# *Introduction*

Scanning is changing the way people work with computers. With your new scanner, you can now take photographs, magazine clippings, books and other visual material and incorporate them into your everyday communication. This manual shows you how.

- The *Installation* shows you how to connect the scanner to your PC and install the software.
- The next chapter, *Start scanning,* provides step by step instructions for scanning photos and documents.
- The *Appendices* provide a Troubleshooting section and a summary of the scanner characteristics. If you have a problem, we recommend you look at the section first before contacting technical support.
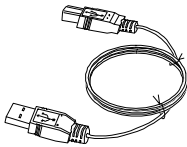
Installation

You have already unpacked the box to get to this manual, so we hope you can find the following to continue with the installation:
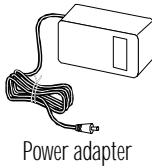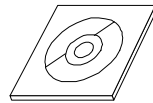
Power adapter
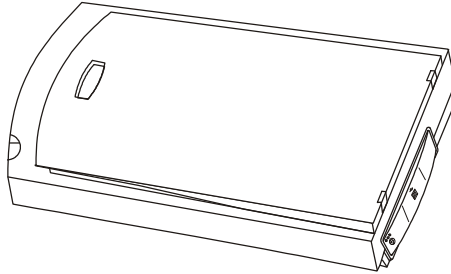
Scanner

Scanner cable

Software on CD-ROM

We also assume that you have checked out the system requirements and that your PC is suitable for this scanner. Just to make sure, please check that your computer:

- is a 486, Pentium or higher, IBM-compatible
- has 16MB RAM, 32MB or more recommended
- has at least 80MB hard disk space for software installation and some working space
- provides a Universal Serial Bus ⇨
- has access to a CD-ROM drive ⇨
- is operating under Windows 98

Check out your system – Windows 98

Go to the System option in the Control Panel.

STOP! *Please install the software* **before** *connecting the scanner, otherwise your scanner may not be detected.*

Installing the software

The scanner's software comes on CD-ROM and includes a setup wizard that makes installation a snap. Before starting, close any open applications:

Under Windows 98

1. Insert the CD into your drive.
2. The Setup Wizard pops up automatically with a few choices for you to make. Make your choices and follow the instructions.
3. The last screen in the setup wizard asks you to restart Windows.
4. Move on to the next section "Connecting the Scanner" for instructions on how to connect the scanner to your PC.

Note: If for any reason, the Setup doesn't run automatically, please use the **Start** menu **Run** command to launch the Setup.exe file on the CD-ROM.

Note: To ensure that the software driver and application software have been properly installed, under the Windows Start menu, select Settings, followed by Control Panel. Double-click "Add/Remove Programs." If properly installed, your scanner driver and application software will be displayed in the list that pops up.

If you try the above and it doesn't seem to work, please check out the *Troubleshooting* section at the end of this manual.

Connecting the scanner

Start with your computer, monitor, and any other peripherals turned off. Connection is then simple. Each cable has a clear destination as follows:
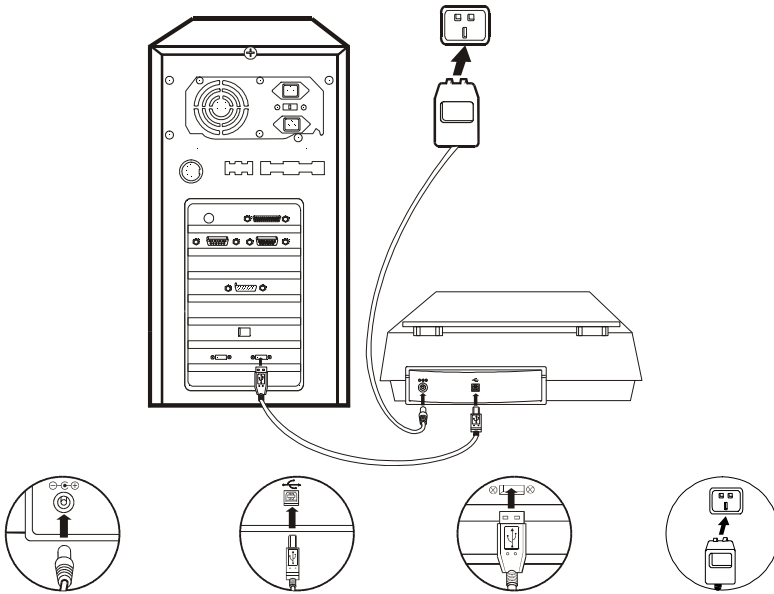
❶ PLUG THE POWER ADAPTER INTO THE SCANNER'S POWER RECEPTOR.

