

Electronic User's Manual



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Welcome to MiraScan 5.0!

In the "Prepare your original for scanning" section, we will walk you through your first scan. You don't need to know much about scanners and digital imaging. Just follow the steps in this section and you'll be able to scan images and save them as files, send them via a fax application software or e-mail, or put them on a web page..., etc.

Before you start, check the following items:

- Check if the scanner is correctly installed and connected to your computer. For details, please see the scanner installation guide poster in the package.
- If you want to use the "Scan to Fax", "Scan to E-mail", "Scan to OCR" and "Scan to PDA" functions, make sure the relevant software programs are installed.
- Check if the printer is correctly installed and turned on before using the "Scan to Printer" function.

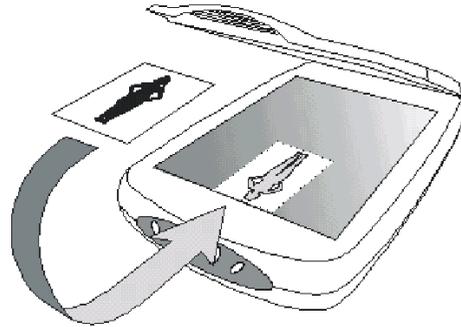
Click the  button to jump to the next page, the  button to the previous page.

Click the  button to jump to the table of contents.



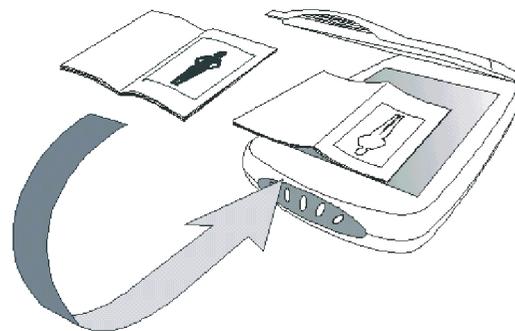
Preparing your original for scanning

If you want to scan a photograph



Place the photograph with the side to be scanned facing down on the scanner glass plate and align it against the edge of the scanner. Note the direction of the photograph so that you will not scan the photograph in the wrong direction. Close the scanner cover.

If you want to scan a picture in a book or magazine



Open the book to the page that contains the picture you want to scan and put it on the scanner with the picture against the glass plate. Note the direction of the picture so that you will not scan the picture in the wrong direction. Close the scanner cover.



Opening MiraScan 5.0

Double-click the MiraScan icon  on your desktop. The MiraScan 5.0 user interface will appear.



Now you are ready to use the "Scan to" functions. Click a quick index button on the left of this page, and you will jump to the page that describes how to use that function.



Quick Index



File



E-mail



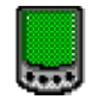
Printer



Fax



OCR



PDA



Web



Applications



Wallpaper

Scan to File

1

Click the button indicated below.

Click this button



2

The scanner will start scanning the original. When finished, the scanned image file will be saved to your "My Documents" (Windows 98/Me/NT) or "Personal" (Windows 2000) folder.



Quick Index



File



E-mail



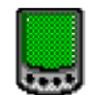
Printer



Fax



OCR



PDA



Web



Applications



Wallpaper

Scan to E-mail

1

Click the button indicated below.

Click the triangle  on this button



2

A button bar will appear on the left. Click the button  on the button bar.

Click this button



Quick Index



File



E-mail



Printer



Fax



OCR



PDA



Web

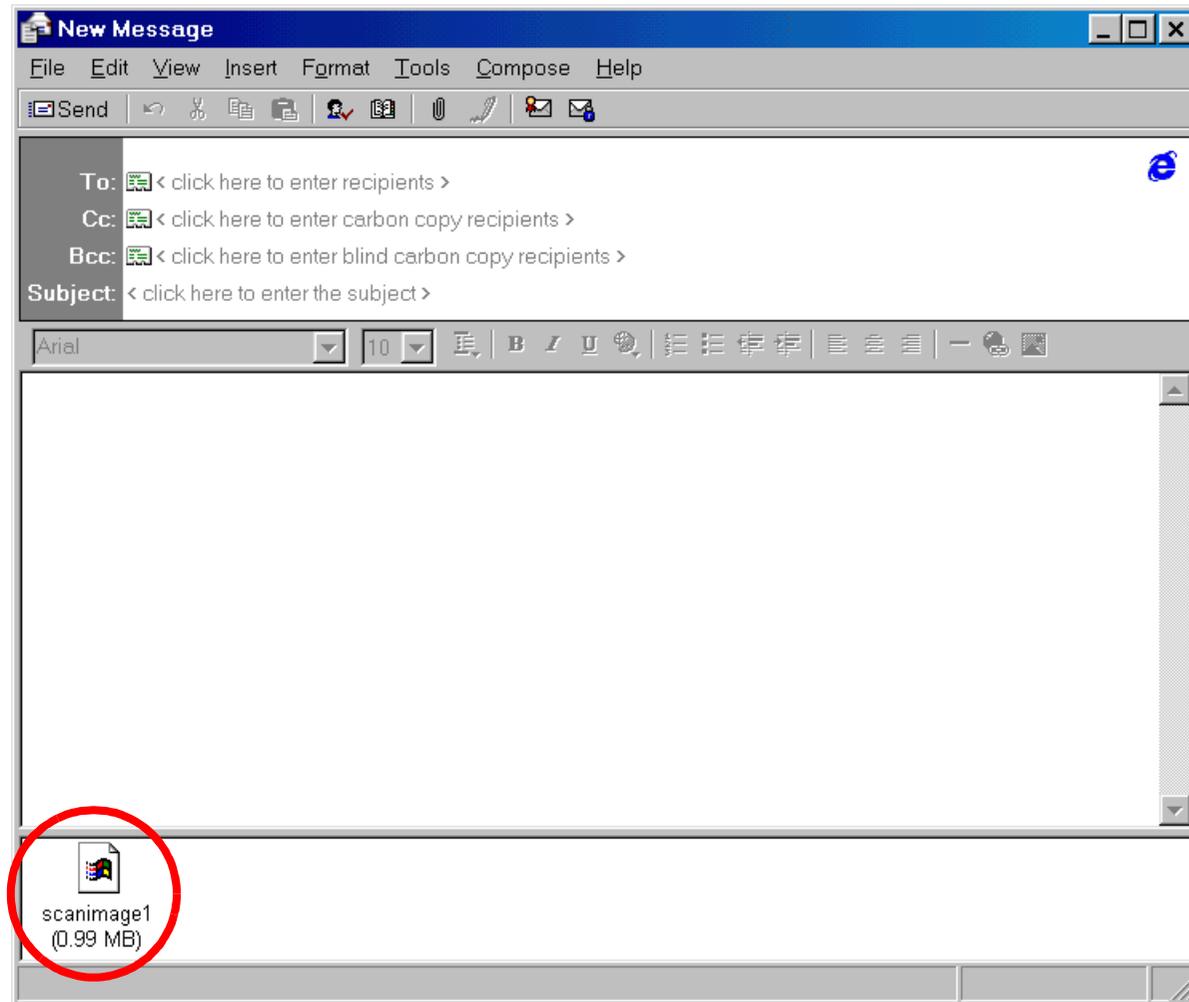


Applications



Wallpaper

3 MiraScan 5.0 will scan the original and transfer the scanned image to a new e-mail as an attachment.



Quick Index



File



E-mail



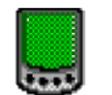
Printer



Fax



OCR



PDA



Web



Applications



Wallpaper

Scan to Printer

1

Click the button indicated below.

Click the triangle  on this button



2

A button bar will appear on the left. Click the button  on the button bar.

Click this button



3

MiraScan 5.0 will start scanning the original. When finished, the image will be printed by your printer.



Quick Index



File



E-mail



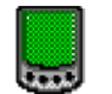
Printer



Fax



OCR



PDA



Web



Applications



Wallpaper

Scan to Fax

1

Click the button indicated below.

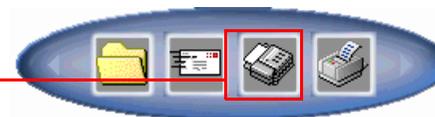
Click the triangle  on this button



2

A button bar will appear on the left. Click the button  on the button bar.

Click this button



3

MiraScan 5.0 will start scanning the original. When finished, the scanned image will be sent to the compatible fax software installed in your computer.



Quick Index



File



E-mail



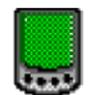
Printer



Fax



OCR



PDA



Web



Applications



Wallpaper

4

The Send Fax Wizard (taking WinFax for example) will appear. Follow the instructions and you will be able to send the scanned image by fax.



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File



E-mail



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Fax



OCR



PDA



Web



Applications



Wallpaper

Scan to OCR

The "Scan to OCR" function allows you to scan documents and turn the scanned document image into editable text files. This will save you a lot of time re-typing the text.

1

Click the button indicated below.

Click this button



Quick Index



File



E-mail



Printer



Fax



OCR



PDA



Web

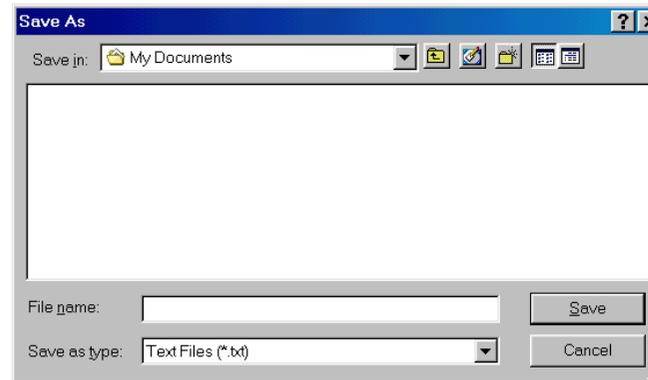


Applications



Wallpaper

2 MiraScan 5.0 will start scanning the image. A "Save As" dialogue box will then appear. Specify the file name and location you want to save the output text file and click "Save".



3 The OCR software (taking FineReader 4.0 Sprint for example) will recognize the scanned image and save the result with the name and to the location you specified in step 2.



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All rights reserved. This program is protected by International
copyright laws as described in help about.



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Printer



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PDA



Web



Applications



Wallpaper

Scan to PDA

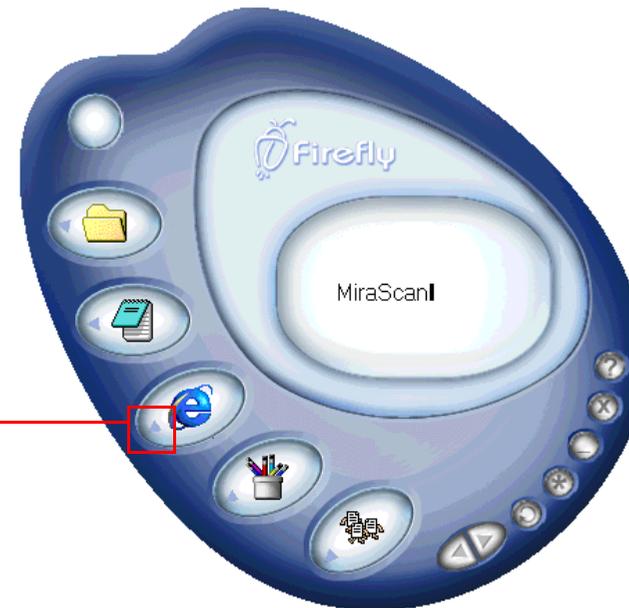
This function allows you to scan your favorite photos to Palm compatible PDAs (Personal Digital Assistant).

Before you start, check the following:

- The utility software that comes with your PDA (such as Palm Desktop) is installed.
- The software "Album ToGo" (available in the "AlbumToGo" folder in the scanner software CD-ROM) is installed.
- The PDA is placed on its cradle and connected to your computer correctly.

1

Click the button indicated below.



Click the triangle  on this button



Quick Index



File



E-mail



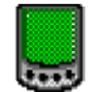
Printer



Fax



OCR



PDA



Web



Applications



Wallpaper

2 A button bar will appear on the left. Click the button  on the button bar.

Click this button



3 MiraScan 5.0 will start scanning the original. When finished, press the Sync button on the cradle to transfer the scanned image to your PDA.



Quick Index



File



E-mail



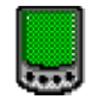
Printer



Fax



OCR



PDA



Web



Applications

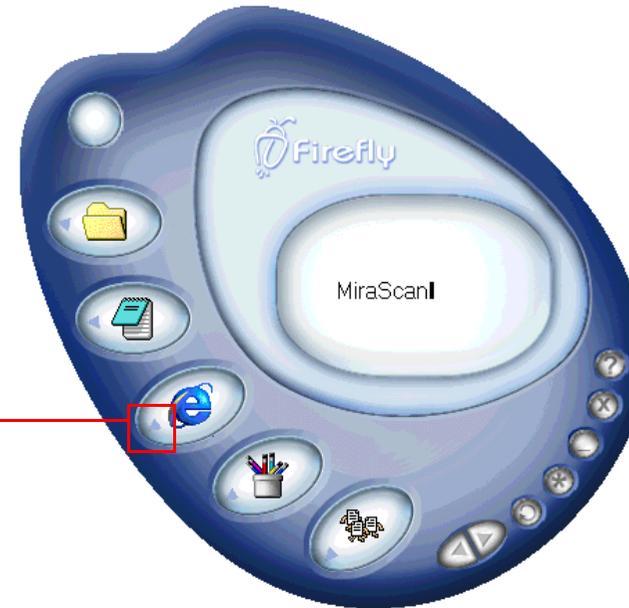


Wallpaper

Scan to Web

1

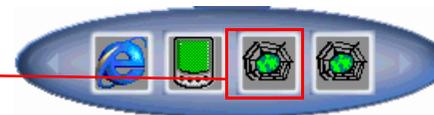
Click the button indicated below.



Click the triangle  on this button

2

A button bar will appear on the left. Click the button  on the button bar.



Click this button



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File



E-mail



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OCR



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Web



Applications



Wallpaper

3

MiraScan 5.0 will start scanning the original. When finished, the following dialog box will appear.

Enter your e-mail address

Specify your personal password

Preferences

Membership Info Proxy Settings

e-mail:

Easy Password:

[Click here to obtain a new membership](#)

Cancel OK

4

Now you need to register to the photo sharing web site and get your own album page. Connect to the Internet. Enter your e-mail address and specify your personal password in the dialog box. Click "OK" when finished.

5

The following dialog box will pop up, showing the upload progress. When the upload is completed, your Internet browser (such as Microsoft Internet Explorer) will open and the scanned image will appear on your album page. If the image does not appear, click the "Refresh" button of your browser.

ClubPhoto Web Uploader (ACER API)

Album Name:

Drag and drop jpeg image files to the following list:

File Name	File Size
scanimage6.jpg	474KB

Upload Progress:

About... Preferences... Stop Uploading Start Uploading



Quick Index



File



E-mail



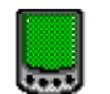
Printer



Fax



OCR



PDA



Web



Applications



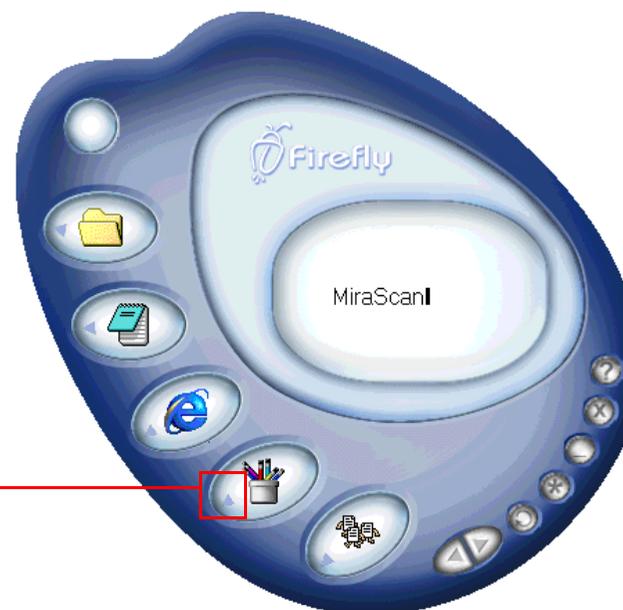
Wallpaper

Scan to Application Programs

If you have installed application programs that MiraScan 5.0 can recognize and work with, you can use this function to scan and transfer the scanned images to those application programs.

1

Click the button indicated below.



Click the triangle  on this button

2

A button bar that contains several application programs' icons will appear.



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Web



Applications



Wallpaper

3

Click an icon on the button bar. MiraScan 5.0 will start scanning the original and transfer the scanned image to the application program of your choice.



Quick Index



File



E-mail



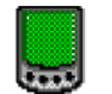
Printer



Fax



OCR



PDA



Web



Applications



Wallpaper

Scan to Wallpaper

This function enables you to scan images and replace your current Windows wallpaper with the new scanned image.

1

Click the button indicated below.



Click this button

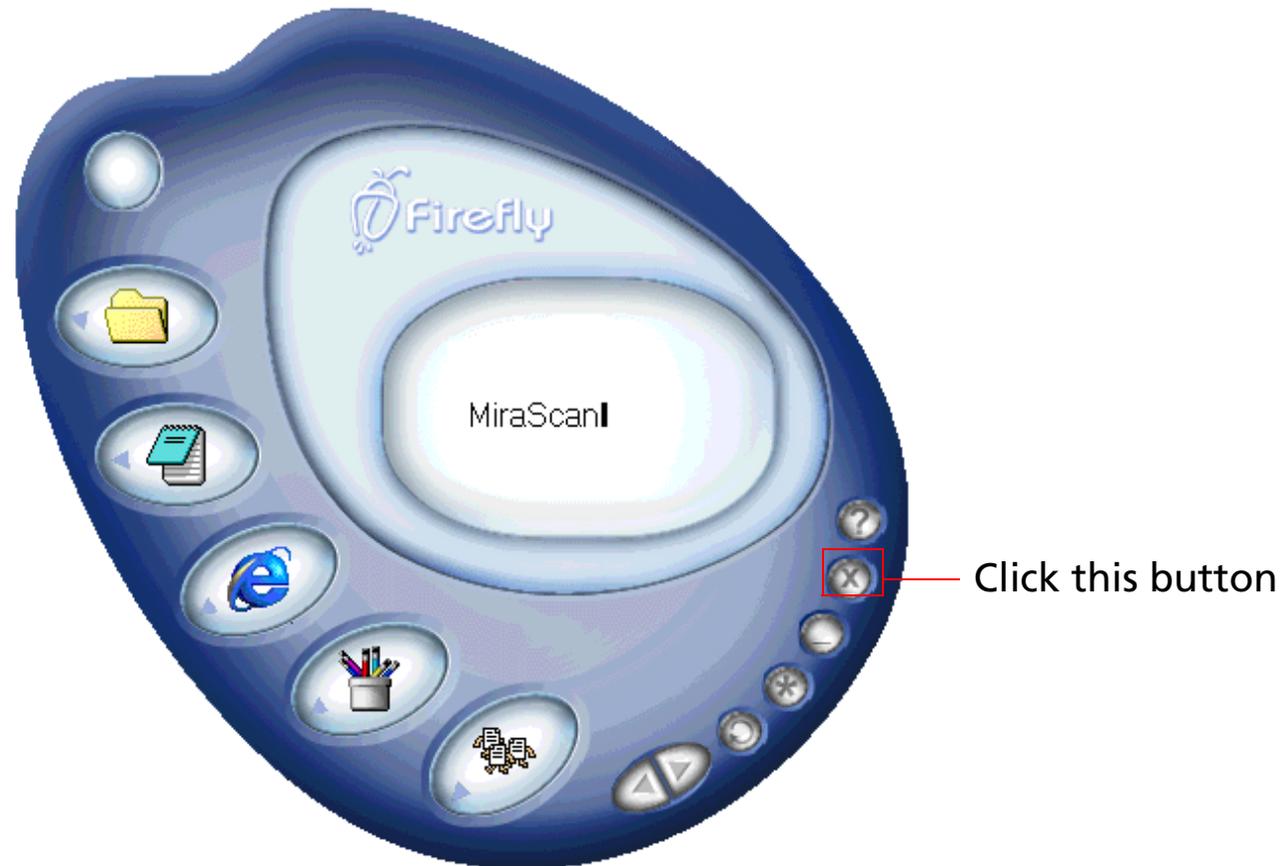
2

MiraScan 5.0 will start scanning the original and when finished, your wallpaper will be replaced by the scanned image.



