for the deskew process of this sheet.

Search on the other side

The borders of the back side are used for the deskew process of the actual sheet. This mode is recommended if the scanner is equipped with an option for transparent originals, and foils are scanned.

Search both sides, take best result

For the deskew process of the actual sheet, the edges of both sides are taken into consideration, in order to reach a common result and to calculate the optimum rectangle from it.

**Horizontal Offset
Vertical Offset**

Range [-1024..+1024], default = 0

At some scanners, front page and back page have an offset. If a constant offset exists between front page and back page, this offset can be entered in pixels.

If the back page is set off to the right, the horizontal offset is positive, and vice versa. If, analogously, the back page is set off towards the bottom, the vertical offset is positive, and vice versa.

**Tolerance:
Size**

Range[0%..100%], default = 2.0%

Front page and back page normally never have exactly the same size or the same skew. With this value you can set how far the sizes of the two sides may differ before the program suggests that "wrong" borders were found on the one side. The value indicates the allowed tolerance in percent.

The default of 20 thus matches 2%. This means that the minor width (length) must be within the range of +/- 2% of the larger width (length).

**Tolerance:
Angle**

Range [0°..25,5°], default =0,5°

Front page and back page usually do not have exactly the same size, or the same angle. Here you can set how far the angle may differ, in 1/100 degrees, before the program suggests that "wrong" borders were found on the one side.

1.6.10.2 Process Parameters for Deskew**Mode**

1-Point method: The nearest point of the original is used as target point. Advantage: Fast method. Disadvantage: Originally straight borders receive steps.

2-Points method: The target point is calculated from the weighted mean value of the two nearest points of the original.

4-Points method: The target point is calculated from the weighted mean value of the four nearest points of the original. This delivers good, smooth borders, but the method works slow, and the target image may look unsharp.

Bicubic 16 Points : This is an improved method that executed a special smoothing of the borders.

Fill Color

If areas of the target rectangle lie outside of the original image (mostly missing corners because the scan area was set too small), these areas must be reconstructed during the deskew process. This parameter determines the color for filling color images. You may select from **Black**, **White**, or a fix **Other Color**. The fix fillcolor can be selected by means of the Windows color selection dialog. For gray images, a grayscale tone can be set by means of this dialog.

Fill Border

With this option enabled, image areas are filled up that come from defective image borders or from the fact that an image is not always exactly right-angled. You can also set whether the fill color shall be **Black**, **White** or any **Other color**, again to be selected from the Windows color selection dialog.

In addition, it is possible to fill with the **Image Color**. Here we try to continue the colors of the most proximate border until the edge. This method is optimal for small borders, at larger missing image parts, however, it will lead to stripes at the border. The parameters for calculating these colors must be set in their own dialog.

1.6.10.2.1 Expanded Color Filler Properties

This process is used to fill missing image areas that come from the fact that a sheet of paper is not always exactly rectangular. Maybe the paper was cut from a block, before scanning, what happens for example when illustrates or leaflets are scanned.

Also, this process fills up torn borders or cut corners.

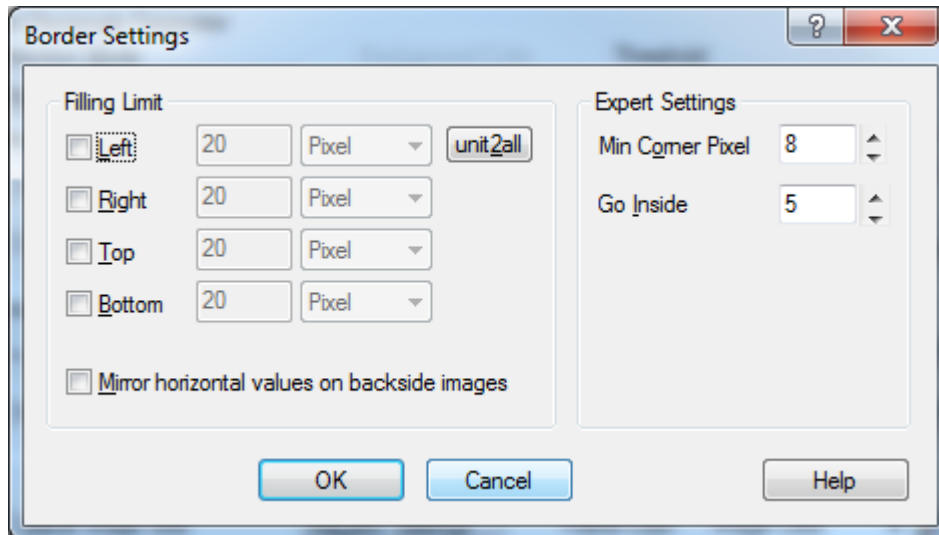


Illustration 27 – Expanded Color Filler Features

Filling Limit Left, Right, Top, Bottom

Here you can set how far the border filler will penetrate the images at maximum.

To all

Applies the value set for **Left** for the other borders.

Min. Corner Pixel

Range [0..32], default = 8

Number of pixels that must surpass the threshold subsequently so that a document corner can be supposed. Higher values will better filter out interferences from the background.

Go Inside

Range [0..32], default = 5

Often, pixels are found closest to the border of an images that neither belong to the background color of the scanners, nor match the color of the image. The algorithm will therefore **Go Inside** the image for xx pixels in order to determine the border color of the image.

1.6.10.3 Adapt Image Size – Parameters Image Adaptation

After deskewing, the image can be enlarged to a specific size, or be fitted with an additional frame. Same as with border filling, you can select from Black, White, or another color, or the color of the image. The size of the resulting image and the dimensions of the frame can be set in a dialog.

1.6.10.3.1 Deskew: Resize Image

Use this dialog to set how an image can again be adjusted to a specific size, after its deskew, and whether borders shall be added.

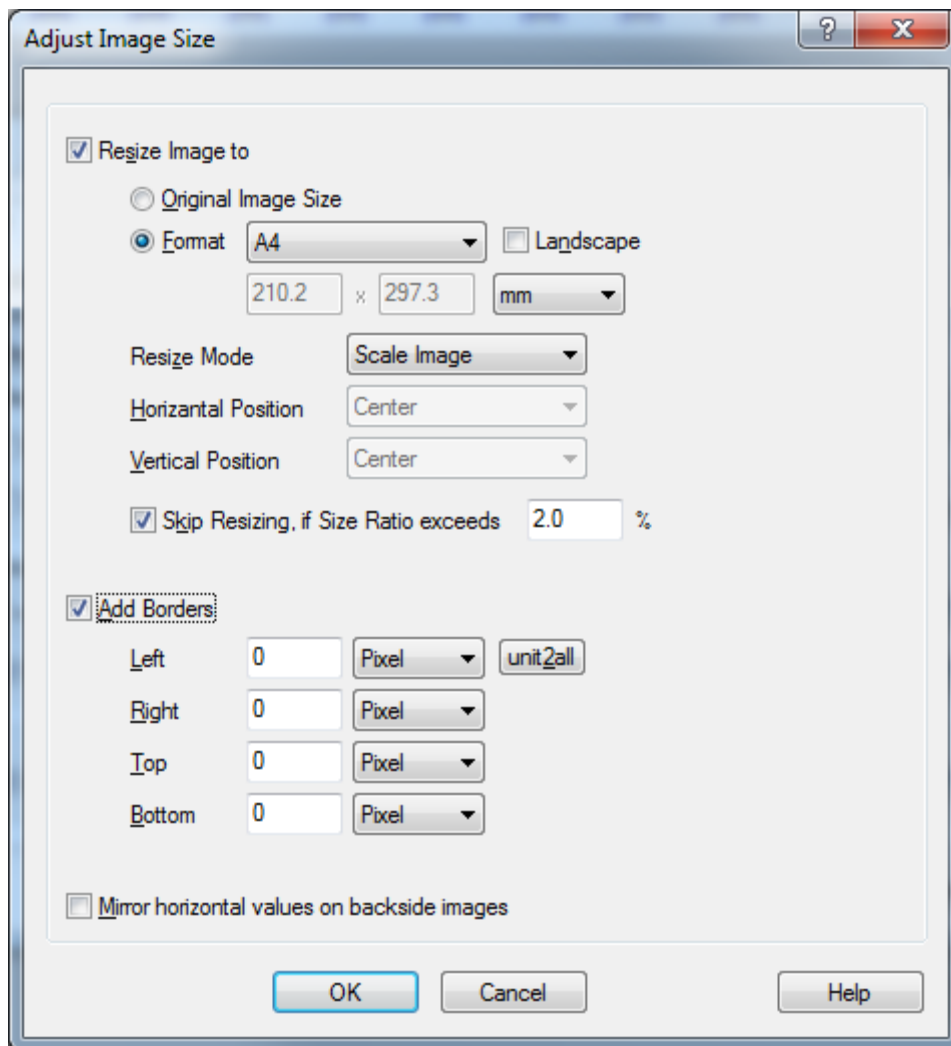


Illustration 28 – Deskew: Resize Image

**Resize Image to
Original Image Size**

Enables resizing after the scan. There are the following options:
Fills, or stretches the image up to the size set on the property page "Paper" (without the additional border that might be set there

- Format, Landscape** Fills, or stretches the image up to the size set here. Make your choice from the usual paper formats A0-A7, B0-B7, Letter, Legal, Double Letter, and a user-defined format. The fixed formats may be entered as landscape format, and the user-defined format allows to select from the usual measuring units.
- Resize Mode** Make your decision to **Stretch** or to **Fill**. Stretching should be used only for minor adjustments, if for example A4 was scanned and normal documents with only little skew shall be stretched to full A4 format.
- In case of Fill, however, you can enter the **Horizontal** and **Vertical Position** of the deskewed image areas in the target image.
- You may chose from **Left, Center, Right** or **Top, Center, Bottom**, respectively.
- Maximum size change** You should enter a maximum percentage for resizing, in order to prevent very small images (like receipts or coupons) from being blown up to regular A4 format.

