EPSON® TWAIN Pro

SCANNER UTILITY PROGRAM

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of SEIKO EPSON CORPORATION. No patent liability is assumed with respect to the use of the information contained herein. Neither is any liability assumed for damages resulting from the use of the information contained herein.

Neither SEIKO EPSON CORPORATION nor its affiliates shall be liable to the purchaser of this product or third parties for damages, losses, costs, or expenses incurred by purchaser or third parties as a result of: accident, misuse, or abuse of this product or unauthorized modifications, repairs, or alterations to this product.

SEIKO EPSON CORPORATION and its affiliates shall not be liable against any damages or problems arising from the use of any options or any consumable products other than those designated as Original EPSON Products or EPSON Approved Products by SEIKO EPSON CORPORATION.

EPSON is a registered trademark of SEIKO EPSON CORPORATION.
IBM and PS/2 are registered trademarks of International Business Machines Corporation.
Macintosh is a registered trademark of Apple Computer, Inc.
Microsoft and Windows are registered trademarks of Microsoft Corporation in the United States of America and other countries.
Presto! is a trademark of NewSoft Technology Corporation.

General Notice: *Other product names used herein are for identification purposes only and may be trademarks of their respective companies.*

Copyright © 1999 by SEIKO EPSON CORPORATION, Nagano, Japan.

User's Guide

Contents

Introduction

Features 1
About This Guide 2

Chapter 1 Installing the Software

System Requirements 1-2
Installing the Scanner Software 1-3
For Windows 98 users 1-3
For Windows 95 and Windows NT 4.0 users 1-10
Upgrading from Windows 95 to Windows 98 1-16
For Windows NT 3.5x users 1-22
Calibrating Your Screen 1-24

Chapter 2 Scanning Basics

Basic Scanning Procedure 2-2
Starting EPSON TWAIN Pro 2-3
Scanning an Image 2-4
Saving the Scanned Image 2-5
Getting Information From Online Help 2-5
Optimizing Image Scanning 2-6
Manually optimizing images 2-6
Displaying the Preview window 2-7
Adjusting the Highlight setting 2-7
Adjusting the Shadow setting 2-8
Adjusting the Gamma setting 2-9
Applying a preset tone curve 2-9
Adjusting the Gray Balance Intensity setting 2-9
Adjusting the Saturation setting 2-10
Using the tone curve 2-11

Optimizing OCR Scanning 2-15
Scanning text 2-15
Improving character recognition 2-15
Potential text recognition problems 2-16

Chapter 3 Using the Start Button

Scanning by Pressing the Start Button 3-2
Presto! PageManager for EPSON. 3-3
Target applications in the Scan Buttons bar 3-4
Assigning an application to the Start button. 3-4
Adding applications to the Scan Buttons bar 3-7
Registering new applications. 3-8
Setting up EPSON Scanner Monitor 3-10
Setting Up the Start Button Feature for Windows 98 3-14

Chapter 4 Understanding EPSON TWAIN Pro Features

Overview 4-3
The EPSON TWAIN Pro Dialog Box. 4-4
Document Source 4-4
Image Type. 4-5
Destination 4-10
Resolution. 4-12
Source 4-13
Target 4-13
Scale. 4-14
Preview Window 4-15
Preview Buttons 4-17
Zoom preview button. 4-17
Return to full preview button 4-17
Return to zoom preview button 4-18
Marquees 4-18
Making and modifying marquees 4-18
Delete marquee button 4-20
Duplicate marquee button 4-20
Auto locate button. 4-21

Marquee number indicator 4-22
Image Adjustment Buttons 4-23
Auto exposure button 4-23
Image controls button 4-23
Tone correction button. 4-26
Color adjustment button 4-28
Reset button. 4-30
Settings 4-30
Configuration. 4-32
Scan 4-34
Scan All 4-34

Chapter 5 Calibrating Your System

Calibrating Your Screen 5-3
Using ICM (For Windows 95 and 98 Users) 5-6
For Windows 95 users 5-6
For Windows 98 users 5-6

Chapter 6 Troubleshooting

Problems and Solutions 6-2

Glossary

Index

Introduction

Features

The EPSON TWAIN Pro scanner software is the perfect companion for your EPSON scanner. With this software you can scan images in color, grayscale, or black-and-white and obtain professional quality results.

EPSON TWAIN Pro directly controls all of the features of your EPSON scanner. This program is the standard cross-platform interface for other applications, and automatically starts up when you scan from another application.

EPSON Screen Calibration utility allows you to match your scanner and display monitor to reproduce images so that they are identical to the originals. Calibration is one of the most important factors for precisely reproducing scanned images on display monitors.

EPSON TWAIN Pro software is provided on a CD-ROM, which also contains other software such as Page Manager for EPSON, EPSON Scanner Monitor, EPSON Scan Server, EPSON TWAIN Pro Network and other useful applications to make full use of your scanner.

Page Manager for EPSON and EPSON Scanner Monitor provide full support for the Start Button feature to make scanning much easier.

EPSON TWAIN Pro Network has the same scanning features as EPSON TWAIN Pro, and allows you to use your scanner in a networked environment, with EPSON Scan Server.

About This Guide

This *User's Guide* provides detailed instructions for installing and using EPSON TWAIN Pro. It also provides a complete reference for all software features.

- ❏ Chapter 1 contains information about installing the software. Be sure to read this chapter first.
- ❏ Chapter 2 provides basic information about scanning.
- ❏ Chapter 3 tells you how to use the start button on your scanner.
- ❏ Chapter 4 is a reference with detailed information about the settings and functions of EPSON TWAIN Pro.
- ❏ Chapter 5 tells you how to calibrate your system for use with EPSON TWAIN Pro and your scanner.
- ❏ Chapter 6 contains troubleshooting information.

***Notes** in this* User's Guide *contain important information and useful tips on operating your scanner or software.*

Chapter 1

Installing the Software

System Requirements 1-2

Installing the Scanner Software 1-3
- For Windows 98 users 1-3
- For Windows 95 and Windows NT 4.0 users 1-10
- Upgrading from Windows 95 to Windows 98 1-16
- For Windows NT 3.5x users 1-22

Calibrating Your Screen 1-24

System Requirements

Before installing the EPSON TWAIN Pro, make sure that your system meets the following requirements:

Scanner	EPSON GT-10000
System:	Microsoft® Windows® 95, Windows 98, Windows NT® 3.51, or Windows NT 4.0
Interface:	Adaptec® SCSI adapter
Display:	Color monitor, 800 × 600 screen resolution (or higher recommended), and 65,000 colors (or higher recommended)

Note:
Color and tone reproduction are subject to the display capability of your computer system, including the video card, monitor, and software. Refer to the manuals for those products for details.

Installing the Scanner Software

After connecting the scanner to your computer, install the EPSON TWAIN Pro software from the CD-ROM that comes with it. Installation instructions vary depending on the version of Windows you are using.

- ❏ Windows 98 users ... page 1-3
- ❏ Windows 95 and Windows NT 4.0 users ... page 1-10
- ❏ Upgrading from Windows 95 to Windows 98 ... page 1-16
- ❏ Windows NT 3.5x users ... page 1-22

Note:
If you are using the floppy disk version of the software, make a backup copy of the scanner software before you begin installation.

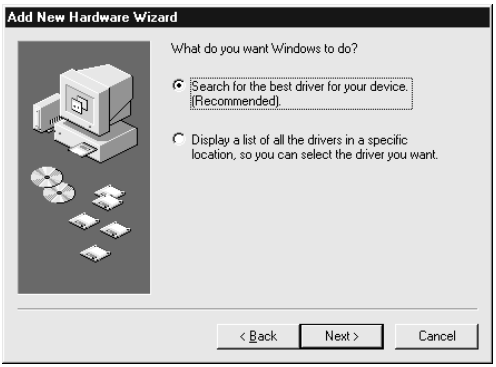
For Windows 98 users

Note:
If you are currently using Windows 95 and the scanner software is already installed, but you want to upgrade from Windows 95 to 98, first uninstall EPSON TWAIN Pro from Windows 95. Then reinstall EPSON TWAIN Pro as described in step 1 below using Windows 98. To uninstall EPSON TWAIN Pro see page 1-16 .

1. Make sure that the scanner is turned on.
2. Turn on the computer, and start Windows.

3. When the dialog box below appears, insert the scanner software CD in the CD-ROM drive, then click **Next**.

4. Select the **Search for the best driver for your device** option, then click **Next.**



5. Make sure the **CD-ROM drive** and **Specify a location** check boxes are both selected, then browse and select or type in the CD-ROM drive letter, EPSON folder, the folder of your preferred language, and **Win98** folder as the location, as shown below, and click **Next**.

6. Follow the instructions on the screen. You may be asked to insert the Windows 98 CD-ROM.

7. The EPSON Screen Calibration utility automatically starts. Follow the instructions on the screen. For details, see page 1-25.

Note:
If the EPSON Screen Calibration utility does not start automatically , see Chapter 5 to calibrate your screen after installing the scanner software.

8. When the following dialog box is displayed, click **Finish**.

9. If an older version of EPSON TWAIN Pro has already been installed, start the Updater utility.

   Click the **Start** button on the Windows taskbar and click **Run**. The **Run** dialog box appears. In the **Open** box, type **X:\Epson** then specify your language by typing **English**, **French**, **German**, **Italian**, **Prtugue** or **Spanish**, followed by **\Updater\Updater.exe.** and click **OK**. Type the letter of your CD-ROM drive at "**X** ".

   If the Updater dialog box appears asking which scanner options you are using, go to "Using Updater" on page 1-8 and follow the instructions.

10. Double-click the **My Computer** icon.

11. Double-click the CD-ROM drive icon. A dialog box asking for your preferred language appears on your screen. If no dialog box appears, click the **Cdsetup.exe** icon.

12. Select your preferred language and click **OK**.

13. The following dialog box is displayed. Click **Add Software**.

14. A list of software is displayed in the list box. Click to select the software you want to install. Descriptions of the software can be found in the software documentation, or on the CD-ROMs that come with your scanner. Make sure Presto! PageManager for EPSON is selected.

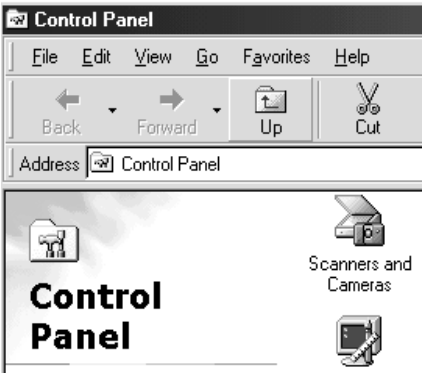
15. Click **OK**. Then follow the instructions on the screen.

    The setup program installs PageManager and any other applications you selected.

Note:

❑ *If folders for the applications on the CD-ROM contain README files, double-click on their icons and read them as they contain up-to-date information regarding the software.*

❑ *You will find the* **Scanners and Cameras** *icon shown below in the Control Panel after EPSON TWAIN Pro is installed.*

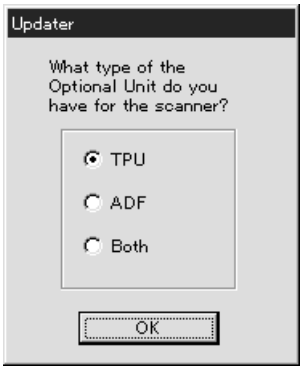


Using Updater

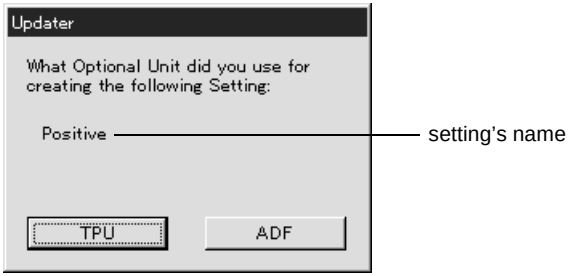
The Updater utility imports user-defined settings you created for Image Type, Destination, or Tone Correction settings from the old version to the new version of EPSON TWAIN Pro.

Note:
The Updater utility starts automatically when installing EPSON TWAIN Pro in Windows, except Windows 98, if an older version of EPSON TWAIN Pro is already installed.

If the user-defined settings you created on the old version of the EPSON TWAIN Pro includes information for the Automatic Document Feeder (ADF) or Transparency Unit (TPU), the following dialog box is displayed. Select the appropriate options.



If you have both the Automatic Document Feeder and the Transparency unit, and select **Both** on the above dialog box, the following dialog box appears. Click the appropriate option and repeat this procedure for all user-defined settings for each option.



Note:
For further information on changes from older versions of EPSON TWAIN Pro and about Updater.exe, refer to the README file in C:\Windows\Twain_32\Epfbpro.

For Windows 95 and Windows NT 4.0 users

1. Make sure that the scanner is turned on.

2. Turn on the computer, and start Windows.

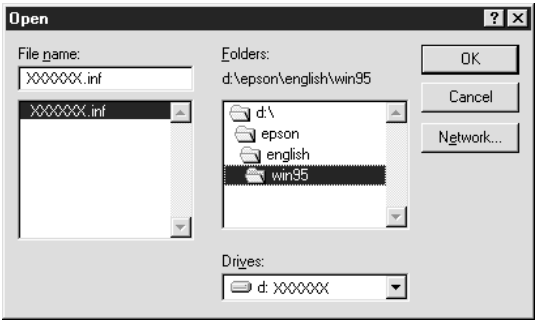
   If you are using the parallel interface or if you are using Windows NT 4.0, insert the scanner software CD in the CD-ROM drive. Go to step 3.

