DIMA Digital Imaging Glossary of Terms

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A

Accelerated Graphics Port (AGP)
An interface specification from Intel designed to facilitate 3-D graphics by allowing the graphics card to access the computer's RAM to refresh the monitor's display.

Access
To store or retrieve information with a software application from a computer component such as a disk drive so the user can work with it.

Access Time
The length of time that is required for a computer system to process a data request and then retrieve the data from memory or a storage device.

Achromatic Color
A neutral white, gray, or black color that does not have a hue.

ActiveX
An implementation of OLE (object linking and embedding) developed by Microsoft that allows the user to see desktop applications in a web browser.

Active-Matrix Display
A flat-panel LCD display used in laptop and notebook computers in which each pixel is controlled by its own (RGB) transistor triad, yielding sharper images and better color than passive matrix LCD displays.

Adaptive Compression
A type of compression software commonly used to back up files. The method of compression changes with the type of file and is not recommended for photographic images because it may destroy the original data.

Additive Color
Refers to the colors that result from mixing the primary colors of light (Red, Green and Blue – RGB) to produce the visual spectrum of colors. When the primary colors are mixed at 100 percent intensity, white light is produced.

Address
The unique location of data in memory, e-mail, Internet, or media access control address on a network.

Addressable Resolution
The maximum resolution of any device. The finite number of pixels that any imaging device is capable of creating, manipulating, or imaging.

Adobe Acrobat
Adobe's software application for creation and viewing of Portable Document Format (PDF) files that can display a document as it was originally designed without having the particular software or fonts used to create the file.

Adobe Type Manager
Software that produces Postscript outline fonts for display or output.

Airbrushing
A software tool found in many image editing programs that simulates the effect of a mechanical airbrush.

Algorithm
A process or set of rules that a computer follows to solve calculations. In imaging, the term is usually used to describe the set of routines that make up a compression or color-management program and other RIP applications.

Aliasing
The visual stair-stepping of edges that occurs in an image when the resolution is too low. This can be caused by improper image sampling or processing. See *Jaggies*.

Alpha Channel
An image-editor channel used to contain a mask, partial picture element or color that is used to calculate the transparency of each color in an image. In a three-color image, the alpha channel would be the fourth channel.

Alphanumeric
The set of characters consisting of the alphabet and the numerals 0-9 as codes and computational expressions.

AM (Amplitude-Modulated Screening)
An image screening method that uses halftones where dots vary in size but are located on a regularly spaced grid.

American National Standards Institute (ANSI)
The official U.S. standards organization, and the U.S. member of the International Standards Organization (ISO). An organization within the federal government responsible for standardizing computer systems for trade and communications purposes. COBOL, FORTRAN, and C programming languages are all ANSI standards.

Analog
An electronic signal, tone, or other measure that is continuously variable in its level as opposed to the discrete steps or levels of digital data.

Analog-to-Digital Converter (ADC)
A device that converts continuously variable analog signals into discrete digital data.

Anti-Aliasing
The removal or softening of jagged (aliased) edges by averaging or blending techniques. See *Aliasing*.

Applet
A small Java program that can be attached to an HTML document and executed by a Java-enabled browser.

AppleTalk
An inexpensive local-area network (LAN) architecture that is built into all Apple Macintosh computers and printers. AppleTalk supports Apple's "LocalTalk" cabling system as well as Ethernet and IBM Token Ring. It can connect Macintosh computers and printers, as well as PCs that are equipped with special AppleTalk hardware and software.

Archive
A long-term storage area, often on a server or digital medium, for image storage, backup copies of files or for files that are no longer in active use.

Area Array
An image sensor with a two-dimensional grid of photo sites or pixels.

Artifact
In digital graphics applications, unwanted visual anomalies or defects generated by an input or output device or software operation that degrades image quality.

Artist's Proof
One of a small group of prints set aside from the edition for the artist's use. Sometimes a number of printer's proofs are done for the printer's use.

ASCII (American Standard Code for Information Interchange)

A computer coding system that converts letters, numbers, and symbols to binary values that a computer can understand.

Aspect Ratio

The relationship of the horizontal and vertical measures of an image. The horizontal value is placed first (i.e., 3:2).

Asymmetric Digital Subscriber Line (ADSL)

A Digital Subscriber Line (DSL) on which data flows in (downstream) faster that it goes out (upstream). ADSL speeds range from 1.5 Mbps to 6 Mbps downstream and 64 Kbps to 384 Kbps upstream.

Asynchronous Transfer Mode (ATM)

A fast network communications system that can transfer voice, video, or data at speeds of 155 or 622 megabits per second and faster. To achieve these speeds, data is divided into 53 byte cells of information that are sent along the fastest possible route.