Closing MiraScan 5.0

To close MiraScan 5.0, click the button  .



Additional Operations



Click this button to get on-line help

Click this button to minimize MiraScan 5.0

Click this button to access advanced setting options

Click this button to switch to the Console Mode

Click this button to hide all button bars

Click this button to display all button bars



Overview

Introduction to MiraScan 5.0

As a radically new application program, MiraScan 5.0 provides a more convenient and friendly user interface and functions thanks to a more advanced design and development. MiraScan 5.0 offers an ultimately novel operative way for users.

What is new in MiraScan 5.0?

For optimum personalization, this version offers the following advanced features:

Button Mode --- Whether it is the first time you use MiraScan 5.0 or whether you are a seasoned user, in either case you will want to start using the many advantages it offers as quickly as possible. Its user interface is friendly and has a very nice look. For easy operation MiraScan 5.0 provides Button Mode in the form of easily recognizable buttons. This allows you to swiftly locate the button linked to a certain sub-task and will help you better understand the relationship between the operations MiraScan 5.0 supports.

Don't worry about not having any experience with scanning or image formats. This application program allows you to scan to diverse destinations with the click of a button. We have roughly divided all operations into five classes. They are: Scan to Office Assistance (OA), Scan to Document, Scan to Web & Remote, Scan to Image Application and Scan to Image Fun. You can click to expand each class for further selection. In each class, some default application programs are provided. You can add a new application program using the drag-drop function or through the Settings dialog box. To increase the intuitive character of the application program, all prompts are shown in a message window. Nearly all settings and macros can be changed in the settings tabs. All you need to do is click a button. It doesn't get much easier than this, does it?

Console Mode --- If you are not satisfied with the result in Button Mode or want to carry out more expert operations, you can switch to Console Mode. This mode offers you a complete and efficient control over all operations. You can undertake all relevant operations in separate windows and shift between various active windows. In the Console mode, you can readily apply your advanced user's skills. We have provided user-friendly settings, parameters, macros and operations. As in other popular image



processing software, movable and controllable sub-windows are featured beside main windows for easy operation. The great functions of this application program guarantee professional output. But you needn't worry about maybe not having the right skills. With the aid of the documentation, you will eventually become an imaging expert.

Shift between Button Mode and Console Mode --- Once you've familiarized yourself with the Modes, you will want to start using them to achieve the output you require. You can shift between two modes. The system will save the last settings for the Console Mode.

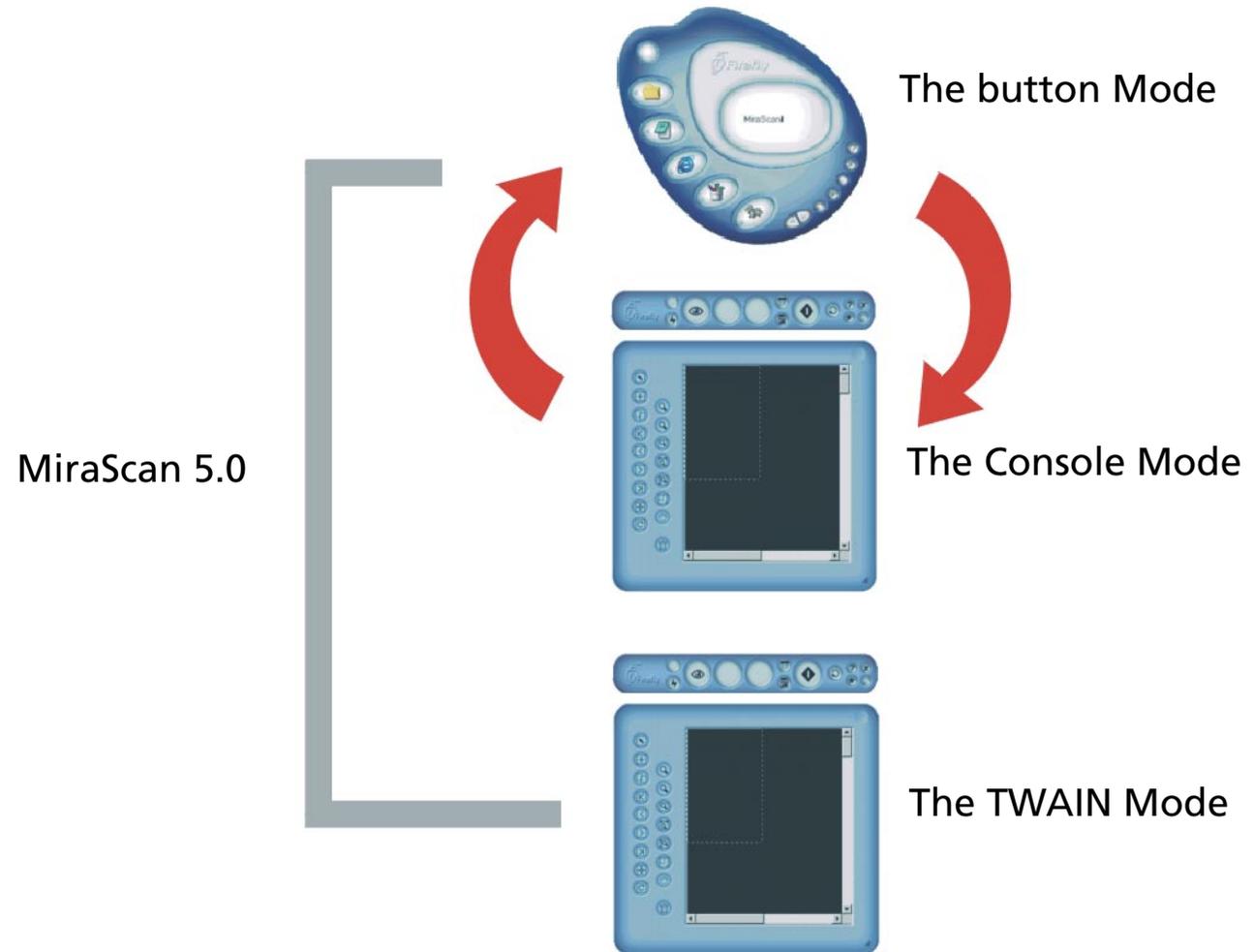
Scan Jobs window --- You can specify a scanning job sequence in the novel Scan Jobs window. The Job List offers you an overview of your workflow. All information on browsing, scanning, variables and operation, etc. is available in this window. You can define properties for various items to best suit your needs.

TWAIN Mode --- In addition to the two operation modes, TWAIN Mode is also available as an image input source. Similar to Console Mode, it allows you to preview scanned material and adjust its properties. After adjusting, the scanned image is automatically sent to an application of your choice for further specialized processing. Preparation, as you can see, is optimal.



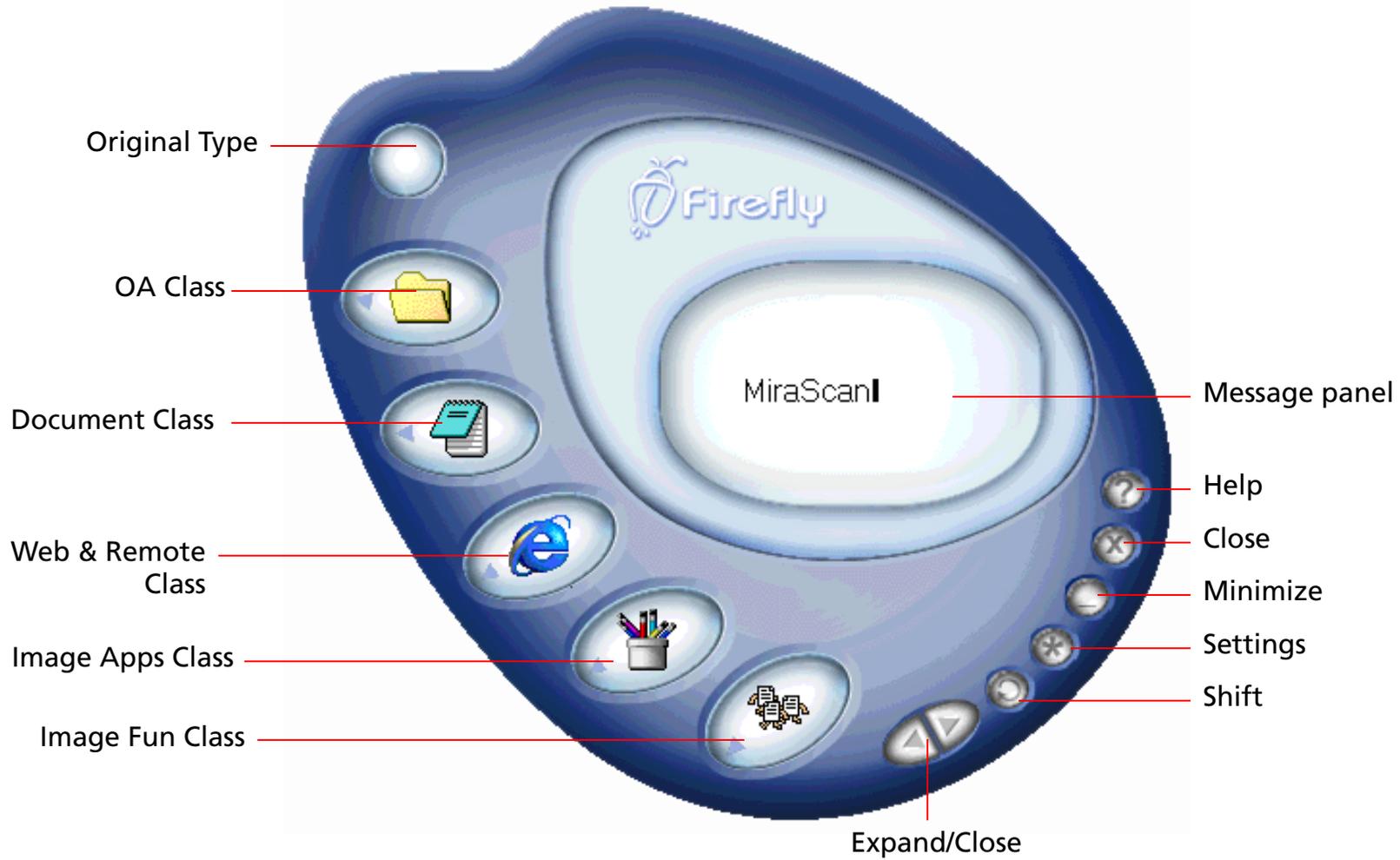
The general structure of MiraScan 5.0

Please refer to the illustration below to familiarize yourself with the general structure and working modes of MiraScan 5.0:



MiraScan 5.0 user interfaces

The Button Mode



 **Shift**

If you click this button, the Button Mode will shift to Console Mode.

 **Settings**

Here you can change the default Button Mode settings, customize macros, etc. If you click this button, a new dialog box will pop up. See "Making Button Mode settings" on page 54.

 **Minimize**

To minimize the user interface to the system tray (option in Settings dialog box) or task bar (default).

 **Exit**

Click this button to close MiraScan 5.0, and save all current settings. See more in "The Button Mode" on page 47.

 **Help**

Click this button to link to the Help system.

 **Expand/Close**

If you click this button, expanded class button bars will be closed and vice versa. Five class button bars are available. They are Office Assistance (OA), Document, Web & Remote, Image Applications and Image Fun.

 **Original Type**

Here you can choose the type of material you are scanning in an expanded bar. The available options are Transparency, Negative Film and Reflective. This button is only active when TPO (Transparency Option) is available with your scanner.

 **OA Class button**

Click this button to expand a class button bar containing all kinds of operations for Office Assistance (OA). For details see "Office Assistance (OA) Class" on page 49.

 **Document Class button**

This item allows you to expand a class button bar in which OCR (Optical Character Recognition) or document applications are listed. For details see "Document Class" on page 50.





Web-Remote Class button

This item allows you to expand a class button bar in which links to web sites or web page editing programs are listed. For details see "Web & Remote Class" on page 50.



Image Apps Class button

This item allows you to expand a class button bar in which Image Application programs are listed. For details see "Image Application Class" on page 52.

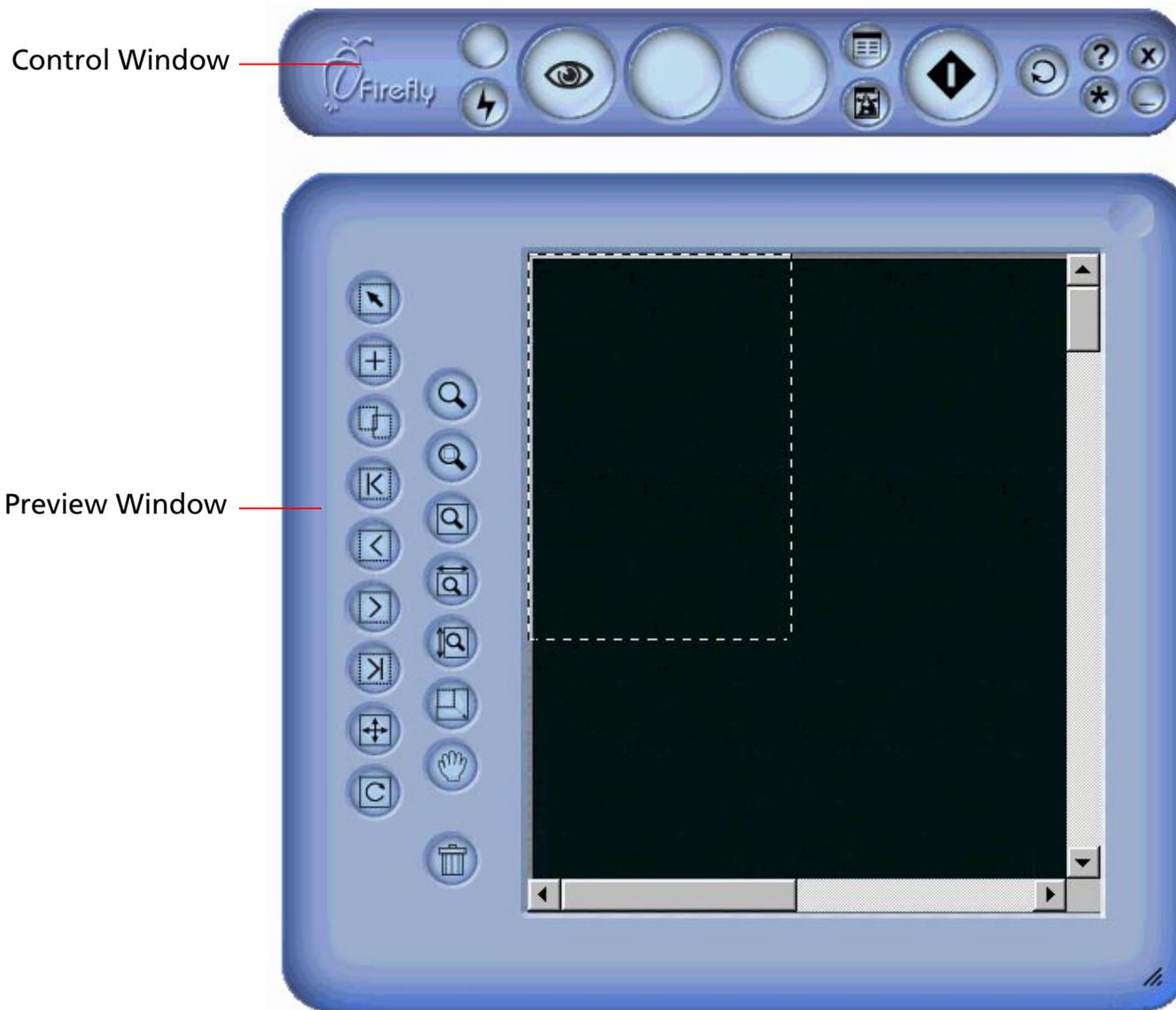


Image Fun Class button

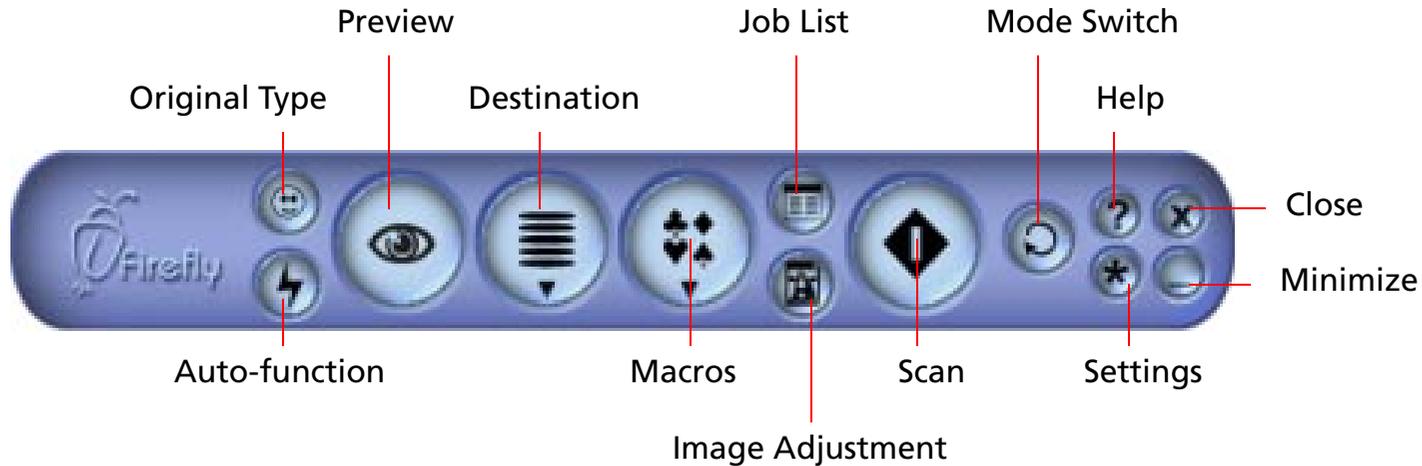
This item allows you to expand a class button bar in which you can do some funny image processing. For details see "Image Fun Class" on page 52



The Console Mode



CONTROL WINDOW



Original Type

Here you can choose the type of material you are scanning in an expanded bar. The available options are Positive Film , Negative Film  and Reflective . This item is only active when TPO (Transparency Option) is installed on your scanner.



Auto Function

Here you can enable or disable the auto function of settings.



Preview

With this button you can preview scanned material. The result will be shown in the Preview window.



Destination

If you click this button, a drop-down menu appears in which you can choose a destination for the scan.





Macros

If you click this button you can select a pre-defined or customized macro for scan settings. For details see “The Scan Setting Macro” on page 69.



Job List

Opens and closes the Jobs List window. For details see “The Jobs List Window” on page 106.



Image Adjustment

This button opens and closes the Image Adjustment window. When you open the Image Adjustment window for the first time, it appears in Color Wizard Mode. See detail in “Color Wizard Mode” on page 80.



