

Aim: Installation and study of scanner.

Scanner:

A scanner is a device that captures images from photographic prints, posters, magazine pages, and similar sources for computer editing and display. Scanners come in and flatbed types and for scanning black-and-white only, or color. Very high resolution scanners are used for scanning for high-resolution printing, but lower resolution scanners are adequate for capturing images for computer display. Scanners usually come with software, such as Adobe's Photoshop product, that lets you resize and otherwise modify a captured image.

Terms Related to Scanner

Definitions:

Photocopier- A photocopier is an electronic machine that makes copies of images and documents. Photocopiers were once single-function devices.

PARC (Palo Alto Research Center) - PARC is Xerox's Palo Alto Research Center, located in Palo Alto, California, in the high-tech area that has become known as Silicon Valley.

Xerox- Xerox is a provider of document-related technology and services. Xerox derives from xerography, more commonly known as photocopying.

Printers- Terms related to printers, including definitions about scanners and words and phrases about inkjet, laser, photo and all-in-one printers.

Internet applications- This WhatIs.com glossary contains terms related to Internet applications, including definitions about Software as a Service (SaaS) delivery models and words and phrases about web sites.

Uses of Scanner:

A scanner is a device which transfers physical images, such as from photographs or books, into a digital format computers can read and display. There are handheld, flat-bed or feed-in types of scanner available.

What is a good way to scan multiple pages?

The best method for scanning multiple pages depends on the scanner, the computer's operating system and whether the pages need to be in a single document. Some scanners support batch scanning, which automatically imports multiple pages, while others require the selection of special options to link the individual images together.

Data capture is the retrieval of information from a document using methods other than data entry. The utility of data capture is the ability to automate this information retrieval where data entry would be inefficient, costly or inapplicable.

How Scanner work:

Scanners operate by shining light at the object or document being digitized and directing the reflected light (usually through a series of mirrors and lenses) onto a photosensitive element.

In most scanners, the sensing medium is an electronic, light-sensing integrated circuit known as a charged coupled device (CCD). Light-sensitive photosites arrayed along the CCD convert levels of brightness into electronic signals that are then processed into a digital image.

CCD is by far the most common light-sensing technology used in modern scanners. Two other technologies, CIS (Contact Image Sensor), and PMT (photomultiplier tube) are found in the low and high ends of the scanner market, respectively.

CIS is a newer technology that allows scanners to be smaller and Another sensing technology, CMOS (Complementary Metal Oxide Semiconductor), appears primarily in low-end, hand-held digital cameras where its low cost, low power consumption and easier component integration permits smaller, less expensive designs. Traditionally, lighter, but sacrifices dynamic range, depth-of-field, and resolution.

Functions of scanner:

Scanned files can be stored on a computer hard drive, flash drive or shared network folders. An operator can send scanned documents to a client computer using web services. A flatbed scanner equipped with a fax feature can send a fax to more than one destination.

A flatbed scanner with printing capabilities can serve as a home printer, allowing the user to make adjustments to the document. Scanners with optical character recognition software, known as OCR, can scan documents and convert them to editable text.

A scanner can even scan 3D objects such as cloth, shells and coins that are somewhat flat.

1. Sending scanned files (Network Scanner):

Scan files can be sent to or stored on a computer, and you can specify the format of a scan file according to how the file will be used.

- a. Sending by e-mail
- b. You can send scan files to specified e-mail addresses.
- c. For details, see chapter 1 "Sending Scan Files by E-mail".
- d. Sending to folders
- e. Scan files can be stored in shared network folders, or on FTP or Netware servers.

2. Sending using WSD:

- a. You can use Web Services on Devices (WSD) to send scan files to a client computer.

Delivering

- b. You can deliver scan files using a delivery server.

3. Scanning originals from a client computer (TWAIN Scanner):

You can use the TWAIN driver to scan files from a networked or directly connected computer.

4. Storing files:

Scan files can be stored on the machine's hard disk or saved on a removable memory device.

- a. Storing files on the machine's hard disk
 - b. You can do various things with files that are stored on the hard disk, such as save them in shared folders or send them by e-mail.
- c. Saving files on a removable memory device
 - d. You can save scan files on a removable memory device such as a USB memory stick or an SD card.

Types of Scanner:

1. flatbed scanners:

The most popular type of desktop scanner is flatbed scanner, so called because of its flat, glass platen (or bed) which serves as both the scanning area and surface for laying objects down to be scanned. Most flatbeds are used for scanning reflective art.

flatbed scanners generally share the following specifications: 8-1/2" x 11" scanning area, 300 to 400 spi scanning ability (often interpolated to 800, 1200, or 1600 "spi"), 8-bits per color channel, and low cost. They often come bundled with powerful "value-added" software such as Adobe Photoshop.

A flatbed scanner is made up of a glass pane and a moving optical CIS or CCD array. The pane is illuminated with the help of bright light planted underneath it. The image—the one that is to be scanned—is then placed on the glass pane. The sensor and source of light move across the glass pane to scan the document and produce its digital copy.