   If you are using Windows 95, one of the following dialog boxes will appear.

❑ If the dialog box below appears, insert the scanner software CD in the CD-ROM drive.

Select **Driver from disk provided by hardware manufacturer**, then click **OK**, and **Browse**.

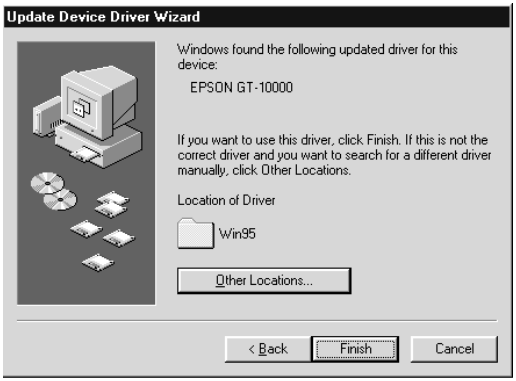
Select the CD-ROM drive, click on **EPSON** folder, the folder of your preferred language, and **Win95** folder, then click **OK**. Go to step 3.



❑ If the dialog box below appears, insert the scanner software CD in the CD-ROM drive, then click **Next**.

When you are asked for the drive and folder, select the CD-ROM drive, EPSON folder, your language preference, and **Win95** folder. An example is shown below.

When the following dialog box or similar appears, click **Finish**.



3. Double-click the **My Computer** icon.

4. Double-click the CD-ROM drive icon. A dialog box asking your preferred language appears on your monitor. If no dialog box appears, click the **Cdsetup.exe** icon.

5. Select your preferred language and click **OK**.

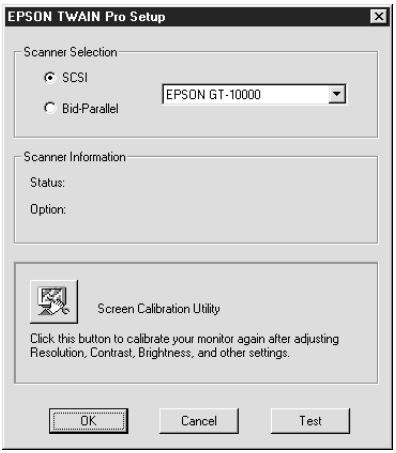
6. You will see the following dialog box. Click **Add Software**.

7. A list of software titles is displayed in the list box. Click to select the software you want to install on your PC. Make sure EPSON TWAIN Pro and Presto! PageManager for EPSON are selected. Descriptions of the software can be found in the software documentation, or on the CD-ROMs that come with your scanner.

8. Click **OK**. Then follow the instructions on the screen.

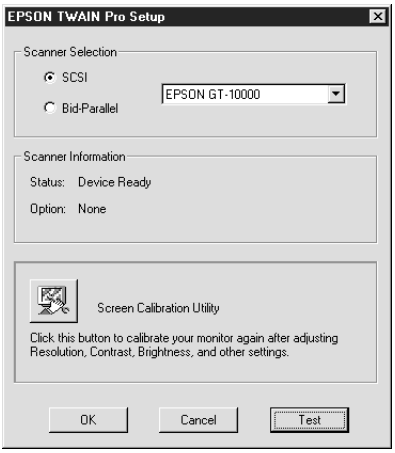
   The EPSON TWAIN Pro setup program installs EPSON TWAIN Pro and EPSON Scanner Monitor.

9. After EPSON TWAIN Pro is installed, the **EPSON TWAIN Pro Setup** dialog box appears.



10. Make sure that **SCSI** is selected in the **EPSON TWAIN Pro Setup** dialog box.
    Make sure your EPSON scanner appears in the list box.

11. Click **Test** to check the connection. If everything is properly installed and connected, the "Device Ready" message is displayed in **Status:** of Scanner Information in the **TWAIN Pro Setup** dialog box.



If "Unavailable" message is displayed, see Chapter 6, “Troubleshooting.”

12. Click **OK** to close the **EPSON TWAIN Pro Setup** dialog box.

13. The EPSON Screen Calibration utility automatically starts. Follow the instructions on the screen. For details, see page 1-24.

If an older version of EPSON TWAIN Pro is already installed, the Updater utility starts automatically. This utility imports user-defined settings you created for Image Type, Destination, or Tone Correction settings from old version to the new version of EPSON TWAIN Pro. For details, see page 1-8.

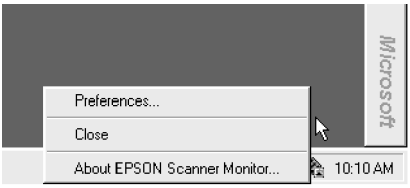
Upgrading from Windows 95 to Windows 98

If you were using your scanner with Windows 95, you will have to uninstall EPSON TWAIN Pro before updating to Windows 98. After updating you will need to reinstall EPSON TWAIN Pro.

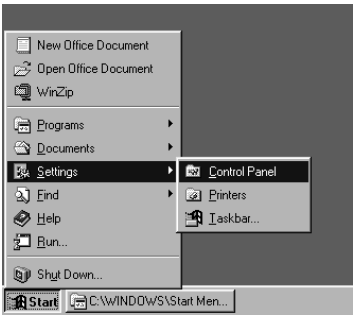
Uninstalling EPSON TWAIN Pro

Before you upgrade from the Windows 95 operating system to Windows 98, you need to uninstall EPSON TWAIN Pro. Follow the steps below.

1. Click the EPSON Scanner Monitor icon in the task bar and select **Close** to close EPSON Scanner Monitor.



2. Click the **Start** button, highlight **Settings**, and then select **Control Panel**.



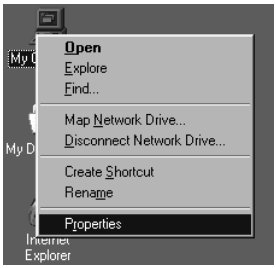
3. Double-click the **Add/Remove Programs** icon. Select **EPSON TWAIN** Pro and click the **Add/Remove** button. Then follow the instructions on the screen.

Now you can update Windows 95 to Windows 98.

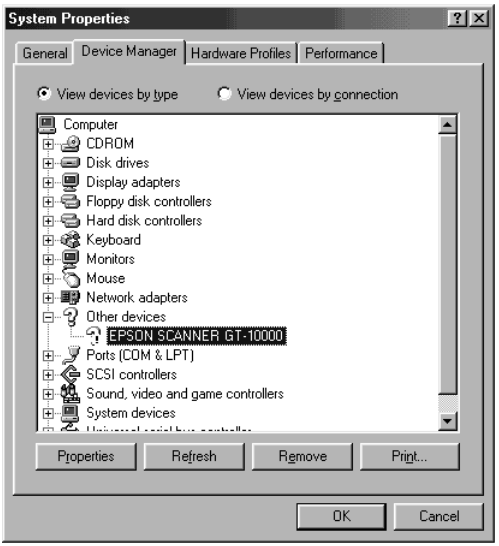
Reinstalling EPSON TWAIN Pro

After updating Windows 95 to Windows 98, you have to reinstall EPSON TWAIN Pro. Follow the steps below:

1. Use the right mouse button to click **My Computer** from the Desktop, then select **Properties**.



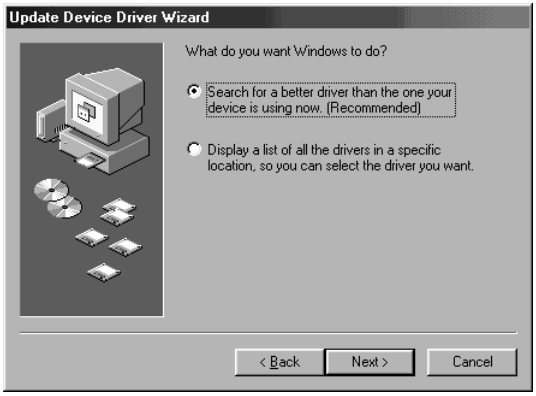
2. In the **System Properties** dialog box, select the **Device Manager** tab, double-click **Other devices or EPSON Scanners**, then double-click your EPSON scanner's name.



3. Select the **Driver** tab, then click **Update Driver**.

4. Click **Next** in the dialog box below.

5. Select **Search for a better driver than the one your device is using now**, and click **Next**.



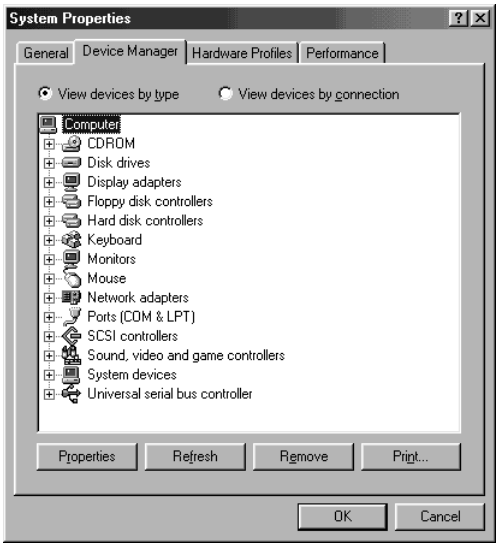
6. Insert the CD in the CD-ROM drive.

7. Select **Specify a location** then browse and select or type in the drive letter, **EPSON** folder, the folder of your preferred language, and **Win98** folder, as the location, as shown below, and click **Next**.

8. Follow the instructions on the screen. You may be asked to insert the Windows 98 CD-ROM.

9. Click **Close** in the **scanner properties** dialog box.

10. Click **OK** in the **System Properties** dialog box.



11. Restart your computer.

For Windows NT 3.5x users

1. Make sure that the scanner is turned on.
2. Turn on the computer and start Windows.
3. Insert the scanner software CD in the CD-ROM drive.
4. Choose **Run** from the **File** menu.
5. Click **Browse**. Then select the CD-ROM drive.
6. Choose the **Cdsetup.exe**, then click **OK**.
7. A dialog box asking for your preferred language appears on your monitor.

8. Select your preferred language and click **OK**.

9. You will see the following dialog box. Click **Add Software**.

10. Follow the steps on page 1-13 from step 7 onwards.

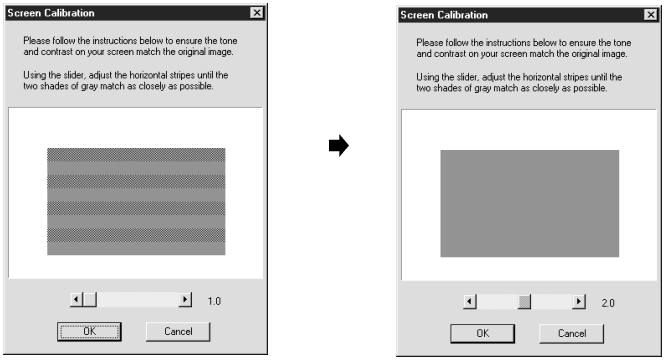
Calibrating Your Screen

You must calibrate your screen and scanner to reproduce scanned images identical to the originals. Follow the steps below:

After the scanning software has been installed, the following dialog box appears, unless you were installing on Windows 98 using the Plug and Play feature. In that case, start from step 2.

1. Click **Next**.

2. In the **Screen Calibration** dialog box, move the slider to the right or left until the shades of gray of the two sets of horizontal stripes match.



Note:
View the screen from a slight distance. The gray stripes will not perfectly blend together; the objective is to make the different tones match as closely as possible.

3. Click **OK** to register the calibration setting.

4. When the message "Setup is completed" appears, click **OK**. This message does not appear if you were installing on Windows 98 using the Plug and Play feature.

You will not need to change the screen calibration again as long as you continue to use the same monitor. If you change monitors, you should perform this calibration procedure again.

Chapter 2

Scanning Basics

2

Basic Scanning Procedure. 2-2

Starting EPSON TWAIN Pro 2-3

Scanning an Image 2-4

Saving the Scanned Image 2-5

Getting Information From Online Help 2-5

Optimizing Image Scanning 2-6
- Manually optimizing images 2-6
- Displaying the Preview window 2-7
- Adjusting the Highlight setting 2-7
- Adjusting the Shadow setting. 2-8
- Adjusting the Gamma setting. 2-9
- Applying a preset tone curve 2-9
- Adjusting the Gray Balance Intensity setting. 2-9
- Adjusting the Saturation setting. 2-10
- Using the tone curve 2-11

Optimizing OCR Scanning. 2-15
- Scanning text 2-15
- Improving character recognition 2-15
- Potential text recognition problems. 2-16

Basic Scanning Procedure

Once you have finished installing EPSON TWAIN Pro, you can begin scanning. To start scanning, you have to run TWAIN-compliant software and launch EPSON TWAIN Pro from the software. This chapter describes the basic scanning procedures.

You can start scanning with the **Start** Button feature instead of following the instructions below. To learn how to use the **Start** button, refer to Chapter 3.

Starting EPSON TWAIN Pro

Before you can start scanning you must first install the EPSON TWAIN Pro software, as described in Chapter 1, and an application that supports EPSON TWAIN Pro.

Next, perform the following steps.

Note:
The location of the commands described in the following procedure may be different in the application you are using. Refer to your application's documentation for details about how to select a TWAIN data source.