Scan

Click this button to start scanning.



Shift

Click this button to shift from Console Mode to Button Mode.



Help

Click this button to link to the Help system.



Exit

Click this button to close MiraScan 5.0 and save all current settings.



Settings

Click this button to change the default Console Mode settings (a bit different from Button Mode) or to customize macros. See “The Scan Setting Macro” on page 69.

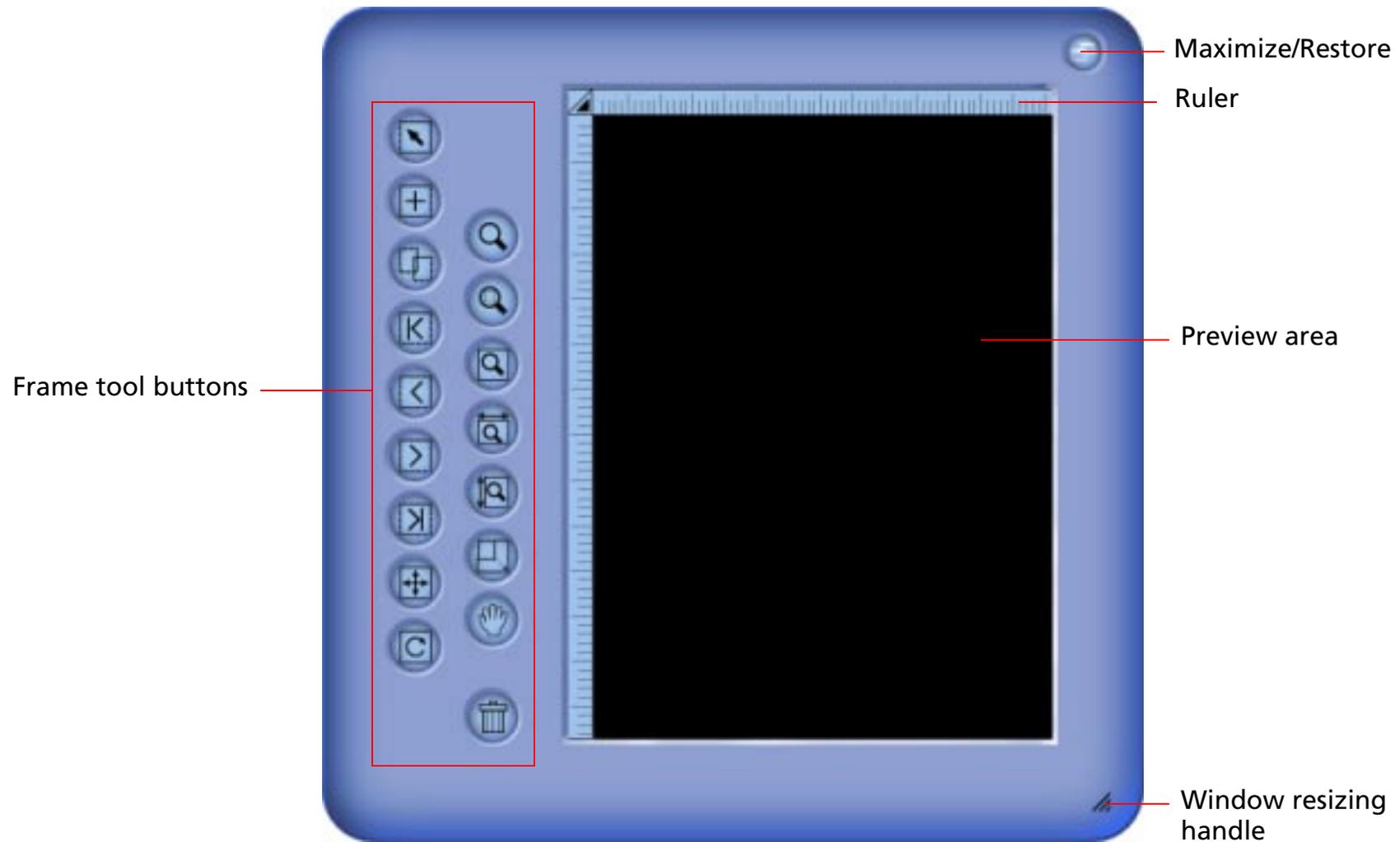


Minimize

Click this button to minimize the user interface to the task bar (default) or the system tray (option in the Settings dialog box).



PREVIEW WINDOW



Frame tool buttons



Select

Click this button to select a single or multiple frames. For details see "Frame Tools" on page 76.



Add

Click this button to draw a new frame in the Preview window.



Duplicate Frame

Click this button to duplicate the frame.



First Frame

Click this button to activate the first frame.



Previous Frame

Click this button to activate the previous frame.



Next Frame

Click this button to activate the next frame.



Last Frame

Click this button to activate the last frame.



Flip

Click this button to reverse a canvas horizontally. You can also flip vertically by clicking this button and pressing the "Shift" key on the keyboard.



Rotate

Click this button to rotate a canvas 90 degree clockwise. To rotate a canvas 90 degree counterclockwise, hold down the "Shift" key.



Zoom

Click this button to zoom in or out on an image.





Zoom Selected

Click this button to magnify active frame(s) as large as possible.



Maximize Image

Click this button to display the preview as large as possible, whether Zoom Scan is used or not.



Show Max by Width

Click this button to show the preview as wide as possible.



Show Max by Height

Click this button to show the preview as high as possible.



Zoom Scan

Click this button to zoom in the active frame to fit into the Preview window and view it at the highest resolution.



Hand

Click this button to display a hand to drag an image if it does not entirely fit into the Preview window.



Trash Can

Click this button to delete the active frame. It will be removed when you exit the program.



Ruler's Option

For details see "Rulers' Operation" on page 76.

Rulers

A horizontal ruler helps you locate the image and calculate its size. It will automatically convert to the appropriate unit when you select another unit in Ruler's operation.

Preview Area

All pre-scanning results will be displayed in this area for you to preview.



JOB LIST WINDOW

This Job List window will appear when the Job List button in the Control window is clicked.

The Job List Window features a toolbar at the top with the following buttons: Copy, Paste, Load, Save, Reset, Add, Delete, and Close. Below the toolbar is a 'Jobs Sheet' table with the following data:

Subject	Job 1	
Scan State	Scan	
Image Type	Color	
Scan Mode	High speed	
Resolution	100 dpi	
Scale Size	1.00 %	
Width	4.00	
Height	6.00	
Unit	6.00	
Image Control	Color Adjust	
File Size	703.178 KB	

At the bottom of the window is a 'Status display area' containing the following information:

- Total job number :
- Total job size :
- Free space of target HD :





Copy

Click this button to copy the original job or all parameters onto a clipboard.



Paste

Click this button to paste the parameters from the clipboard to a selected job or storing cell.



Load

Click this button to load scan parameters from a file.



Save

Click this button to save selected or all parameters as a file. If you check the radio box, you can save them as a new macro. If you hold down "Shift" you can save them as a new macro directly.



Reset

Reset all parameters to the system default values.



Add

Click this button to add a new scan job in the Jobs sheet.



Delete

Click this button to delete selected jobs.

Jobs Sheet

Here you can edit the parameters of various jobs. For details see Jobs Sheet.

Status display area

Shows current scan and system status, including available free hard disk space, scan job numbers and total job size.



Quick Start

Making a scan in the Button Mode

To start working with MiraScan 5.0 in the Button Mode, please follow the steps below.

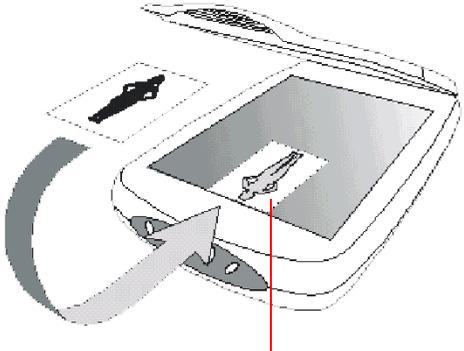
Step 1: Check whether the scanner is in good condition and close all applications you are not using (recommended). To open MiraScan 5.0, click "Start" on the Windows task bar > "Programs" >

"MiraScan V5.0" > "MiraScan V5.0" or double-click the  icon on the desktop.

Step 2: Place the original on the scanner glass plate. Please refer to the illustrations below for how to place the original you want to scan on the scanner glass plate.

Note: The scanner illustrated here may be different from the one you purchased. However, the way to place your original is the same.

Scanning reflective originals

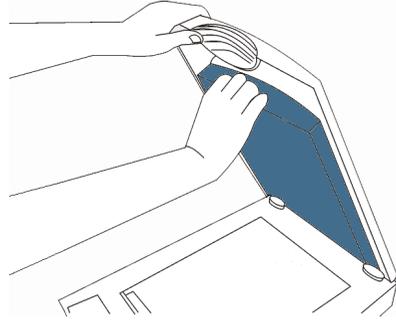
Scanning reflective originals	
 <p>Note the direction</p>	<p>Place the original with the side to be scanned facing down on the scanner glass plate. Note the direction of the original so that you will not scan the image in the wrong direction.</p>



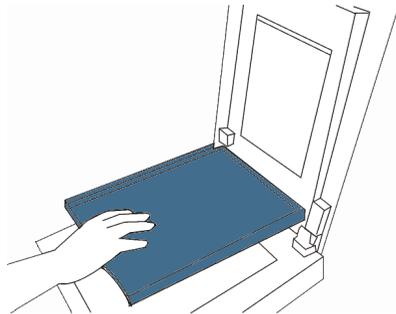
Scanning transparent originals

Note: Your scanner must be equipped with a TPO (transparency option) to scan transparent originals. Remove the TPO cover from the TPO before scanning.

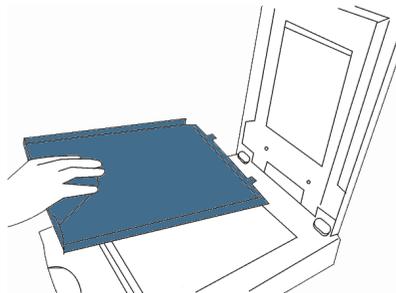
To remove the TPO cover:



Open the scanner lid and find the TPO cover handle. Pull the handle downward and the TPO cover will be separated from the TPO.



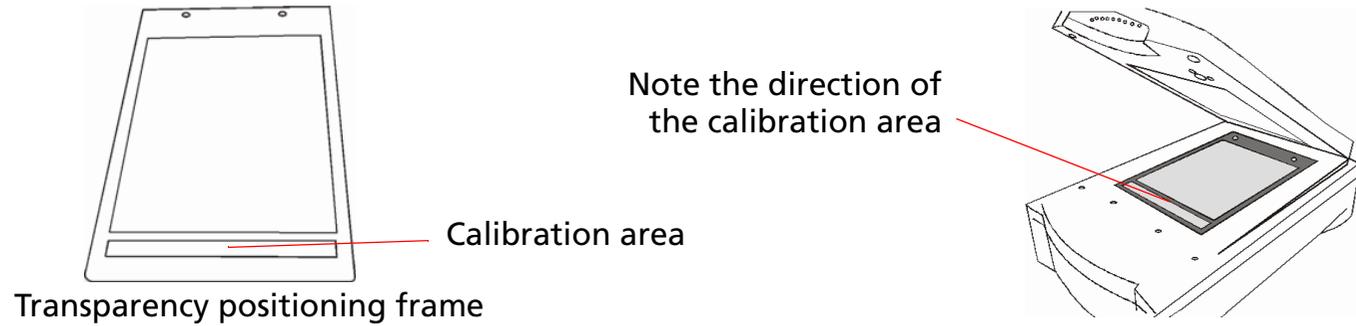
Keep moving the TPO cover downward until it is upright on the TPO.



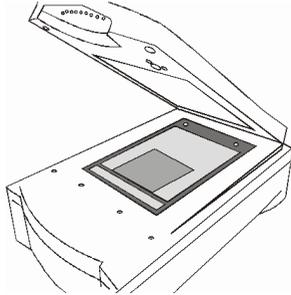
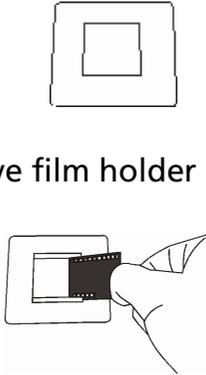
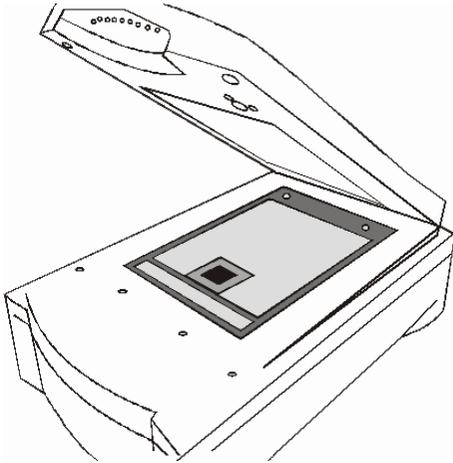
Take the cover away from the TPO.



Place your original in an appropriate frame, then place it on the glass plate of scanner. When doing so, make sure that the calibration area is facing the right direction (towards the front panel of the scanner). Do not block the calibration area, or the scanner will fail to function correctly.

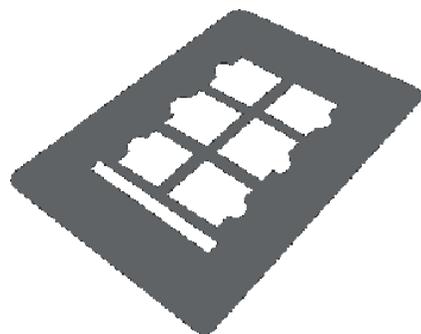


Scanning films

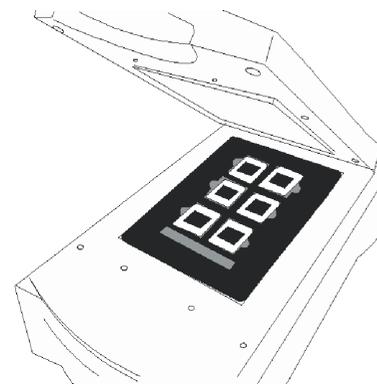
 <p>Place the film with the emulsion side face down</p>	 <p>Positive film holder</p> <p>Place the positive film in the holder</p>	
---	---	--



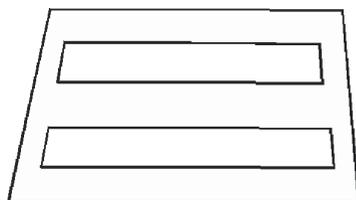
Scanning mounted slides



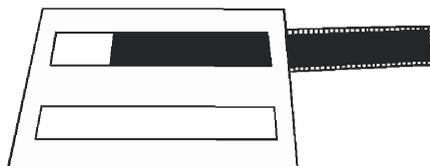
Slide holder



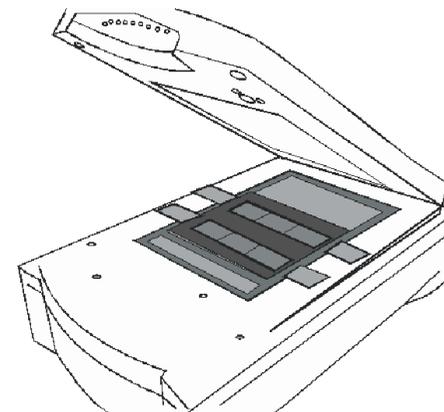
Scanning filmstrip



Filmstrip holder



Insert the filmstrip into the holder



- Step 3:** When you open MiraScan 5.0 for the first time, it will automatically enter Button Mode. From Button Mode you can transfer scanned material to other application programs for further processing. For example, if you want to save a scan as a file, all you need to do is click the "Scan to File" button.
- Step 4:** MiraScan 5.0 will automatically begin previewing and scanning. A progress box will appear on your screen, and then a "Save File" dialog will pop up for you to define the file's name and format and to select a path. We provide default settings for any destination. However, you can change them to fit your needs. For more about how to customize these settings, please see "Making Button Mode settings" on page 54.

Making a scan in the Console Mode

- Step 1:** Place the original on the scanner glass plate.
- Step 2:** Open MiraScan 5.0 by clicking "Start" on the Windows task bar, then "Programs" > "MiraScan V5.0" > "MiraScan V5.0" or double-click the  icon on the desktop. If MiraScan 5.0 is in the Button Mode, click the  button to switch to the Console Mode. MiraScan 5.0 will start previewing the original and when finished, the preview image will appear on the Preview Window.
- Step 3:** If MiraScan 5.0 is already open in the Console Mode, click the  button in the Control window to preview the original.
- Step 4:** Select the appropriate original type by clicking the  button in the Control window and select a type from  that appears. If you select negative film , a Film Type dialog box will appear. Select the type of film you are scanning from the dialog box.
- Step 5:** Now you can choose to make adjustments to the scan, which include:
- Use the Frame Tools in the Preview window to add, duplicate and navigate the scan jobs (see "Frame Tools" on page 76).



- Click the  button in the Control window to use the pre-set scan macros (see “The Scan Setting Macro” on page 69).
 - Click the  button in the Control window to open the Job Setting List to modify settings for each scan job (see “The Jobs List Window” on page 106).
 - Click the  button in the Control window to open the Image Adjustment window to make more detailed adjustments to the image (see “The Image Adjustment Window” on page 79).
 - Choose a destination where the scanned image will be delivered by clicking the  button in the Control window and selecting an application program or device from the list that appears.
- Step 6:** Click the  button to start scanning the original. When finished, the scanned image(s) will be delivered to the destination you specified.

Making a scan in the TWAIN Mode

Step 1: Open a TWAIN compliant application program.

Step 2: If this is the first time you make a scan, you may have to select the TWAIN source by choosing “Select source” in the “File” menu and then selecting “MiraScan 5.0”) in your application software (you only need to do this once, unless you re-install your application software). Please note that the way to select the TWAIN source may differ according to the software you use. For details, please refer to the documents that come with your application software.

Step 3: The MiraScan 5.0 Console Mode will be opened. Click the  button in the Control window to preview the original.

Step 4: Follow Step 3 and 4 as described in “Making a scan in the Console Mode”.

Step 5: Click the  button to start scanning the original. When finished, the scanned image(s) will be imported into the application program.



More about MiraScan 5.0

MiraScan 5.0 provides three operation modes: Button Mode, Console Mode and TWAIN Mode. These operation modes are designed to suit your habits and for better efficiency under most circumstances.

- The Button Mode: Used when you want to make scans quickly.
- The Console Mode: Used when you need to make more detailed adjustments and to achieve the best scanning results.
- The TWAIN Mode: Used when you are using a TWAIN compliant application program and want to scan images.

The Button Mode

If you have used other programs with one-click functions, you will know what advantages they offer. If you're not familiar with them, you can get detailed descriptions of operations and cursor's actions.

When you open MiraScan 5.0 or shift from Console Mode, Button Mode is shown as:



In the main area, there are Scanning Classes buttons and some Function buttons. When you move the mouse cursor on a button, the related description will appear on the message panel.

Please refer to the table below for the functions of these buttons.

Function Buttons

Original Type

Here you can specify the type of material you are scanning, i.e. Positive Films , Negative Films  or Reflective . This item is only active when TPO (Transparency Option) is installed on your scanner.

Expand all/Contract all

Expands all the class buttons to show the whole button bar for each class and vice versa.

Minimize

Minimizes the User Interface and displays the buttons on the task bar or an icon on the system tray. The default location is the task bar, but you can change this in the Settings dialog box.