After the images are deskewed and probably resized, an additional border may be added. It might, for example, be used to add a (Bates) stamp without overwriting the image itself.

- Add Borders** Enables or disables the function.
- Left, Right, Top, Bottom** You can set, for each direction, whether an additional frame shall be fitted.
- For all** Takes over the value set for left for the other borders.
- Mirror horizontal values on backside images** Exchanges the values for left and right on the backside, in case of duplex scanning.

1.6.11 Rotation

If this feature is enabled by the checkbox, the image will be analyzed in order to detect the text orientation in the image. In case of successful detection, the image will be rotated so that the text can be read upright.

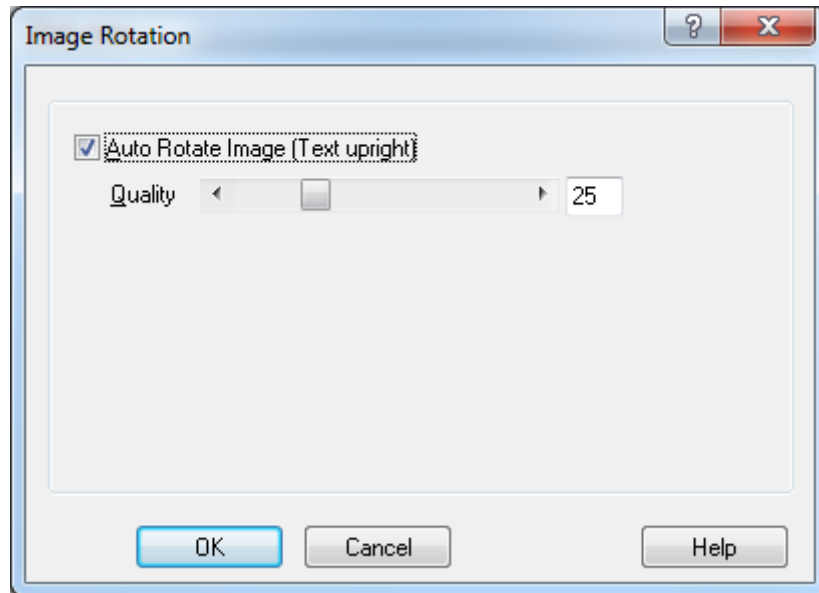


Illustration 29 – Image Rotation

Auto Rotate Image (Text upright) Activates the text-based image alignment

Quality

The slider determines the minimum quality that must be reached by the analysis in order to rotate the image. When the value is reached, or surpassed, by the image analyses, the image will automatically be rotated.

Small value: A low detection quality will be accepted;
high value: Rotation is done only at high probability of detection.

1.6.12 Compression

For image data transfer of color images, or grayscale images, you can select whether the images shall be transferred from the scanner to the computer uncompressed, or JPEG-compressed.

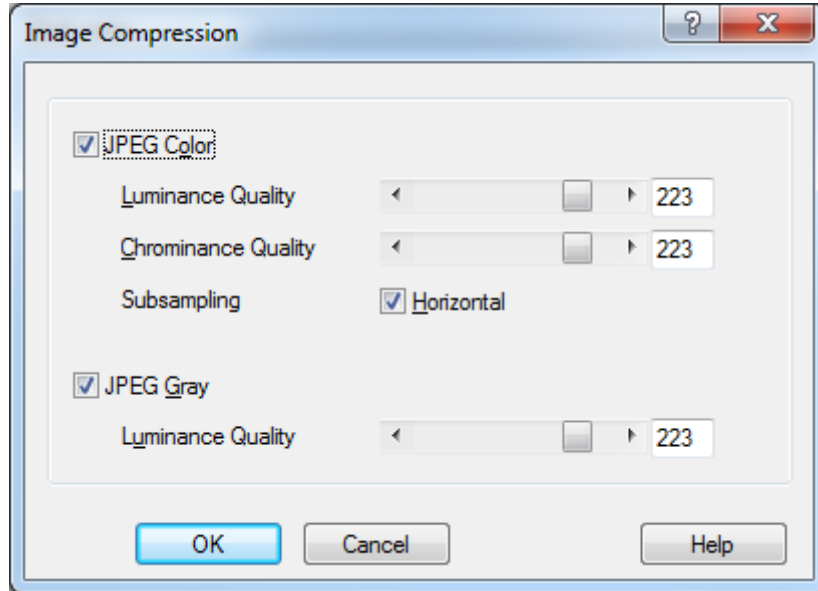


Illustration 30 – Image Compression

- JPEG Color** Enables compression for color images
- Luminance Quality** The Luminance slider determines the value for brightness.
- Chrominance Quality** The Chrominance slider determines the value for color.
- Subsampling** Activates horizontal subsampling
- JPEG Gray** Enables compression for gray images
- Luminance Quality** The Luminance slider determines the value for brightness.

1.7 Property Page: Marker Detection

The Marker Detection is comparable to the Patchcode detection. Goal is to detect images with a special colored mark on it, a sticker for example, or a highlight-marker sign, a logo, etc.. The marker detector is able to find one of up to three defined markers. A marker definition consists of its painting color and the size of the dyed area; this definition is built by a learning process. The detection process looks for the three marker colors (if enabled, of course) and selects the one with the greatest amount. The result of the detection process is stored in the Image Header, starting at position 380.

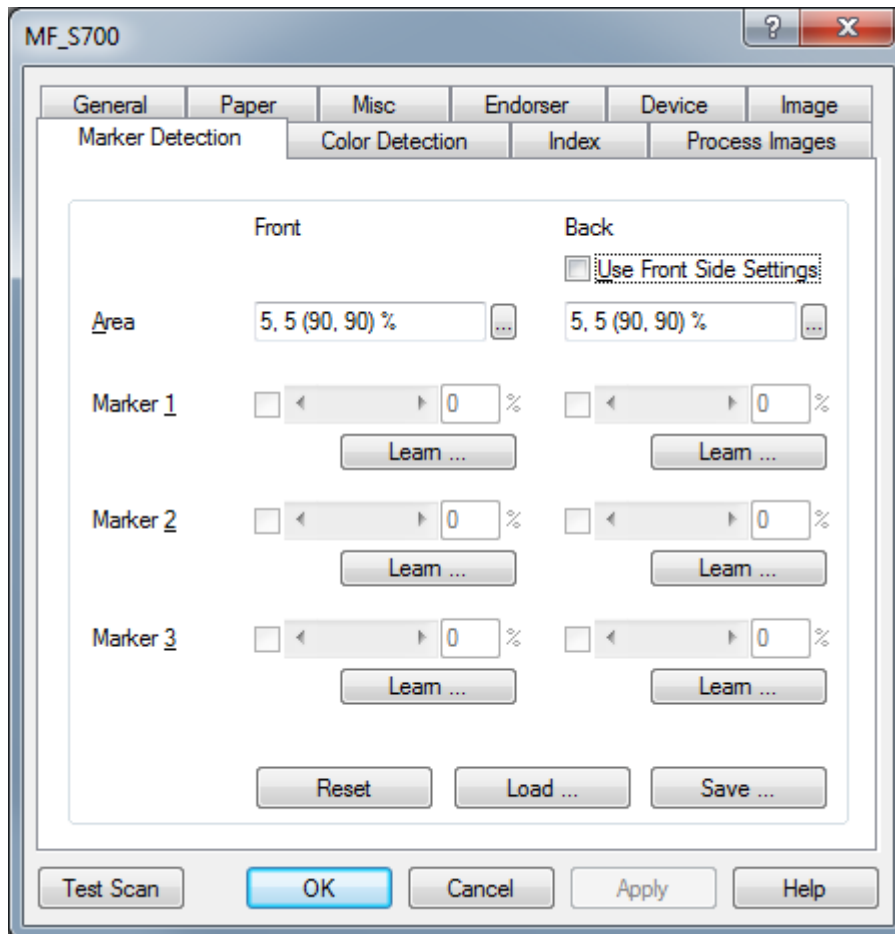


Illustration 31 – Property Page Marker Detection

The results from this process are saved in the Image-Header (Chapter 2) starting from Position 380.