1. Turn on the scanner and place a document on the document table. Refer to the scanner's *User's Guide* for instructions on how to turn it on and to place a document correctly.

   Note:
   The software may not work properly if you start up your computer and EPSON TWAIN Pro before turning on the scanner.

2. Start up the application you want to scan from. The application must be one that supports EPSON TWAIN Pro. Example applications include: graphics programs, OCR programs, and similar.

3. In the application, choose **TWAIN Source** from the **File** menu. In the dialog box that appears, select **EPSON TWAIN Pro (32-bit)** as the data source, and click **Select**.

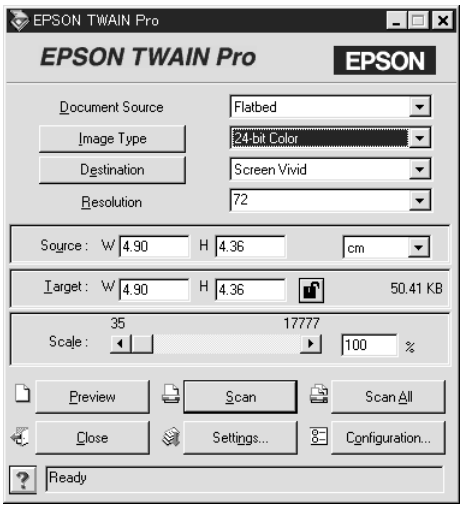
   Note:
   In general, you will only need to perform steps 1-3 the first time you use the scanner with EPSON TWAIN Pro.

4. In the application, choose **TWAIN Acquire** from the **File** menu to open EPSON TWAIN Pro.

The **EPSON TWAIN Pro** dialog box appears.

Scanning an Image

This section describes the basic steps you need to perform to actually scan an image. See Chapter 4, "Understanding EPSON TWAIN Pro Features" for more information about how you can use more advanced features that give you greater control over your scanning operations.



1. Select **Document Source**.

   The default for this setting is **Flatbed**. See "Document Source" on page 4-4 for more information about the options.

2. Select the **Image Type**.

   The default for this setting is **24-bit Color**. See "Image Type" on page 4-5 for more information.

3. Select the **Destination**.

   The default for this setting is **Screen Vivid**. See "Destination" on page 4-10 for more details of this setting.

4. Preview the image.

5. Draw a marquee to specify the area to be scanned.

6. Make fine adjustments to the zoom preview range if necessary.

7. Click **Scan** to scan the image and display it on your computer screen.

Saving the Scanned Image

Save the scanned image using **Save** or **Save As** in the application you are using. Refer to the documentation that comes with your application for information about saving files.

Getting Information From Online Help

Click the **?** button in the **EPSON TWAIN Pro** dialog box.

Optimizing Image Scanning

EPSON TWAIN Pro can automatically adjust and optimize the exposures and colors of the scanned images when scanning. However, you can also make adjustments manually with the powerful image quality adjustment tools in EPSON TWAIN Pro. This section provides general information on optimizing images with these tools.

Manually optimizing images

To manually optimize images, adjust the following EPSON TWAIN Pro settings in the order specified below:

Adjust the brightness and contrast

1. Adjust the Highlight and Shadow settings.
2. Adjust the Gamma setting.
3. Adjust the tone curve with a predefined tone correction setting.

Make color adjustments

4. Adjust the Gray Balance Intensity setting.
5. Adjust the Saturation setting.
6. Manually adjust the tone curve for individual colors.

The following sections explain how to make these adjustments in EPSON TWAIN Pro.

Displaying the Preview window

The **Preview** window shows you how your adjustments affect the image as soon as you make them. The **Preview** window is also the starting point from which you access the **Image Controls** and **Color Adjustment** dialog boxes that contain the tools for optimizing your image.

Note:
See "Preview Window" on page 4-15 for **Preview** *window operations, and "Configuration" on page 4-32 for information about how to control previewing image quality.*

1. After selecting the **Document Source, Image Type**, and **Destination** as described under "Scanning an Image" on page 2-4, click **Preview** to open the **Preview** window. A preview image of the document appears on your screen.

2. Click one of the buttons below to display the dialog box that contains the image optimization tools you need.

Adjusting the Highlight setting

Highlights are the brightest areas of an image.

1. In the **Image Controls** dialog box, click the button under **Highlight**.

   This causes the pointer to change to an eyedropper, whose movement is restricted to within the Preview window.

2. Move the eyedropper pointer to the location you want to select as the highlight point, and then click.

The brightness of the pixel at the point you click is set as the highlight level, and the other parts of the image are adjusted accordingly.

3. To change the highlight level (brightness) of the point you selected, move the **Highlight** slider left or right, or type a value in the text box.

   You can set a value in the range of 61 to 490.

   Note:
   See "Image controls button" on page 4-23 for full details on adjusting the highlight level.

Adjusting the Shadow setting

Shadows, the darkest areas of an image, are the opposite of highlights.

1. On the **Image Controls** dialog box, click the button under **Shadow**.

   This causes the Pointer to change to an eyedropper located within the image in the **Preview** window.

2. Move the eyedropper Pointer to the location you want to select as the shadow point, and then click.

   The brightness of the pixel at the point you click is set as the shadow level, and the other parts of the image are adjusted accordingly.

3. To change the shadow level (darkness) of the point you selected, move the **Shadow** slider left or right, or type a value in the text box.

   You can set a value in the range of 0 to 60 for shadow.

Note:
See "Image controls button" on page 4-23 for full details on adjusting the shadow level.

Adjusting the Gamma setting

Gamma is the difference in contrast between the light tones and dark tones of an image. Any change you make in the Gamma level only affects the midtones of the image.

To change the Gamma level of the image, move the **Gamma** slider left or right, or type a value in the text box.

You can set a value in the range of 50 to 500 for Gamma.

Note:
See "Image controls button" on page 4-23 for full details on adjusting the gamma level.

Applying a preset tone curve

You can adjust the contrast within an image more finely by applying one of the preset tone curves. This allows more control over the image addition to using the Auto Exposure settings in the **Image Controls** dialog box. The tone correction list in the **Tone Correction** dialog box provides the six most common tone correction curves.

Note:
See "Using the tone curve" on pages 2-11 and 4-26 for details on tone correction.

Adjusting the Gray Balance Intensity setting

Gray balance makes it possible to remove a color cast (tinting) from a specific color.

1. In the **Color Adjustment** dialog box, click the button under **Gray Balance Intensity**.

   This causes the pointer to change to an eyedropper located within the image in the **Preview** window.

2. Move the eyedropper pointer to the location that contains the color whose gray balance intensity you want to adjust, and then click.

   The color you click appears in the two boxes below the **Gray Balance Intensity** slider.

3. To change the gray balance intensity level of the color you selected, move the slider left or right, or type a value in the text box.

   You can set a value in the range of 0 to 100. Changing the value causes the color in the right hand box to change accordingly. Your changes are also reflected in the image in the **Preview** window.

   Note:
   See "Color adjustment button" on page 4-28 for full details on adjusting the gray balance intensity level.

Adjusting the Saturation setting

Saturation is the density of a color. Higher density makes the color appear richer, while lower density makes it appear paler.

To change the saturation level of the image, move the **Saturation** slider left or right, or input a value in the text box.

You can set a value in the range of -100 (lowest color density) to 100 (highest color density) for saturation.

Note:
See "Color adjustment button" on page 4-28 for full details on adjusting the saturation level.

Using the tone curve

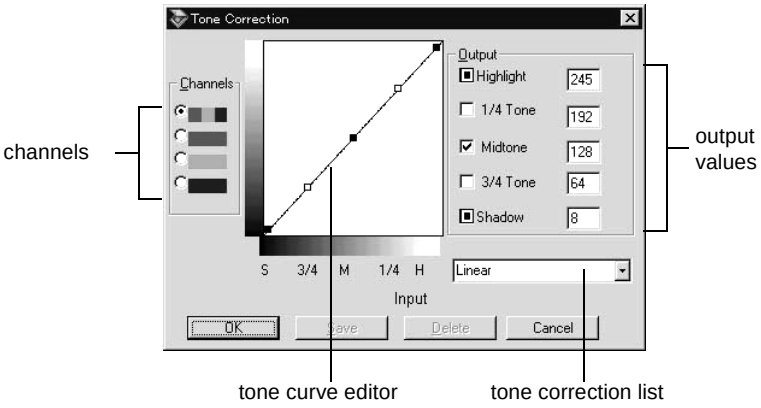
The tone curve provides you with a versatile means for adjusting the intensity of the colors of the image being scanned. You can adjust the shadow, midtone, and highlight values, which helps to ensure well-balanced coloring of the image.

Note:

- ❑ *Use of the tone curve is recommended for fine adjustments after you have previewed the image and adjusted the highlights and the shadows using Auto Exposure and the* **Image Controls** *dialog box. Use of the tone curve to make initial settings is not recommended.*

- ❑ *The* *button becomes unavailable whenever* **Black & White** *is selected as the Pixel Depth and* **None** *is selected as the Halftone.*

The tone curve is located in the **Tone Correction** dialog box, which appears when you click the button in the **Preview** window. How to use each of the controls in the **Tone Correction** dialog box is described below.



Channels

Click an option button under channels to select the color whose tone curve you want to adjust. When the master channel at the top is selected, your adjustments affect all three colors. Selecting one of the other channels below allows you to adjust red, green, or blue only.

Tone curve editor

Moving the mouse pointer into the tone curve editor causes it to change to a finger. Use this pointer to drag any of the five points in the curve and change its shape. The x-axis of the curve is the brightness of the original (input values) while the y-axis brightness of the scanned image (output values).

To change the tone curve back to its default, select **Linear** in the **tone correction** list.

Output values

These are the current values for output data in accordance with the current locations of the points inside the tone curve editor. These values change when you drag points in the tone curve editor, or you can type in values here to change the shape of the tone curve. Each value can be adjusted within the range of 0 to 255.

Note:

- ❏ *Each output value name has a check box to the left. Highlight and Shadow are always selected, but you can select and clear 1/4 Tone, Midtone, and 3/4 Tone by clicking their check boxes.*

- ❏ *When a value's check box is clear, its point on the tone curve editor automatically shifts to smooth out the tone curve when one of the other points is moved.*

- ❏ *When a value's check box is selected, it means that its point is fixed and it will not shift when other points are moved.*

Tone correction list

Use this list box to select a preset tone curve. There are six preset tone curves shown below, and you can add your own curves to the list using the procedure in the next section, "Saving your own tone curve".

Curve Name	Highlight	1/4 Tone	Midtone	3/4 Tone	Shadow	Description
Linear	245	192	128	64	8	Default curve
Lighten	245	193	133	74	4	Lightens dark image
Darken	245	152	82	38	11	Darkens bright image
Flat Contrast	245	182	129	72	2	Reduces contrast
High Contrast	245	204	129	51	2	Increases contrast
Open Shadow	245	193	129	80	5	Lightens dark shadows

When you select a curve from the tone correction list, the settings in the **Tone Correction** dialog box change accordingly.

Saving your own tone curve

Use the following procedure to assign a name to a tone curve you customized and save it for later use:

1. Make the tone curve settings you want. This causes the name shown in the tone correction list to change to **User Defined**.

2. After customizing the tone curve, type a name for the new curve (up to 32 characters) in the list box.

3. Click **Save** to save your new tone curve settings under the name you specified.

Deleting a customized tone curve

Use the following procedure to delete a tone curve you customized. You cannot delete any of the six preset tone patterns.

1. Use the **tone correction** list to select the customized tone curve you want to delete.

2. Click **Delete**.

3. In the **confirmation** dialog box that appears, click **Yes** to delete the curve.

Closing the Tone Correction dialog box

You can close the **Tone Correction** dialog box by clicking either **OK** or **Cancel**.

- ❏ Clicking **OK** applies the current **Tone Correction** dialog box settings and closes the dialog box.

- ❏ Clicking **Cancel** closes the dialog box without applying the current dialog box settings. Clicking the **close** button in the upper right corner of the dialog box has the same affect as clicking **Cancel**.

Optimizing OCR Scanning

This section gives you suggestions and recommended settings in order to improve OCR (optical character recognition) scanning results.

Scanning text

Follow the steps under "Scanning an Image" on page 2-4 to scan the text. Make sure you select **OCR** for both **Image Type** and **Destination** in the **EPSON TWAIN Pro** dialog box.

If the recognition rate is not compatible with the default settings, follow these steps:

Improving character recognition

1. In the **EPSON TWAIN Pro** dialog box, make sure **OCR** is selected in both the **Image Type** and **Destination** list boxes. Then click the **Image Type** button. This causes the **Image Type** dialog box to appear.

2. In the **Image Type** dialog box, select **None** for **B/W Option**, and then click **OK**.

3. In the **EPSON TWAIN Pro** dialog box, click **Preview**. Then click the button to display the **Image Controls** dialog box.

4. Use the **Threshold** slider to change the threshold value, monitoring the results of your changes on the **Preview** window. Increasing the threshold value makes characters thicker and easier to recognize.

5. If you still have problems, try using the enhancement tools in your OCR software to make adjustments and improve recognition.

Potential text recognition problems

The quality of the text in your original document greatly effects OCR results.

The following types of originals can make recognition difficult and should be avoided if possible:

- ❏ Copies of copies
- ❏ Faxes
- ❏ Text with tightly-spaced characters or line pitch
- ❏ Text that is in tables or underlined
- ❏ Cursive or italic fonts, and font sizes less than 8 points

Remember that OCR software cannot recognize handwritten characters.