Exit

Before exiting a confirmation dialog box appears. In the "Don't ask me again!" check box the default radio button is "Yes". If you click this button to close MiraScan 5.0, it will save the current setting for the next time. But if some parameters of the current scanner are different from last time, MiraScan 5.0 will deny these parameters and use the default ones.

Switch to Console Mode

If you click this button, MiraScan 5.0 immediately switches to the Console Mode and runs functions according to the last settings of the Console Mode.



Settings

Here you can change the default Button Mode settings or customize macros. If you click this button, a new dialog box will pop up. See "Making Button Mode settings" on page 54.

Help

Click this button to link to the Help system.

Scanning Class Buttons



Office Assistance (OA) Class

In OA class, you can scan material to peripherals or certain software. The default functions include Scan to File, Scan to Fax, Scan to E-mail and Scan to Printer. You can also add other functions.

SCAN TO FILE

If this button is clicked, MiraScan 5.0 saves the scanned image as a file after scanning. File formats like Tiff, Jpg, Gif, Bmp, Pcx, Tga, Png are supported in this version (Default file type is *.bmp) and the default path of the saved file is "My document" (Windows 95/98) or "Personal" (Windows 2000/Me) folder.

The default setting:

Resolution: 150dpi.

Auto functions: Auto type, auto crop, auto rotate, auto descreen.

SCAN TO FAX

If this button is clicked, MiraScan 5.0 sends the scanned image to compatible fax software.

The default setting:

Resolution: 200dpi.

Auto functions: Auto type (Gray, Line-art), auto crop, auto rotate, auto descreen.



SCAN TO E-MAIL

If this button is clicked, MiraScan 5.0 sends the scanned image to a compatible e-mail application via a system tool. If the file type is .rtf, MiraScan 5.0 runs the file through an OCR application program and attaches the output to a new e-mail.

The default setting is:

Resolution: 150dpi (image file) / 300dpi (.rtf file).

Auto functions: Auto type, auto crop, auto rotate (if gray, color), auto descreen (if image file).

SCAN TO PRINTER

If this button is clicked, MiraScan 5.0 sends the scanned image to a printer. The resolution and the image type depend on the settings of the printer. If you change the printer's properties in the Settings dialog box, these settings will be applied.

The default setting:

Resolution and image type are the same as the printer's.

Auto functions: Auto crop, auto rotate (if gray, color), auto descreen (if gray, color).



Document Class

In the Document Class, you can scan material to OCR (Optical Character Recognition) programs or document applications. (If it is an OCR application, the image data will be sent to it.) If word processing programs like Word has been installed in the system, MiraScan 5.0 will automatically detect and add them to this class.



Web & Remote Class

In the Web & Remote Class, you can scan material to the Web or a remote site. Scan to ClubPhoto (default), Scan to iMira, Scan to PDA, Scan to Web Navigator and Scan to Web Page Editor are offered.



SCAN TO CLUBPHOTO/iMIRA

If this button is clicked, MiraScan 5.0 scans and uploads the image to Club Photo/iMira photo sharing web sites.

The default setting:

Resolution: 72dpi.

Auto functions: Auto type (gray, color), auto crop, auto rotate, auto descreen.

File format: JPEG.

Dimension: maximum 4096 pixel x 4096 pixel.

SCAN TO PDA

Sends the image to a Palm image generator. MiraScan 5.0 will scan and send the image to a Palm image generator. After MiraScan 5.0 is closed, press the HotSync button on the cradle. The scanned image will be transferred to your PDA device.

The scanning resolution is based on the selected area. The largest dimension is 256 pixel x 256 pixel.

The default setting:

Resolution: 72 dpi.

Auto functions: Auto type (gray, color), auto crop, auto rotate, auto descreen.

File format: JPEG.

SCAN TO WEB NAVIGATOR/EDITOR

Automatically generates a HTML file which includes all selection areas and makes an index frame in a HTML file after scanning.

The default setting:

Resolution: 150 dpi.





Image Application Class

In this class you can send a scanned image to an image processing application.

Default scanning setting:

Resolution: 150 dpi.

Auto functions: auto type, auto crop, auto rotate, and auto descreen.



Image Fun Class

In this class you can save scanned image as a file and immediately replace the current Windows wallpaper with the scanned image. The minimum dimension is 800 x 600 pixels and the maximum is 1600 x 1200 pixels. The color depth of bitmap file is based on the color mode of the monitor.

Some cursor operations in the panel

- If you focus the cursor on a button, an appropriate tool tip will appear on the message panel.
- Left-click a button in a class or on a class bar to run the appropriate default operation.
- If you left-click a button in a class or on a class bar while holding the "Shift" key, the clicked icon in the expanded bar is set as the default selection for the class.
- If you drag the button away from the expanded bar, the button will be removed from the bar. A message box will pop up asking for confirmation.
- Drag a shortcut or an executable file from Explorer or desktop into a certain class to add the function to the selected class. The appropriate tab of the Settings dialog box will appear and allow you to set the scanning setting.
- Right-click a class button and a menu including the following items will pop-up.



Settings
Delete/Hide
Set as default(Shift+Click)
Add new program

Settings: To open the Settings dialog box.

Delete/Hide: To delete custom-designed buttons. The MiraScan 5.0 default button can only be hidden. If you delete this button, MiraScan 5.0 will delete all relative settings. You can change the button condition (shown/hidden) in the Settings dialog box.

Set as default: To set the currently selected button as the default button. If you hold down the "Shift" key, the clicked button is placed on the bar as the default button.

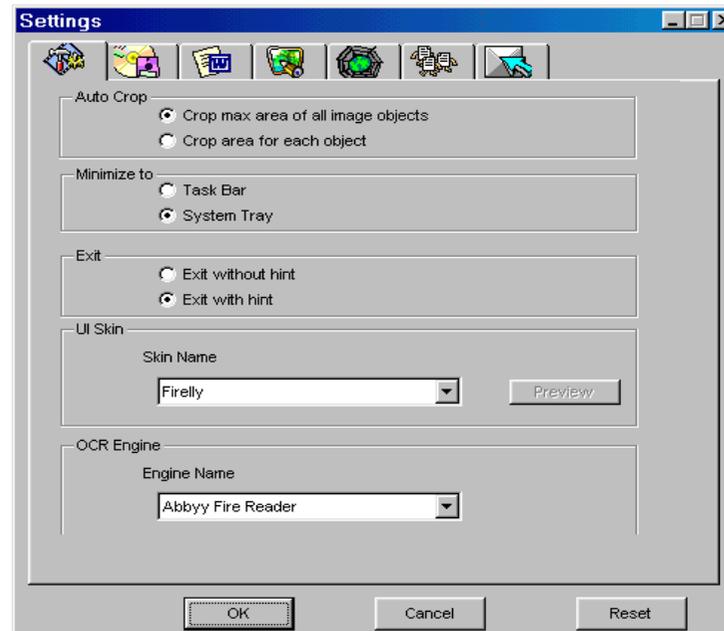
Add new program: To display a dialog box where you can select an executable file or a shortcut to the application program of your choice. Open the Settings dialog box and check whether the application program is identified (supported) by MiraScan 5.0.



Making Button Mode settings

Right-click a class button and select "Settings". A window will appear in which you can define the various items. There are six tabs in this window, namely, General Tab, OA Tab, Document Tab, Web & Remote Tab, Image Application Tab, Image Fun Tab and Push Button Event Tab.

General Tab



Auto Crop

This item selects how image(s) are cropped after scanning. "Crop max area of all image objects (default)" crops the maximum area that contains all image objects, while "Crop area for each object" crops each image separately.



Minimize to

Selects whether MiraScan 5.0 will be minimized to the task bar (default) or the system tray (option in the Settings dialog box) after the Minimize  button is clicked.

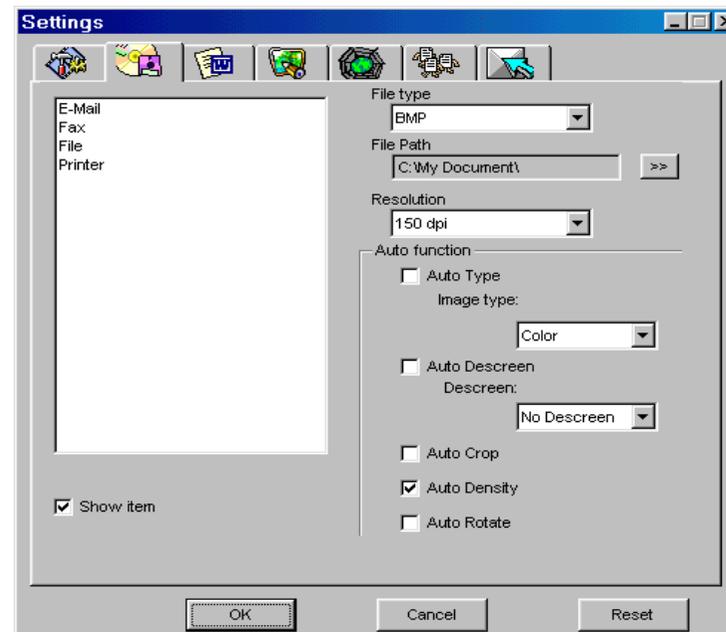
Exit

If "Exit without hint" is selected, a hint dialog will not appear on the screen after the "Exit" button is clicked. The default setting is "Exit with hint".

OCR Engine

Default setting is "ABBYY FineReader sprint 4.0". If you have installed other OCR programs, you can click the drop-down list to select another one.

OA Tab



Click an item on the list on the left part of the tab, related sub-items will appear on the right side of the tab.



Options for "Scan to File"

File Type

Specifies the file type used to save the scanned image. Available file types are:

- RGB supported: BMP, TIF (24/48 bits), PCX, JPG, TGA, PNG;
- GRAY supported: BMP, TIF (8/16 bits), PCX, JPG, TGA, PNG, GIF;
- BW support: BMP, TIF, PCX, TGA, PNG, GIF.

File Path

Here you can select a location to save the scanned image file. The default path is "C:\My Documents". There is a "Browse" button to select a new path.

Resolution

Selects scan resolution. The default resolution is 150dpi. Others like 72, 96, 100, 150, 200, 263, 300, 350, 600, 1200 or customized are optional.

Show Item

If you uncheck this box the "Scan to file" icon is not displayed on the class button bar.

Auto Function

Contains five check boxes: Auto Type, Auto Descreen, Auto Crop, Auto Density and Auto Rotate.

- Auto Type: If this check box is checked, MiraScan 5.0 will choose an appropriate image type to scan. You can also uncheck the check box and select an image from the drop-down list box.
- Auto Descreen: If you are scanning images from magazines, newspapers or other printed materials, you will find that the scanned image appears to be covered by tiny screen patterns. To eliminate this screen pattern, you can use the options in the drop-down list box. Check this check box and MiraScan 5.0 will descreen the scanned image automatically.
- Auto Crop: Check this check box and MiraScan 5.0 will crop the scanned image to an appropriate size automatically
- Auto Density: If this item is checked, MiraScan 5.0 will automatically adjust the density of the scanned image to a satisfactory level.
- Auto Rotate: Check this item and MiraScan 5.0 will automatically rotate the scanned image to a correct position.



Options for "Scan to Fax"

FAX driver

The current fax application program is shown in an editing box. If the "Select" button is clicked, other fax application programs are listed for you to select .

Resolution

Selects scan resolution. The default resolution is 200dpi. Others like 150, 263, 300, 350, 600, 1200 or customized are optional.

Image Type

The default type is Auto Type. Gray or Line-art is optional.

Show Item

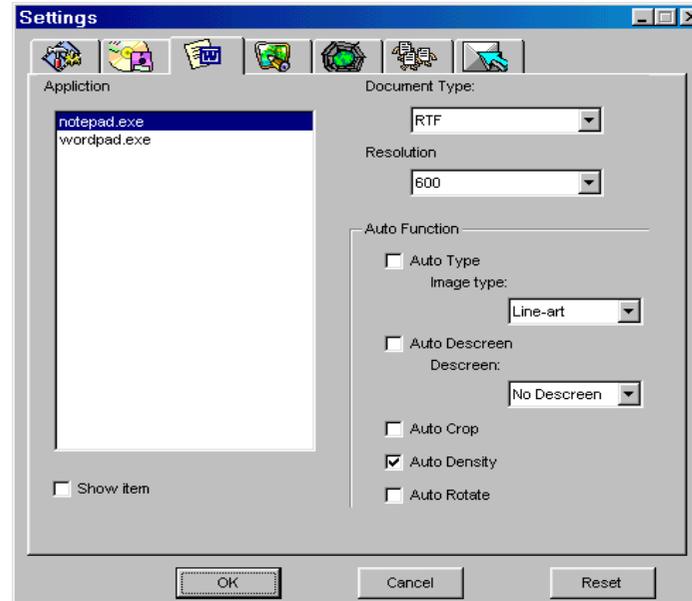
If you uncheck this box, the "Scan to Fax" icon on the class button bar is not displayed.

Auto Function

Same as in "Options for Scan to File".



Document Tab



Application

Supported applications will appear in this list. Click on an application in the list and all related options will appear on the right side of the tab.

Document Type

You can choose a document output file type from the drop-down list box. The content is generated by the OCR application.

Resolution

The default resolution is 300 dpi. Others like 300, 350, 600, 1200 and customized are supported by scanner.

Show Item

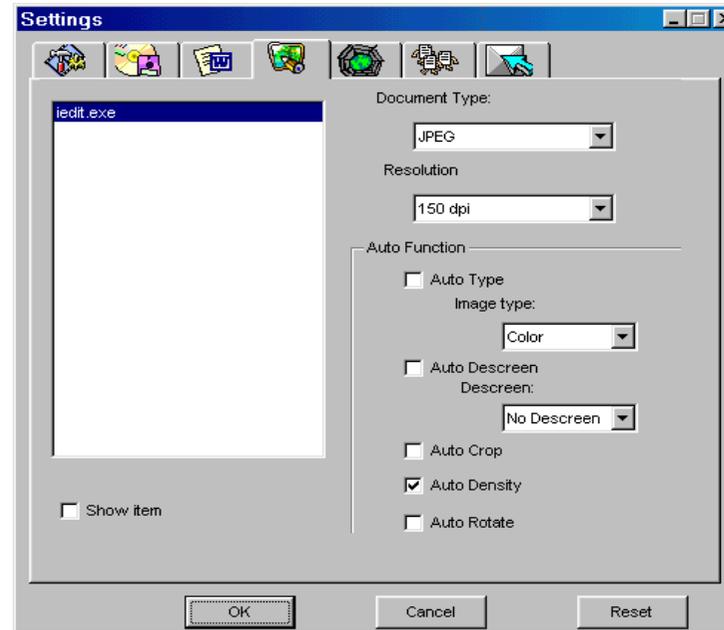
If you uncheck this box, the "Application" icon is not displayed on the button bar.

Auto Function

Same as in "Options for Scan to File".



Image Application Tab



Application

Supported image applications will appear in this list. Click an application in the list and all related options will appear on the right side of the tab.

Document Type

The default type is *.bmp and included items are: BMP, JPEG. This item will be automatically changed according to different applications.

Resolution

The default resolution is 300 dpi. Others like 72, 96, 100, 150, 263, 300, 350, 600, 1200 or customized are optional.

Show Item

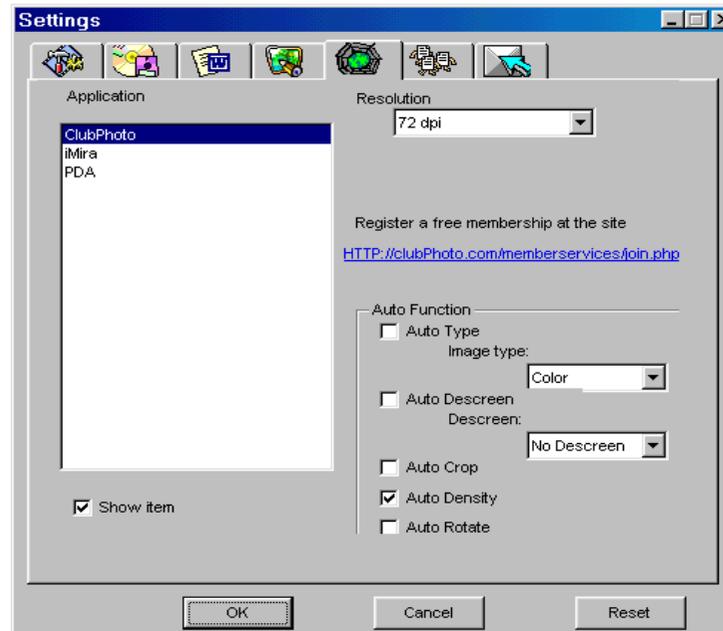
If you check this box, the selected application icon is not displayed on the class button bar.



Auto Function

Same as in "Options for Scan to File".

Web & Remote Tab



Click an application in the list and all related options will appear on the right side of the tab.



Options for "ClubPhoto"

Resolution

Specifies scan resolution. The default resolution is 72 dpi. Others like 72, 96, 100, 150, 263, 300, 350, 600, 1200 and customized are optional. Please note that a higher resolution will result in a larger file size and a longer upload time.

Show Item

If you uncheck this box, the "Scan to ClubPhoto" icon is not displayed on the class button bar.

Hyperlink to ClubPhoto Web site

If you click this item, the system web browser is started and the registration web page of the ClubPhoto web site is opened.

Auto Function

Same as in "Options for Scan to File".

Options for "iMira"

Resolution

The default resolution is 72 dpi. Others like 72, 96, 100, 150, 263, 300, 350, 600, 1200 and customized are optional. Please note that a higher resolution will result in a larger file size and a longer upload time.

User

You need to register to iMira and fill in your user name here to upload the scanned image to iMira.

Password

You need to register to iMira and fill in your password here to upload the scanned image to iMira.

Site

Link to the iMira web site.

Show Item

If you uncheck this box, the "Scan to iMira" icon is not displayed on the class button bar.



Hyperlink to iMira Web site

If you click this item, the system default web browser is started and the registration web page of the iMira web site is opened.

Auto Function

Same as in "Options for Scan to File".

Options for "PDA"

Auto re-scale selection area to 256 x 256 pixel

Select this radio box to re-scale automatically the selected area to 256x256 pixels during the scanning process. 256 x 256 pixels is the size that best fits the display size of your PDA.

Fixed selection area 256 x 256 pixel

Select this radio box to set the selection frame to 256 x 256 pixels without resizing.

Show Item

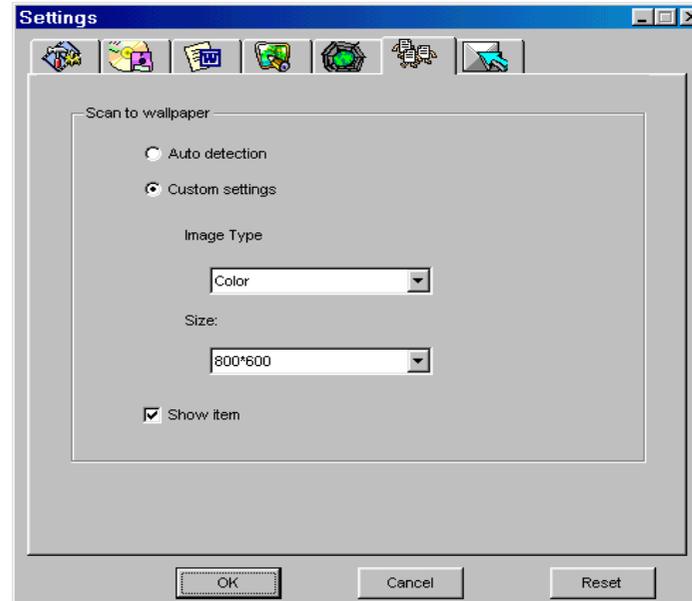
If you uncheck this box, the "Scan to PDA" icon is not displayed on the class button bar.

