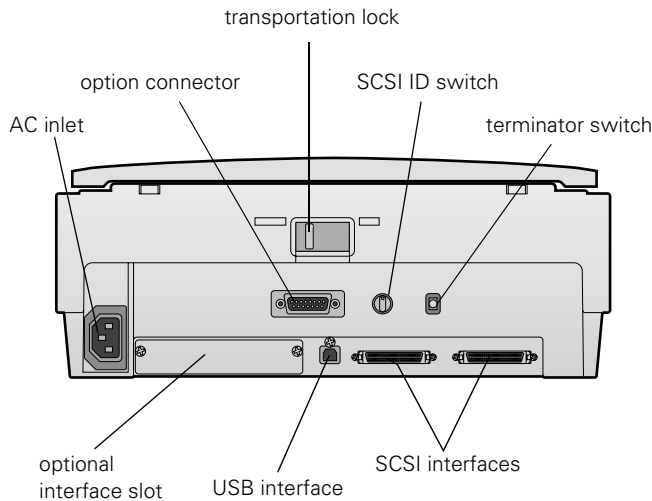
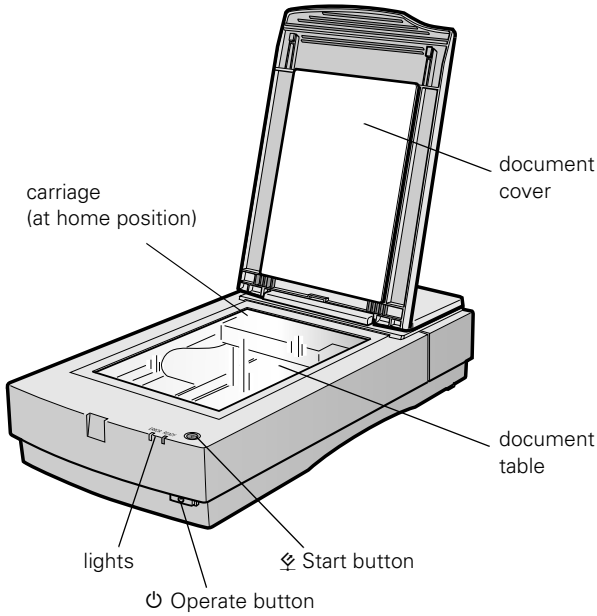


Scanner Parts



Optical density	3.6 Dmax
Color depth	48-bit internal/48-bit external
Grayscale depth	16-bit internal/16-bit external
Maximum document size	8.5 × 11.7 inches (216 × 297 mm) A4 or Letter (the reading area can be specified from your software)
Optical resolution	1600 dpi
Maximum hardware resolution*	1600 dpi (main scan) 3200 dpi with Micro Step Drive™ (sub scan)

* The maximum hardware resolution of 1600 × 3200 dpi is achieved using EPSON's Micro Step Drive technology

Maximum interpolated resolution	12800 × 12800 dpi
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Speed (1600 dpi, draft mode)	Color: 9.2 msec/line (approx.) Grayscale: 3.1 msec/line (approx.) Line Art: 3.1 msec/line (approx.)
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Color separation	RGB color filters on CCD
Reading sequence	Monochrome: One-pass scanning Color byte sequence: One-pass scanning (R, G, B) Color line sequence: One-pass scanning (R, G, B)

Zoom	50 to 200% in 1% increments
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Command level	ESC/I-B8 FS
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Pixel depth	16 bits per pixel (16 bits per pixel input, 1 to 16 bits per pixel output)
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Brightness	7 levels
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Line art settings	Fixed threshold TET (Text Enhancement) Technology, enable/disable selectable
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Digital halftoning	AAS (Auto Area Segmentation, enable/disable selectable) 3 error diffusion modes (A, B, and C) 4 dither patterns (A, B, C, and D) for bi-level and quad-level data (2 downloadable dither patterns)
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Gamma correction	2 types for CRT display 3 types for printer 1 type user-defined
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Scanner Specifications

Scanner

General

Scanner type	Flatbed, color
Photoelectric device	Color MatrixCCD™ line sensor
Effective pixels	13600 × 18720 pixels (1600 dpi)