Chapter 3

Using the Start Button

Scanning by Pressing the Start Button 3-2

Presto! PageManager for EPSON 3-3
- Target applications in the Scan Buttons bar 3-4
- Assigning an application to the Start button 3-4
- Adding applications to the Scan Buttons bar 3-7
- Registering new applications 3-8

Setting up EPSON Scanner Monitor 3-10

Setting Up the Start Button Feature for Windows 98 3-14

Scanning by Pressing the Start Button

The Start Button feature allows you to scan and send data to a target application with a single push of your scanner's Start button.

You can open EPSON TWAIN Pro, start scanning, and have the scanned image sent to a certain application, simply by pressing the **Start** button on your scanner. To use this feature, you need to install Presto! PageManager for EPSON (hereafter, "PageManager"), or other compatible software.

For installing PageManager, refer to Chapter 1.

When the **Start** button of the scanner is pressed:

- ❏ Windows 98, (or EPSON Scanner Monitor software on an operating system other than Windows 98), detects when the **Start** button is pressed and sends information to the application, such as PageManager.

- ❏ The application will automatically open EPSON TWAIN Pro, scan the image and display it.

Note:

- ❏ *You need to configure the* **Start** *button to launch the desired application before using this feature.*

- ❏ *The scanned image will be handled by the software to its maximum capability. For example, using PageManager, you can send the scanned image to a printer, or convert your scanned OCR image to text format and paste it in a word processing application--all by simply pressing the* **Start** *button.*

- ❏ *If the scanner is connected to a PC which is running EPSON Scan Server, the start button feature mentioned above is disabled. For information on using the* **start** *button in a networked environment, refer to the EPSON Scan Server & EPSON TWAIN Pro Network User's Guide.*

Note for Windows 98 users:
The **Start** *Button feature is automatically supported by the Windows 98 operating system, therefore you do not need to install EPSON Scanner Monitor software onto Windows 98.*

The following sections will help you set up PageManager and the EPSON Scanner Monitor software, or help you configure the Windows 98 system, in order to use the Start button feature.

Presto! PageManager for EPSON

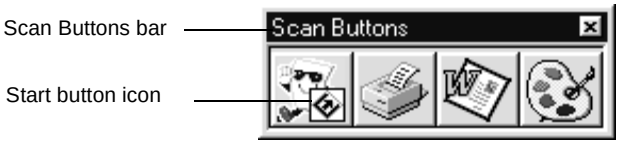
PageManager allows you to scan and send data directly to an associated application with a single push of your scanner's **Start** button. You can also scan to any target application by simply clicking on the application icon in PageManager's Scan Buttons bar. This section will help you set up PageManager so you can begin to scan using the **Start** button. For more detailed information on PageManager settings, refer to your PageManager documentation.

Note:
For information on installing PageManager, see "Installing the Scanner Software" on page 1-3.

Target applications in the Scan Buttons bar

When PageManager is started, the Scan Buttons bar will appear on your screen. The icons in this bar represent target applications or peripheral devices that can be accessed by your scanner. You can scan and send data directly to these applications or devices by clicking on their icons. Full details of setting up the applications in the Scan Buttons bar are described below.

PageManager also allows you to assign any one of the applications or devices on the Scan Buttons bar to the **Start** button of the scanner. You can scan an image and send it straight to your selected application with one simple push of the Start button.



Note:
The application button which shows the **Start** *button icon indicates the application that is assigned to the* **Start** *button of the scanner. Only one application can be selected for the* **Start** *button.*

Assigning an application to the Start button

To assign an application on the Scan Buttons bar to the Start button of the scanner, follow the steps below.

1. Select **Scan Buttons Setting** from the **File** menu of PageManager.

2. Click the **Start Button Settings** tab in the **Scan Buttons Setting** dialog box. The following dialog box appears:

The icons in Select target application correspond to the icons in the Scan Buttons bar and represent the possible target devices and applications.

3. Select an application or device from the **Select target application** box and click **OK**.

The selected application is now assigned to the scanner's Start button.

Execute Scan Button automatically check box

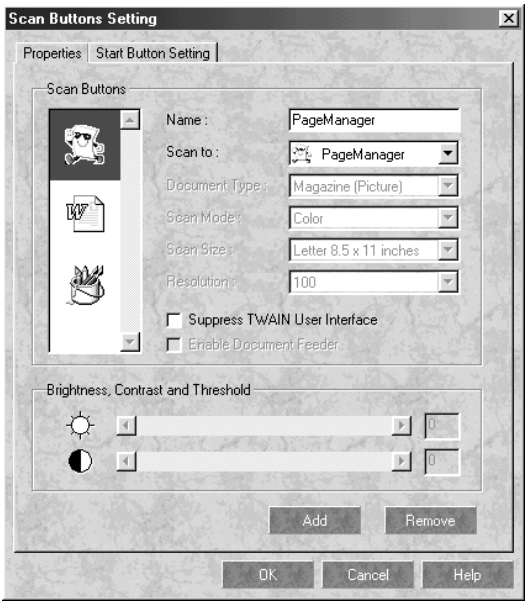
When this check box is selected, the associated application will automatically open and the scanned image is sent to the application when you press the scanner's **Start** button. When this check box is clear, no application has been associated to the **Start** button and only the Scan Buttons bar will appear when you press the **Start** button on the scanner. Then you can select an application from the Scan Buttons bar.

Adding applications to the Scan Buttons bar

You can add applications appearing in the Application bar at the bottom of the PageManager window to the Scan Buttons bar. Follow the steps below:

1. Select **Scan Buttons Setting** from the **File** menu.

   You will see the following dialog box.



2. Specify the name of the setting in the **Name** box.

3. Click the arrow next to the **Scan to** box and select the application you want to add to the Scan Buttons bar.

4. Select the appropriate scanning settings (Document Type, Scan Mode, etc.) for the application from this dialog box and click **Add**. Then click **OK**.

   The button of the selected application appears on the Scan Buttons bar.

To remove an application assigned to the Scan Buttons bar, select the application from the **Scan to** box and click **Remove**. Then click **OK**.

Suppress TWAIN User Interface check box

When this check box is selected, the **EPSON TWAIN Pro** dialog box does not appear when you scan, and the scanner works according to the settings in PageManager. When this box is not checked, the **EPSON TWAIN Pro** dialog box appears when you scan, and the scanner works according to the settings in EPSON TWAIN Pro.

Enable Document Feeder check box

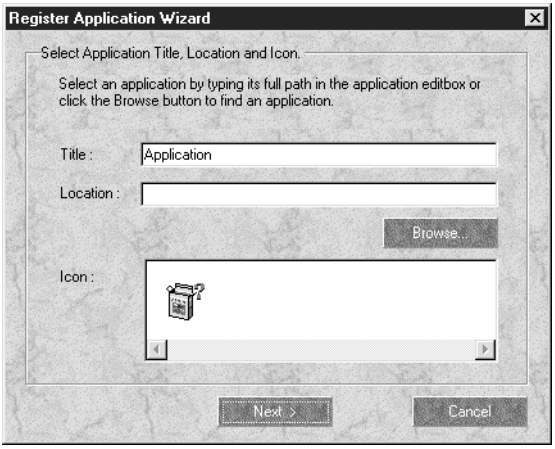
When this box is checked, the scanner feeds your documents through the Automatic Document Feeder. When this check box is clear, the scanner scans your documents from the document table.

Registering new applications

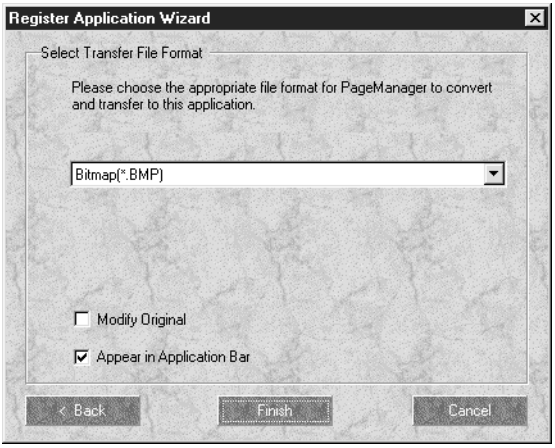
To add an application to Scan Buttons bar, you need to register the application. The registered applications will appear in the **Scan to:** box in the **Scan Buttons Setting** dialog box.

1. Select **Application Setting** from **File** menu and then select **Register New Application**.

The **Register Application Wizard** dialog box appears.



2. Specify the application's name, location and icon and click **Next>**.



3. Specify the format of the image and click **Finish**.

Setting up EPSON Scanner Monitor

EPSON Scanner Monitor is software that recognises when the **Start** button is pressed and sends information to the assigned application, such as PageManager. Not all applications will support the **Start** button or EPSON Scanner Monitor.

Once EPSON TWAIN Pro is installed on an operating system other than Windows 98, EPSON Scanner Monitor identifies PageManager as the application that allows you to use the Start Button feature. If you need to turn off the Scanner Monitor, or select another application supporting the Start Button feature, access Scanner Monitor as described below.

Note:

- ❏ *Application software other than PageManager for EPSON which supports both EPSON Scanner Monitor and the Start button feature may be limited.*

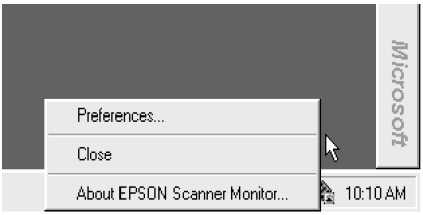
- ❏ *Windows 98 supports the Start Button feature; therefore, EPSON Scanner Monitor is not installed automatically when you install EPSON TWAIN Pro on Windows 98.*

For Windows 95 or NT 4.0 users

Click the **Scanner Monitor** icon located in the Windows task bar on your desktop to perform any of the following tasks.

❑ Turning off the Scanner Monitor

If you want to turn off the Scanner Monitor, select **Close**. However, this will disable the scanner's Start Button feature.



Note:
After you turn off the Scanner Monitor, it will turn back on automatically the next time you start Windows.

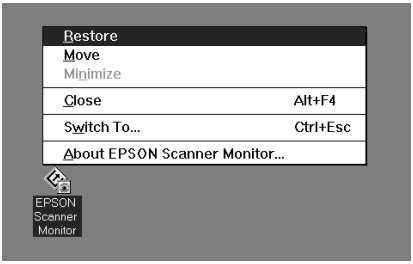
To activate the Scanner Monitor, select **Programs** from the **Start** menu and click **EPSON Scanner**; then select **EPSON Scanner Monitor**. The Scanner Monitor icon appears in your taskbar.

❑ Assigning an application to the Scanner Monitor

Select **Preferences**. The **EPSON Scanner Monitor** dialog box appears. You can select an application that supports the Start Button feature and EPSON Scanner Monitor, such as PageManager for EPSON.

For Windows NT 3.51 users

Click the **Scanner Monitor** icon on the desktop to perform any of the following tasks.

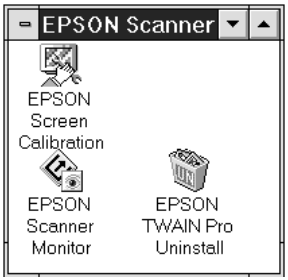


❑ Turning off the Scanner Monitor

If you want to turn off the Scanner Monitor, select **Close**. However, this will disable the scanner's Start Button feature.

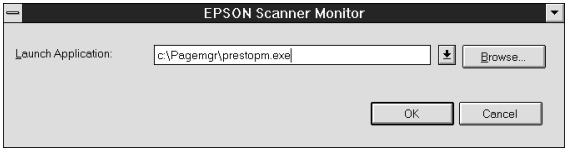
Note:
After you turn off the Scanner Monitor, it will turn on again automatically the next time you start Windows NT 3.51.

To activate the Scanner Monitor, open the **EPSON Scanner** group, and double-click the **Scanner Monitor** icon. The **Scanner Monitor** icon appears on your desktop.



❑ Assigning an application to Scanner Monitor

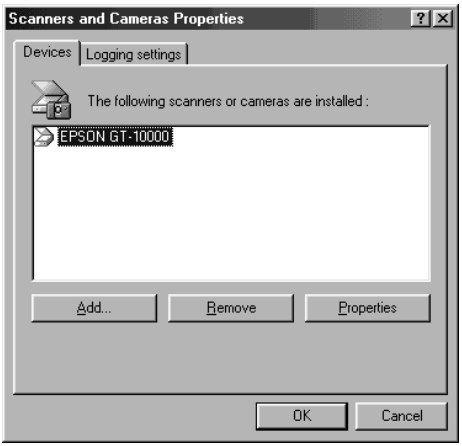
Select **Restore**. The **EPSON Scanner Monitor** dialog box appears. You can select an application that supports the Start Button feature and EPSON Scanner Monitor, such as PageManager for EPSON.



Setting Up the Start Button Feature for Windows 98

Windows 98 allows you to use the **Start** button on your scanner without installing EPSON Scanner Monitor and without having to open an application that supports the Start Button feature. When you press the scanner's **Start** button or the **Start** button icon from the Scan Buttons bar, you can send a scanned image automatically to your application, such as PageManager, as long as the software has already been installed.