If you want to scan transparent slides on your flatbed scanner, you will require a transparency adapter. Flatbed scanners derive their name from the fact that their glass plane or bed, where the object to be scanned is placed, is flat.

Entry-level flatbed scanners generally share the following specifications: 8-1/2" x 11" scanning area, 300 to 400 spi scanning ability (often interpolated to 800, 1200, or 1600 "spi"), 8-bits per color channel, and low cost. They often come bundled with powerful "value-added" software such as Adobe Photoshop. These machines frequently offer excellent price/performance ratio. Because there is fierce competition for this market, at the time of this writing, the magic price for entry-level scanners seems to be hovering around the \$1000-\$1200 mark.

Mid-level flatbed scanners differ from their entry-level cousins in three important ways: First they cost much more! Second, because they're targeted toward a more professional market, they rarely come bundled with "value-added" software such as Photoshop. Third, and most importantly, they have significantly better specifications. For example, a typical mid-level flatbed scans at 600x1200 spi and 10-bits per color, resulting in scans of significantly higher quality. Some mid-level scanners may also offer a larger scanning area.

High-end flatbed scanners are positioned as alternatives to drum scanners. They offer features that professionals demand: a noise-free design, large scanning area, high dynamic range, and high resolution. Expect to pay a premium price for these scanners. Mid-level scanners are increasingly taking over this territory. Expect the lines to blur between mid-level and high-end flatbeds in the near future.



2. Handheld Scanners:

Hand scanners are useful for their portability and low price (often one-third to a quarter of the cost of a flatbed scanner). Hand scanners generally plug into a computer's printing port, as opposed to a SCSI port, allowing them to be easily shared from workstation to workstation. Many people find them ideal for use with a notebook or laptop. Unfortunately, hand scanners are less accurate than flatbeds because they have weaker light sources and often produce uneven scans - courtesy of the unsteadiness of your hand or the surface you're standing on.

A handheld scanner is a small manual scanning device which is moved over the object that needs to be scanned. In flatbed and sheetfed scanners, you put the document that is to be scanned inside the device. In contrast, in the case of handheld scanner, you have to drag it over the document that is to be scanned. Using a handheld scanner can be a cumbersome task as the hand needs to be steady all the time. Even a slight movement of hand can lead to distortion of the image. One of the most-utilized handheld scanner is the barcode scanner, typically used in shopping stores to value goods.



3. Drum Scanners:

Professional color trade shops wouldn't think of using anything less than a drum scanner for producing color separations for high-end printing. Instead of using CCD technology, drum scanners use PMT (Photo Multiplier Tube) technology for greater dynamic range and color accuracy. They also cost an arm and a leg, Nevertheless, drum scanners offer features not available to desktop scanners such as direct conversion to CMYK, auto sharpening, batch scanning, greater dynamic range, and huge image scanning areas.

A drum scanner is the one which uses a photomultiplier tube (PMT) to scan images instead of the charge-coupled device that is typically used in a flatbed scanner. Photomultiplier tubes are vacuum tubes which are extremely sensitive to light. In drum scanners, the image is mounted on the glass tube. When the beam of light moves across the image, its reflection is picked up by the PMT and processed. Drum scanners are known for their high resolution, which makes them apt for detailed scans. If they are not as popular as flatbed scanners, it is because of their cost and largesize.



4. Photo Scanner:

As the name itself suggests, a photo scanner is mostly used to scan photographs. It boasts of high resolution and color depth, both of which are necessary for scanning photographs. If you want to buy a scanner to digitize film negatives and slides, then the photo scanner is your best bet. While flatbed scanners can also scan your photographs for you, they are not as fast as dedicated photo scanners. It's also worth noting that the in-built software in some photo scanners helps in cleaning and restoring old photographs.



5. Film Scanner:

A film scanner is utilized to scan photographic films directly into a computer. The photographer has direct control over certain aspects, such as cropping, ratio of original image on the film, etc. Some film scanners available today have specialized software through which it is possible to minimize scratches and improve color quality. Low-end film scanners most often accept 35 mm film strips, while high-end scanners—armed with interchangeable film loaders—can accept 35 mm or 120 mm strips and even individual slides.



6. Sheet fed Scanner:

As its name suggests, in this type of scanner, the document is fed into the horizontal or vertical slot provided in it. The prominent components of a sheetfed scanner include the sheet-feeder, scanning module, and calibration sheet. While the sensor and source of light move across the glass pane in flatbed scanners, in sheetfed scanners, they are stationary. Instead, the document moves through the scanner. Ideal for scanning single page documents, these scanners cannot scan thick objects, like books, and that, perhaps, is their major drawback.