Character on Position 388	Marker
0	no Marker detected
1	Marker 1 detected
2	Marker 2 detected
3	Marker 3 detected

Marker Detection cannot be processed if the camera delivers a gray image. It is necessary that the camera creates a color image.

The learning process should be re-run, if any change is done to cameras color shade, i.e. after changing the scanner, after white calibration, after changing camera gamma. So be sure, that your master copies are at hand, for the learning process.

Back: Use Front Side Settings

If checked, marker detection process on back side images will be done by using the same parameters as learned/set up for the front side.

Area

Default: [5, 5, (90, 90) %] (excludes 5 % from detection, on each border of the image)

Defines the area where Marker detection shall be processed. Click on the button [...] to edit the range.

Please note: If also color detection is used, the process will speed up when both use the the same areas (position and size).

Enable

If checked, marker detection is enabled. Enabling is available only, after marker has been learned.

Detection Level

Range [1..100%], Default: 50%

A marker will be found, if the detected area of the image holds at least the here defined percentage of the learned marker area size.

Learn ...

Click the button to start the Learn process for Marker Detection. Before the scanner feeds a sheet, a dialog opens, showing what to do.

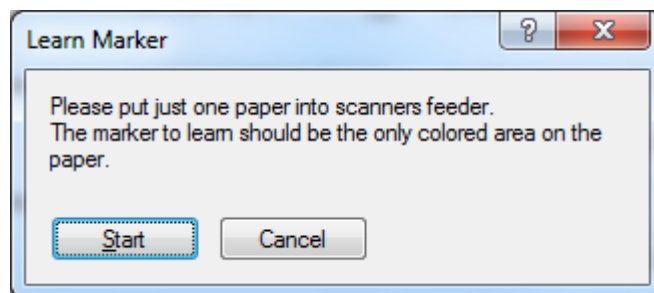


Illustration 32 – Learn Marker

After successfully learning, marker detection is enabled, the Detection Level is set to the default value, and the square shows a color impression of the learned marker.

Reset

Click button, to delete all learned markers.

Load ...

Click button, to load marker settings from file.

Save ...

Click button, to store marker settings to file.

1.7.1.1 Define Search Area for Markers

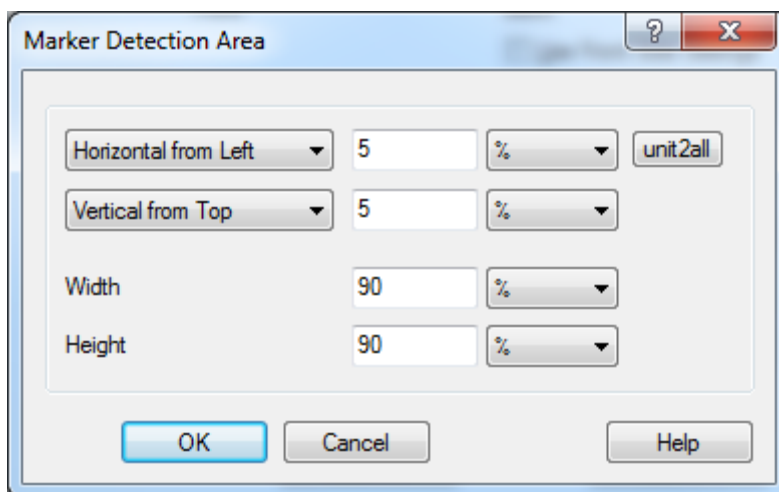


Illustration 33 – Marker Detection Area

1.8 Property Page: Color Detection

The Color Detection processor recognizes, if an image is of black&white or color type. This information can be used to switch the current image stream.

The result of the detection process is stored in some flags of the Image Header. At position 342 flag "Type" reflects the detected image type. Further flags "Drop", "Comp" and "Cols" can be used in special cases.

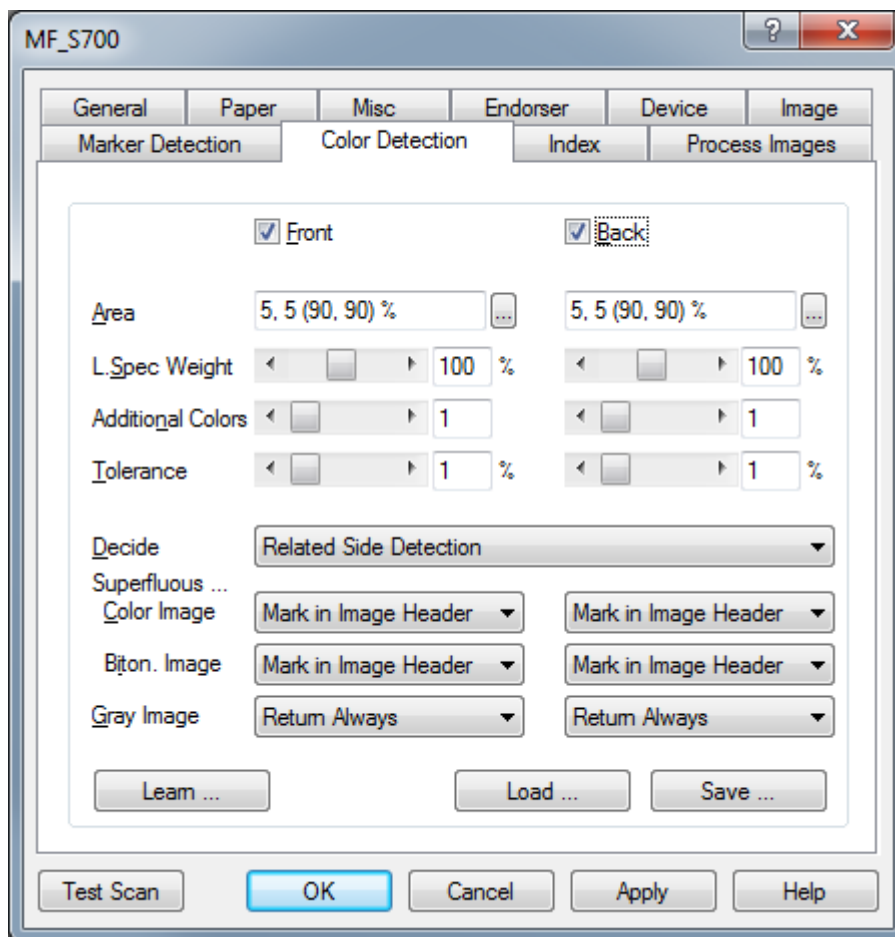


Illustration 34 – Property Page Color Detection

Color Detection cannot be processed if the camera delivers a gray image. It is necessary that the camera creates a color image.

The learning process should be re-run, if any change is done to cameras color shade, i.e. after changing the scanner, after white calibration, after changing camera gamma. So be sure, that your master copies are at hand.

- Front** If checked, the color detection process will be run with every front side image.
- Back** If checked, the color detection process will be run with every back side image.
- Use Front Side Settings** If checked, the color detection process on back side images will be done by using parameters, learned/setup for front side.

- Area** Default: [5, 5, (90, 90) %] <exclude border (5%) from detection>
Defines the area of the image, where the detection process is done. To edit the area, click the [...] button.
If also Marker Detection is active, the process will speed up, if both use the same area (position and size).
- L.Spec Weight** Range [1..200%], Default: 100%
"Learned Spectrum Weight" Defines the weight of the learned colors when comparing with actual images spectrum.
Example: Assume, learning was done with one document with a 5 mm² red square in it.
When scanning it with L.Spec Weight = 100% it will be detected as black&white.
With L.Spec Weight set to 80% it will not be detected as black&white, unless the red square falls short of 4.4 mm².
With L.Spec Weight set to 120% it will be detected as black&white as long as the red square does not exceed 5.5 mm².
- Additional Colors** Range [0..100], Default: 1
After comparing the current image's spectrum with the learned one, there will remain more colors; colors, that are not learned, or a number of pixel of a color, greater than learned. Define a number of additional colors here that you'll accept in black&white images.
- Tolerance** Range [1..100%], Default: 1%
Assume, Spectrum Weight Comparison removes the related colors from current image's spectrum. If this reduced spectrum holds still more color than the here given relation, the image is detected as a color image.
- Decide** Choose, how the detection result is used to handle the images:
Related Side Detection: use front side detection to handle front side image, and use back side detection result to handle back side.
Use Front Side Detection for both Sides: detection is done to front side only, result is used to handle both sides.
Use Back Side Detection for both Sides: detection is done to back side only, result is used to handle both sides.
Both Sides are Color, if at least one is detected as Color: if just one side is detected as color, both sides are handled as color images.
Both Sides are Color, if both are detected as Color: if just one side is detected as black&white, both sides are handled as black&white images.