Once EPSON TWAIN Pro is installed on Windows 98, the **Scanners and Cameras** icon appears on the Control Panel, and your scanner will be listed in the **Scanners and Cameras Properties** dialog box as shown below.

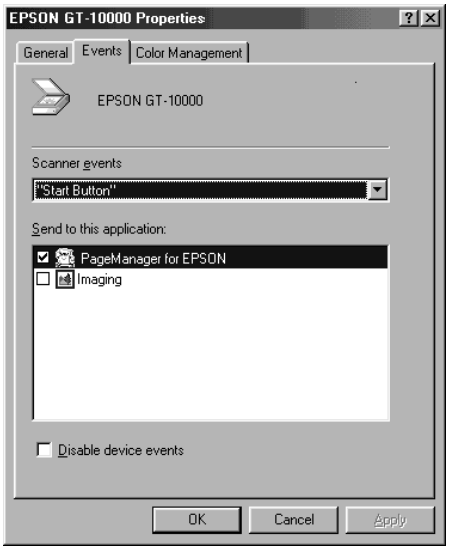


Assigning an application to the Start button

After installing applications that support "scanner events," such as PageManager, you need to select one of those applications as the target application.

If you want to use your scanner's **Start** button with PageManager as the supporting application, follow the steps below:

1. Select your scanner from the installed scanners and cameras list in the **Scanners and Cameras Properties** dialog box. Click **Properties,** and then click the **Events** tab.



2. You can see the **Start Button** is listed as a scanner event. Make sure the check box of the application you want to assign to the **Start** button is selected and all other application check boxes are clear in the **Send to this application** list.

Note:

- ❑ *If more than one application is selected, a dialog box appears prompting you to select one application to launch when the* **Start** *button is pressed.*

- ❑ *Some applications do not support linkage to scanners and digital cameras. You can only link events to applications that appear in the* **Send to this application** *list.*

3. Close the dialog box by clicking the **OK** button.

Disabling the Start Button

If you need to disable the Start Button feature, check the **Disable device events** box in the **Properties** dialog box of your scanner (found in the **Scanners and Cameras Properties** dialog box). If the box is not checked, Windows 98 will automatically detect when the **Start** button is pressed and launch the application you selected in the **Send to this application** list as usual.

Chapter 4

Understanding EPSON TWAIN Pro Features

Overview 4-3

The EPSON TWAIN Pro Dialog Box 4-4
- Document Source 4-4
- Image Type 4-5
- Destination 4-10
- Resolution 4-12
- Source 4-13
- Target 4-13
- Scale 4-14

Preview Window 4-15

Preview Buttons 4-17
- Zoom preview button 4-17
- Return to full preview button 4-17
- Return to zoom preview button 4-18

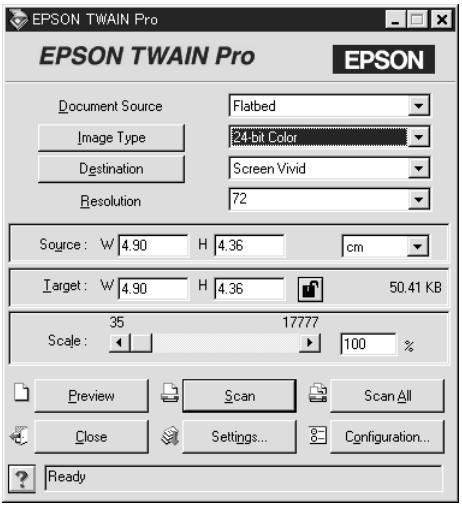
Marquees 4-18
- Making and modifying marquees 4-18
- Delete marquee button 4-20
- Duplicate marquee button 4-20
- Auto locate button 4-21
- Marquee number indicator 4-22

Image Adjustment Buttons 4-23
- Auto exposure button 4-23
- Image controls button 4-23
- Tone correction button 4-26
- Color adjustment button 4-28
- Reset button 4-30

Settings 4-30
Configuration 4-32
Scan 4-34
Scan All 4-34

Overview

When you start EPSON TWAIN Pro through a compatible application, the following window appears.

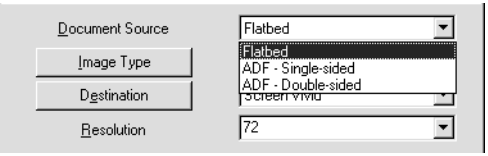


The following sections describe EPSON TWAIN Pro's features**.**

Note:
Some settings may be unavailable because they have been overridden by other settings or are not supported by your scanning application.

Document Source

If you have installed the optional Automatic Document Feeder or the Transparency Unit on the scanner, you need to select a document source from the Document Source list. Otherwise, leave the Document Source set to **Flatbed**.



Flatbed:

Select this setting when you use the scanner document table.

ADF - Single-sided:

Select this setting to scan single-sided documents on the optional Automatic Document Feeder. This setting is available only when the optional Automatic Document Feeder has been installed.

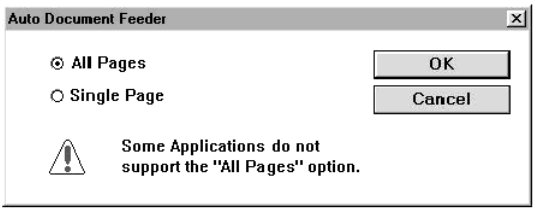
ADF - Double-sided:

Select this setting to scan double-sided documents on the optional Automatic Document Feeder. This setting is available only when the optional Automatic Document Feeder has been installed.

Note:
Uninstalled options cannot be selected.

Multi-page Support with the Automatic Document Feeder

If you select ADF - single-sided or ADF - double-sided as the Document Source and click the **Scan** button, the following dialog box appears:

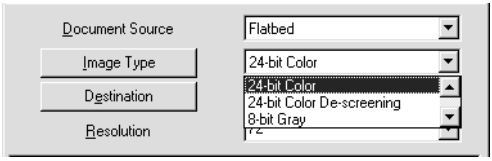


If you select **Single Page**, only one page will be fed from the Automatic Document Feeder and scanned.

If you select **All Pages** (default), all the pages will be fed from the Automatic Document Feeder and scanned. Depending on your application, the **All Pages** option may not work correctly.

Image Type

You always need to select the type of image to be scanned from the **Image Type** list or button. Click the arrows on the right to view all the available settings.



Select a predefined choice from the list. Click the **Image Type** button to create and save the custom settings as described on the next page. The following predefined settings are available:

24-bit Color :

24-bit colors, high quality (default)

24-bit Color De-screening :

24-bit colors, high quality, and de-screening

8-bit Gray :

256 grays, high quality, and de-screening

Line Art:

Black-and-white, draft quality and faster scanning

OCR:

Black-and-white, high quality, and Text Enhancement Technology

Copy & Fax:

Black-and-white, draft quality and fast, Auto Area Segmentation

Clicking **Image Type** opens the following dialog box, allowing you to customize the Image Type settings.

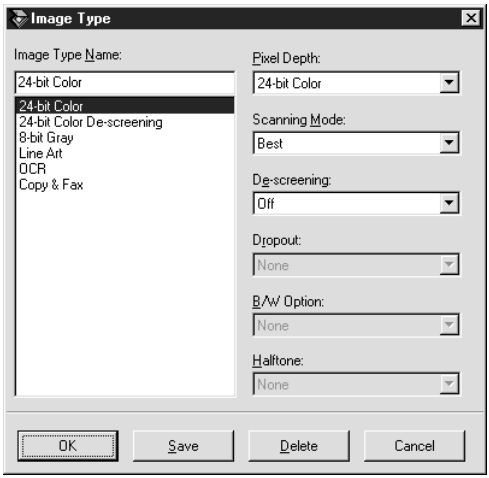


Image Type Name:

Names of the predefined settings and any custom settings you have saved appear in the Image Type Name list.

You can enter a name in this field to change or assign a name to any custom setting.

Pixel Depth:

Select scanning colors from the **Pixel Depth** menu. Your choices are 24-bit Color, 8-bit Gray, and Black & White.

Scanning Mode:

Use this setting to select between speed and quality. **Best** provides the best quality image, while **Draft** provides faster scanning with some loss of quality. Note that you can also change the scanning mode of the preview image using the procedure under "Configuration" on page 4-32.

De-screening:

Use this setting to turn de-screening on or off. De-screening removes moiré patterns that may appear when printed images are scanned. Since this is a software operation, it takes much longer to produce an image when de-screening is turned on.

Dropout:

Use this list to select any color you do not want to scan. You may choose None, Red, Green, and Blue.

Note:
If Pixel Depth has been set to any color setting, the Dropout option is unavailable. Dropout is available only for Grayscale or Black & White.

Black & White Options:

Select the options you want to use from this list. This menu is available only when Pixel Depth is set to **Black & White**. Your choices are Text Enhancement Technology, Auto Area Segmentation, and None.

Text Enhancement Technology:
This function eliminates the document background and raises recognition accuracy during OCR (Optical Character Recognition) scanning.

When this option is selected, the following buttons are not available: Auto Exposure, Image Controls, Tone Correction, Color Adjustment, and Auto Location.

Auto Area Segmentation:
This function separates text from graphics so that grayscale images will be clearer and text recognition more accurate.

When this option is setelcted, following buttons are not available; Threshold and Color Adjustment.

None:
Select **None** if neither the Text Enhancement Technology nor the Auto Area Segmentation feature is needed.

Halftone:

Select a halftone or dither setting from this list to optimize image reproduction. Halftones are patterns of dots. Your options are Mode A (Hard Tone), Mode B (Soft Tone), Mode C (Net Screen), Dither A (4 × 4 Bayer), Dither B (4 × 4 Spiral), Dither C (4 × 4 Net Screen), Dither D (8 × 4 Net Screen), and None.

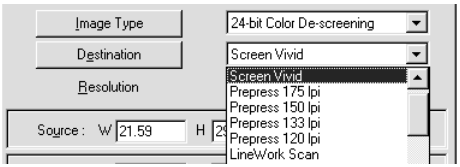
Note:
Halftone is available only when Pixel Depth is set to **Black & White**.

After customizing your settings, type a new name for the setting in the **Image Type Name** box, click the **Save** button and then the **OK** button to use your custom settings for the current scanning operation. Clicking the **Cancel** button returns the settings to their default values.

To delete an Image Type setting, select the setting name in the **Image Type Name** list and click **Delete**.

Destination

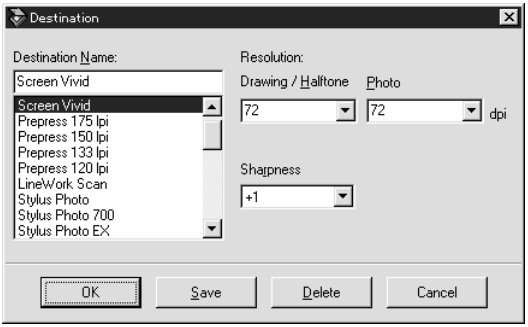
Select the destination or output device where the scanned image is to be printed or displayed with the **Destination** list or button.



Select a pre-defined or custom choice from the list. Click the **Destination** button to create and save custom settings as described later in this section. The following pre-defined settings are available:

Screen, Screen Vivid (default), Prepress 175 lpi, Prepress 150 lpi, Prepress 133 lpi, Prepress 120 lpi, LineWork Scan, InkJet Printer, Laser Printer 600, FAX, OCR, and EPSON Printers

By clicking **Destination**, the following dialog box appears:



Destination Name:

Names of the pre-defined and custom settings appear in this list.

You can enter a new name for your custom settings to be saved.

Resolution:

Select a scanning resolution from this list for line drawings and halftone images or photos.

Note:

- ❏ *When the Pixel Depth setting in the* **Image Type** *dialog box is set to* **8-bit Gray** *or* **Black & White**, *the Drawing/Halftone setting takes effect and the Photo setting is disabled. For other Pixel Depth settings, the Photo setting takes effect and the Drawing/Halftone setting is disabled.*

- ❏ *To print scanned images when the Resolution is set to* **Drawing/Halftone**, *select the same resolution setting from the list as you selected in the printer driver. To print scanned images when the Resolution is set to* **Photo**, *select the resolution setting that is approximately 1/3 of the resolution you selected in the printer driver, otherwise the* **Photo** *setting takes longer to print, without improving the output quality of the image.*

- ❏ *The Resolution setting is closely related to the Image Size and Scale settings. Be careful when changing the Resolution setting, or the resulting image may be very different from what you see on your monitor.*

- ❏ *The degree of resolution possible depends on your scanner.*

Sharpness:

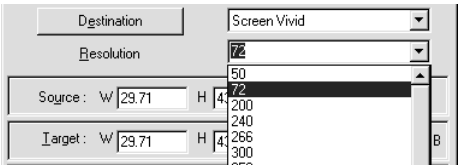
You can select from -2 (soft focus) to 2 (sharp focus) in the list.

To apply the settings you made, click **OK**. To cancel the settings, click **Cancel**.

To save the settings you made, type a new name in the **Destination Name** box, and then click **Save**.

To delete a Destination setting, select the target setting name to be deleted in the **Destination Name** list, then click **Delete**.

Resolution



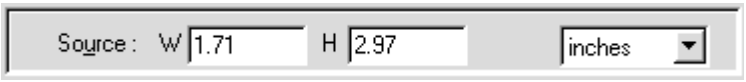
This pop-up menu provides easy access to resolution options. The default resolution options are 50, 72, 200, 240, 266, 300, 350, 360, 400, 600, 720, 800, 1200, 2400, 4800, 7200, 9600 dpi.