EPSON Expression 1680

Color correction	1 type for CRT display 3 types for printer (available in color byte sequence mode and color line sequence mode) 1 type user-defined
Interfaces	SCSI 2 (micro DB 50-pin connectors) USB (Type B receptacle connector) IEEE 1394 (FireWire); optional
Light source	Xenon gas cold cathode fluorescent lamp
Reliability	100,000 cycles of carriage movement (main unit MCBF)
Dimensions	Width: 13 inches (332 mm) Depth: 22.1 inches (562 mm) Height: 5.3 inches (133 mm)
Weight	Approximately 18.7 lb (8.5 kg)

Electrical

Input voltage range	100 to 120 VAC: 90 to 132 VAC 220 to 240 VAC: 198 to 264 VAC
Rated frequency	50 to 60 Hz
Rated current	100 to 120 VAC: 0.8 A 220 to 240 VAC: 0.4 A
Power consumption	Operating: Approximately 30 W Approximately 50 W with TPU or ADF unit Standby: Approximately 10 W

Environmental

Temperature	Operating: 41 to 95 °F (5 to 35 °C) 50 to 89 °F (10 to 32 °C) when using ADF Storage: -13 to 140 °F (-25 to 60 °C)
Humidity (without condensation)	Operating: 10 to 80% Standby: 10 to 85%
Operating conditions	Ordinary office or home conditions. Avoid dust, direct sunlight, and proximity to strong light sources.

Safety Approvals

120 V model	Safety: UL 1950 CSA C22.2 No. 950 EMC: FCC part 15 subpart B class B CSA C108.8 class B
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230 V model	Safety: EN 60950 EMC: EN 550022 (CISPR Pub 22) class B AS/NZS 3548 class B
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SCSI Interface

Interface type	ANSI X3T9.2/375R Revision 10L (SCSI 2)
Logic level	TTL-compatible
ID setting	Selectable from 0 to 7
Terminator	Internal terminator (enable/disable selectable)
Connector type	Two micro DB 50-pin connectors

USB Interface

Interface type	Universal Serial Bus Specification Revision 1.1
Electrical standard	Full speed mode (12Mb) of Universal Serial Bus Specification Revision 1.1
Connector type	One receptacle (Type B)

IEEE 1394 FireWire (Optional)

Interface type	IEEE 1394-1995 compatible
Data transfer method	Half-duplex Data/Strobe differential serial
Synchronization method	Clock synchronization with DS-Link
Encoding/decoding	DS-Link
Logic level	3.3 V
Compatible connectors	IEEE 1394-1995 compatible
Power class	Power class code 100 No power supply from external sources Fitted with a repeat function with bus power
Environmental	Temperature: Operating: 41 to 95 °F (5 to 35 °C) Standby: -13 to 140 °F (-25 to 60 °C) Humidity (without condensation): Operating: 10 to 80% Standby: 10 to 85%

Option Interface Connector

Interface type	For use with the optional automatic document feeder (B813162) and transparency unit (B813182)
Output voltage	21.6 to 26.4 VDC 4.75 to 5.25 VDC
Output current	0.6 A (24 V) 0.3 A (5 V)

Initialization Methods

SCSI interface

Hardware:	Initialized when the scanner is turned on or the scanner receives a SCSI Reset signal from the SCSI interface
Software:	Initialized when the software sends the Esc @ (initialize the scanner command), or the scanner receives a SCSI Bus Device message

USB interface

Hardware:	Initialized when the scanner is turned on or the USB cable is unplugged from the USB port on the scanner
Software:	Initialized when the software sends the Esc @ command or the scanner receives a Bus Reset from the USB interface

Transparency Unit (B813182)

General

Reliability	MCBF 100,000 cycles
Readable area	8.5 × 11.7 inches (216 × 297 mm)
Dimensions	Width: 12.8 inches (324 mm) Depth: 21.3 inches (540 mm) Height: 3.6 inches (92 mm)
Weight	Approximately 11 lb (6 kg)

Electrical

Input voltage	21.6 to 26.4 VDC 4.75 to 5.25 VDC
Rated current	0.6 A 0.1 A

Environmental

Temperature	Operating: 41 to 95 °F (5 to 35 °C) Standby: -14 to 140 °F (-20 to 60 °C)
Humidity (without condensation)	Operating: 10 to 80% Standby: 10 to 85%