Superfluous Color Image

If the image is detected as color, the black&white image is superfluous. Select how to handle this black&white image:

Mark in Image Header: The original black&white image gets send to the application; the color recognition flags in the image header are set.

Blank Image: The black&white image is cleared to white before sending to the application. The images size is not changed, the color recognition flags in the image header are set.

Small Blank Image: The black&white image is replaced by a small white b&w image before it is send to the application. The color recognition flags in the image header are set.

Drop Image: The black&white image is not send to the application.

Use carefully; not all applications accept gaps in image stream! So please use this option only if you are sure that the application supports this behavior.

Superfluous Biton. Image

If the image is detected as color, the black&white image is superfluous. Select how to handle this black&white image:

Mark in Image Header: The original black&white image gets send to the application; the color recognition flags in the image header are set.

Blank Image: The black&white image is cleared to white before sending to the application. The images size is not changed, the color recognition flags in the image header are set.

Small Blank Image: The black&white image is replaced by a small white b&w image before it is send to the application. The color recognition flags in the image header are set.

Drop Image: The black&white image is not send to the application.

Use carefully; not all applications accept gaps in image stream! So please use this option only if you are sure that the application supports this behavior.

Gray Image

Select how to handle the gray image after color detection:

Return always: The gray image is sent to the application, regardless of the color analysis result.

Same Action as Color Image : The gray image is sent to the application, following the same rules that are used for the according color image.

Same Action as Bitonal Image: The gray image is sent to the application, following the same rules that are used for the according black&white image.

Learn ...

Click the button to start learning of black&white images. Before the scanner starts, a dialog opens, showing what to do:

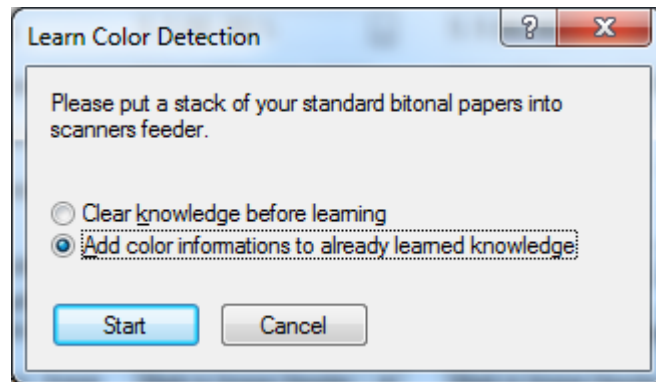


Illustration 35 – Learn Color Detection

After learning, L.Spec. Weight parameters are returned to their default setting.

Load ...

This button opens a dialog to load prior saved color detection settings.

Save ...

This button opens a dialog to save the actual color detection settings.

1.8.1.1 Color Detection – Define Search Area

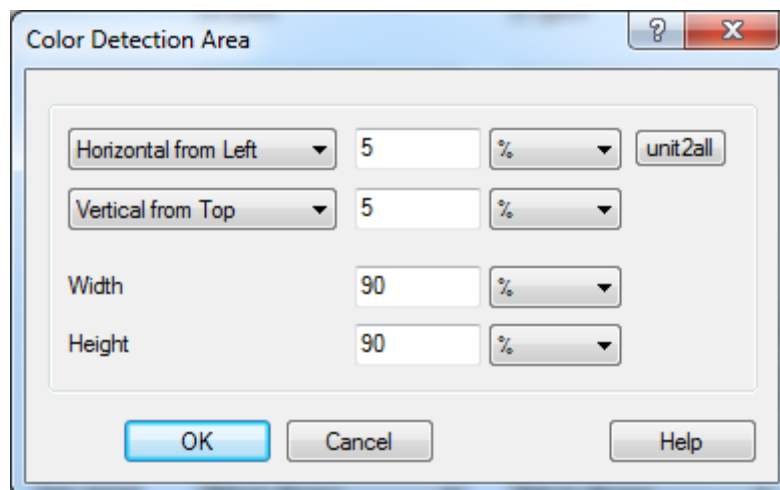


Illustration 36 – Color Detection Area

1.9 Property Page: Index

Index print is a special scanner endorser/imprinter function. Please note that the endorser must be enabled in order to activate the index counter

To assure that the index counter is printed, the endorser text must contain the format command %l.

Independent of the possibility to print, the index also defines the image address in the Image Header. The Image Header is an additional image information that is sent to the scan application together with the image. The scan application can evaluate the header and can, for example, name the file with the image same the print on the paper reads. Please find descriptive tables of the image header in Chapter 2.

XINO S700 scanners have an integrated patchcode reader. To assure that a patchcode can be recognized, it must be placed on the first 5cm of the sheet, seen in throughput direction.

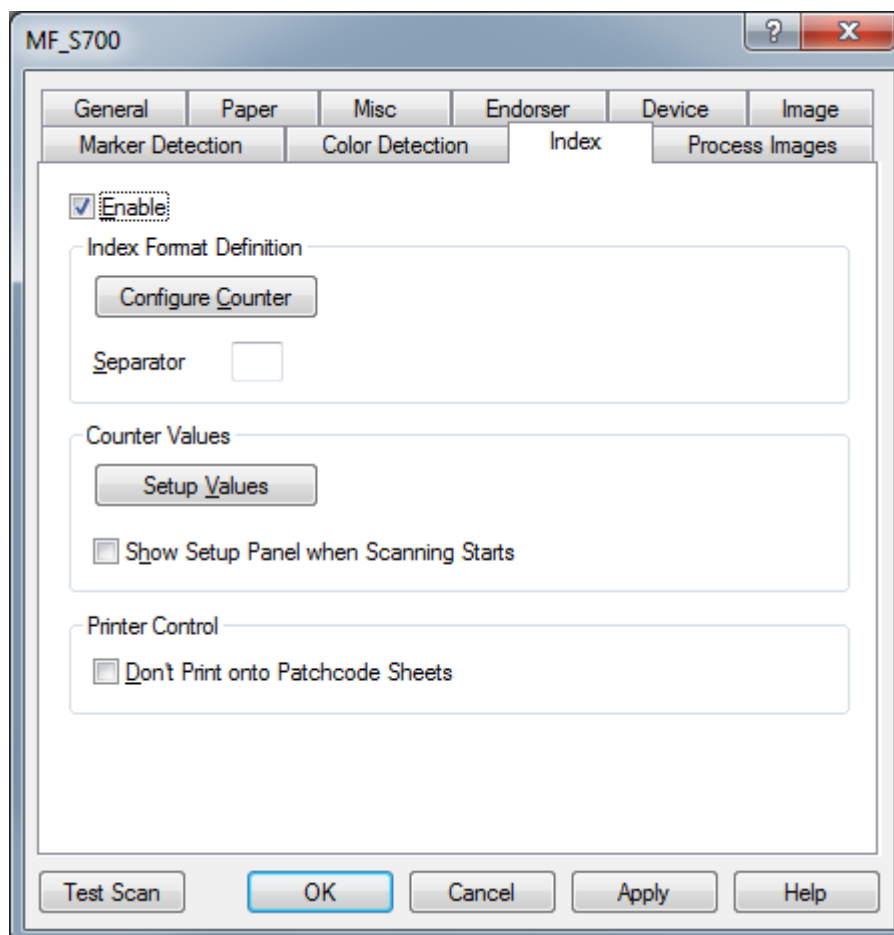


Illustration 37 – Property Page Index

The index is formed by (maximal) four counters: Level1, Level2, Level3 and Level4. Their counting method is ruled by the scanner-integrated patchcode reader:

Use this tab to define how to count and how the numbers shall be formatted for being printed.

Configure Counter

Opens the Index Counter Setup dialog.

Separator

This character is printed as separator between the Level counters.

Setup Values

Opens the dialog that displays the actual counter values. You may change these values.