You can also type a value in the **Resolution** dialog box. The value has a range of 50 to 4800 dpi in increments of 1 dpi.

Source

These values indicate the width and height of all (or the selected part) of the source image in the specified unit of measurement. You can type in a new width and height to indicate the area of the image you want to select. You can also define the precise scan area using the marquee.

From the list box, you can specify one of the following units of measurement for the Source and Target values: pixels, inches, or cm.

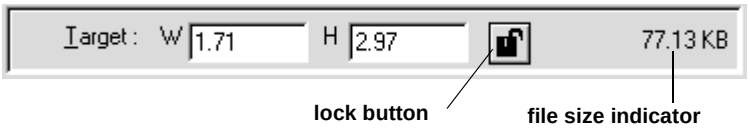


Note:

- ❏ *The Image Size values are ignored if you click the* **Scan** *button without previewing the image.*
- ❏ *The Image Size setting is closely related to the Resolution and Scale settings. Changing one may change the others, and the resulting image may not be what you expected.*

Target

Use these settings to specify the width and height of the output image in relation to the scale you selected in the Resolution pull-down menu.



Target size can be locked using the lock button.

You can use the **Source list** box to specify the unit of measurement for Target values.

The File Size indicator on the right shows the approximate size of the scanned image in KB or MB.

Scale

The Scale value indicates the proportion by which the image will be enlarged or reduced during scanning.

Note:

- ❏ *The Scale feature is disabled if you click the* **Scan** *button without previewing the image.*
- ❏ *The Scale setting is closely related to the Resolution and Image Size settings. Changing one may change the others, and the resulting image may not be what you expected.*

Scale bar:

An image can be reduced or enlarged by moving the Scale slider. You can also click the left or right arrow to change the image size in increment of 1%.

Note:
The range of the possible reduction or enlargement varies depending on the current resolution setting.

Scale indicator:

The percentage of enlargement or reduction is indicated in the Scale indicator field. You can type a new value directly in this field. When you move the Scale slider, the value in this field changes accordingly.

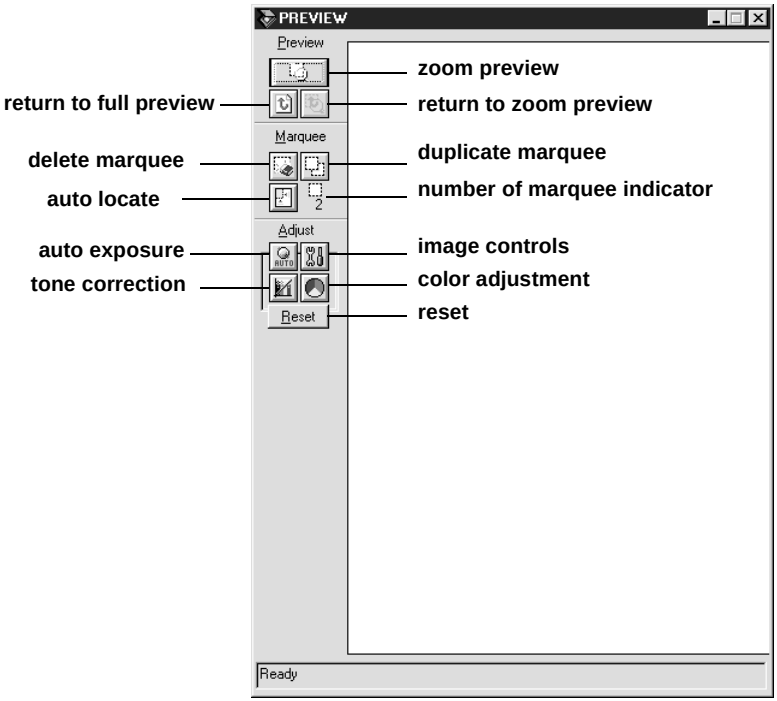
Preview Window

The Preview feature displays your image and allows you to see the effects of your settings before scanning. You can also use the Preview feature to determine the width and height of the scanned image and the file size of the image to be saved. See the section on Image Size in this chapter.

Note:
You cannot preview an image that exceeds available memory or disk space.

To preview an image, click **Preview** in the **EPSON TWAIN Pro main** dialog box.

The following window appears:



You can see the effects of changing any of the following settings:

- ❏ Pixel Depth, Halftone, and Dropout (in the **Image Type** dialog box)
- ❏ Sharpness (in the **Destination** dialog box)
- ❏ Exposure, Gamma, Highlight, Shadow, and Threshold (in the **Image Controls** dialog box)
- ❏ Tone Correction (in the **Tone Correction** dialog box)

- ❑ Gray Balance, and Saturation (in the **Color Adjustment** dialog box)

Note:
Although the image in the **Preview** *window changes as you make settings, the settings do not affect the actual scanned image until you scan or rescan the image.*

For more information on image settings, see the sections on Image Controls, Color Adjustment, and Configuration in this chapter.

Preview Buttons

Zoom preview button

Clicking the **zoom preview** button zooms in on the selection in the active marquee. See page 4-18 for information about marquees.

Return to full preview button

Clicking the **return to full preview** button restores the image to a full preview. This button is available only if you have used the zoom preview as described in the previous section.

Return to zoom preview button

Clicking the **return to zoom preview** button restores the image to the previous zoom. This button is available only when a marquee area has been previously selected and zoomed, and the marquee's size and location have not been changed from the last zoom. This restores the zoom preview from memory, which is quicker than rescanning the same zoom by clicking the **zoom preview** button again.

Marquees

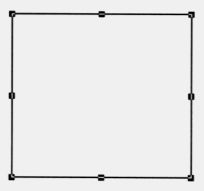
A marquee is a frame around an entire image, or a selected portion of an image. Marquees are often used in scanning and image-editing software to allow only the target area of an image to be sent to the destination software or device.

Making and modifying marquees

Move the pointer over the image in the **Preview** window, and the pointer becomes a cross-hair. Drag (move the mouse while holding down the left mouse button) the cross-hair over any area of the image, and a frame appears. The point where you first clicked is anchored, but the rest of the frame is sizable and movable. After you finish creating a marquee, you can resize and move it as described below.

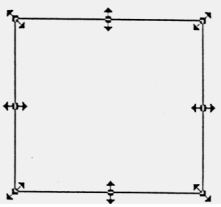
Multiple Marquees

You can make multiple marquees in one image in order to scan the most important parts while ignoring the rest. Marquees can be different sizes, and they can overlap. Each marquee can retain its parameters independently. Extra marquees can be made anywhere except on the frame of another marquee. You can begin a marquee anywhere the pointer appears as a cross-hair. To distinguish the active marquee from other marquees, look at the marquee frames. The active marquee has eight handles (small boxes) on the frame as shown below.



Resizing Marquees

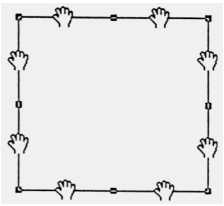
When you move the pointer over any of the eight handles, the pointer will change to a double-headed arrow as shown below. You can then resize the marquee selection by clicking and dragging a handle up, down, sideways, or diagonally. The double-headed arrows only appear on the active marquee.



To resize a marquee proportionately, click and drag an arrow while pressing the **Shift** key.

Moving Marquees

To move a marquee while retaining its size, move the pointer along the frame of the marquee, and when the pointer changes into a hand, drag the marquee to move it.



If you drag a hand while pressing the **Shift** key, the marquee will be limited to either vertical or horizontal movement.

Delete marquee button

Clicking the **delete marquee** button removes the active marquee.

Note:
You can also delete the active marquee by pressing the **Delete** *key on your keyboard.*

Duplicate marquee button

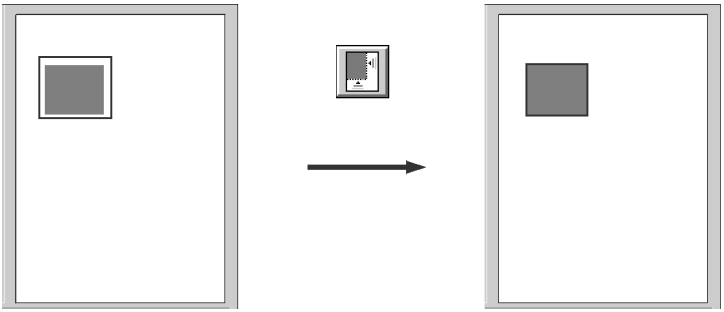
Clicking the **duplicate marquee** button creates another marquee the same size as the active marquee. Use this button to make multiple marquees.

Clicking the **duplicate marquee** button while holding down the keys noted in the table below causes the active marquee to be duplicated in a specific direction.

Horizontal	Vertical
Ctrl key	Alt key

Auto locate button

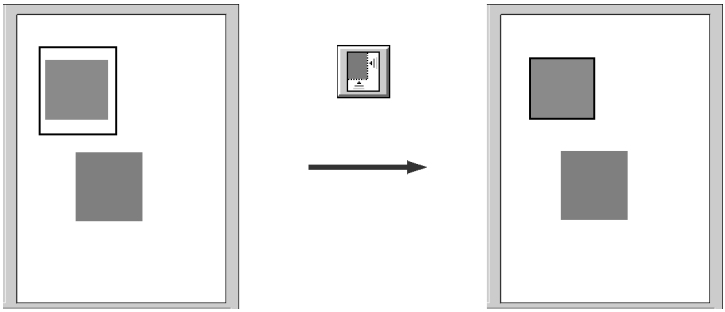
Clicking the **auto locate** button automatically locates the image in the **preview** window, and cuts off any white borders surrounding it.



Note:

- ❏ *The auto locate feature is automatically enabled if you click* **Scan** *without previewing the image.*
- ❏ *If the underside of the Automatic Document Feeder or the document cover becomes dirty, the auto locate feature may not work well.*

If a document contains more than one image, select the target image by dragging the mouse pointer over the image. You do not have to be precise when selecting the size and position of the image; a rough estimate will do. Then click the **auto locate** button. The exact location and size of the image will be automatically determined, and the image is displayed in the **preview** window.



Marquee number indicator

This shows the number of marquees in the **Preview** window. To create more marquees, see "Duplicate marquee button" on page 4-20.

Image Adjustment Buttons

Auto exposure button

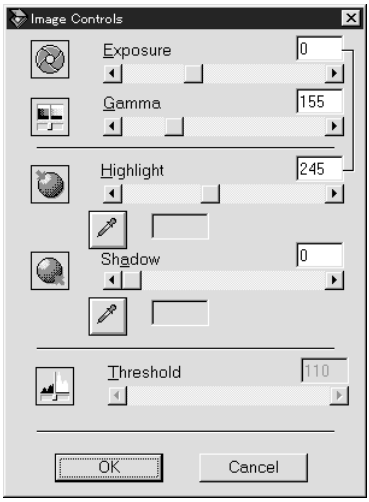
Clicking the **auto exposure** button automatically adjusts the exposure settings for an image. The Exposure, Highlight, Gamma, and Shadow settings in the **Image Controls** dialog box and the Gray Balance Intensity in the **Color Adjustment** dialog box are automatically set.

When Black & White pixel depth is selected, this button is unavailable.

Image controls button

Clicking the **image controls** button causes the following dialog box to appear.

Move the sliders or enter values into field boxes to change the values.



Note:

- ❏ *Using the auto exposure feature overrides any settings you have made in the* **Image Controls** *dialog box.*
- ❏ *If the Pixel Depth setting is set to* **Black & White** *and the Halftone setting is set to* **None** *in the* **Image Type** *dialog box, the Exposure, Gamma, Highlight, and Shadow settings become unavailable.*
- ❏ *The effects of settings you make will appear in the* **Preview** *window.*

Exposure:

You can select from -10 (darkest) to 20 (brightest) by moving the slider or clicking the left or right arrows. Exposure works as a combination of the Highlight and Shadow settings to determine the overall brightness or darkness of an image.

Gamma:

You can select from 50 (lowest) to 500 (highest) by moving the slider or clicking the left or right arrows. Gamma is the contrast between the light tones and the dark tones in an image.

Highlight:

You can select from 61 (brightest) to 490 (darkest) by moving the slider or clicking the left or right arrows. Highlight determines the amount of detail that is visible in the bright areas of your image.

If you click the button below the slide bar, the mouse pointer changes to an eyedropper. You can now select an area of specific brightness to be used as the highlight level for the entire image.

Shadow:

You can select from 0 (lightest) to 60 (darkest) by moving the slider or clicking the left or right arrow. Shadow determines the amount of detail that is visible in the dark areas of your image.

If you click the button below the slide bar, the mouse pointer changes to an eyedropper, which allows you to select a shaded area to be used as the shadow level for the entire image.

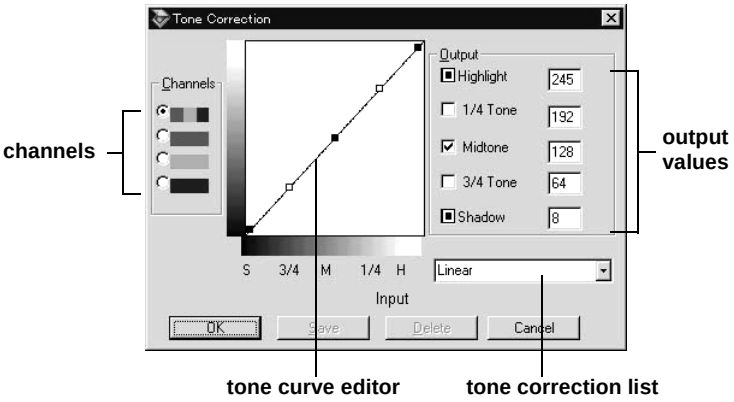
Threshold:

Note:
The Threshold setting is only available when the Pixel Depth setting is set to **Black & White** *and the Halftone setting is set to* **None**.