Automatic Document Feeder (B813162)

General

Paper input/output	Load face up; eject face down
Paper quantity	30 pages (55 g/m ² paper, maximum total thickness under 0.24 inches [6 mm])
Reliability	100,000 sheets (load/eject MCBF)
Dimensions	Width: 12.2 inches (310 mm) Depth: 20.9 inches (528 mm) Height: 3.6 inches (92 mm)
Weight	Approximately 9.9 lb (4.5 kg)

Electrical

Input voltage	22.8 to 25.2 VDC 4.75 to 5.25 VDC
Input current	24 V: 0.6 A 5 V: 0.3 A

Environmental

Temperature	Operating: 50 to 89 °F (10 to 32 °C) Standby: -4 to 140 °F (-20 to 60 °C)
Humidity (without condensation)	Operating: 20 to 80% Standby: 95% or less

Lights and Buttons

The scanner has two indicator lights and two buttons on its control panel. Light status and button functions are described in the tables that follow.

Scanner indicator lights

Light	Light status	Color	Scanner status
READY	○	Green	Ready to scan images
	◌ (flashing)	Green	Scanning is in progress
ERROR	○	Red	An error occurred; see the following table for more information
	◌ (rapidly flashing)		
	●		

○ = on, ● = off, ◌ = flashing

Error conditions

ERROR light	READY light	Error type
○	○	Command error: The scanner has received incorrect commands from your scanning software. Try rescanning the document.
◌	●	Interface error: Check that your scanner is securely connected to your computer, and then turn the scanner off and back on again.
◌	◌	Fatal error: Check that the transportation lock is released, and then turn the scanner off and on again. If this doesn't solve the problem, call your EPSON dealer.
●	●	Option error: There's a problem with an installed option. Check to make sure the transparency unit or automatic document feeder is flat against the document table. Check that your option is securely connected to the option (ADF/TPU) connector at the back of the scanner. Finally, check that the automatic document feeder isn't out of paper and doesn't have a paper jam. If these suggestions don't solve the problem, call your EPSON dealer.

○ = on, ● = off, ◌ = flashing

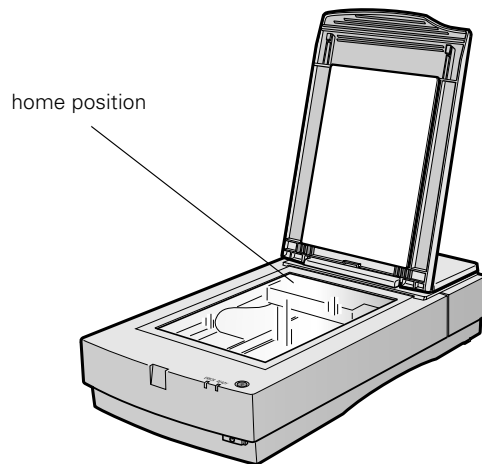
Scanner buttons

Button	Function
⏻ Operate	Turns the scanner on and off.
⏏ Start	Automatically launches a ⏏ Start button-compatible application. You must set up your scanner software and a compatible application to use this button. If you installed Presto! PageManager, it's automatically assigned to the ⏏ Start button. You can set up Presto! PageManager to scan your image automatically and send it directly to another application or a peripheral device, such as a printer.

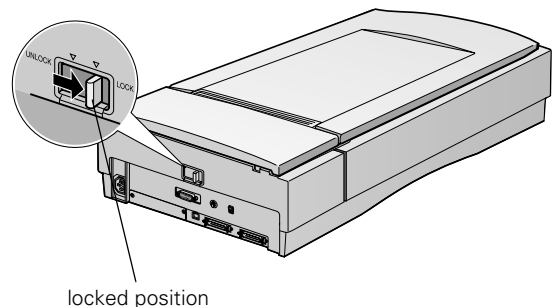
Transporting the Scanner

When you transport the scanner a long distance or store it for an extended time, follow the steps below to secure the carriage.

1. Make sure the transportation lock on the back of the scanner is in the UNLOCK position.



2. Locate the SCSI ID rotary switch on the back of the scanner. Align the dot on the rotary switch with the asterisk (*).
3. If you're using a transparency unit or automatic document feeder, remove it and replace the scanner cover.
4. Turn on the scanner and wait until the carriage moves to the home position as shown. Then turn off the scanner.
5. Slide the transportation lock at the back of the scanner to the LOCK position.