❷ PLUG THE USB CABLE (SQUARE END) INTO THE SCANNER PORT.

❸ PLUG THE USB CABLE (FLAT END) INTO YOUR PC'S USB PORT.

❹ PLUG THE POWER ADAPTER INTO AN ELECTRICAL OUTLET.

Uninstalling the scanner

Windows 98 provides an Uninstall Wizard for uninstalling your scanner
software driver and application programs:

Uninstall from the "Start menu" (Uninstall Wizard)

1. From the Windows Start menu, select Programs, followed by the name of your scanner.

2. From the drop-down menu, select Uninstall.

3. A window will pop up, asking you to confirm the deletion of the selected application and all of its components.
   Click O.K. and the UninstallShield program will run automatically and delete the scanner software driver.

4. Once completed, restart Windows.

Start scanning

If you want to scan from any image editing, OCR, or other program that can accept scans, you can do so via a standard link called TWAIN. Any program that supports TWAIN can access the scanner and make full use of its functions. Such programs include CorelDraw, IphotoPlus, Painter, PhotoDeluxe, PhotoImpact, PhotoShop, PhotoSuite, Presto! PageManager, TextBridge, etc. This chapter describes the TWAIN interface in detail and explains all the scanning settings.

Where to find the scanner commands

After installing the scanner and associated software, you should be able to find the scanner commands, as follows:

1. From within the Twain-compliant application, choose **Select Source** in the **File** menu and the Select Source dialog appears. Select the name of the scanner (and, if applicable, the correct model number). The dialog box closes.

2. Choose **Acquire** in the **File** menu, and the TWAIN window opens:
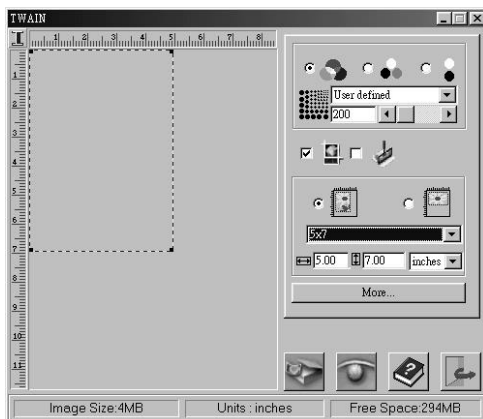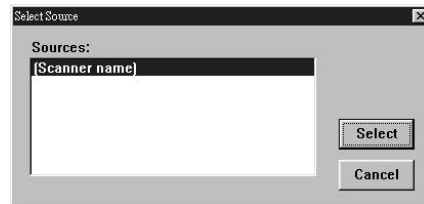
Scanning

Regardless of what you want to scan, once the TWAIN window is open, the process is the same:
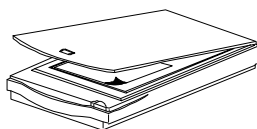
1. Put your photo or document face down onto the scanner glass and close the cover.

2. Press preview to see what the scan will look like.
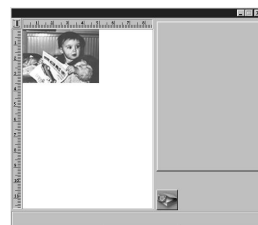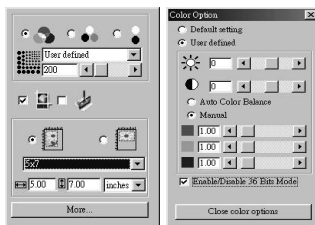
3. Move your cursor to the top left of the photo or document. Click and drag down to the bottom right of the area to scan.

4. Select the settings you want to use. For more information, see *Scanning settings.*

5. Click on the Scan button
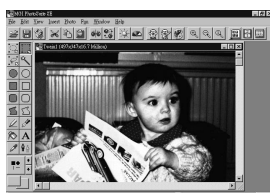
The image appears in your TWAIN-compliant application after scanning.

If you are scanning multiple photos or documents, you can continue to scan and transfer until you're finished. When you want to return to the TWAIN-compliant application, press the Close button.