You can select from 0 to 255 by moving the slider or clicking the left or right arrow. Threshold determines which shade of gray is used as the cutoff point to differentiate which tones will be scanned as black and which will be white.

Tone correction button

When you click the **tone correction** button, the following dialog box appears:



Note:
You can see the effects of the Tone Correction settings in the **Preview** *window.*

The tone value represents the contrast in the tonal relationship between an original image and its reproduction on the display monitor or printer.

Tone curve editor:

The editor allows you to customize tone correction. Drag points on the tone curve to adjust the tone value. You can edit up to five tonal elements.

Output options:

If you select the check box for a specific point, such as 1/4 Tone or Midtone, that point will remain in place; it will not be affected by the movement of other points on the curve. If the box is not checked, the point will be affected by the movement of other points.

Channels options:

You can select the combined red, green, and blue (RGB) channel to modify all colors, or adjust these colors individually.

Note:
If Pixel Depth is set to **Black & White** *or* **8-bit Gray** *in the* **Image Type** *dialog box, you can only select the combined RGB channel option.*

Tone correction list:

Select a tone correction setting from this list. Available preset Tone Curves are **Linear**, **Lighten**, **Darken**, **Flat Contrast**, **High Contrast** and **Open Shadow**.

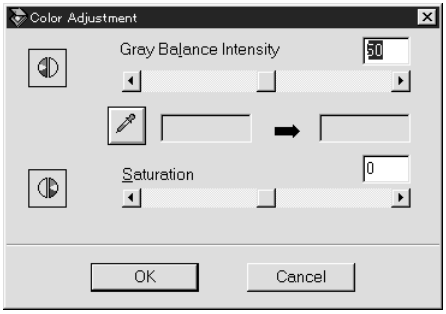
Save button:

After you correct tone, type a name for your custom settings (up to 32 characters) in the **tone correction** list and click **Save**.

To delete a setting, select the name you want to delete in the tone correction list and click **Delete**. To cancel the operation, click **Cancel**.

Color adjustment button

When you click the **color adjustment** button, the following dialog box appears so you can adjust color attributes.



Note:

- ❏ *If Pixel Depth is set to 8-bit Gray or Black & White, the color adjustment button become unavailable.*
- ❏ *You can see the effects of the Color Adjustment settings in the* **Preview** *window.*

Gray Balance Intensity:

This setting adjusts the amount of gray in a color combination that appears neutral gray by removing color casts from the selected color.

Click the **eyedropper** button beneath the slide bar, and the mouse pointer changes to an eyedropper. Then click the color you want to modify. The eyedropper "picks up" the color and displays it in the box beside the eyedropper button. You can then correct the cast level for that color from 100 to 0 (neutral gray) by moving the slider or enter a value into the box. The adjusted color appears in the box on the right, and the effect shows up immediately in the preview image. Click **Cancel** to restore the original image.

Saturation:

Saturation is the property that defines a hue, i.e. a color as pale or rich.

Select the saturation level for colors from -100 (less color) to 100 (more color) by moving the slider or clicking the left or right arrow.

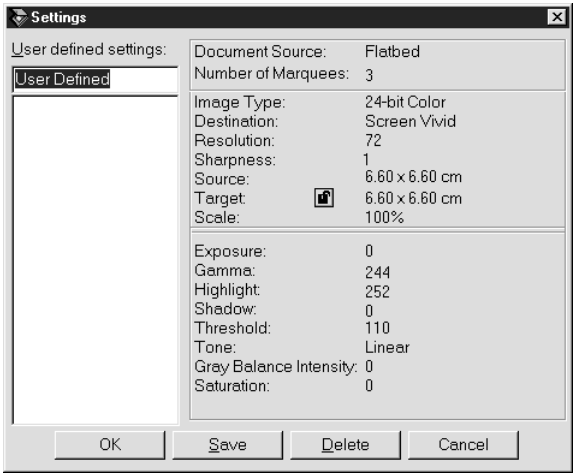
The scanner scans the strength of colors using this saturation setting.

Reset button

Click this button to return all Image Controls, Tone Correction, Color Adjustment, and Auto Exposure settings to their default values.

Settings

Click the **Settings** button to open the **Settings** dialog box, where you can save all of the currently selected settings as a group of custom settings for the active marquee with any name you specify. Note that only user-defined settings related to the Document Source currently selected will appear in the User defined settings field.



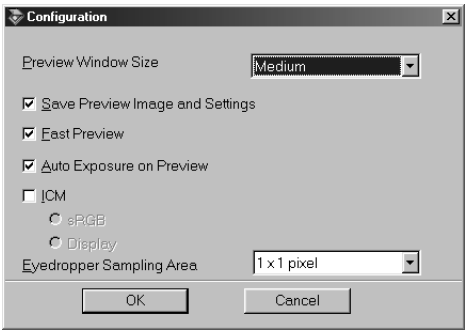
To save the current settings, type a new name into the **User defined settings** field, and then click **Save**.

To apply saved settings, select the name you created from the **User defined settings** list, and then click **OK**. The preview image will reflect the settings you apply.

To delete settings, select the name from the list, and then click **Delete**.

Configuration

Click the **Configuration** button to view this dialog box. You can make settings that affect the **Preview** window.



Preview Window Size:

Select the size of the **Preview** window. Choose Large, Medium, or Small.

Save Preview Image and Settings:

Select this check box to automatically save the preview image and all the image settings when you exit EPSON TWAIN Pro (quit scanning). The next time you restart EPSON TWAIN Pro, the last preview image and settings will reappear.

Fast Preview:

Enables high-speed loading of the preview image in Draft & fast mode. When this box is not checked, the preview image is scanned in Best & De-screening mode, which provides an optimal quality preview. Do not use this feature (clear the check box) when quality is more important than speed.

Auto Exposure on Preview:

Automatically optimizes the exposure settings and displays the preview image. This is the same as clicking the auto exposure button.

ICM:

Depending on your Windows version, this setting may not be available or may have options. Select **ICM** to reproduce the colors in your image using the Windows ICM color management system. If your output devices (printer and monitor) do not support ICM, make sure this box is not checked.

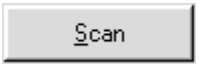
For Windows 98 users:

When the sRGB option is selected, the sRGB profile is used to reproduce colors. When the Display option is selected, the color profile selected for your monitor in the **Display Properties** dialog box is used to reproduce colors.

Eyedropper Sampling Area:

Allows you to select one of the three following size settings for the Eyedropper Sampling Area: 1 × 1 pixel, 3 × 3 pixel, or 5 × 5 pixel. The Eyedropper feature can sample the average Highlight, Shadow, and Gray Balance Intensity values of the target area.

Scan



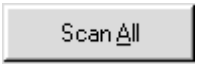
Clicking the **Scan** button scans the full image (or the area in the active marquee in the **Preview** window). The scanned image is sent to the application software you used to activate EPSON TWAIN Pro and you can now work with the image using that application.

While scanning, a progress bar appears. If necessary, click the **Cancel** button to stop scanning.

Note:

- ❏ *You cannot scan an image whose size exceeds available memory or disk space. If you attempt to scan an image that is too large, an error message appears on the screen.*
- ❏ *Before you begin scanning, you should calibrate your display monitor. For more information, see Chapter 5.*
- ❏ *After an image is scanned, be sure to save it. For information on saving files, see Chapter 2.*

Scan All



Clicking the **Scan All** button scans all images defined by the marquees as separate images, one at a time. This button is available only when there are multiple marquees in the **Preview** window.

Chapter 5

Calibrating Your System

Calibrating Your Screen 5-3

Using ICM (For Windows 95 and 98 Users) 5-6
For Windows 95 users 5-6
For Windows 98 users 5-6

The EPSON Screen Calibration utility is automatically installed when you install EPSON TWAIN Pro.

EPSON Screen Calibration calibrates your monitor to ensure the tone and contrast on your monitor screen closely match the original image. Be sure to calibrate your screen before starting to use your scanner.

Calibrating Your Screen

You only need to calibrate your screen when you first install the scanner software, or any time you switch to a different monitor.

For Windows 98 users:

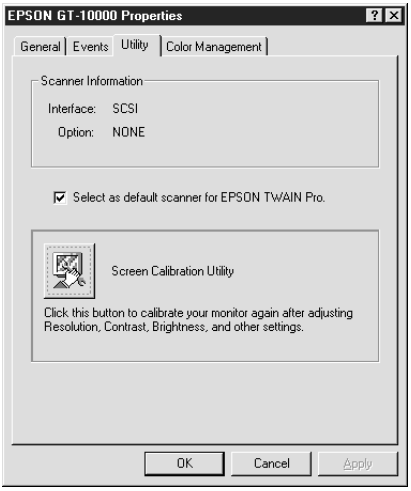
1. Click the **Start** button from the Windows task bar and select **Settings** -> **Control Panel** from the menu.

2. Double-click the **Scanner and Cameras** icon in the Control Panel window.

3. Double-click on your scanner name in the list box of the **Scanner and Cameras Properties** dialog box.

   The **Properties** dialog box appears.

4. Click the **Utility** tab of the dialog box.



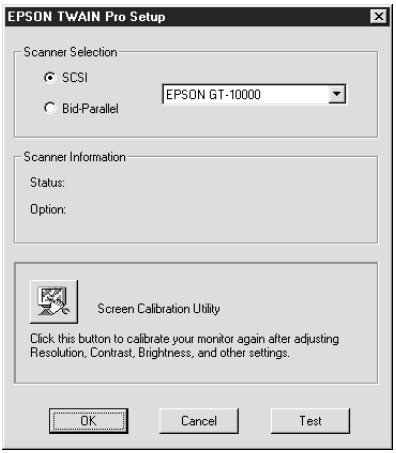
5. Click **Screen Calibration Utility** in the dialog box.

For Windows 95, NT 3.51, and NT 4.0 users:

1. Click the **Start** button from the Windows task bar and select **Settings** -> **Control Panel**.

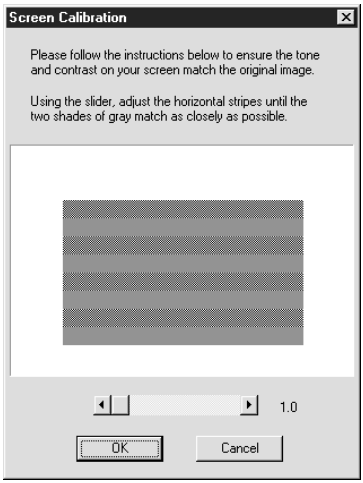
2. Double-click the **EPSON TWAIN Pro Setup** icon in the Control Panel window.

   The **EPSON TWAIN Pro Setup** dialog box appears.



3. Click **Screen Calibration Utility** in the dialog box.

The following dialog box, or a similar one, appears on the screen:



1. Look at the screen from a distance and move the slider to the right or left until the two tones closely match.

2. Click **OK** to finish calibrating your scanner and monitor.

Note:
The gray stripes will not perfectly blend together; however, you only need to be sure the different tones match as closely as possible.

The calibration setting is automatically saved as part of the Screen profile in the Calibration list in EPSON TWAIN Pro's **Destination** dialog box. The screen profile contains calibration information for the preview image as well as the scanned image.

Using ICM (For Windows 95 and 98 Users)

If you use Windows 95 or 98 and your output devices (printer and monitor) support the ICM color management system, you can use the ICM calibration method.

For Windows 95 users

Note:
If your output devices do not support ICM, leave the check box empty.

Follow the steps below:

1. Start the application you want to scan from and choose **TWAIN Acquire** from the **File** menu to open EPSON TWAIN Pro.

2. Click **Configuration**, and then select **ICM** in the Configuration dialog box.

3. Make any other settings you desire.

4. Click **Scan**.

For Windows 98 users

Note:
If your output devices do not support ICM, leave the check box empty.

Follow the steps below:

1. Start the application you want to scan from and choose **TWAIN Acquire** from the **File** menu to open EPSON TWAIN Pro.

2. Click **Configuration**, and then select **ICM** in the **Configuration** dialog box.

3. Select either the sRGB or Display option.

When the sRGB option is selected, the sRGB profile is used to reproduce colors. When the Display option is selected, the color profile selected for your monitor in the Display properties dialog box is used to reproduce colors.

4. Make any other settings you desire.

5. Click **Scan**.

Chapter 6

Troubleshooting

Problems and Solutions 6-2

6

Problems and Solutions

Most problems you will encounter while operating your scanner and software have simple solutions. Read the appropriate section to find your problem, then follow the recommended steps.

Note:
Some EPSON TWAIN Pro settings may not be available, because they have been overridden by other settings or are not supported by your scanner. In some cases where the settings are set automatically by the software and have no need to be changed.

If you cannot find the solution to your problem below, contact your dealer or a qualified customer support person for assistance.

You cannot install EPSON TWAIN Pro.