Auto Function

Same as in "Options for Scan to File".



Image Fun Tab



Scan to wallpaper

Auto Detection

If this radio button is clicked, the image type is automatically chosen according to the scanning target and only gray and color are supported.

Customized Settings

If this radio button is clicked, the image type will be based on the Image Type setting in the combo boxes.

Image Type

Included items are color and gray.

Size

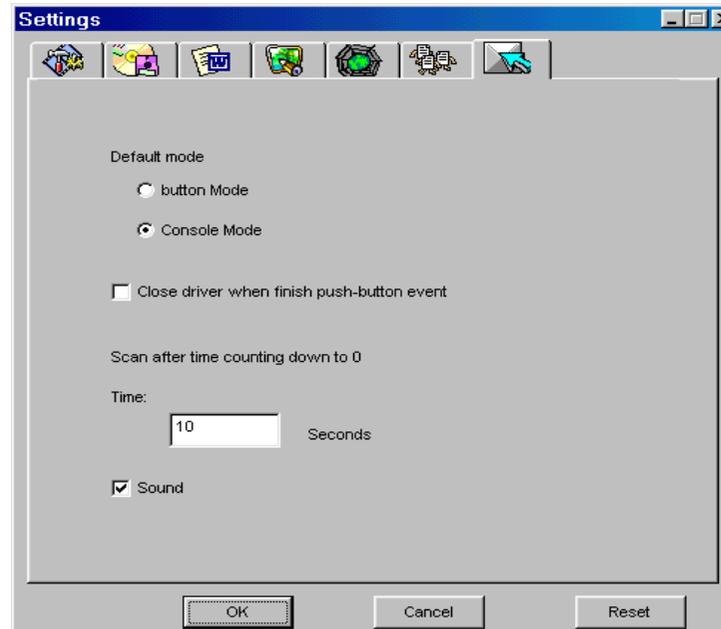
You can choose from one of the following wallpaper sizes: 800 x 600, 1024 x 768, 1152 x 864, 1280 x 1024 or 1600 x 1200.



Show Item

If you uncheck this box, the "Scan to Wallpaper" icon is not displayed on the class button bar.

Push Button Event Tab (only shown when scanner is equipped with push buttons)



Default Mode

Button Mode

If this radio button is clicked, when you push the button on the scanner, MiraScan 5.0 will start the Button Mode.

Console Mode

If this radio button is clicked, when you push the button on the scanner, MiraScan 5.0 will start the Console Mode.



Close driver when finish push-button event

MiraScan 5.0 will be closed (checked) or not (unchecked) after finishing the operation of the push event.

Scan after time counting down to 0

In the entry field you can set the time that elapses between pushing the scan buttons on the scanner and the start of the actual scanning process. In this period of time you can see the preview image in the Console Mode and decide whether the scan is to be performed or not.

Sound

If this is checked, the scanner will play a sound.

Getting Help

To help you better understand and operate MiraScan 5.0, you can access the Help system provided in the Button Mode. Click the Help  button and a submenu with the following items will appear.

Content: Load help file and show the MiraScan 5.0 Button Mode page. You can also press the "F1" key on the keyboard.

What's this?: The mouse cursor will change to a "question mark" so you can consult a page explaining what an item is for. You can also press the "Shift" and "F1" keys on the keyboard.

Scanner Information: Show scanner information in a dialog, including "Scanner Model", "Firmware version", "Driver version", "Device Manager", "USB Info", "Max resolution", "Max Scan area" and an "OK" button. Before you ask for technical support, please have this information ready.

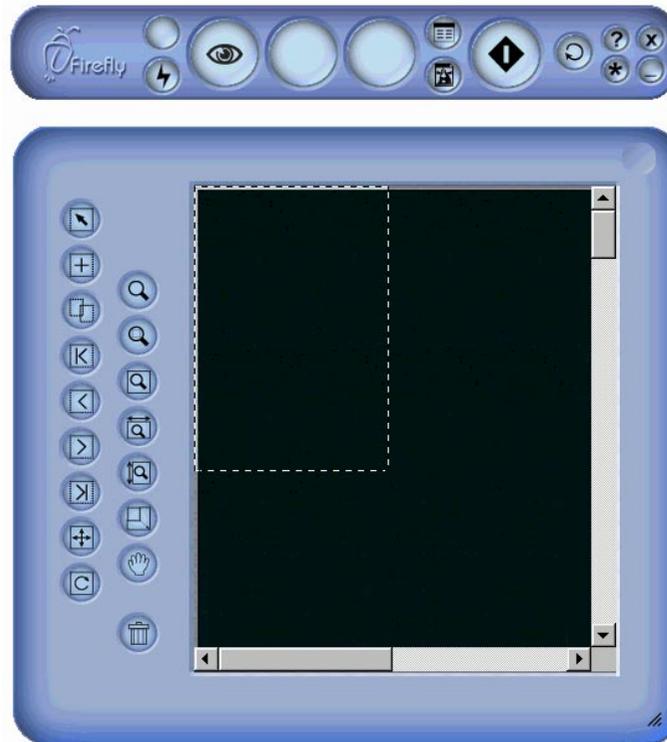
Driver update: Connect to the driver update web page to download the latest version.

About: A pop-up a message box which includes driver version and license information.



The Console Mode

When you shift to the Console Mode, it appears as follows:



The Console Mode consists of 4 different windows: The Control window, Preview window, Job Setting List window (default hidden) and the Image Adjustment window (default hidden) . As their names suggest, you can control scan operations, preview images, view job settings and make image adjustments in these windows.

When you switch to the Console Mode, the default open windows are the Control Window and Preview Window. You can click the  button on the Control Window to open the Job Setting List window and the  button to open the Image Adjustment window.



The Control Window

The Control Window is the window located at the top of the default window in Console Mode.



Each button has a specific function:



Original Type

Three types of original material are supported, namely Positive film , Negative film  and Reflective .

If you select Negative film as the original type, a dialog will appear asking you to choose the film type to use.



Auto Function switch

You choose to apply the auto function or not. The auto functions are set in the Settings window (see "Auto Functions" on page 74).



Preview button

To preview or refresh the preview image.



Destination

You can appoint a scanning destination in the popped-up list according to file types, formats, purposes or other. MiraScan 5.0 categorizes destinations beforehand into five types.



Scan Setting Macro

MiraScan 5.0 provides macros for convenient and diverse scanning. We would recommend you use these. For details see "The Scan Setting Macro" on page 69.



 **Open Jobs Settings List window**

Click this button to open the Jobs Settings List window (see “The Jobs List Window” on page 106).

 **Open Image Adjustment window**

Click this button to open the Image Adjustment window (see “The Image Adjustment Window” on page 79).

 **Scan**

Click this button to start scanning.

 **Settings**

Similar to Settings in Button Mode, except for two additional settings: Operate Scan Settings Macro and Advanced Settings.

 **Help**

Click this button to access the Help system, MiraScan 5.0 and update information.

 **Minimize**

Click this button to minimize the window to the task bar or the system tray.

 **Exit**

Click this button to exit MiraScan 5.0.

 **Shift to Button Mode**

All settings will be saved and the program will then shift to Button Mode.



The Scan Setting Macro

The scan setting macro provides several frequently used, pre-defined scan settings combinations that you can use to scan, so you get just the scanned image that fits your needs.

To select a scan setting macro to use on a scan job:

1. After previewing, choose a scan job (frame) in the Preview window.
2. Click the Scan Setting Macro button . The scan setting macros tool bar will pop up.
3. According to the purpose of the scan, click a scan setting macro icon on the tool bar.
4. The scan setting macro icon that you selected will appear on the scan setting macro button. The macro settings will be applied to the selected scan job.
5. If you have multiple scan jobs, repeat step 1 ~ 4.
6. Now you can start scanning with the macro settings applied to the scan jobs.

In addition to the pre-set scan setting macros, you can also customize your own. See “The Macro Tab” on page 71.

The tables below lists all available pre-set scan setting macros.

MACROS FOR REFLECTIVE TYPE

Item		Meaning
	Text only for OCR	To scan a text-only document and perform OCR.
	Text and photo for OCR	To scan a document that contains text and pictures and perform OCR.
	Line-art for Trace	To convert the scanned image to vector images in other application programs.
	Line-art for Office	To scan line-art pictures and put them on office documents.



	Line-art for printing	To scan line-art pictures and print them out.
	Photo for Web	To scan photos and put them on web pages.
	Photo for Office	To scan photos and put them on office documents.
	Photo for Printing	To scan photos and print them out.

MACROS FOR TRANSPARENCY TYPE

Item	Meaning	
	Slide 135	To scan 135 slides.
	Positive film 120	To scan 120 positive films.
	Positive film 4 x 5	To scan 135 positive films.

MACRO FOR NEGATIVE FILM

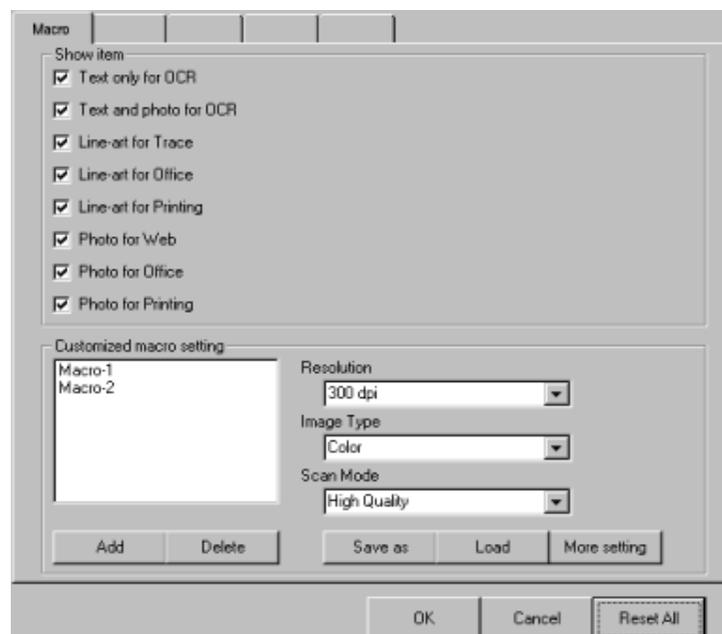
Item	Meaning (parameters)	
	Negative film	To scan negative films.



Advanced Settings in the Console Mode

Click the  button to open the Settings window. The majority of settings are similar to those in the Settings window in the Button Mode, but Customized macro settings and Advanced tab are different.

THE MACRO TAB



The options contained in this tab:

Show Item check boxes

Check the check box beside each item, and the macro will be shown on the scan macros tool bar and vice versa.

Macro list

Lists out all macros. You can click to choose a macro and click the "Delete" button to delete the selected macro.



Resolution

Selects the resolution for a customized macro.

Image Type

Selects the image type for a customized macro.

Scan Mode

Selects the scan mode for a customized macro.

More Setting

Open more setting options for a customized macro.

Save As

Opens a dialog to save the macro. The file extension will be *.msf.

Load

Opens a standard dialog to load the macro. The filter is *.msf

Add

Duplicates the currently selected macro as a new one.

Delete

Deletes the currently selected macro.

Creating a customized macro

To create a customized macro:

1. Select the appropriate resolution, image type and scan mode from the "Resolution", "Image Type" and "Scan Mode" drop-down list boxes. You can also click the "More setting" button for more setting options.
2. Click the "Save as" button. A dialog box will appear asking you to save the macro. Specify the macro name and save the macro.

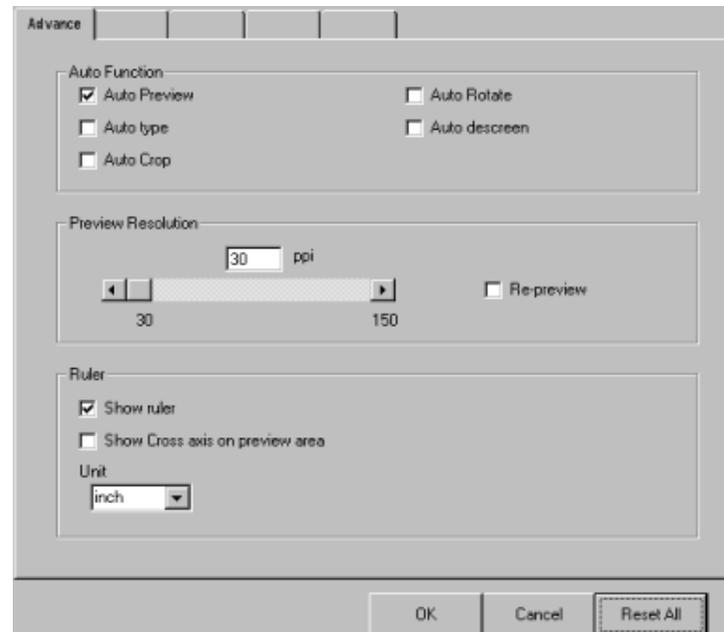


Loading a customized macro

To load a customized macro:

1. Click the "Load" button to browse the macro files.
2. Click the macro you want and then click "OK" to load the macro.
3. Once the macro is loaded, a corresponding customized macro icon will appear on the scan setting macros tool bar.

THE ADVANCED TAB



Several advanced setting options are provided in the Control Window. They are as follows:



Auto Functions

Auto Preview

If you check this item, MiraScan 5.0 will do a preview when the modes are shifted.

Auto Type

If this check box is checked, MiraScan 5.0 will choose an appropriate image type to scan. You can also uncheck the check box and select an image from the drop-down list box.

Auto Crop

Check this check box and MiraScan 5.0 will crop the scanned image to an appropriate size automatically.

Auto Rotate

Check this item and MiraScan 5.0 will automatically rotate the scanned image to a correct position.

Auto Descreen

If you are scanning images from magazines, newspapers or other printed materials, you will find that the scanned image appears to be covered by tiny screen patterns. To eliminate this screen pattern, you can use the options in the drop-down list box. Check this check box and MiraScan 5.0 will descreen the scanned image automatically.

Preview Resolution

You can change the preview resolution by inputting a value into the entry field or by dragging the slider.

Ruler

Show Ruler

If you uncheck this box, the ruler will not be shown.

Show cross-axis on preview area

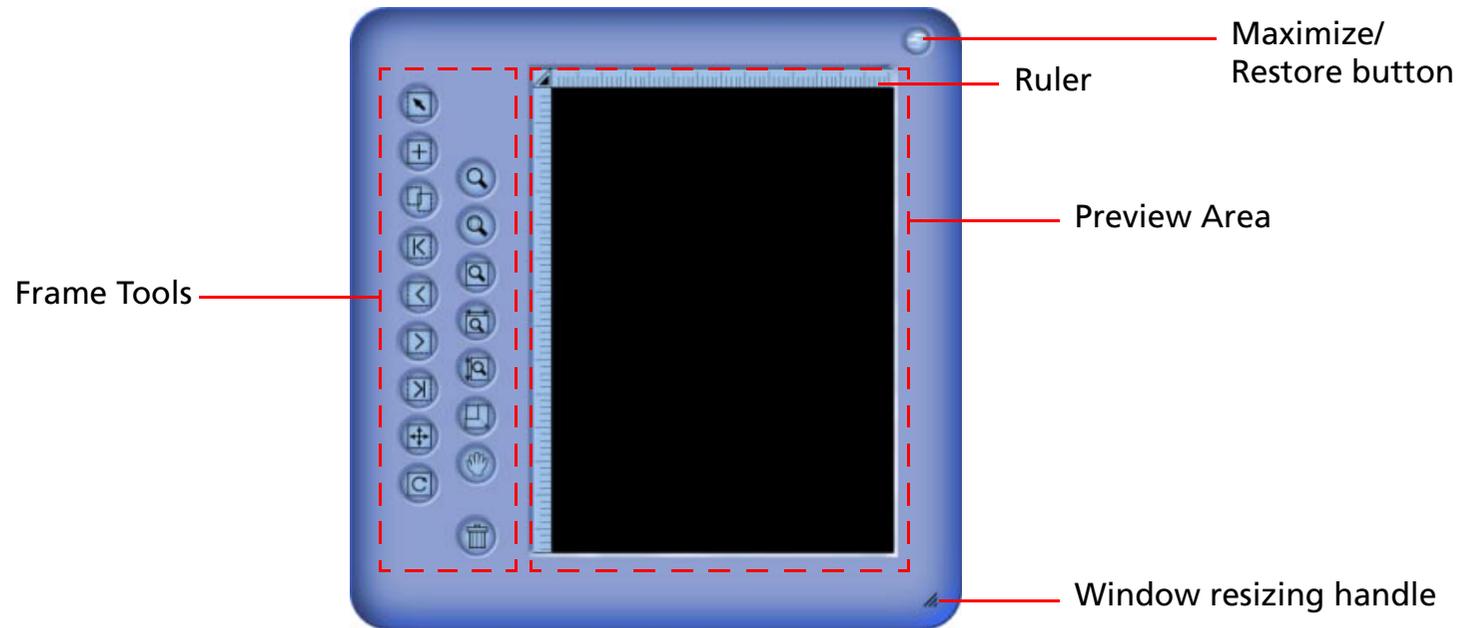
If you check this box, the cross-axis on the ruler is displayed.

Unit

You can select ruler unit from the drop-down list box.



The Preview Window



The Preview window is located below the Control window in the Console Mode.

Preview Area

To display and crop an image.

Ruler

Shows the image's location.

Frame Tools

Provides the necessary tools for the scan frames in the preview area.

Maximize/Restore

Maximizes or restores the window.



Rulers' Operation

Here you can make changes to a ruler's appearance. Click the  button. A menu will pop up containing some options.

Show Cross Lines: If you click this item and move the cursor back to the Preview window, crossed lines will appear to help you position the cursor more accurately.

Hide Ruler: If you click this item, the ruler will be hidden and the Preview window will fit out. If you want to restore the ruler, select the item "Show Ruler" in the Settings dialog box or in the menu which pops up after clicking the cross.

Unit: selects the unit for the ruler.

Frame Tools

You can use the Frame Tools to define and edit scan areas. Only the image enclosed by the scan areas will be scanned after you click the scan button. The scan areas are represented by dotted frames in the Preview area. To manipulate these frames, the tools below are provided.



Frame Selection

You can select:

Single frame: Move, rotate, zoom in and zoom out a single frame.

Multiple frames: Only move all frames as a whole.



Add New Frame

Click this button to draw a new frame in the Preview window. If you hold down the "Shift" key simultaneously you can create a square.



Duplicate Frame

Click to select a frame in the Preview area, and click this button to duplicate the selected frame.



Go to First Frame

Click this button to shift from the active frame to the first frame.



-  **Go to Previous Frame**
Click this button to shift from the active frame to the previous frame.
-  **Go to Next Frame**
Click this button to shift from the active frame to the next frame. (It is disabled when there are several active frames.)
-  **Go to Last Frame**
Click this button to shift from the active frame to the last frame. (It is disabled when there are several active frames.)
-  **Canvas Rotate**
Click this button to rotate the canvas 90 degrees clockwise. If you hold down the "Shift" key, it will rotate 90 degrees counterclockwise.
-  **Canvas Flip**
Click this button to invert the canvas horizontally.
-  **Magnifier**
Left-click to zoom in on the canvas. Right-click to zoom out of the canvas.
-  **Show Full Preview**
Click this button to display the entire previewing material as large as possible.
-  **Zoom to Max**
Click this button to magnify active frame(s) as large as possible.
-  **Show Max by Width**
Click this button to display the entire previewing file as wide as possible
-  **Show Max by Height**
Click this button to display the entire previewing file as high as possible.