If the carriage does not automatically return to the home position, slowly raise the front of the scanner and hold it up until the carriage comes to rest in the home position. Then slide the transportation lock to the LOCK position.

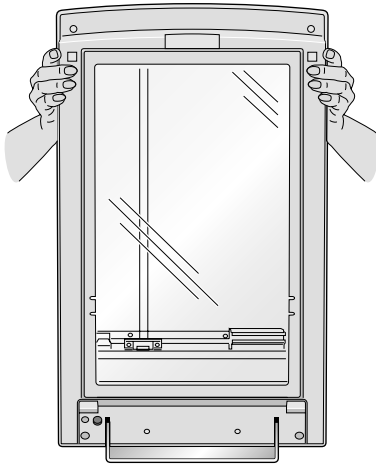


If you are using a transparency unit and it is switched on, the scanner carriage will not move to the home position. Remove the transparency unit first, then perform the steps above. See the next section for instructions.

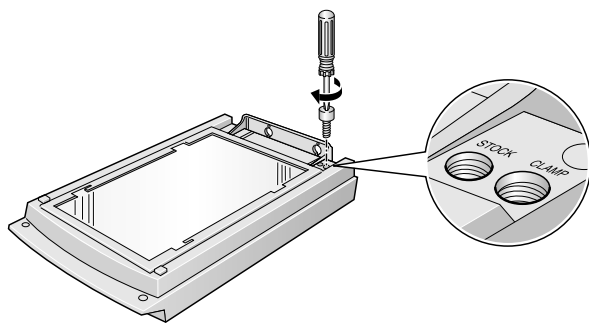
Transporting the Transparency Unit

After you've removed the transparency unit from the scanner, prepare it for shipping as follows:

1. Slowly raise the front of the transparency unit to allow the lamp assembly to slide to the back of the unit. Wait until the lamp assembly comes to rest.



2. Reinstall the transparency unit's shipping screw in the hole marked CLAMP.



Scanning with EPSON TWAIN Pro

1. Start your host application (for example, Adobe® Photoshop® LE).
2. Select your scanner driver. (Unless you change your source, you only need to do this step once.)

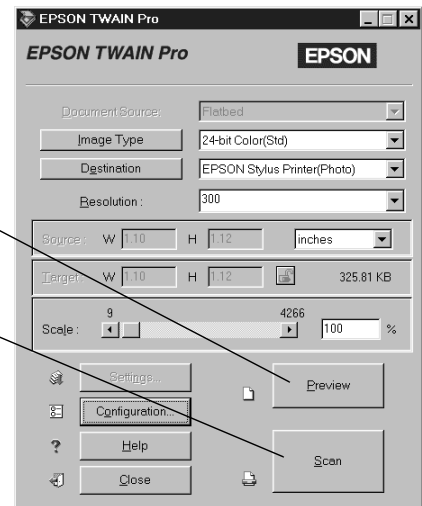
For example, if you're running Windows® and using Adobe Photoshop LE as your host application, click File, Import, Select TWAIN_32 Source. In the Select Source dialog box, select EPSON TWAIN Pro(32-bit). Then click Select.

If you have a Macintosh®, click File, Import, Twain Select. In the Select a source dialog box, choose EPSON TWAIN Pro and click OK.



The command you choose from the File menu differs from one host application to another. With other host applications, you might choose Acquire or Select Source instead of Import.

3. Open the scanner software.



For example, choose Import from Photoshop's File menu.

In Windows, select TWAIN_32.

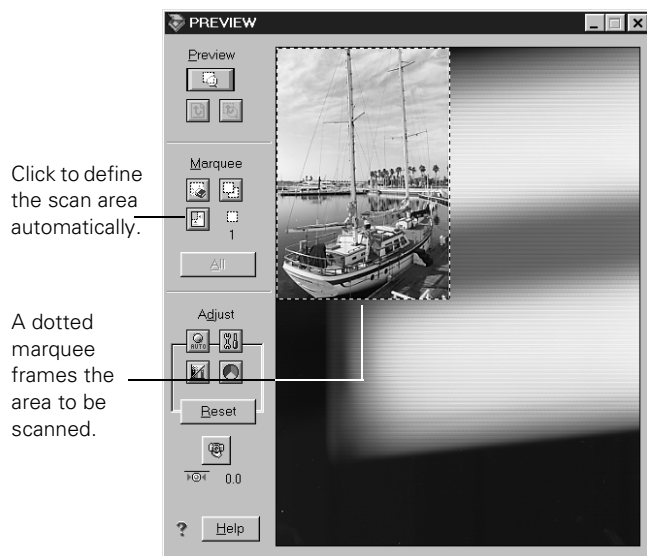
On a Macintosh, select TWAIN_Acquire.