Cause	What to do
Incorrect system configuration	Check that your computer and operating system matches the system requirements on page 1-2. Make sure your computer has enough memory to run the application.
EPSON Scanner Monitor is running	Close the EPSON Scanner Monitor software, then install EPSON TWAIN Pro.

The scanner does not appear in the Scanner Selection box of the EPSON TWAIN Pro Setup dialog box.

Cause	What to do
Connection problem	Turn off the scanner and computer and check that they are connected properly.

SCSI ID number conflict	Change the scanner's SCSI ID number to one that is not being used by any other SCSI device.
Connection sequence problem	Check the connection sequence and make sure the scanner's terminator switch is set correctly. Refer to the scanner *User's Guide* for details.

The Scanner Status does not indicate "Device Ready" after you click Test in the EPSON TWAIN Pro Setup dialog box or the Scanner's Properties dialog box (Windows 98).

Cause	What to do
Connection problem	Turn off the scanner and computer and check that they are connected properly.
Cable problem	Make sure the interface cable meets the requirements of your interface board. Refer to the documentation that came with the interface board.
Interface board problem	Make sure the interface board is installed correctly.
Power on sequence problem	Turn off the scanner and computer. Turn on the scanner and then turn on the computer.
SCSI driver problem	Make sure the SCSI driver is properly installed.
SCSI ID number conflict	Change the scanner's SCSI ID number to one that is not being used by any other SCSI device.

Connection sequence problem	Check the connection sequence and make sure the scanner's terminator switch is set correctly. Refer to the scanner *User's Guide* for details.

You cannot start up EPSON TWAIN Pro.

Cause	What to do
Scanner is off	Turn on the scanner and then your computer.
Connection problem	Turn off the scanner and computer and check that they are connected properly.
Cable problem	Make sure the interface cable meets the requirements of your interface board. See the documentation that came with the interface board.
Interface board problem	Make sure the interface board is installed correctly.

You cannot select optional Automatic Document Feeder.

Cause	What to do
Installation problem	Make sure the Automatic Document Feeder is installed correctly. Refer to your scanner User's Guide for details.

Image is dark, with little or no detail.

Cause	What to do
Screen calibration	Calibrate the screen as described under "Calibrating Your Screen" on page 5-3.
Destination setting	Select **Screen** or **Screen Vivid** as the Destination (page 4-10). Selecting a printer may cause onscreen colors to appear different from the colors of the original.

You cannot scan an image or the scanned image consists of only a few dots.

Cause	What to do
No document on the document table	Make sure you have a document on the document table.
Threshold setting for OCR scanning	When **OCR** is selected as the Image Type, try changing the **Threshold** setting in the **Image Controls** dialog box. Refer to the section "Image controls button" on page 4-23.

Moiré (crosshatch) patterns appear in the scanned image during halftone scanning.

Cause	What to do
Image Type setting	Turn on the De-screening setting on the **Image Type** dialog box.
Focus	Place a transparent sheet between the document and document table to defocus the image. If your scanner is equipped with a focus mechanism, adjust the focus.
Document position	Move or angle the document slightly.
Sharpness setting	Change **Sharpness** to a softer focus setting on the **Destination** dialog box.

Scanned image is too large.

Cause	What to do
Destination setting	Select **Screen** or **Screen Vivid** as the Destination setting. If you select a printer for Destination, the image will still print at the correct size, even if the image appears larger on the monitor.

Colors are incorrect or appear strange

Cause	What to do
Image Type and Destination settings	Make sure the Image Type and Destination settings are correct.

Poor character recognition during OCR scanning

Cause	What to do
Image Type setting	Select **OCR** for Image Type.
Threshold setting	Try adjusting the Threshold setting in the Image Control dialog box.
Background noise on the document	Select **Text Enhancement Technology** as the B / W option on the Image Type dialog box.

Pressing Start button on the scanner does not start scanning.

Cause	What to do
Scanner Monitor is off	Activate Scanner Monitor. For details, refer to "Setting up EPSON Scanner Monitor" on page 3-10.
Start button is not specified as a scanner event	Specify Start button as a scanner event. For details, refer to "Assigning an application to the Start button" on page 3-15.
EPSON TWAIN Pro is not selected as a TWAIN data source	Select **Select Source** ->**EPSON TWAIN Pro** from **File** menu of PageManager.

Scanned image by using Start button is missing.

Cause	What to do
Wrong application is assigned to Start button	Make sure desired application is assigned to the Start button.

Glossary

additive primary colors
The colors of red, green and blue (RGB) - which give the perception of white when fully added. These are the colors of the color system used with monitors and scanners.

bi-level data
Image data that is composed of 1 bit per pixel. A pixel is represented by a single bit of digital data that can be expressed as only 1 (light) or 0 (dark).

bit
Short for binary digit. The smallest unit of data in computer processing. A bit can represent two values: on and off, or 1 and 0.

bit/pixel
The unit that indicates the number of bits allocated for a pixel. The larger the bit value, the more detail of a pixel will be reproduced.

brightness
A scanner function to lighten or darken the output image data.

byte
A unit of information consisting of eight bits. A byte can represent a control code or character.

carriage
A component of the scanner that contains the optical sensor and light source for scanning.

color correction
A method of adjusting the color image data for a particular type of device so that the reproduction results are as close as possible to the original colors.

color separation
A process of converting full-color images into a limited number of primary colors. Additive primary colors (red, green, and blue) are used by the scanner, and the subtractive primary colors (cyan, magenta, and yellow) plus black are used for printing press separation.

daisy chain
A SCSI bus arrangement that allows several devices to be connected simultaneously in a line to a single computer. See SCSI.

default
A set of values used when no other selections have been made. These are sometimes called factory defaults if the original values have not been changed since the scanner left the factory.

dithering
A process in which software or an output device simulates continuous tones with groups of dots.

document
The item, such as a sheet of paper or a book, that is placed on the document table for the scanner to read.

dpi
Short for dots per inch. A unit of measurement for resolution. The higher the value, the higher the resolution.

dropout color
A color the scanner does not recognize and ignores. You can select and deselect dropout colors in the scanner software.

ESC/I
Abbreviation for EPSON Standard Code for Image scanners. A system of commands that allows you to control image scanners from your software.

ESC/P
Abbreviation for EPSON Standard Code for Printers. A system of commands that allows you to control printers from your software.

grayscale
Images represented with various shades of gray in addition to black and white.

halftoning
A method of reproducing images with patterns of dots to improve the quality of the output.

home position
The position at the rear (nearest the cover hinge position) of the scanner where the carriage rests before a scanning operation.

imagesetter
A device that uses computer files to produce high-resolution text and graphics output on film or paper. These are usually found in service bureaus and printing companies.

impact dot printer
A printer that transfers ink onto the paper by striking an ink ribbon with a number of small pins.

ink jet printer
A printer that transfers ink onto the paper by spraying the ink through a number of small nozzles.

interface
A piece of hardware, a method, or a standard used for connection between or among computer devices.

line sequence
A type of color scanning that separates primary colors line by line. The carriage makes only one pass.

monochrome
Black and white images, or images represented only by the intensity of luminosity.

OCR
Optical Character Recognition.
The technology that allows computers to "read" text from physical objects. OCR requires a graphical representation of text to interpret, which usually comes from a scanned image.

page sequence
The type of color scanning in which the entire image is scanned once for each separate color.

pixel
Short for picture element. Each image is composed of a number of pixels. Pixels are also counted in units of dots.

plain bi-level
Bi-level image data without the halftoning process.

port
An interface channel through which data is transmitted between devices.

primary colors
Basic colors. See *additive primary colors* and *subtractive primary colors.*

resolution
Indication of how finely an image is resolved into pixels. Can be measured in dots per inch (dpi), pixels per inch (ppi), or samples per inch (spi).

scan
An operation performed by the sensor and the carriage. The image is divided into pixels by scanning.

scanning area
The physical size of the image that can be scanned by the scanner.

SCSI
Small Computer System Interface. This is one method used to connect your computer to peripherals such as scanners, hard disk drives, CD-ROM drives, and others.

SCSI ID
The numbers that all devices in a SCSI connection (see daisy chain) use to identify each other. If the same ID number is used by two devices in the same daisy chain, the devices cannot operate properly.

subtractive primary colors
The colors of cyan, magenta, and yellow (CMY) which produce black when mixed in certain amounts. In printing, black is often added to give more definition as mixing of actual inks cannot produce pure black.

terminator
A device that stops electronic signals, and prevents them from proceeding or returning to other devices. This is necessary to stop a signal from continuously reflecting between devices.

threshold
A reference point that is used to determine whether data will be processed as "on" or "off". In the case of color image data, "on" means that a certain color will appear in a pixel or dot, and "off" means that color will not appear there.

tone correction
A method of adjusting the tone curve so that the reproduction results on different types of output devices have gradations similar to the original image.

tone curve
The graph that shows the contrast ratio between the input (original image) and output (image data) in image processing.

Index

Numerics

24-bit Color (Std) / 24-bit Color *4-6*
24-bit Color De-screening *4-6*
8-bit Gray (Std) / 8-bit Gray *4-6*

A

adding applications to the Scan Buttons bar *3-7*
ADF - Double-sided *4-4*
ADF - Single-sided *4-4*
assigning an application to the start button *3-4*, *3-15*
Auto Area Segmentation *4-9*
Auto Document Feeder multi-page support *4-5*
auto exposure button *4-16*, *4-23*
auto exposure on preview *4-33*
auto locate button *4-16*, *4-21*

B

black & white options *4-8*

C

calibrating screen *1-24*, *5-3*
channel options *4-27*
channels *2-11*, *4-26*
closing the tone correction dialog box *2-14*
color adjustment button *4-16*, *4-28*
configuration *4-32*
Copy & Fax *4-6*
curve name *2-13*

D

darken *2-13*
delete marquee button *4-16*, *4-20*
de-screening *4-8*
Destination *4-10*
destination name *4-11*
disabling the start button *3-16*
displaying the preview window *2-7*
document source *4-4*
dropout *4-8*
duplicate marquee button *4-16*, *4-20*

E

EPSON Scanner Monitor *3-10*
exposure *4-24*
eyedropper sampling area *4-33*

F

fast preview *4-33*
features *1*
file size indicator *4-13*
flat contrast *2-13*
flatbed *4-4*

G

Gamma *4-25*
Gamma setting *2-9*
gray balance intensity *2-9*, *4-29*

H

halftone *4-9*
help button *2-5*
high contrast *2-13*
highlight *2-7*, *4-25*

I

ICM *4-33*, *5-6*
image controls button *4-16*, *4-23*
image type *4-5*
  24-bit Color (Std) / 24-bit Color *4-6*
  24-bit Color De-screening *4-6*
  8-bit Gray (Std) / 8-bit Gray *4-6*
  Copy & Fax *4-6*
  Line art *4-6*
  OCR *4-6*
image type dialog box
  black & white options *4-8*
  de-screening *4-8*
  dropout *4-8*
  halftone *4-9*
  image type name *4-7*
  pixel depth *4-7*
  scanning mode *4-8*
image type name *4-7*
installing EPSON TWAIN Pro
  Windows 95 *1-10*
  Windows 98 (parallel interface) *1-10*
  Windows 98 (SCSI interface) *1-3*
  Windows NT 4.0 *1-10*

L

lighten *2-13*
line art *4-6*
linear *2-13*
lock button *4-13*

M

manually optimizing images *2-6*
marquee *4-18*
  deleting *4-20*
  duplicating *4-20*
  making *4-18*
  modifying *4-18*
  moving *4-20*
  multiple *4-19*
  resizing *4-19*
marquee number indicator *4-22*
multi-page support
  automatic document feeder *4-5*

N

none *4-9*
number of marquee indicator *4-16*

O

OCR *4-6*
OCR scanning
  improving character recognition *2-15*
  optimizing *2-15*
  potential text recognition problems *2-16*
  scanning text *2-15*
online help *2-5*
open shadow *2-13*
optimizing image scanning *2-6*
output options *4-27*
output values *4-26*

P
pixel depth *4-7*
preset tone curve *2-9*
presto! PageManager
for EPSON *3-3*
preview *4-15*
buttons *4-17*
preview window size *4-32*
problems and solutions *6-2*
R
registering new application *3-8*
reset button *4-16*, *4-30*
resolution *4-11*, *4-12*
return to full preview
button *4-16*, *4-17*
return to zoom preview
button *4-16*, *4-18*
S
saturation *2-10*, *4-29*
save preview image and
settings *4-32*
saving the scanned image *2-5*
saving tone curve *2-13*
scale *4-14*
scale bar *4-14*
scale indicator *4-14*
Scan *4-34*
Scan All *4-34*
Scan Buttons bar *3-4*
Scanners and Cameras
Properties dialog box *3-14*
scanning an image *2-4*
scanning by pressing the start
button *3-2*
scanning mode *4-8*
setting up the start button
feature for Windows 98 *3-14*
settings *4-30*
shadow *2-8*, *4-25*
sharpness *4-11*
source *4-13*
starting EPSON TWAIN Pro *2-3*
system requirements *1-2*
T
target *4-13*
text enhancement technology *4-8*
threshold *4-26*
tone correction button *4-16*, *4-26*
tone correction list *4-26*, *4-27*
tone curve *2-11*
deleting *2-14*
tone curve editor *4-26*, *4-27*
U
upgrading from Windows 95 to
Windows 98 for SCSI
interface users *1-16*
using ICM *5-6*
using updater *1-8*
Z
zoom preview button *4-16*, *4-17*