Advantages of Scanner:

1. Scanner provide for the easy and convenient capture of data from paper sources. And facilitate the editing of the same.
2. An optical scanner include being easy and quick in converting printed text into an electronic and editable form.
3. There is no need to carry personal identification. The person has to be present. This makes identification theft and fraud much less likely.
4. A flatbed scanner can scan larger documents, and without bending them. The downside is that it takes up lots of space.
5. The advantages of using scanners are: It can copy things onto computers then you can alter the things you copied.
6. An advantage of a scanner is the ability to produce accurate and high quality.

Disadvantages of Scanner:

1. On the downside, scanning is a very slow method of data capture especially where a lot of documents have to be dealt with, and scanners are costly to maintain.
2. On the other hand, include inaccuracy and data is not in a standard recognizable form.
3. A device for examining, reading, or monitoring something, in particular.

FOR SENIORS: HOW TO INSTALL A SCANNER

Before you can scan documents into your computer with a scanner, you need to install the scanner driver so that your scanner and computer can communicate. Start by connecting the scanner to your computer's USB port (see your scanner manual for information about how it connects to your computer).

1. Turn the scanner on.

If you're not using a Plug and Play device or Windows doesn't have the driver for that device, you see the Found New Hardware message.

2. Click the Found New Hardware message, click Yes, This Time Only, and then click Next again.

You only need to do this step if you don't permit Windows 7 to automatically connect to Windows Update. Otherwise, you don't see the Found New Hardware Wizard.

3. If you have a CD for the scanner, insert it in your CD drive and click Next.

Windows 7 searches for your scanner driver software and installs it.

4. Choose Start→Control Panel and type scanners in the Search box.

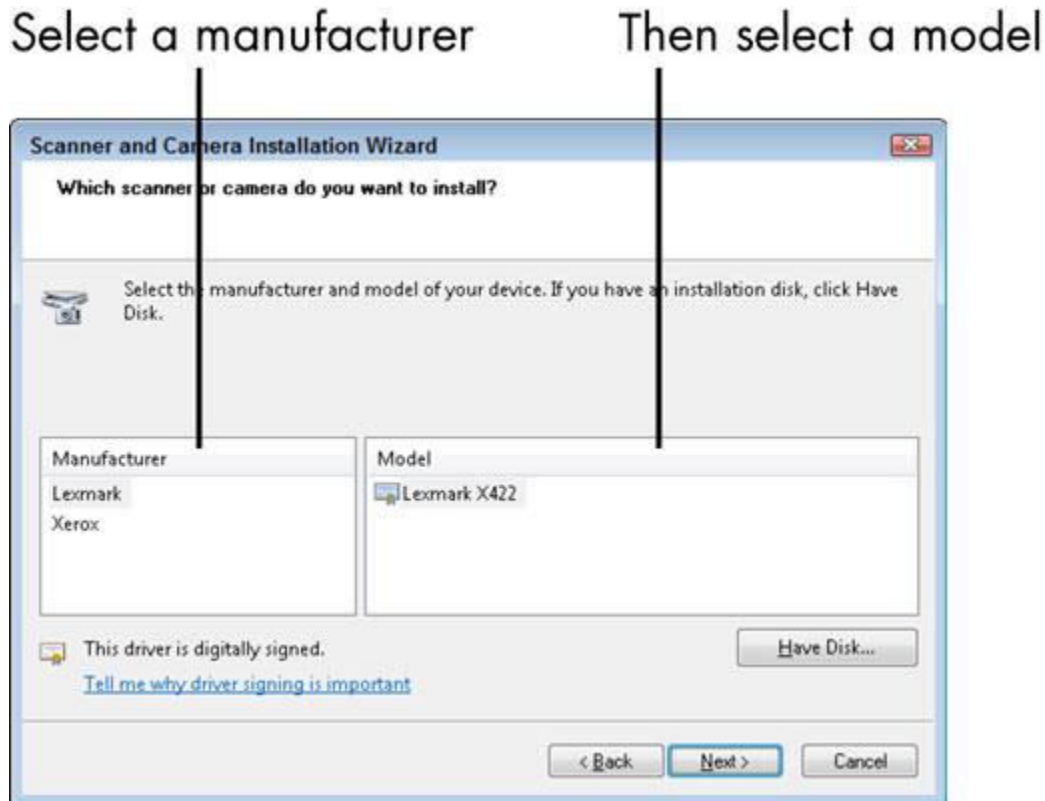
Windows returns a set of links.

5. Click the View Scanners and Cameras link.

The Scanners and Cameras window appears.

6. Click the Add Device button and then click Next.

The Scanner and Camera Installation Wizard window appears. When you click Next, the next screen of the wizard appears.



7. Click a Manufacturer in the list on the left and then click a model in the list on the right.

Now it's just a matter of following the wizard directions based on the model of scanner you choose and whether you have a manufacturer's disc (a CD- or DVD-ROM). If you don't have a disc, Windows can help you download software from the Internet.

8. When you reach the end of the wizard, click Finish.

The installation is complete.