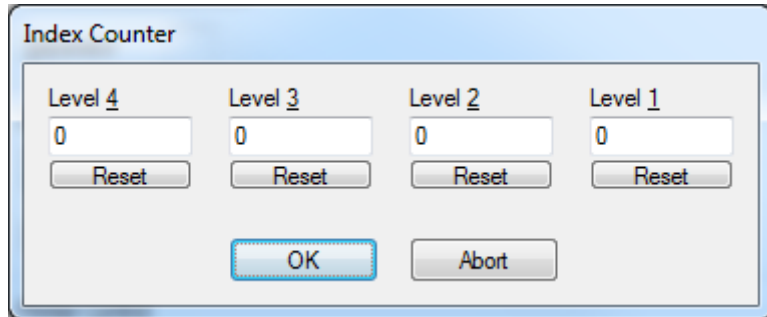


Illustration 38 – Setting Dialog for Index Counter

Show Setup Panel when Scanning Starts

With this option enabled, the counter value setup dialog is always shown at the start of a scanning session.

If the dialog is left with Abort, the scanner informs the application about the job end which means that the scan job is stopped.

Don't Print onto Patchcode Sheets

With this option enabled, recognized patchcode sheets will not be printed.

1.9.1 Configure Counter Format

After clicking this button, the following setup dialog will open:

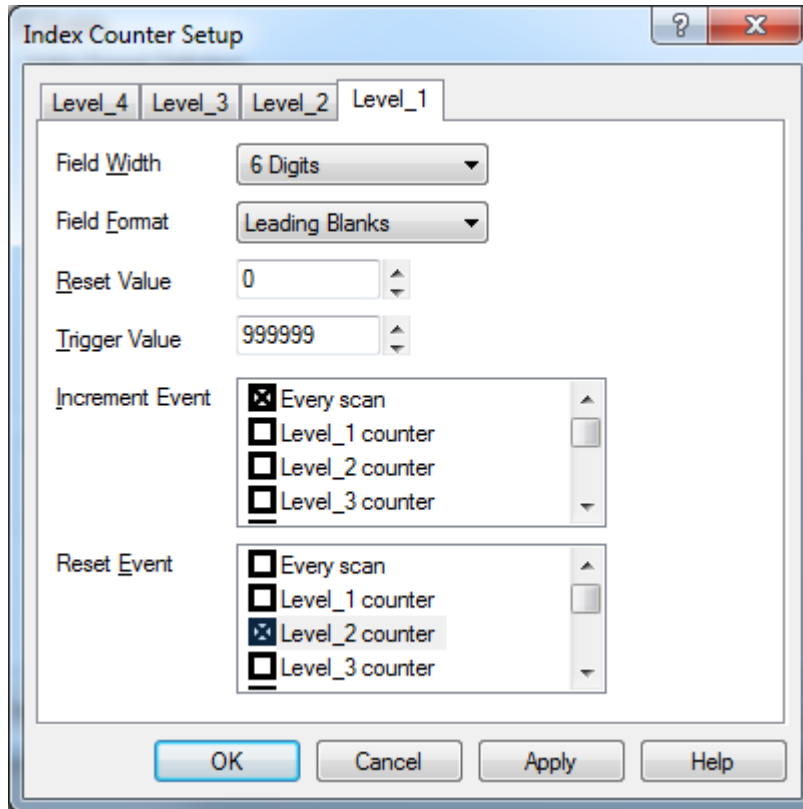


Illustration 39 – Index counter Format definition

This dialog is identical for each of the 4 Level counters.

Field Width

This number determines the maximal number of digits for the counter. Here, you can also completely disable the counter; a switched off counter can not be printed nor be modified.

Field Format

Print format for the counter:

Compressed: The counter is printed without additional characters. The number of printed digits varies from 1 to Field Width (as per the actual counter value).

Leading Blanks: The counter will always be printed exactly in the width of the field. Unused digits are filled up to the left with blanks.

Leading Zeros :The counter will always be printed exactly in the width of the field. Unused digits are filled up to the left with 0.

Trigger Value

When the counter reaches this value, a *Level-#* event will be triggered. Such a *Level-#* event is either an Increment Event, or a Reser Event.

Increment Event

If one of the events offered here occurs, the counter will be incremented by **one**.

Make your choice from **every scan**, the recognized patchcodes **1, 2, 3, 4, T, 6, all**, or the reaching of the set **Trigger value** for the **counter 1, 2, 3 or 4**

It is possible to select a counter event and also a patchcode event.

Reset Event

If one or several of the events quoted here occurs, the counter will be reset. So it will be set to the **Reset Value** as set above.

The same events are available as for selecting the counter event.

If a trigger value is defined that can no more be reached because the actual counter reading has already surpassed this value, the following warning will show up:

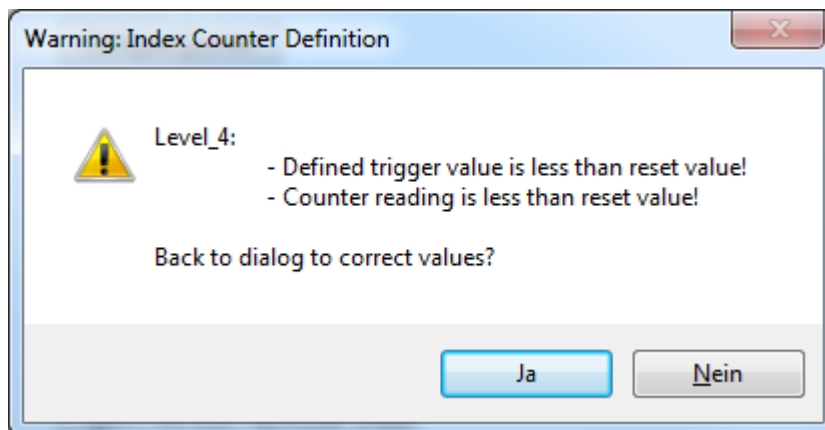


Illustration 40 – Indexing Warning: Trigger Value Exceeded

1.10 Property Page Image Processor

For scanners without the options Reverse-in-Color, Rotate and Deskew, the Image Processor makes it possible to process these steps afterwards.

For XINO Scanners of the S700 Series, it will hardly make sense to define Color Inversion, Rotation and Deskew here, as these processing steps are already available in the scanner itself.

In addition, the Image Processor allows to split images and thus create extra images. All these three processes are set on the Property Sheet: Process Images.

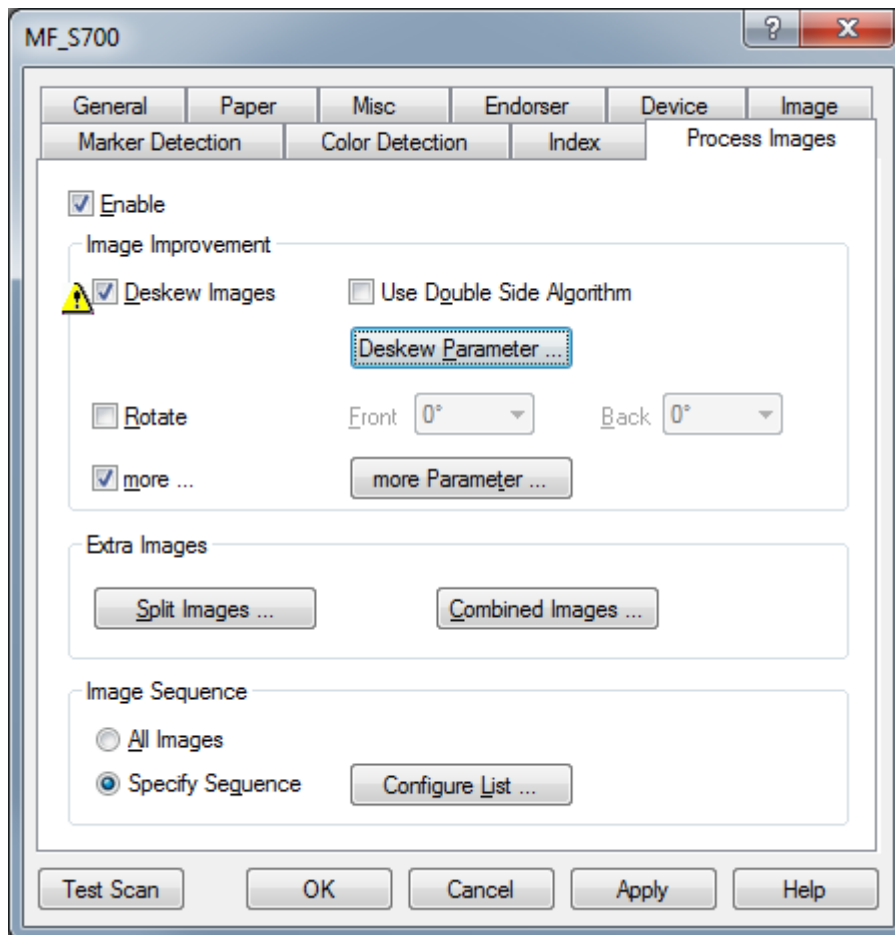



Illustration 41 – Property Page Image Processor

1.10.1 Image Enhancement

Enable	Enables the Image Processor. As long as none of these functions is required, we recommend to let the image processor disabled.
Deskew Images	Check this box if the Image Processor shall deskew scanned images, or shall crop their borders.
Use Double Side Algorithm	This option allows to use the search results from the back page for the deskew of the front page.
Deskew Parameter ...	If a deskew algorithm has already been enabled in the scanner itself, a warning symbol will show up.  <input checked="" type="checkbox"/> Deskew Images <i>In most cases, successive usage of several deskew methods makes no sense and can even lead to worse alignment.</i> A detailed description is found in Chapter 1.6.10. Deskew
Rotate	You can set a rotation angle (for the front page, in clock-direction) if you want to display and to save your scanned documents in another direction: <ul style="list-style-type: none"> 90° rotate one quarter to the right, 180° make a half rotation, 270° rotate a quarter to the left.
more ... More Parameter ...	This button opens a dialog, as described in Chapter 1.10.1.2.