The EPSON TWAIN Pro main window appears.

4. Choose the Document Source, Image Type, and Destination.

For example, if you're scanning a photograph, select Flatbed as your Document Source, 24-bit Color (Std) as your Image Type, and EPSON Stylus Printer (Photo) as the Destination, if you're sending the scanned image to an EPSON inkjet printer. If you're using the optional transparency unit, select TPU for Neg. Film or TPU for Pos. Film as your Document Source. If you're using the optional automatic document feeder, select Auto Document Feeder as your Document Source.


- Click the Preview button.




Click to define the scan area automatically.

A dotted marquee frames the area to be scanned.

You see a preview of your scan in the window that opens.

- Click the  Auto Locate button to automatically define the scan area around the edges of your image. Or adjust the scan area by positioning the mouse pointer over any of the eight boxes around the marquee's edge and dragging the box to resize the marquee.

Click the  Auto Exposure button to automatically set the highlight, midtones, and shadow exposure.



Generally it's a good idea to use the Auto Exposure button to obtain the best settings for your scan. If you're not satisfied with the results, see your electronic *EPSON Expression 1680 Reference Guide* for information about adjusting settings.

If you need to remove color cast from your image, use the Gray Balance Intensity feature.

- When you've finished making adjustments, click the Scan button.



The READY light on the front of the scanner flashes while it's scanning. In a few moments, a scanned image is imported into your host application's window.

(If the READY light continues to blink, it may indicate an error condition. See page 4 for more information.)



- Click Close to close the EPSON TWAIN Pro window and return to your application.
- If you want, save your image using the Save or Save As options from the File menu of your host application.

Using a Network Scanner


Network scanning involves the following steps:

- The scanner server must be turned on and running EPSON Scan Server.
- From the client computer, start EPSON TWAIN Pro Network to establish a connection to the scanner server. Only one client computer at a time can connect to the scanner server. (See "Starting EPSON TWAIN Pro Network" on page 7 for instructions.)
- Choose the Image Type, Resolution, and other settings you want for your scan.
- Place your first image on the document table (or in the optional automatic document feeder or one of the optional transparency unit's film guides).
- Start the scan. Although this can be done from EPSON TWAIN Pro Network on the client computer, it may be more convenient to press the scanner's  Start button or to start the scan from the scanner server. Then you can scan several images with a single trip to the scanner.
- If you want to scan more than one image, place your second image on the document table and press the scanner's  Start button again. Repeat this step for every image you want to scan. (The settings you chose for the first image apply to these images too.)
- When you return to the client computer, your scanned images appear in the host application's window. Close EPSON TWAIN Pro Network to end your connection to the scanner server and allow other client computers to use the scanner.

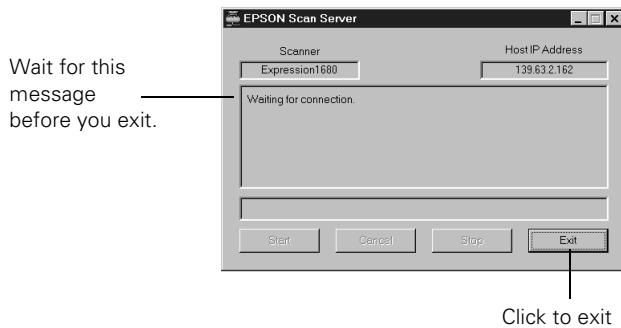


Some applications, such as Adobe Photoshop LE, automatically close the client computer's connection to the scanner server when you press the  Start button. You can't use the  Start button to scan multiple images if you're using these applications.