Hand Tool

Click this button to display a hand to drag the image when it does not entirely fit in the Preview window.



Zoom Scan

Click this button to display the active frame to fit the Preview window and view it at the highest resolution.

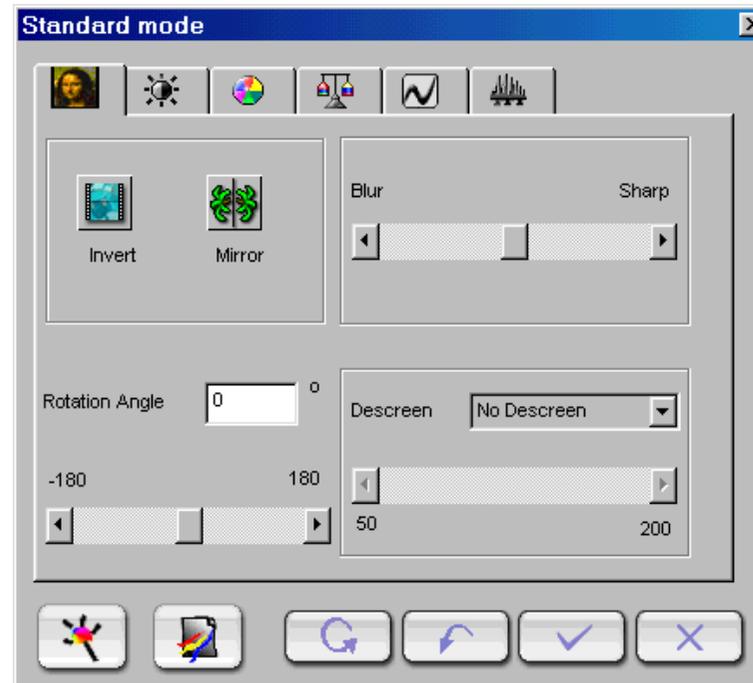


Trash Can

Click to select a frame, and click this button to delete the selected frame.



The Image Adjustment Window



The Image Adjustment window will appear when you click the  button on the Control window. It consists of three modes: Color Wizard, Color Matching and Standard. You can use the tools in these modes to work on the image before the final scan is delivered to a file or an application program.

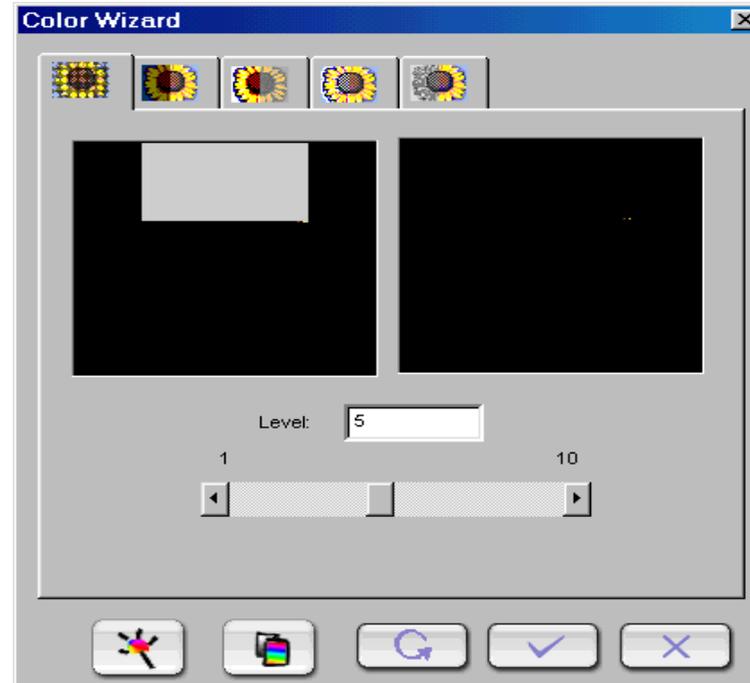
Click the  button to enter Color Wizard mode. (This mode is disabled if you set the image type to line art.

Click the  button to enter Color Matching mode. (This mode is disabled if you scan negative films or set the image type to line art and grayscale.

Click the  button to enter Standard mode.



Color Wizard Mode



This mode consists of two windows, five tabs and some buttons. All items in the five tabs will automatically change according to the items you select. You also can shift to two other kinds of modes: Color Matching and Standard Mode.

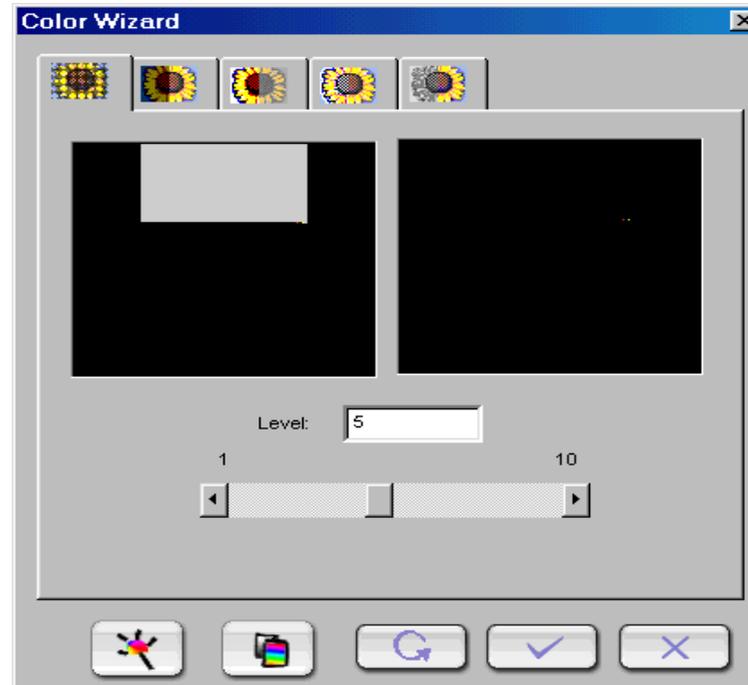
Note: The settings in Color Wizard mode will suppress all settings in Standard Mode.

The Original window in this mode shows the primary image, while the Effected window displays the change effect.

To apply the effect, click  button. To reset, click  button. Or click  button to cancel.



DENSITY TAB

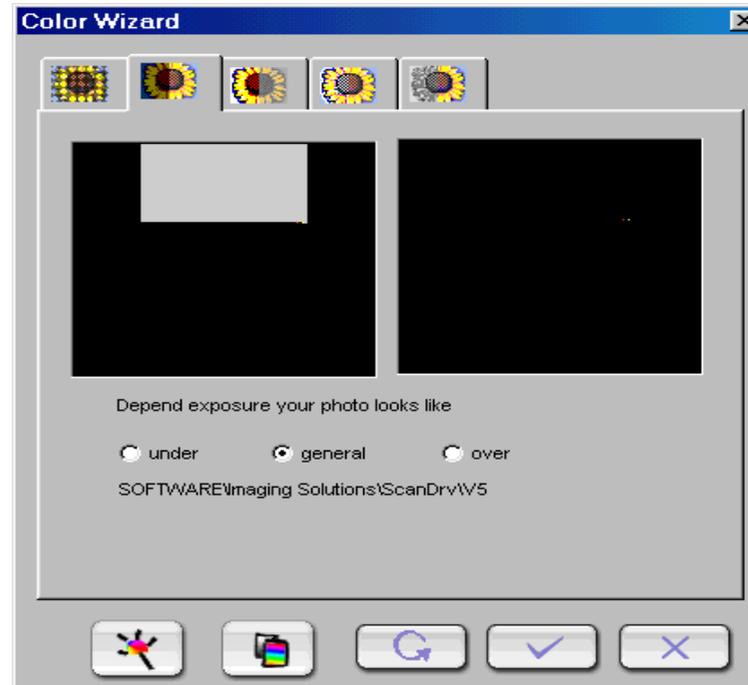


This tab allows you to adjust the density of a scanned image. The default density level is 5. The range of density level is from 1 to 10.

If you enter a value in the entry field, MiraScan 5.0 will change the position of the scroll bar and refresh the effect.



EXPOSURE TAB



There are three options that allow you to change the exposure effect of the image:

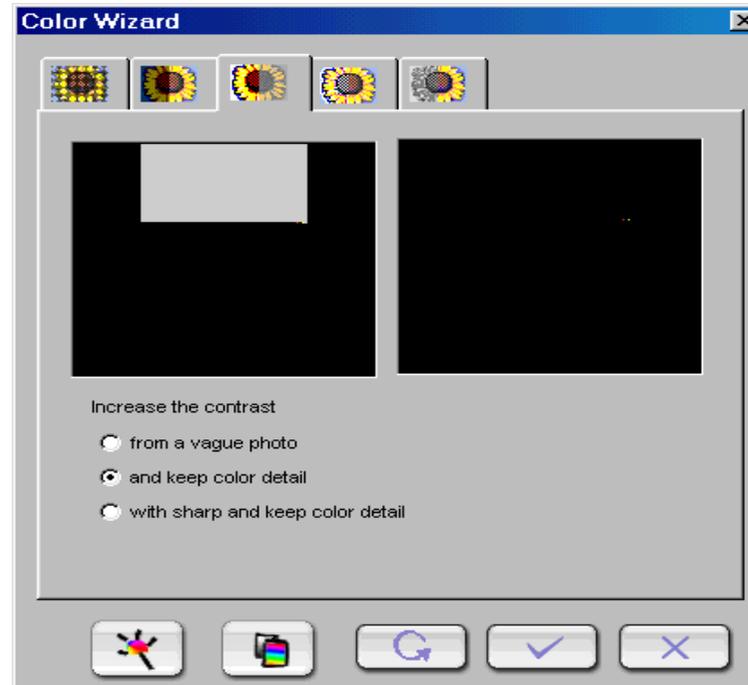
Under: Darkens the image.

General: Extends the color level and sharpens the image.

Over: Brightens the image.



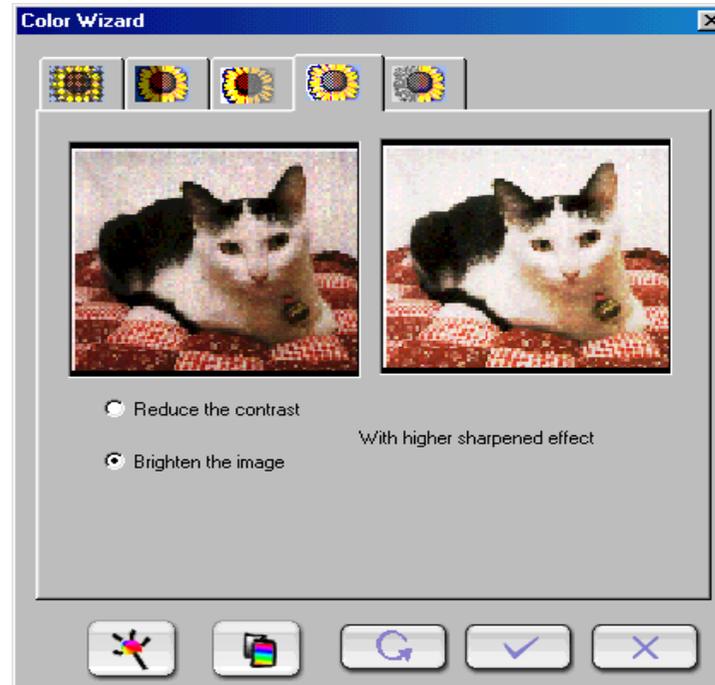
CONTRAST TAB



Here you can adjust the contrast of a scanned image. Choose from the three radio buttons, namely: "From a vague photo", "Keep color detail", and "With sharp and keep color detail".



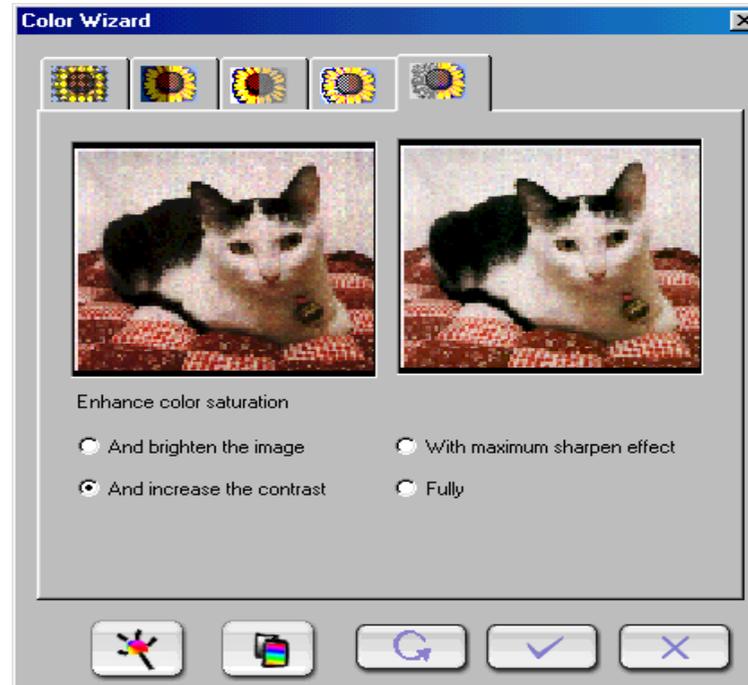
SHARPNESS TAB



This tab allows you to adjust the sharpness of the image with two different options.



SATURATION TAB



This tab allows you to adjust the color saturation of an image on four different levels.



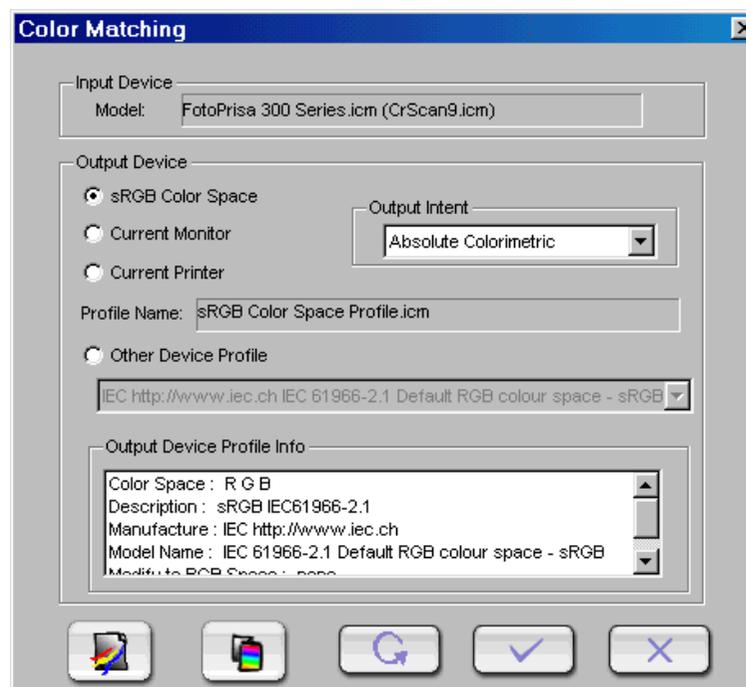
FILM WIZARD TAB



Film wizard is a convenient tool for you to optimize the scanning result when you scan films. It provides 4 different effects in 4 thumbnails. Click the effect you like and a red frame will appear around it.



Color Matching Mode



The Color Matching Mode is entered by clicking the  button. This mode contains two sections and some other buttons. The two sections relate to the input device (just reveal a static text about model's name and profile's name) and the output device.

Note: The settings in Color Matching mode will suppress all settings in Standard Mode.



Output Device

sRGB Color Space

Shows the relative profile name.

Current Monitor

Same as above.

Current Printer

Same as above.

Other device profile

Change the profile settings.

Output device profile information

Show information of currently selected profile.

Output Intent

Picture Intent

Picture intent causes the full gamut of the image to be compressed or expanded to fill the gamut of the destination device, so that gray balance is preserved but colorimetric accuracy may not be preserved.

In other words, if certain colors in an image fall outside of the range of colors that the output device can render, the picture intent will cause all the colors in the image to be adjusted so that every color in the image falls within the range that can be rendered and so that the relationship between colors is preserved as much as possible.

This intent is most suitable for display of photographs and images, and is generally the default intent.



Graphic Intent

Graphic intent preserves the saturation of colors in the image at the possible expense of hue and lightness.

Implementation of this intent remains somewhat problematic, and the ICC is still working on methods to achieve the desired effects.

This intent is most suitable for business graphics such as charts, where it is more important that the colors be vivid and contrast well with each other rather than a specific color.

Proof Intent

The Proof intent is defined such that any colors that fall outside the range that the output device can render are adjusted to the closest color that can be rendered, while all other colors are left unchanged.

Proof intent does not preserve the white point.

For example, the whitest white of a paper is more yellow than the whitest white of a computer monitor. An image converted into the gamut of the printer using relative colorimetric intent would result in all colors becoming more yellow. The white point of the image is moved to match the white point of the printer. All other colors in the image keep their position relative to the white point. This produces an image that more accurately reflects what the printed image will look like. However, the user may find it visually disconcerting.

Match Intent

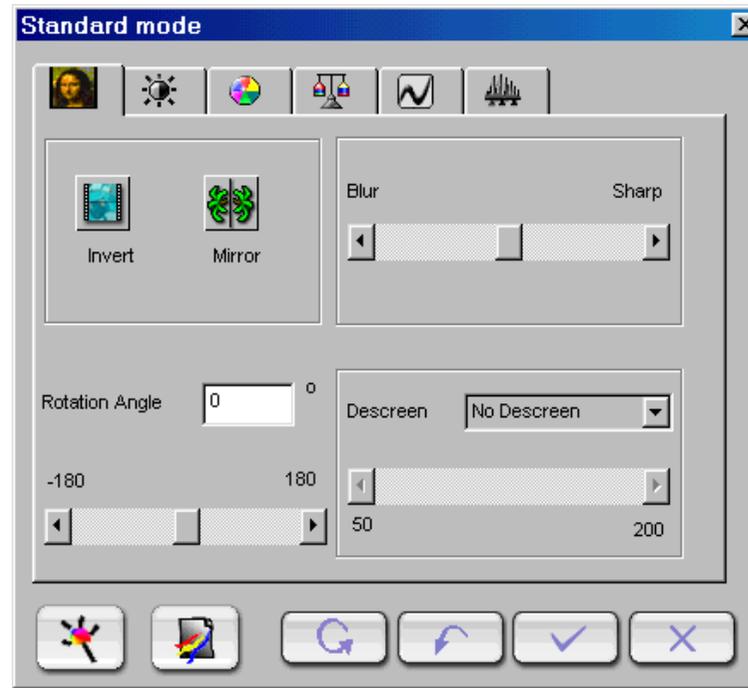
In a Match intent, any colors that fall outside the range that the output device can render are adjusted to the closest color that can be rendered, while all other colors are left unchanged.

Match intent preserves the white point.

For example, the whitest white of a paper is more yellow than the whitest white of a computer monitor. An image converted into the gamut of the printer using match intent would result in all colors being converted and matched into the gamut of the printer. The white point of the image is not moved to match the white point of the printer. Therefore, the distance of the colors to the white point may change. This produces an image that is less visually disconcerting to the user, but is also a less accurate rendition of printer output.