1.10.1.1 Image Processor: Deskew Parameters

We recommend to not enable deskew here, when using XINO Scanners. Instead, the Deskew in the scanner itself should be used. If both methods are enabled at one time, deskew results become unpredictable!

This dialog offers, in three sections, setting possibilities for the steps of the deskew process: Border Finding, Deskew and Image Adjustment. By means of the tabs, you can switch between the parameters for **Black&White**, **Color** and **Gray**.

The Deskew of the Image Processor mainly uses the same parameters as the Scanner Deskew in the scanner that can be defined on the property page: Image. Nevertheless, there are some differences:

The Image Processor Deskew allows to work with *separate* parameter sets for all three color formats. So, for example, the bitonal image can be created with borders and the color image without borders. In addition, there is a **Mode** for black&white images: The **Fast / 1 Point** method. It is available for bitonal images only; shifts the lines of the image to the manner of geometric alignment. This method is very fast, but restricted to skews up to 7 degrees.

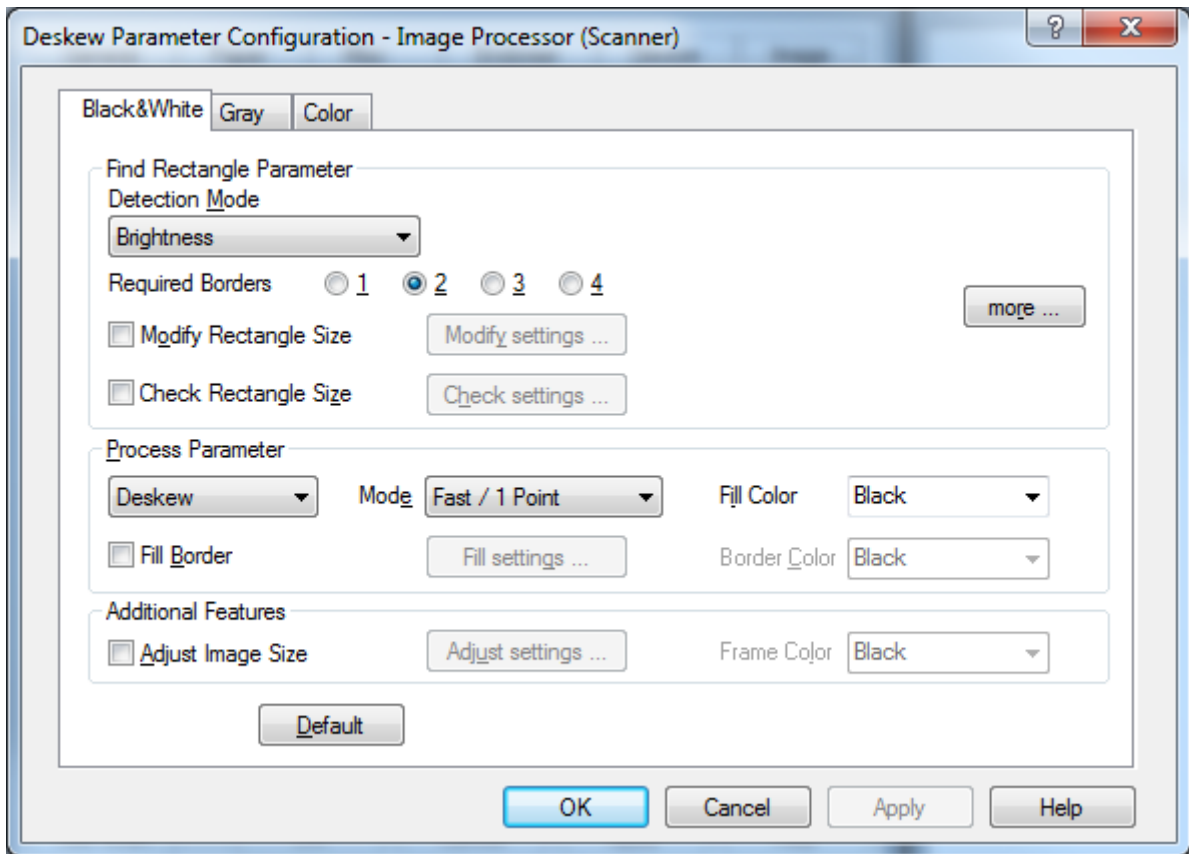


Illustration 42 – Image Processor (Scanner)

1.10.2 More... further Parameter

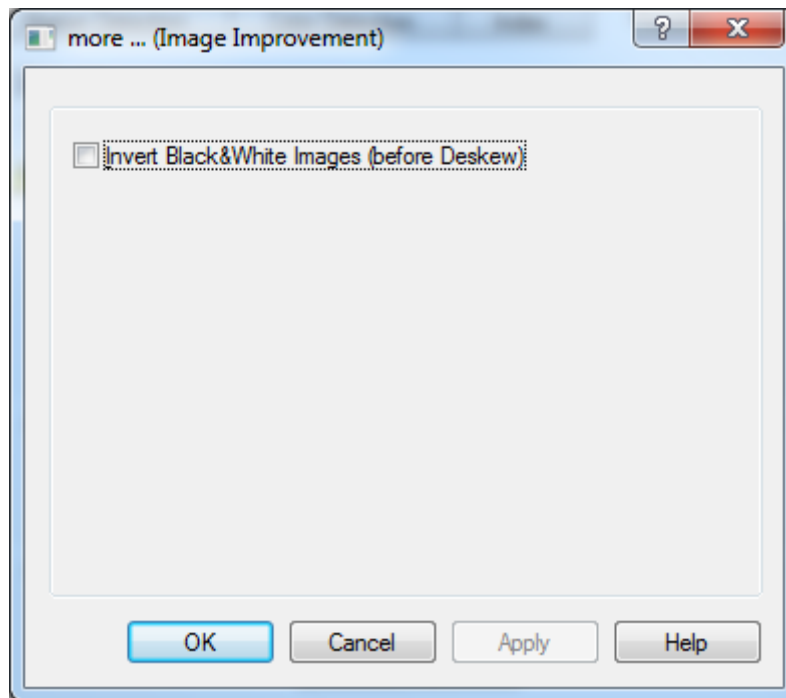


Illustration 43 – more ... (Image Improvement)

For better deskew results, you can set here that the black&white image is inverted in color before the process.

1.10.3 Split Images Manager

This dialog lists all defined split images. It also serves to add, modify and delete split image definitions. Actually, up to 20 images can be administered, inclusive the non-split originals.

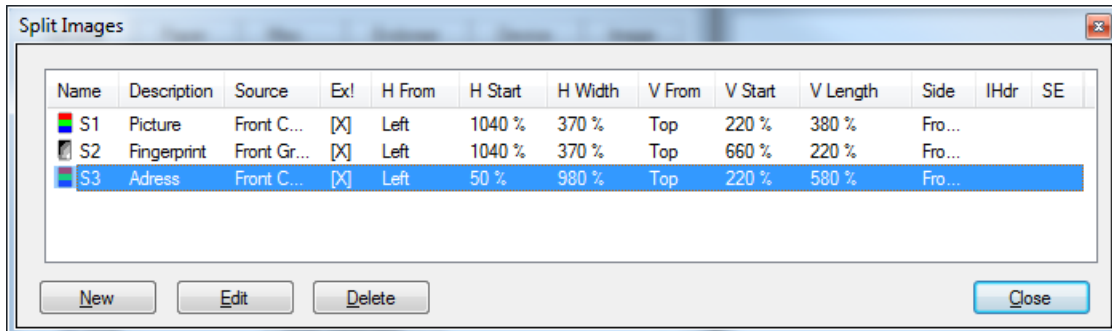


Illustration 44 – Split Images Manager

The meaning of the individual columns is explained in the next Chapter. The buttons at the bottom have these functions:

- New** A click to this button opens a new parameter set for split images, and the Split Parameter Editor will show up.
There, parameters can be set for the split image to be created. This function is no longer available if the maximal number of split images is already defined.
- Edit** Available only if a definition line is selected in the Split Image List. Click the button to open the Split Parameters Editor where the parameters of this split image can be modified.
- Delete** Available only if one or several definition lines in the Split Images list are selected. Click this button to delete the selected split images definitions.
- Close** Closes the dialog.