Scanning settings

Ruler type button

Crop box

Preview window

Photo or document display area

Message bar

Setting area

Click for Color Options

Click to close TWAIN and return to the application

Click to scan

Click to display the scan in the preview window

Click to open the TWAIN Help

Preview window

After clicking the preview button, this window shows the document or photo on the scanner glass. You can then view changes made to settings and define an area to scan: simply drag your mouse to outline the area. You can adjust this area's size by dragging its handles, or its position by clicking on it and dragging. At the top left of the window there is a ruler type button, click this to select the ruler units from inches, cm, or pixels.

Message bar
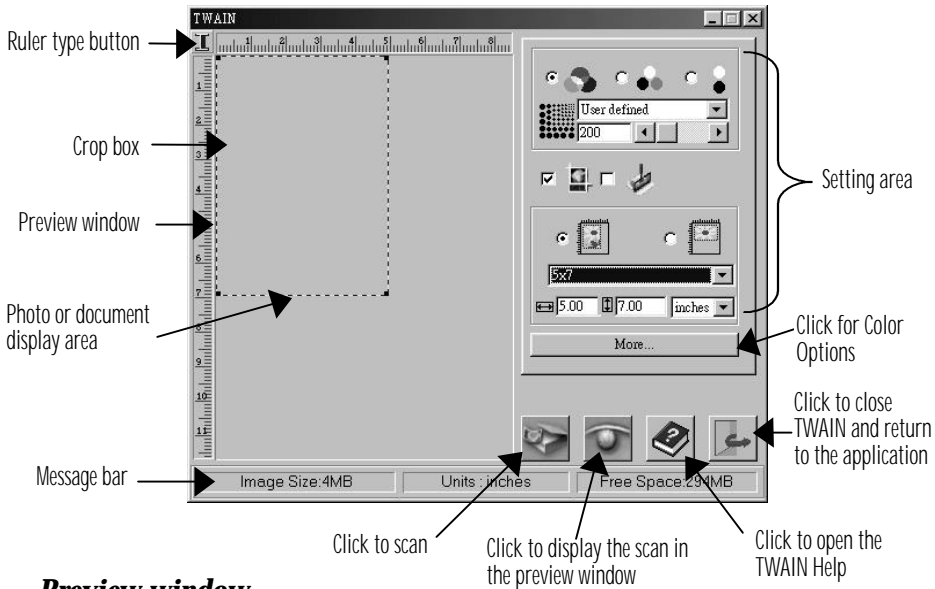
The message bar displays the predicted size of your scan, the current units and the amount of free space on your hard disk. The predicted size changes if you change the scan area size, the scan mode and/or the resolution. If the image size exceeds the amount of free space, you will not be able to complete the scan. In this case, you can reduce the scan mode, resolution, scan area, or clear some space on your hard disk.

Setting area

True Color Grayscale Lineart

Scan mode

Resolution

Auto Crop & Descreen mode

Scan size

Button opens Color Options

Brightness

Contrast

Color correction

36-bit color mode
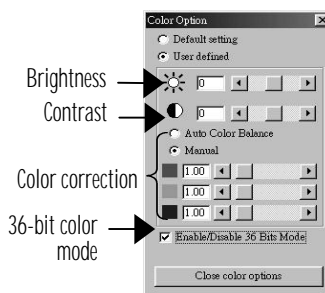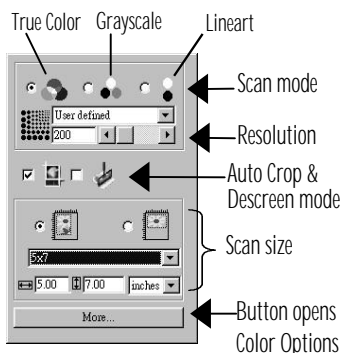
Scan Mode

The scan mode determines the amount of color information collected from your original. Choose this option based on what the original is - color or black & white - and what you want to use the scan for: color display, black & white printing, OCR, etc. Your choice also influences the file size: true-color being the largest, grayscale the next and black & white the smallest. When you change this option, look at the projected file size in the message bar: true-color images are three times larger than grayscale and twenty-four times larger than black & white!

True-color
This scan mode collects the maximum amount of color information from the original, up to around 16.7 million colors! Choose this option for a color original that you want to display, print or edit in color.

Grayscale
Use this mode for black & white photos or scanning color material to print on a black & white printer.

Line-art
Use this mode to scan text or line drawings - a picture containing no colors or shades of gray, but black lines only.