Standard Mode



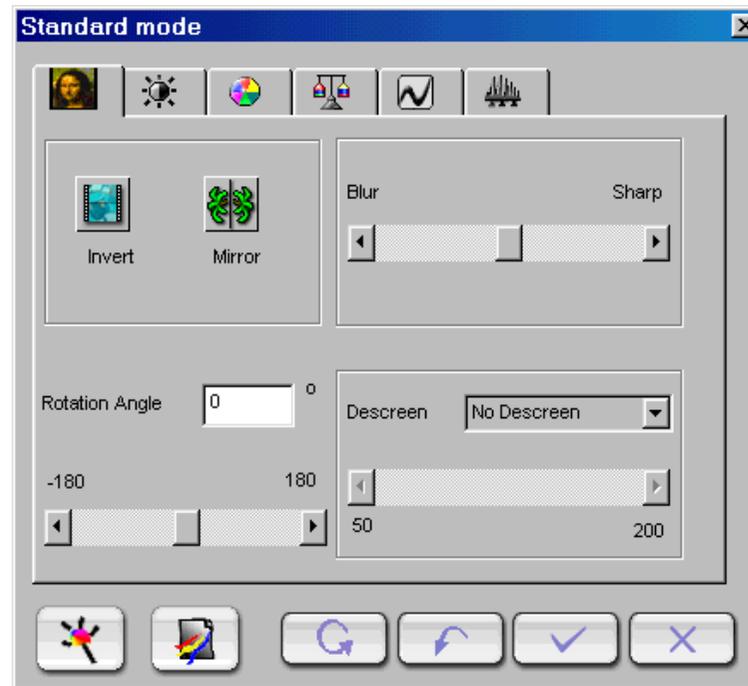
The Standard Mode comprises seven sub-layers. They are, Combo, Brightness and Contrast, Hue and Saturation, Color Balance, Curve, Level and Threshold.

To apply settings made in the mode, click  button. To apply all settings, click  button. To reset, click  button. Or click  button to cancel.

Note: The Hue and Saturation, Color Balance and Threshold tabs will not appear if the image type is set to grayscale. The Threshold tab only appears when image type is set to line art.



COMBO TAB



Tab items:



Invert

If you click this button, the current frame will be converted into inverse color. This means the brightness value of each pixel in the channels is converted to the inverse value on the 256-step color-values scale.



Mirror

This effect is not displayed in the preview area but be realized on the scanning result.

Rotation Angle

You can type a rotating angle into the editing cell or drag the scroll bar.



Blur/Sharpen

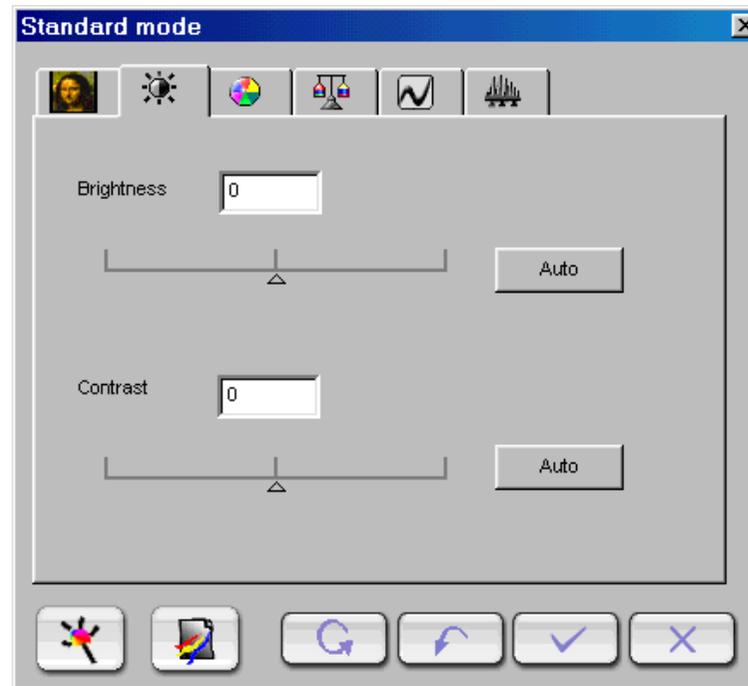
You can drag the slider to blur or sharpen the image: drag the slider to the left to blur the image and to the right to sharpen the image.

Descreen

If you are scanning images from magazines, newspapers or other printed materials, you will find that the scanned image appears to be covered by tiny screen patterns. To eliminate this screen pattern, you can use the options in the drop-down list box. You can select an appropriate descreen option according to the original to be scanned from the drop-down list box.



BRIGHTNESS AND CONTRAST TAB

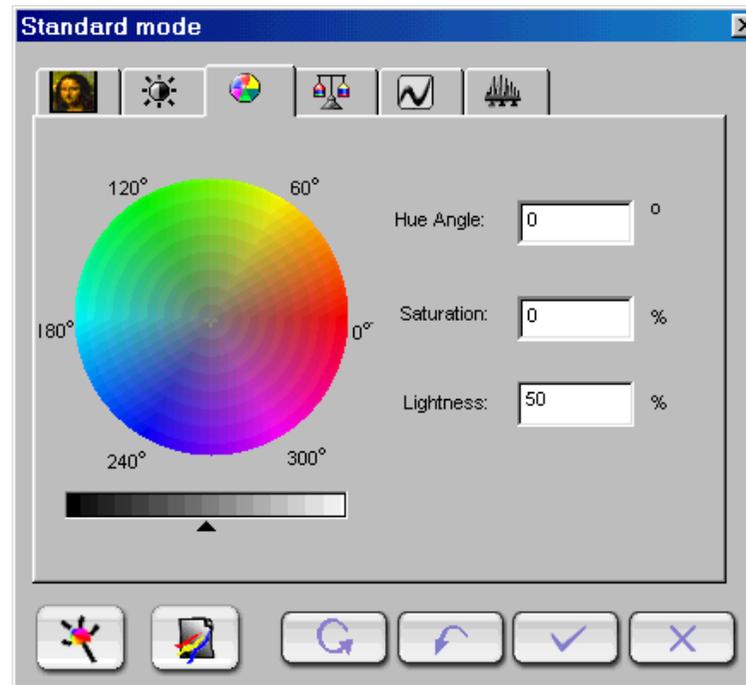


This tab allows you to adjust the brightness and contrast of the scanned image.

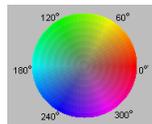
You can manually type the values between -127 and 127 (the default is 0) into their text boxes. You can also drag the scroll bar left to decrease or right to increase the effect. We recommend you to click the "Auto" button to let the software adjust the effect automatically.



HUE AND SATURATION TAB



Hue is a characteristic that distinguishes one color from another, while Saturation decides the intensity of a color.



You can use the **Color Wheel** to specify the hue and saturation of the color you want to use. Move your mouse cursor on the Color Wheel and then click on it. Drag within the Color Wheel to select the hue of the color you want to use. The distance from the center of the wheel decides the saturation of the color: the farther you drag your mouse cursor from the center of the Color Wheel, the higher the saturation.



You can drag the triangle below the Lightness Bar to adjust the lightness of the color you choose. To increase the lightness, drag the triangle to the right. Otherwise, drag the triangle to the left to reduce the lightness.



Hue Angle: °
Saturation: %
Lightness: %

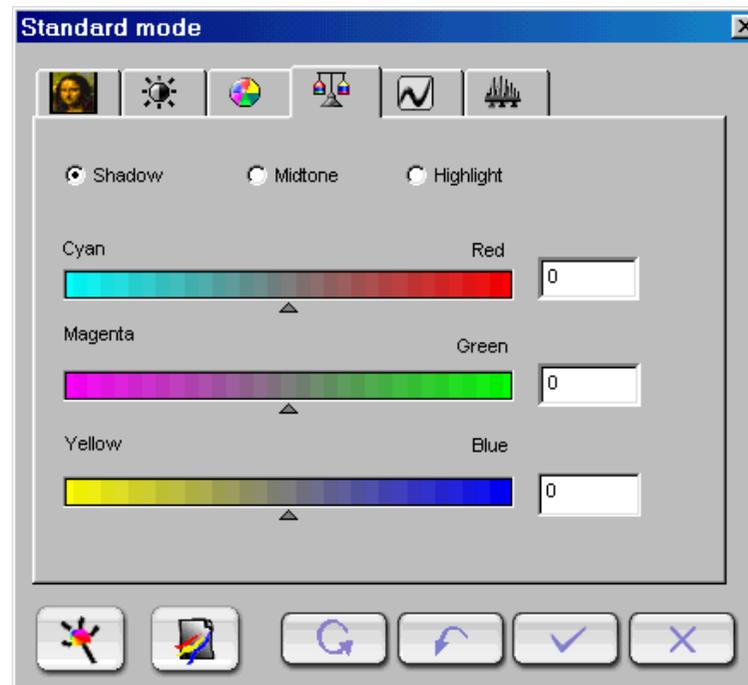
While you drag within the **Color Wheel** to choose the hue and saturation of a color or drag the triangle below the Lightness Bar to specify the lightness of a color, the related information will also be shown in the **Entry Boxes**. You can also enter the values here directly.

Default parameters as:

Item	Range	Default value
Hue Angle	0~359	0
Saturation	0~100%	0%
Lightness	0~100%	50%



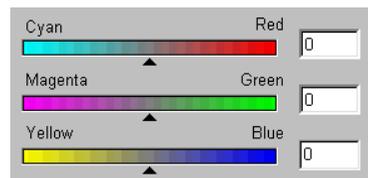
COLOR BALANCE TAB



With the Color Balance tool, you can change the mixture of colors of an image and emphasize or diminish certain colors.



The color channel is where you can select the channel to be adjusted.



You can drag the triangles or enter the value (from 0 to 100) in the box directly to adjust.



To adjust the color balance, first, you select the channel you want to adjust, then drag the triangles under the three color bars. You can also enter the desired values directly into the three entry boxes to the right of the color bars to adjust the color balance.

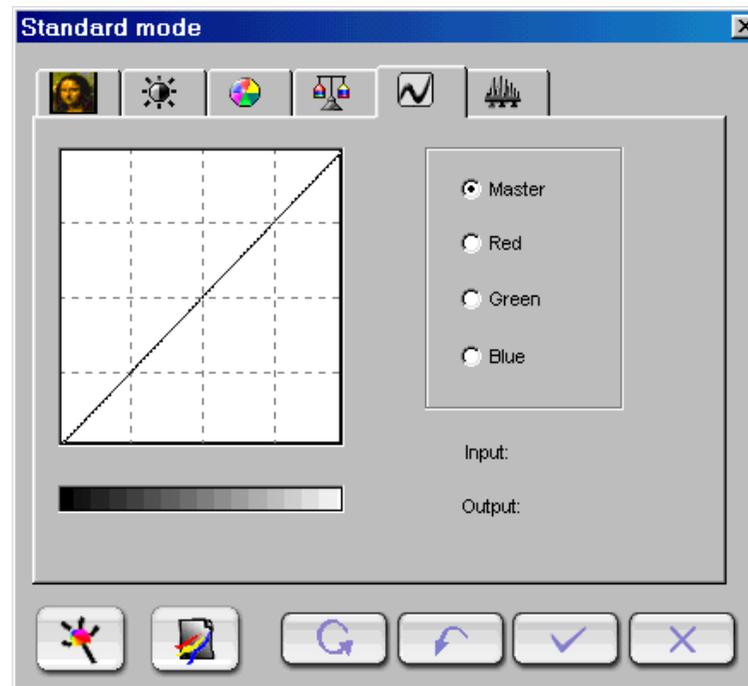
For example, if the color of the brighter area in the original you scan appears to be bluish, you can first choose **Highlight** as the channel, and then drag the triangle below the Cyan-Red bar to the right, or drag the triangle below the Yellow-Blue bar to the left to eliminate the bluish effect.

Default parameters as:

Item	Range	Default value
Color channel		Midtone
Cyan and red	-100~100	0
Magenta and green	-100~100	0
Yellow and blue	-100~100	0



CURVE TAB

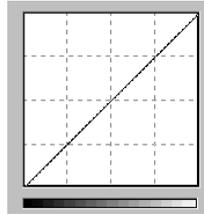


The Curve tool is used to adjust the brightness properties of midtone pixels in an image.

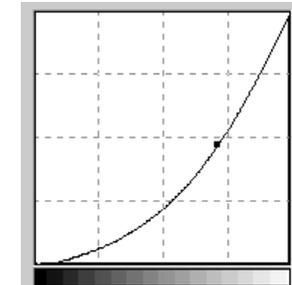
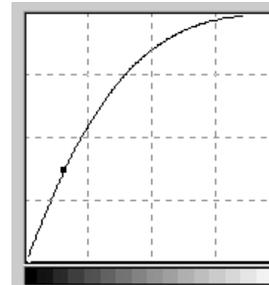
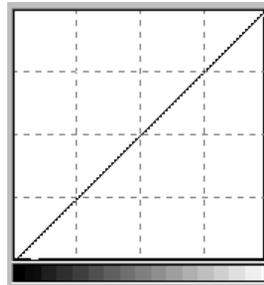


Use the **Color Channel box** to select the color channel to be adjusted. This allows you to adjust the curve property of each color channel respectively.





The x-axis in the **Tonal Map** represents the input brightness level of the pixels in an image. The y-axis represents the output brightness level of the image. By clicking and dragging the curve to change its shape, you can adjust the difference between the input and output brightness level of an image without extensively modifying the dark and bright areas. If we compare the following images and their tonal maps:



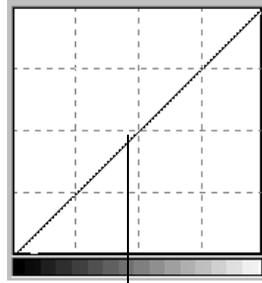
The original image and its tonal map.
The curve is straight and diagonal.

Drag the curve to the left, and the midtone area of the image becomes brighter.

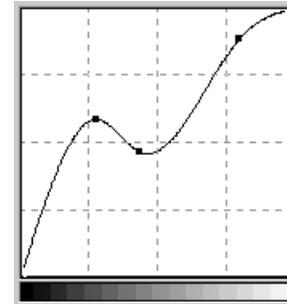
Drag the curve to the right, and the midtone area of the image becomes darker.



You can also click the curve to add new points and further change the shape of the curve:



Click to add a new point

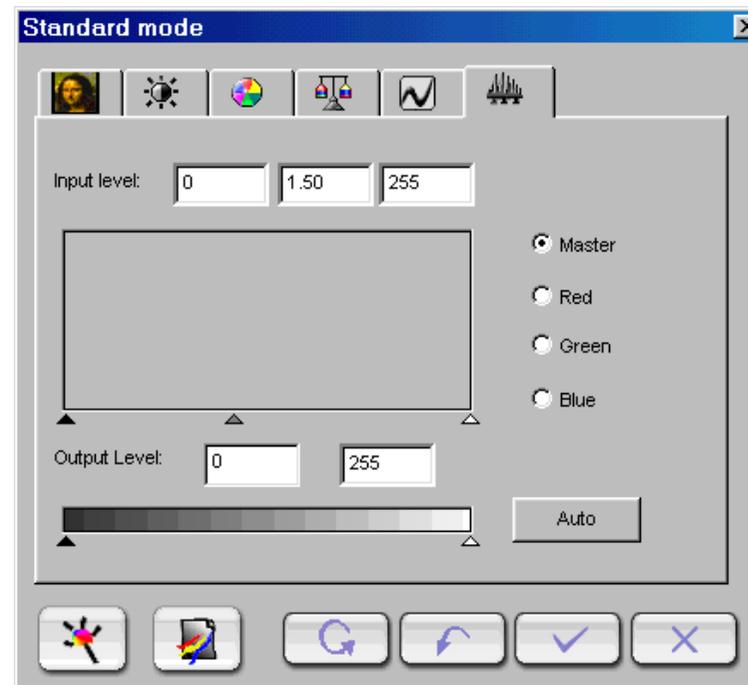


Input: 121
Output: 139

You can read the precise input/output value in the **Input/Output Status Area**.



LEVEL TAB

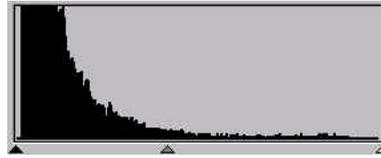


The Color Level dialog box shows the distribution of brightness levels of an image and its values classified into the Input Level and the Output Level.

- Master
- Red
- Green
- Blue

Use the **Color Channel** box to select a color channel to adjust. This will allow you to adjust the histogram property of each color channel respectively.

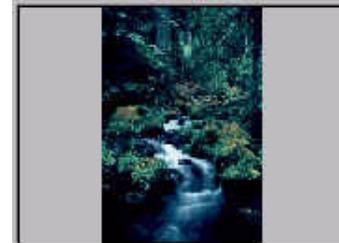




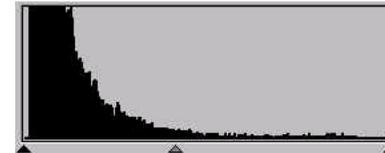
A **Histogram** displays the distributing status of dark and bright pixels in an image. The x-axis is divided into 256 equal portions, representing a brightness level of 0 to 255. The y-axis is used to represent the number of pixels in each brightness level. A comparison of two images and their histograms:



Brighter images have brighter pixels, therefore the bars on the right are higher than that on the left.



Darker images have darker pixels, therefore the bars on the left are higher than that on the right.



In addition, if we take a look at the two images below:



Image 1



Image 2



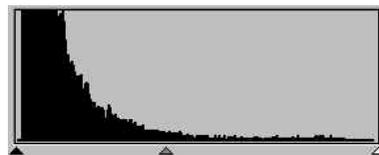
We can see that in Image 1, there is a higher contrast between the brighter and darker part of the image. Bright and dark pixels occupy a larger portion of the total image. Therefore, in the histogram there are higher bars on the left (darker side) and right (brighter side), and in the center the bars are relatively much lower, which means that there are only a few midtone pixels in the image.

In image 2, pixels in objects possess greater levels of brightness and darkness. The distribution is more even than that in Image 1 as well. Therefore, the brighter, midtone and darker pixels share evenly the total pixels in the image. This will make the histogram for Image 2 appear smoother.

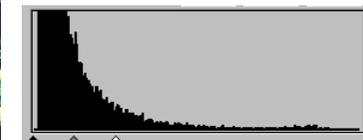
To adjust the level, first choose the color channel. There are four radio boxes for the selection of channels. If you select Master, the level of all three color channels (red, green and blue) will be adjusted simultaneously. If you select one of the Red, Green, or Blue boxes, then only the selected color channel will be adjusted.

Next, you can adjust the level by dragging the triangle under the diagrams. The black handle (the left one) is for the adjustment of shadow of input/output level, the gray handle (the middle one) is for midtone, and the white handle (the right one) is for highlights. You can also adjust the values by directly entering the desired values in the text boxes. You can also press the "Auto" button to let MiraScan 5.0 automatically adjust the color level according to the color of the whole image.