1.10.3.1 Split Images Parameters Editor

By means of this editor, you can define size, position and further features of a split image; you can also determine whether an Image Header must be created for the split image.

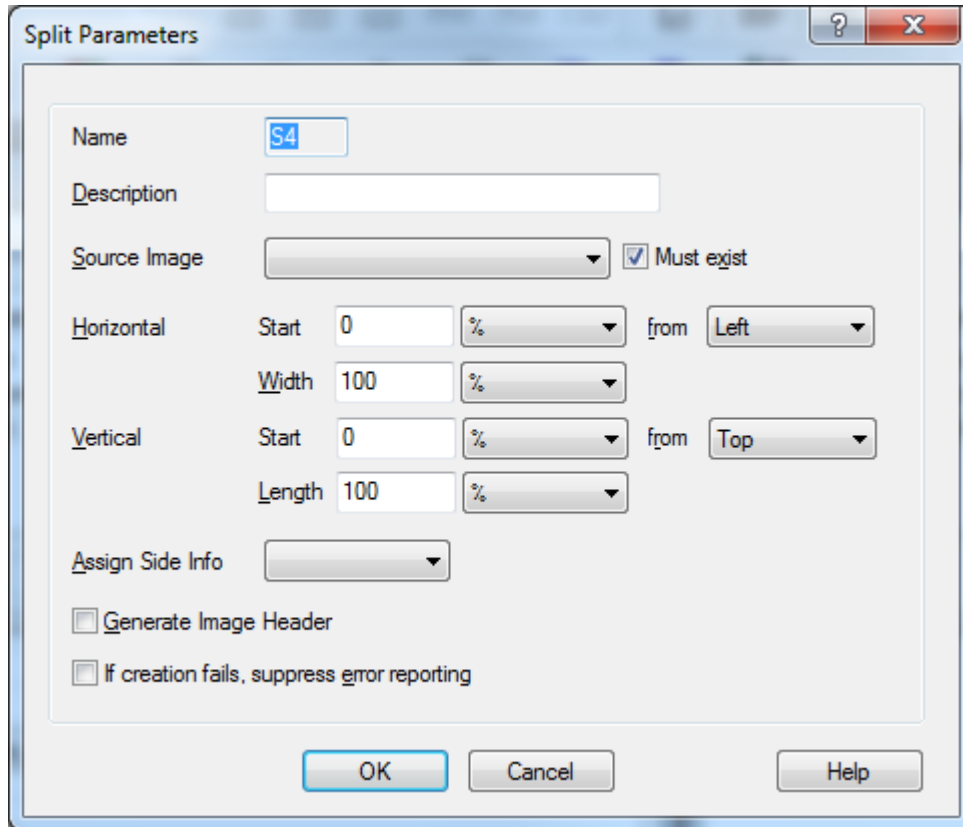


Illustration 45 – Split Images Parameters

Name	Internal name of this set of parameters
Description	Here, the user can enter a short free text to describe the parameters set.
Source Image	Selects the source image where the split image must be taken from.
Must exist	Determines the process how to react if the source image does not exist at run time (during the scanning process): if marked an error message will be thrown; if not marked the split image generation is skipped without any message.
Horizontal – Start	Defines the position of the left-hand edge for the split image within the source image. The position can be entered in absolute measuring units, or relative to the width of the source image (in percent).
from	The position of the left-hand border can be entered relatively to the left or right border of the source image.
Width	Width of the wanted split image. Measuring unit: Absolute, or in percent of the width of the source image. The split image generation will automatically stop at the right-hand border of the source image if a too large width was entered.

Vertical – Start	Defines the position of the top border of the split image within the source image. The position can be entered in absolute measuring units, or relatively to the length of the source image (in percent).
from	The position the top border can be entered relatively to the top and bottom border of the source image.
Length	Length of the wanted split image. Measuring unit: Absolute, or in percent of the length of the source image. The split image generation will automatically stop at the bottom border of the source image if a too large length was entered.
Assign side Info	Select from the dropdown which side attribute (front page, back page, ..) shall be assigned to the generated split image.
Generate Image Header	<p>If marked, a special Image Header will be generated to the newly created split image.</p> <p>For it, the Header of the source image is copied; the indications about image size are replaced by the dimensions of the actual section. Counter readings are not altered in this connection.</p>

1.10.4 Combine Images

By means of this dialog, two images can be combined to one common image. So, for example, front side and back side of an original can be combined to one image.

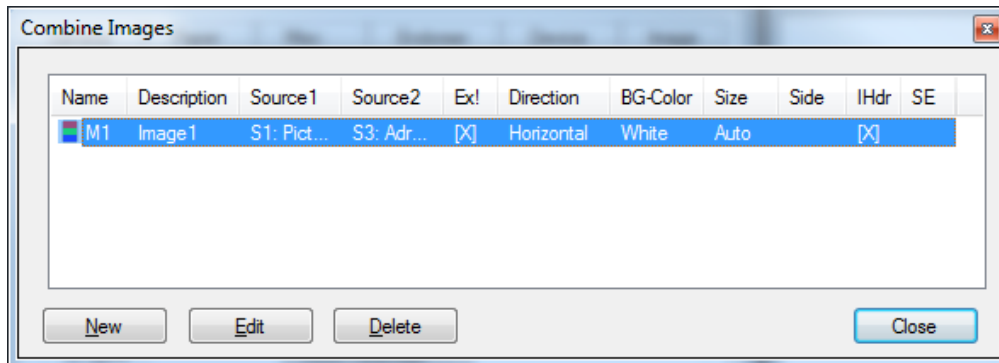


Illustration 46 – Combine Images

The meaning of the individual columns is explained in the next Chapter. The buttons at the bottom have these functions:

- New** A click to this button opens a new parameter set for split images, and the Split Parameter Editor will show up. There, parameters can be set for the split image to be created. This function is no longer available if the maximal number of split images is already defined.
- Edit** Available only if a definition line is selected in the Split Image List. Click the button to open the Split Parameters Editor where the parameters of this split image can be modified.
- Delete** Available only if one or several definition lines in the Split Images list are selected. Click this button to delete the selected split images definitions.
- Close** Closes the dialog.