Starting EPSON Scan Server

EPSON Scan Server starts automatically whenever the scanner server is turned on. When EPSON Scan Server is running, you'll see either the EPSON Scan Server dialog box, or the EPSON Scan Server icon  on the Windows taskbar. If you need to start EPSON Scan Server manually, click Start, Programs, EPSON Scan Server, and then select EPSON Scan Server.

You can quit EPSON Scan Server at any time. Just click the Exit button on the EPSON Scan Server dialog box.



Before you quit, make sure no client computers are trying to use the scanner. Don't exit if the status area of the EPSON Scan Server dialog box indicates that you are connecting to a client. Wait until you see the message Waiting for connection.

If you installed EPSON TWAIN Pro on the scanner server so that you could make a direct connection to the scanner, remember that you must exit EPSON Scan Server to use EPSON TWAIN Pro. EPSON Scan Server disables EPSON TWAIN Pro.

Starting EPSON TWAIN Pro Network

You connect to the scanner server by starting EPSON TWAIN Pro Network from the client computer. Follow these steps:

1. Start your host application.
2. Select EPSON TWAIN Pro Network as your source, or scanner driver. (You only need to do this step once.)

For example, if you're running Windows and using Presto! PageManager for EPSON as your host application, choose Select Source from the File menu. In the Select Source window, choose EPSON TWAIN Pro Network and click Select.

If you have a Macintosh and are using Presto! PageManager for EPSON, click File, Select Source, then Select TWAIN Source. In the Select a source window, select the EPSON TWAIN Pro Network icon and click OK.



The command you choose from the File menu differs from one host application to another. With other host applications, you might choose Import or Select TWAIN_32 Source, for example.


3. Start EPSON TWAIN Pro Network.

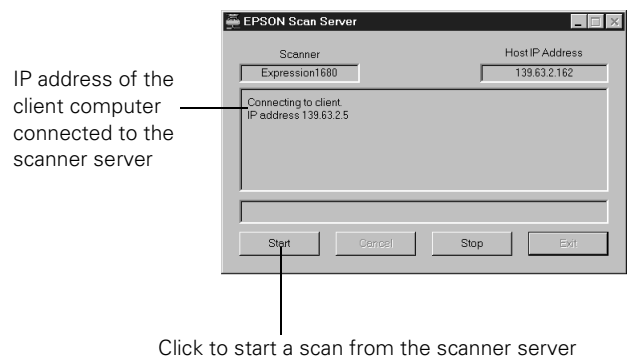
If your host application is Presto! PageManager for EPSON, choose Acquire from the File menu. When EPSON TWAIN Pro Network starts, the EPSON TWAIN Pro Network main menu appears and you connect to the scanner server.

Since the settings and controls for EPSON TWAIN Pro Network are the same as those for EPSON TWAIN Pro, see "Scanning with EPSON TWAIN Pro" on page 5 for general scanning instructions. For more detailed information about settings, see the *EPSON Expression 1680 Reference Guide* on your EPSON Expression 1680 Scanning Tools CD-ROM.

Starting a Scan

You can start a scan on your network scanner in several ways:

- You can start EPSON TWAIN Pro Network on the client computer, make your scan settings, and click the Scan button on the EPSON TWAIN Pro Network main window. The scanned image is imported into your host application's window.
- You can press the  Start button on the scanner to send the scanned image to the client computer that is currently connected to the scanner server.
- You can click the Start button on the EPSON Scan Server dialog box to send the scanned image to the client computer currently connected to the scanner server.



No matter how you start the scan, the client computer must be running EPSON TWAIN Pro Network to connect to the scanner server.

Stopping a Scan in Progress

You can stop a scan in progress from either the client computer or the scanner server.

- ❑ To cancel a scan from the client computer, click the Cancel button on the Progress bar.
- ❑ To cancel from the scanner server, click the Cancel button at the bottom of the EPSON Scan Server dialog box.
- ❑ To break the connection between the client computer and the scanner server, click the Stop button on the EPSON Scan Server dialog box. This closes EPSON TWAIN Pro Network on the client computer and allows other client computers to connect to the scanner server.

Related Documentation

CPD-11741	EPSON Expression 1680 User's Guide EPSON Expression 1680 Software Reference Guide (html)
TM-EXP1680	EPSON Expression 1680 Service Manual
PL-EXP1680	EPSON Expression 1680 Parts Price List