Below is an example of how to use the histogram tools to enhance the image and add detail:



Before adjustment



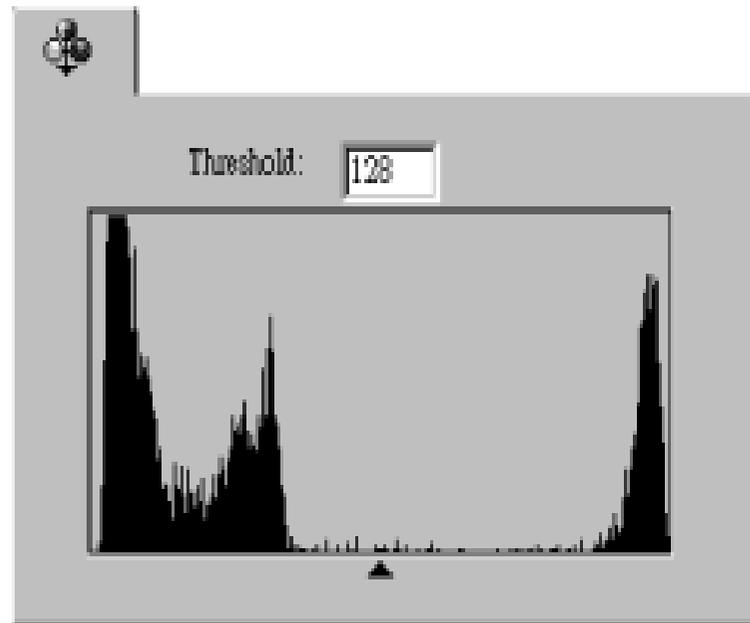
After adjustment



Default parameters are:

Item	Range	Default value
Input level max	Input level min+2~255	255
Input level min	0~input level max-2	0
Gamma	0.1~9.9	1.5
Output level max	0~255	255
Output level min	0~255	0

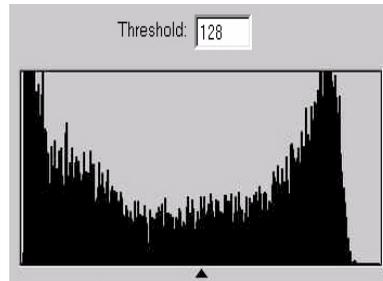
THRESHOLD TAB



The Threshold tool is very useful when you scan line-art images or scan documents for OCR use. You may use this function to adjust the quality of line art images or eliminate unwanted dots in the document to improve the accuracy of recognition.



Note: This function is only applicable when you select line art as the image type.



The x-axis in the histogram represents the brightness level of the pixels in the image (from 0 to 255, from left to right). The y-axis represents the number of pixels.

To adjust the threshold value, drag the triangle below the histogram or enter the threshold value in the Threshold entry box directly. For example:

Image 1 below is the original scanned image, while in Image 2 the threshold value is changed into 70.

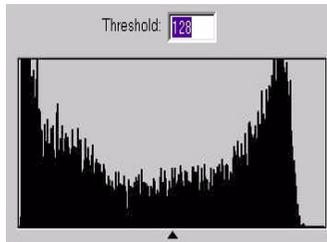
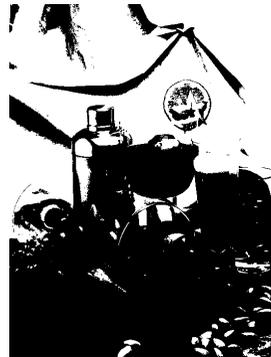


Image 1

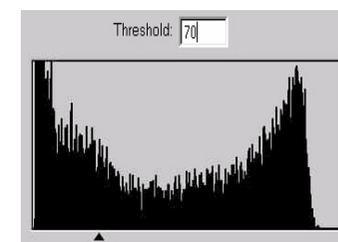


Image 2

This means that pixels in the image with a brightness level below 70 will all be turned into black, and those with a brightness level above 56 are all turned into white. Therefore, you will find that by setting a lower threshold value, some details are lost in the new image. However, if there are many unwanted dots in an image, you can eliminate them.

To set a value you can drag the triangular slider or input a value in the text box.

Default parameters are:

Item	Range	Default value
Threshold	0~255	128



Image Type

Chooses image type as Color, Gray, or Line-art.

Scan Mode

Chooses scan mode.

Resolution

When resolution unit is dpi or ppi, several default values are offered: 72, 96, 100, 150, 263, 300, 350, 600, 1200, 2400, 4800, 9600, 19200.

If you select "Customize", another dialog box will pop up in which you can drag a wheel or a key in a value directly to define the resolution. Even resolutions for the X and Y axes are offered.

Scaling

Some default ratios or definitions are pre-rooted in a drop down-list: 10%, 25%, 50%, 75%, 90%, 100%, 121%, 150%, 200%, 400%, 800%, 1600%, 3200%, Max to B5, Max to B5(R), Max to A4, Max to A4(R), Max to Screen and Max to PDA.

Width

The default unit of width is the same as the ruler's. However, you can choose other units as pixel, cm or inch and the values of width will automatically refresh.

Height

Same as above.

Image Control

You can make adjustments in the Image Adjustment window.

File Size

Shows the file's size. The value changes automatically if you change the unit (Bytes, KB, MB and GB).



Operations on the Jobs Sheet

Changing job settings

Under each job, click to highlight a cell. Click the right part of the cell again and the cell will either turn into a radio button, drop-down list or a editing box for you to make selections.

Subject	Job 1
Scan State	Scan
Image Type	Color
Scan Mode	High quality
Resolution	100 dpi
Scale Size	1.00 %
Width	4.00
Height	6.00
Unit	6.00
Image Control	Color Adjust
File Size	703.178 KB

Click to highlight a cell.

Subject	Job 1
Scan State	Scan
Image Type	Color
Scan Mode	High quality
Resolution	100 dpi
Scale Size	1.00 %
Width	4.00
Height	6.00
Unit	6.00
Image Control	Color Adjust
File Size	703.178 KB

Click the right part of the cell. A drop-down list box appears.

Subject	Job 1
Scan State	Scan
Image Type	Color
Scan Mode	High quality
Resolution	100 dpi
Scale Size	1.00 %
Width	4.00
Height	6.00
Unit	6.00
Image Control	Color Adjust
File Size	703.178 KB

Make a selection from the drop-down list box.



Selecting all job settings

Click the job name on the list, and all cells will be selected.

Subject	Job 1
Scan State	Scan
Image Type	Color
Scan Mode	High speed
Resolution	100 dpi
Scale Size	1.00 %
Width	4.00
Height	6.00
Unit	6.00
Image Control	Color Adjust
File Size	703.178 KB

Click a job name.

Subject	Job 1
Scan State	Scan
Image Type	Color
Scan Mode	High speed
Resolution	100 dpi
Scale Size	1.00 %
Width	4.00
Height	6.00
Unit	6.00
Image Control	Color Adjust
File Size	703.178 KB

All cells under the job will be selected.

Copying and pasting job settings

1. Click to select a cell (or all cells) under a job, and click the  button.
2. Click to highlight a cell (or all cells) under another job, then click the  button.



Button Bar



Copy

Click to select a cell (or multiple cells) on the Jobs Sheet, and click this button to copy the parameters onto a clipboard.



Paste

Click to select a cell (or multiple cells) on the Jobs Sheet, and click this button to paste the parameters from the clipboard.



Load

Click this button to load scan parameters from a file.



Save

Click this button to save selected or all parameters as a file. If you check the radio box, you can save them as a new Macro. If you hold down "Shift" you can directly save them as a new macro.



Reset

Reset all parameters to the system default values.



Add

Click this button to add a new scan job to the Jobs Sheet.



Delete

Click to select a job and click this button to delete it.

Status Bar

Displays information about the number of total jobs, total size of files and remaining space disk. A warning will be shown if not enough disk space remains.



The TWAIN Mode

When MiraScan 5.0 is evoked by a TWAIN compliant application, such as Photoshop, only the Console Mode is supported without the function of the destination selection. Only the general, scanning macro and advance settings in the Settings dialog box are provided. The following table lists out some settings which are a bit different from the other two modes:

Item	Selection
Auto Crop setting	"Crop max area of all image object" (Default)
	"Crop area for each object"
Minimize setting	"Task bar" (Default)
	"System tray"
Exit setting	"Exit with hint" (Default)
	"Exit without hint"

Shortcuts

MiraScan 5.0 provides the following hot keys to quickly execute frequently used commands:

Location	Hot Keys	Action
Both for Button Mode and Console Mode	Alt+F4	Exit
	Ctrl+F	Open Settings dialog box
	Ctrl+M	Switch to Button/Console Mode
Only for Console Mode	Ctrl+P	Preview
	Ctrl+S	Scan



Problems and Solutions

Installation and uninstallation problems

Installation Problems

Installing MiraScan 5.0

First check the system requirements. When you first install the program, we recommend the following installation sequence:

Automatically: Put the CD into the CD-ROM drive, and follow every command or prompt in Autorun and the Setup guide.

Manually: If the automatic setup is not successful, try the following steps:

Step 1: If the scanner and pc are connected, disconnect and power off the scanner.

Step 2: Remove the folder c:\windows\twain_32

Step 3: Install the scanner driver.

Step 4: Reboot the PC.

Step 5: In Windows, plug the USB cable into the scanner and PC.

Step 6: Power on the scanner.



Though I have followed the above steps the installation was not successful. What should I do?

If all of the above actions fail, then there are five possibilities:

Causes	Solution
There's something wrong with the Windows 95 system in your PC.	Format the hard drive and install Windows 98. Windows 98 has much better compatibility to support USB.
There is a hardware conflict.	There is no solution unless you repair the hardware.
Older version error	Manually delete all files of the older version of MiraScan 5.0 and keywords of "MiraScan" in the regedit file. Or setup your system again.
Disk space error (insufficient)	Clear the disk or choose another disk which has enough space. See System requirements.
RAM error (Too tiny RAM to run Setup)	Add RAM or appoint enough virtual RAM. See System requirements.

The scanner is not found during installation

Please make sure to move the lock switch located at the bottom of the scanner. If you are sure the lock is already moved, check the scanner as follows:

- Power on the scanner.
- The white lamp inside the imaging carriage should come on.
- The imaging carriage moves forward a little and back.
- During the movement of the imaging carriage, the light indicator (green or red) at the front of the scanner blinks for about 15 seconds.
- Then, the indicator should stay lit. If the indicator blinks periodically, then the scanner is out of order.



And: Is the USB port in your PC active? Windows supports USB, but please make sure to activate the USB ports from the BIOS. If "Universal serial bus controller" is shown under "Start -> Settings -> Control Panel -> System -> Device Manager", the scanner will be installed successfully.

When the installation program asks to reboot, my computer does not respond.

The rebooting process during the MiraScan 5.0 Quick Install works with most computer systems. However, if you encounter any difficulty, simply reboot your system, and everything will return to normal. The files have already been copied to your hard drive and the installation is complete. Simply reboot and try scanning.

Can I set up MiraScan 5.0 in Windows NT?

No. Windows NT does not support USB. Please read the System Requirements carefully before installation.

There's something wrong with my scanner after I have connected a USB CD-RW. What should I do?

If the problem happened after you set up the USB CD-RW, then an unknown software conflict may have occurred. Try to disconnect the USB CD-RW and re-install the program.

Uninstallation Problems

Uninstalling MiraScan 5.0

Follow this path: Start -> Settings -> Control Panel -> Add/Remove Programs -> Setup/Uninstalltion -> "MiraScan 5.0" -> button of "Add/Remove" or double-click file of Uninstall in MiraScan 5.0's folder.



Why can't I uninstall MiraScan 5.0?

Several possibilities:

Cause	Solution
System error: You did not uninstall MiraScan 5.0 before you setup the operating system again. So in the new system, there's an error in the regedit file.	Import the former system's regedit or delete all MiraScan 5.0 files manually.
The uninstallation file is corrupt.	Delete all files in the folder and "MiraScan" references in the regedit manually.
The last uninstallation is unsuccessful.	Delete "MiraScan 5.0" in Add&Remove Programs in the Control Panel. If this is not possible, use another system editing program such as Tweak Tools.

Problems starting MiraScan 5.0

Why can't I start MiraScan 5.0?

These causes and solutions are based on our experience:

Cause	Solution
Installation is blocked or hampered accidentally	Uninstall it or delete all files manually, then reinstall it.
File is destroyed	Copy intact file or do as above
Shortcut is changed	Redefine shortcut's path
Pirated software	Purchase authorized software



Why does it take so long for MiraScan 5.0 to start?

RAM and virtual RAM are very important for an image processing program. MiraScan 5.0 requires a large RAM to perform its various image processing actions. Your system should have more than 128MB RAM. Also for increased speed, close other programs before opening MiraScan 5.0.

I've been using my scanner for a while with no problems, but recently something strange occurred and my system locked up. Now every time I try to acquire the scanner, I can't find it. Sometimes when I open MiraScan 5.0 the crop box and the select box will not move.

MiraScan 5.0 stores your last settings in its resource file. If your computer locks up while you are using the scanner, it's possible for these settings to have been corrupted. Try holding down the Alt key when you acquire MiraScan 5.0. This will reset the defaults in our software and you will be able to use it. If you still cannot get into your software, simply reload the MiraScan 5.0 software from the original disk.

Why can't I run MiraScan 5.0 in other programs such as Photoshop?

In other applications programs such as Photoshop, only the TWAIN Mode of MiraScan 5.0 can be run. If this is the first time you run MiraScan 5.0 in the application program, you must define the TWAIN source.

Follow the below steps to define the source (take Photoshop as example): File -> Import -> Select TWAIN_32 Source -> in the dialog box to define MiraScan 5.0 as TWAIN source.

How do I set the scanner so that it can be used by all Windows 2000 users?

During the installation of the scanner driver, the installer will modify some system files, and only the "Administrator" is authorized to do so in Windows 2000.

Please follow these steps to authorize all users to access the scanner:

- Click "Start -> Settings ->Control Panel -> System".
- Click "User Profiles -> Copy to".
- Click "Everyone -> OK".



Where do the files go after finishing "Scan to File", "Scan to Document" ...?

After activating the "Scan to File", "Scan to Web" ..., operation, the files are sent to the appropriate application, such as Microsoft Word. But if something goes wrong during transfer, you can retrieve the files in a temporary folder: c:\windows\temp\. See the file's default settings.

Operation problems

Why can't I set a preview action in the Auto Function?

If all check boxes in the Auto Function Settings dialog box are unchecked, previewing is disabled. Check any of the boxes in the dialog to enable previewing.

Why does the Auto Function button not work?

If all sub-items in the Advanced Settings dialog are unchecked, the button is disabled. Check any of the boxes in the dialog to enable the button.

Why does the "Add" or "Duplicate" button in the Preview window not work?

If there are more than 28 frames or jobs in the Preview window, these buttons will be disabled.

Why is it when I send an e-mail with an image scanned from MiraScan 5.0, it's very slow and there's no response.

Considering the current Internet transfer rate, an e-mail should not exceed 1MB. Preferably an image should be smaller than 300 KB for e-mail . If the size of the scanned image is too large, this will influence the transfer rate. You can reduce its size through adjusting its resolution or format in MiraScan 5.0 or in other image processing programs before adding it to your e-mail. Normally, 150 dpi should do and JPG or GIF is very small compared with other formats. You can also compress images with WinZip or similar file compression tools.



How do I add a program to the list of destination programs?

You can drag-drop a shortcut on the desktop to the relative scan class or define the program's path in the Settings dialog box.

How do I change MiraScan 5.0's default settings to meet my special demands?

Please carefully read the instructions in the sections on how to make settings in Button Mode and in Console Mode. Also see the section on how to improve image quality.

When I scan material, its background is scanned and printed. How do I prevent this?

- Crop the scanning area in the Preview window. The black background will not scanned.
- Stick a white A4 paper on the inner side of the top cover of the scanner. The background color will be white.

Why can't I choose a scanning destination when MiraScan 5.0 TWAIN Mode is run in a certain image processing program?

In certain image processing programs, when TWAIN Mode is run, you can't select a scanning destination. You can continue scanning and the scanned image will automatically be sent to the program.



Additional tips on improving image quality

Enhancing an image's definition and verisimilitude

As you know, resolution is used to measure an image's definition, but definition and size contradict each other. In order to enhance image definition and reduce file size, we recommend the following methods:

- Classify material into the corresponding scanning type, such as color, line-art, reflective.
- Choose the smallest and efficient resolution.
- Choose the right scanning destination, such as file, web page, OCR.
- Use default settings unless you are an advanced user.
- Use pre-defined macros to optimize operation.
- Adjust the image adequately.

Darkening or brightening an image

You can simply adjust an image's brightness and contrast to reach the desired effect. For details see Brightness and Contrast.



Enlarging or diminishing an image

Do as follows:

Item	Enlarge	Diminish
Color	More than 16 bits	Less than 16 bits or art-line
Resolution	More than 300 dpi	Less than 150 dpi
Scaling	Scaled	Not scaled
Crop area	Full area	Only desired area
File format	BMP	JPG or GIF
Compress	Uncompressed	WinZip or similar

Sharpening or blurring an image

For simple changes you just need to drag the slider left or right in the Combo tab in Standard Mode (path: Console Mode - > Color Wizard - > Shift to Standard Mode - > Combo). See detailed explanations in the Standard Mode of Image Adjustment.

Changing the color balance

You can adjust the color balance (red/blue/green) in the Hue and Saturation, Color Balance and Level tabs (click hyperlinks to see more).

Rotating an image

You can click in the Preview window to rotate an image clockwise or counterclockwise .

Applying advanced skills

Please carefully read the chapters about Image adjustment and Settings, because they are quite complicated.



Service Information

Technical support

If you encountered problems using MiraScan 5.0 and the scanner, please send an E-mail (containing detailed descriptions of the problem you came upon, the hardware and software environment of your system) to the following addresses:

service@benq-eu.com.

For free driver program updates, product information and news releases, please visit the following web address:

<http://www.benq-eu.com>

Re-packing directions

To avoid unpredictable damages during transportation, before you send the scanner for repair, please follow these guidelines when repacking your scanner:

- Lock the scanner: slide the scanner lock to the lock position before you put the scanner in the box.
- Use the original shipping carton and packing materials for repacking.
- Send only the product and other hardware required to complete the repair.
- Enclose a document describing the problems you encountered.



Appendix

Copyright

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IMPORTANT SAFETY INSTRUCTIONS ON USING YOUR SCANNER

Read these instructions carefully. Save these instructions for future reference.

Follow all warnings and instructions marked on the scanner and related accessories.

Unplug the scanner from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

Do not use the scanner near water.

Do not place the scanner on an unstable cart, stand, or table. The scanner may fall, causing serious damage to the scanner.



Openings in the scanner are provided for ventilation; to ensure reliable operation of the scanner and to protect it from overheating, these openings must not be blocked or covered. The openings should never be blocked by placing the scanner on a bed, sofa, rug, or other similar surface. This scanner should never be placed near or over a radiator or heat register, or in a built-in installation unless proper ventilation is provided.

The scanner should be operated from the type of power indicated on the marking label. If you are not sure of the type of power available, consult your dealer or local power company.

Do not allow anything to rest on the power cord. Do not locate the scanner where persons will walk on the cord.

If an extension cord is used with the scanner, make sure that the total ampere rating of the equipment plugged into the extension cord does not exceed the extension cord ampere rating. Also, make sure that the total rating of all products plugged into the wall outlet does not exceed the fuse rating.

Never push objects of any kind into the scanner through cabinet openings as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquid of any kind on the scanner.

Do not attempt to service the scanner yourself, as opening or removing covers may expose you to dangerous voltage points or other risks. Refer all servicing to qualified service personnel.

Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:

- When the power cord or plug is damaged or frayed
- If liquid has been spilled into the product
- If the scanner has been exposed to rain or water
- If the scanner does not operate normally when the operating instructions are followed. Adjust only those controls that are covered by the operating instructions since improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to normal condition.
- If the scanner has been dropped or the cabinet has been damaged
- If the scanner exhibits a distinct change in performance, indicating a need for service.
- Use only the power cord or power adapter which is of the same type as the one originally included with the scanner.



FCC INFORMATION

The Federal Communication Commission Radio Frequency Interference Statement includes the following paragraph:

This equipment has been tested and found to comply with the limits for a Class B Digital Device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction, may cause harmful interference to radio communication. However, there is no guarantee that interference will not occur in a particular installation. If this equipment dose cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
4. Consult the dealer or an experienced radio/TV technician for help.
5. The user should not modify or change this equipment without written approval from this company. Modification could void authority to use this equipment.