1.10.4.1 Combine Images: Parameters Editor

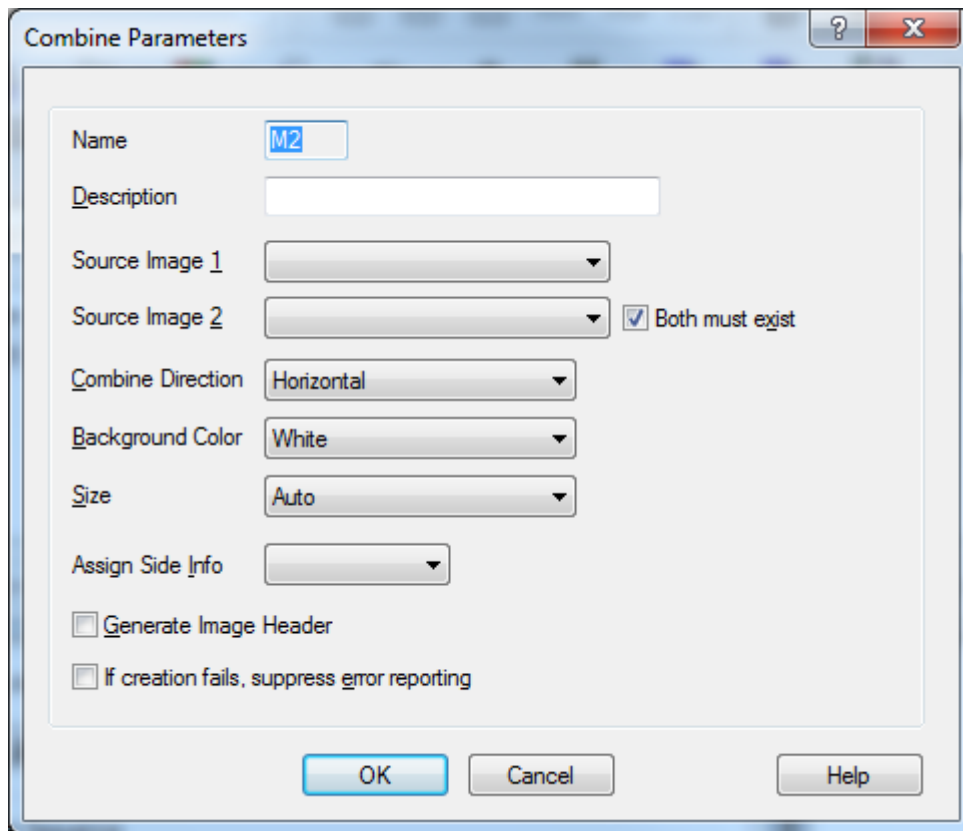


Illustration 47 – Combine Images: Parameters Editor

Name	Internal name of this set of parameters
Description	The user may enter any, short text to describe the set of parameters.
Source Image 1	Selects the first source image that shall be combined with the second one.
Source Image 2	Selects the second source image that shall be combined with the first one.
Both must exist	Determines the reaction if the source image does not exist at runtime (during the scanning process): If the box is checked an error is reported; if it is not checked image generation is skipped, without further message or report.
Combine Direction	You can define whether the images shall be combined horizontally, or vertically.
Background Color	Image areas that are not filled by the source images will be filled with the color that you select here..

Size	Select how the size of the newly created image shall be determined Auto The size of the new image is dimensioned so that both source images exactly fit into it. Double-Max The new image will be double the size (seen in Combine Direction) of the bigger source image. Thus, the source images can later be restored, if required, by simply splitting it in the middle.
Assign Side Info	Select which side attribute (front side, back side, ..) shall be assigned to the generated image.
Generate Image Header	If checked, a special Image Header is generated for the created image. In case that the image cannot be created, no error is reported. Hint: A missing image, however, may lead to error messages during the further program process.
If creation fails, suppress error reporting	If checked and the image could not be created, no error will be reported. Hint: A missing image, however, may lead to error messages during the further program process.

1.10.5 Image Sequence

By means of this dialog you can indicate in which sequence the images that belong to the relative scanning process shall be sent to the scan application:

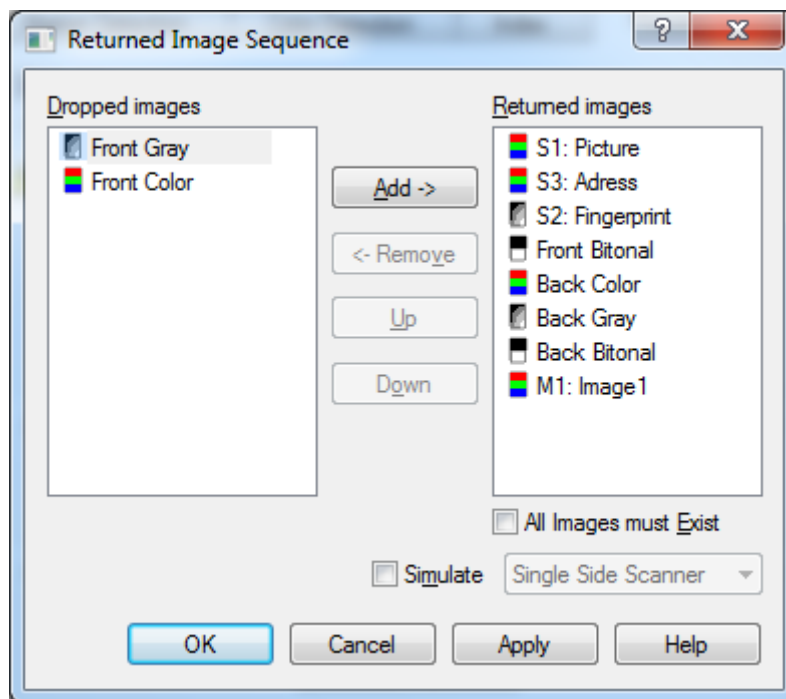


Illustration 48 – Image Sequence

The right-hand half of the dialog lists the images and the split images that are sent to the application; on the left-hand side those that will not be sent.

Please keep in mind that this list always displays all images that could possibly be created, independent of whether the scanner really works in duplex mode, and that all created color channels are transferred.

Dropped images

The images in this list will be dropped, so they are not sent / returned to the scan program.

Returned images

The images in this list will be returned to the scan program in the given sequence. First the images from the first line, next the ones from the next line, and so on.

This list must contain at least one image!

Add ->

Moves all selected images from the "Dropped" list into the list of "Returned" images.

<- Remove

Moves all selected images from the "Returned" list into the list of images that will be dropped.

Up

Moves all selected images in the "Returned" list one position higher.

Down

Moves all selected images in the "Returned" list one position lower.

- All Images must Exist** Determines the process how to react if one or several images from the "Returned" does not exist at run time (during the scanning process):
- if marked**
An error message is thrown.
 - if not marked**
Only the existing images are returned, without further notice.
- Simulate** It is, for example, possible to first return the back page and then the front page, while the relative opposite side info is assigned. This makes sense if the paper is fed with its front page upside down, for example because the back page has a rougher surface and thus is better grasped by the feeder belts than the smoother front page.

To prevent the scan application from interference, you should avoid unnecessary changes between front page and back page. It is better to first return all images from the one side, and then all images from the other side. Whether you start with all front pages, or you return the back pages at first, is mostly irrelevant.

230	231	232	233	234	235	236	237	238																		
S	k	=	-	-	-	0		l	f																	
239	...	255																								
nu	nu	nu																								

256	257	258	...	287																							
:	l	nu	nu	nu																							
288	289	290	291	292	293	294	295	296	297	298	299	300	301														
P	a	t	c	h	c	o	d	e	=	T	-	1	-														
302	303	304	305	306	307	308	309	310	311	312	313	314															
E	n	d	o	r	s	e	d	=	-	-	0	-															
315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331											
B	i	t	s	P	e	r	P	i	x	e	l	=	-	2	4	-											
332	333	334	335	336	337	338	339	340	341																		
D	u	s	t	=	-	-	0	-	-																		
342	343	344	345	346	347	348	349																				
T	y	p	e	=	-	0	-																				
350	351	352	353	354	355	356	357																				
D	r	o	p	=	-	0	-																				
358	359	360	361	362	363	364	365	366	367	368	369	370	371														
C	o	m	p	=	-	0	.	-	0	.	-	0	-														
372	373	374	375	376	377	378	379																				
C	o	l	s	=	-	0	-																				
380	381	382	383	384	385	386	387	388	389	390																	
M	a	r	k	e	r	=	-	0	-	-																	
391	392	393	394	395	396																						
D	f	=	-	0	-																						
397	...	511																									
Nu	nu	nu																									

Hint: This layout uses the following measuring units:

18 – 36	Length	Image size, in bytes
37 – 47	Level	Original level, within the range from 0 to 3
48 – 56	Mode	Operation mode, within the range from 0 to 15
57 – 80	Line Length	Line length, in pixels
81 – 103	Page Length	Page length, in pixels
104 – 153	IA	Image address
154 – 155	MF	Momentary Flag, value 0 or 1
156 – 158	LF	Latched (permanent) Flag, value 0 or 1
159 – 167	Cmp	Compression 0=uncompressed, 1=G3(1-dim), 2=G3(2-dim), 4=G4
168 – 181	Date	Date MMDDYY
182 – 195	Time	Time HHMMSS
196 – 215	Roll	Additional counter (image roller)
216 – 223	Res	Resolution in DPI
224 – 229	BO	Not used
230 – 237	Sk	Skew, 1=Skew detected, but no deskew executed
238 – 243	Pol	Not used
288 – 301	Patchcode	Byte 298: 0,T,2,3,1,4 or 6 Byte 300: 0,1,2,3,4,5 or 6
302 – 314	Endorsed	1, when the page received a print
315 – 331	BitsPerPixel	1, 8 or 24 BPP (b&w, gray, color)
332 - 341	Dust	Possibly dust in the scanner, vertical stripes on the image
342 – 349	Type	Color detection: 0= Unknown, 1=B&W, 2=Color
350 – 357	Drop	Color detection: 1= Superfluous image, may be deleted
358 – 371	Comp	Color detection: The percentage 0-99% means non-white portions of the image in black, gray, and color. Individual areas can also be counted several times.
372 – 379	Cols	Color detection: Number of colors clearly to be distinguished
380 – 388	Marker	Marker detection: 1,2,3 = found, 0 = no marker found
391 – 396	Doublefeed	0 = no double-feed, 1 = at paper start, 2 = at paper end

XINO*scan*

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