Resolution

Resolution determines the amount of detail collected from an original. The higher the resolution, the more detail. Select a value based on what you want to use the scan for. In general, we recommend you keep the resolution *as low as possible* because the higher the resolution, the slower your scan and the larger the resulting file size. A lower resolution (100-200dpi) can capture more color and detailed information than most printers and displays can show. When you adjust the resolution, keep an eye on the projected file size in the message bar. Try the following:

100dpi
For images to display on screen at about the same size as the original in a presentation or on your web page. Also use this for larger images that you will reduce in size to include in a report or presentation and print out on a normal color or black & white printer (with a print resolution of 300 ~ 360dpi).

200dpi
For small images to display at a larger size on screen, or for any size to print out at original size on a color or black & white printer (up to 720dpi print resolution). Also use 200dpi (with black & white scan mode) to OCR clear text (over 10pt); for small text, use 300dpi.

300dpi

When quality is critical and a lower resolution is inadequate, choose 300dpi for any size image, for any use (to determine if the resolution is too low, look for squares in the image, see below). Also use 300dpi (with black & white scan mode) for the best OCR result.

Over 300dpi

Unless you have a specific reason for selecting a higher resolution, we suggest you do not because the resulting file size may be very large and take up a lot of your hard disk space. For example a 3″ x 5″ photograph scanned at 2400dpi, true-color will be over 240MB.
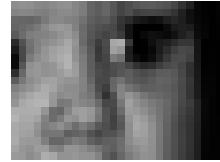
72dpi

100dpi

200dpi

300dpi

200dpi (enlarged 2x)

200dpi (enlarged 3x)

200dpi (enlarged 4x)

200dpi (enlarged 8x)

300dpi (enlarged 2x)

300dpi (enlarged 3x)

300dpi (enlarged 4x)

300dpi (enlarged 8x)

Note: When scanning a photograph that will result in a file size larger than 25MB, there will be a warning screen giving you the option to cancel or continue.

Auto Crop

The auto crop function is disabled by default. To scan with the auto crop function, simply enable *Auto Crop* in the settings tray.

Descreen Mode

When this function is enabled, your scanned image passes through a descreen filter which removes the effects of pixel interference to give the image a smoother appearance. We recommend that you use this function when scanning printed material or reproductions of pictures such as photos from books, brochures and magazines.

The descreen function is disabled by default. If you choose to scan with the descreen function, simply enable *Descreen Mode* in the settings tray.

Size

You can adjust scan size in preview window, enter a width and length in the size entry boxes or select a fixed size from the list box. You can move the area by dragging. The orientation option swaps the width and height values.

Brightness, contrast & color correction

Also known as tone correction commands, these settings adjust images as they are scanned. For example, you may have a photo that is over-exposed (too light) and so you decrease the brightness or color correction to darken the photo. The contrast makes the difference between dark and light areas more or less obvious. Increasing it increases the difference, while decreasing it reduces the difference. Try small changes at first and view the effect. Experimentation is the best route to good results. However, for most photos and documents, you will not need to adjust these values.

The color correction control allows you to adjust gamma. If you have an "off-color" original, for example one in which skin tones are a little green, try reducing green gamma and/or increasing red gamma. The color you want to reduce may be reduced or the other colors increased. Vice versa, to increase a color's apparent intensity, increase

After previewing your scan, changes made to these settings are reflected in the preview window. Making changes in this way allows you to experiment without needing to scan to check the result every time.

Hint: look at
the gray strip
on the right

Bright -25   Bright + 25

Gamma 0.7   Gamma 1.5

Contrast -25   Contrast + 25

Scanning night shots*

If you have particularly dark photos (that are correctly exposed) try increasing the gamma a little (maybe up to 1.4) to bring out details in the shadow areas without affecting the overall tonal range in the image.

Scanning snow shots*

For very light photos, for example from a skiing trip in bright sunlight, reduce the gamma (maybe down to 0.8) to bring out details in the bright areas. This again does not affect the overall tonal range in the image.

* If you use brightness or contrast in the above two cases, you actually reduce the amount of information collected from the original, but gamma collects more information in dark or light areas and less in the opposite type of area.

Scanning text for OCR

If your OCR result is not satisfactory, it may be because the original is unclear. First, adjust the brightness. For bolder text try -10, for lighter, try +10. With this you can increase the contrast a little for bolder text or decrease the contrast for lighter.

Scanning line-art drawings

If parts of lines fade out after scanning, you can reduce the brightness and/or decrease the contrast in much the same way as for scanning text. Similarly if you find that scanned lines appear bolder (fatter), reduce the brightness and/or increase the contrast.

36-bit Color Mode

Your scanner is capable of scanning images using 36-bit color depth. This provides a more dynamic color and tonal range, giving your scanned images a smoother and more colorful appearance.

The 36-bit color mode is disabled by default because currently only a few application programs such as Adobe PhotoShop can accept 36-bit image data. When disabled, your images will be scanned in 24-bit color mode. To scan images in 36-bit color, simply enable *36-bit Color Mode* in the Color Options menu.

Appendices

Troubleshooting

This section provides information on maintaining the scanner and answers
questions to help you solve problems you might encounter when using
the scanner. If you continue to experience problems, or the problem you
face is not covered in this guide, please contact your dealer.

1. Problems with connections

A. Scanner does not respond.
⇒ Make sure all connections are secure and correct.
⇒ Restart the computer and try again.
⇒ Reinstall the software, restart your computer and then try again.
⇒ Check the Universal Serial Bus of your computer is Enable. This setting (Universal Serial Bus Controller) can be found under the System option in your Control Panel in the Device Manager (if in doubt, check out Windows Help).

2. Problems during installation

A. Setup wizard doesn't auto start.
⇒ Check your computer system to see if Auto start is available.
⇒ Under Windows, please check if your CD-ROM is set to Auto Insert Notification. This setting can be found under the System option in your Control Panel in the properties of your particular CD-ROM model (if in doubt, check out Windows Help).

B. After restarting the computer, cant find program icons.
⇒ If program icons do not appear in the Start menu under Programs, try reinstalling.

C. Setup wizard crashes during installation.
⇒ Reinstall the software.

3. Other problems with the scanner

A. The scanner's scanning lamp does not light up.
⇒ Make sure the TWAIN window appears on screen. If not, select the source and acquire for the TWAIN window.
⇒ Make sure all connections are secure and correct.

B. Scanner scans very slowly.
⇒ Make sure the resolution of the scanner is not set too high (preferably 300dpi or lower).
⇒ Check your connections (see 1A above).

C. Error: "Scanner not found. Please check the following: (1) USB setting is enabled. (2) Power adapter is plugged into the scanner connector. (3) USB cable is properly connected with the scanner and your PC."

⇒ Displayed if there is a problem communicating with the scanner. May be caused by power outage, misconnection or an installation problem. Please check your connections and check that your wall socket and power switches are all turned on.

4. Problems in TWAIN

A. The TWAIN window does not appear after choosing Acquire.

⇒ Make sure all connections are secure and correct.
⇒ Check that the scanner is selected in the Select Source dialog box.
⇒ Reinstall the software.
⇒ Check your connections (see 1.A above).

B. Unable to scan to application software.

⇒ Check that the scanner is selected in the Select Source dialog box.
⇒ Make sure all connections are secure and correct.
⇒ Shut down all open programs and Windows, restart your computer and try again.

5. Problems with the scan

A. The scanned image is too light or too dark.

⇒ Check if the Scan Window is clean.
⇒ Adjust the brightness or color gamma settings and try again.

B. Mesh patterns appear on the scanned image.

⇒ The original image is commercially printed. Try reducing the resolution by a small amount, for example from 200dpi to 190dpi; keep reducing until the patterns disappear.

C. Transitions in color are very abrupt (after scanning with true color scan mode).

⇒ This is normal if you are using a display mode that can only display 256 or 16 colors at a time. Try using a high- or true-color mode instead. Refer to the Windows Manual and your display card's guide for more information.

Specifications

Scanning method	One-pass
Interface	USB
Resolution - Optical Enhanced	 600 dpi 19200 dpi
Scanning area	A4 or Letter size – 216mm x 297mm or 8.5in x 11.7in
Scanning mode Color Gray scale B&W	 36-bit True color 12-bit Grayscale 1-bit
Light source	Cold Cathode Fluorescent Tube
Power consumption	12 V DC, 1.25 AMP
Physical dimension (w/ cover)	488.5 x 292.3 x 90.4mm
Unit weight (scanner body)	2. 78 kg
Temperature range Operation Storage	 5°C ~ 40°C or 41°F ~ 104 °F -40°C ~ 70°C or 40°F ~ 150°F
Humidity Operation Storage	 20% ~ 80% 10% ~ 90%
Warm up time	45 secs

FCC STATEMENT

This device complies with Part 15 of FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.