Audio-Visual (AV)

The use of sight and sound to present information.

Author

To create an interactive multimedia program.

Authoring Software

A software program that facilitates the development of interactive multimedia through the use of scripting languages, hypermedia linking, or object programming.

B

Backbone
A high-capacity network connecting subnetworks.

Background Processing
Running applications behind others in a multi-tasking computing environment. The overall performance may be reduced due to the multiple allocation of computer resources.

Banding
Patterned stripes on a print that create harsh, well-defined transitions between different ranges. Generally caused by insufficient color or gray-scale ranges within the output device's image processor, or by insufficient information contained within the original scan.

Bandwidth
The capacity a network or data connection has for carrying data. For analog transmission, bandwidth is the range between the upper and lower transmission frequencies in a given range. It is measured in cycles per second or hertz (Hz). For digital transmission, bandwidth is measured in bits per second (bps), and the larger the bandwidth number, the faster the digital transmission.

Barrel Distortion
A common geometric lens distortion causing an acquired image to pucker toward the center.

Base Resolution
The Photo CD image resolution (512 x 768 pixels) that is formatted for display on current consumer televisions.

Base x4
The 1,536 x 1,024 pixel image that is scanned and stored on a Photo CD.

Base x16
The 2,048 x 3,072 pixel image that is scanned and stored on a Photo CD.

Base x64
The maximum resolution image file that is available on Pro Photo CDs. This 4,000 x 6,000 pixel image produces a 72 MB file.

BASIC (Balustrade Image Sensor)
A specific type of image capture sensor or CCD that can capture high-quality digital images with a single chip.

Basic Input Output System (BIOS)
A file that defines system control for a computer and facilitates the existing input and output connections between the keyboard, monitor, and other devices.

Batch Processing
A method that allows for the repetitive processing groups of data or several digital files by executing only one command.

Baud Rate
The number of voltage or frequency changes made per second on a communication line measured in bits per second (bps).

Beta Test
The testing of a hardware or software product in the field under real operating conditions prior to general release.

Bezier Curve
A type of curved line defined by a mathematical formula and control points. These points serve as handles in graphics programs that can be "gripped" by the mouse pointer to drag the curve into different shapes.

Binary
The number system used by computers that is made up of only two digits: 0 and 1.

Bit
A bit is a binary digit. This is the smallest piece of binary information used by a computer.

Bit Depth
The maximum number of bits that are used to define a pixel, a measure of the defined brightness range, the color depth or pixel values for a digital image, or the number of possible colors or shades of gray that can be included in an image.

Bitmap (BMP)
A rasterized graphic image formed by a rectangular grid of pixels or dots.

Bits Per Second (bps)
A measurement of data transmission speeds. As the name implies, bps is the number of bits that pass a certain point in one second.

Black Generation
A term describing the addition of black ink to the other process colors (CMY) when printing an image. Black generation is typically handled in one of two ways, gray component removal or under color removal. See *GCR* or *UCR*.

Black Point
The darkest shadow in an image histogram used to adjust the tonal range of the image. A color that when scanned, produces values of 0, 0, 0 in a scanner. Ideally, the black point is 0% neutral reflectance or transmittance. See *White Point.*

Bleed
Printing term referring to an image or inked area that extends beyond the trimmed edge of the page.

Blooming
A visual effect caused by overexposing an image sensor to too much light resulting in a leakage into adjacent photo sites. This "digital overexposure" can cause distortions of the subject and/or color.

Blur
The softening of image detail.

BMP
See *Bitmap.*

Bon-a-tirer (BAT)
Pronounced bone-ah-ti-ray. The proof accepted by the artist that is used as the standard for comparing all subsequent prints. Some printers require a signed BAT before production printing can begin.

bps
See *Bits Per Second.*

Brayer
A roller used for flattening, transferring or adhering two flat surfaces.

Brightness
The overall intensity of an image. The lower the brightness value, the darker the image; the higher the value, the lighter the image. See *Chroma.*

Bronzing
A problem that can occur with certain ink/paper combinations where darkened, or “bronzed,” reflections from inked areas are juxtaposed with areas where little or no ink is present, resulting in full reflection of the paper. Also called “gloss differential.”

Bubble Jet
A proprietary Canon thermal inkjet printing technology that uses heat to create “bubbles” in the ink supply which propels the ink through small nozzles onto the print media.

Buffer
A temporary storage area in a computer’s memory, usually RAM, which holds recent changes to files and other information to be written later to the hard drive.

Buffering
The neutralizing of acids in paper by adding an alkaline substance (usually calcium carbonate or magnesium carbonate) into the paper pulp. The buffer acts as a protection from the acid in the paper or from pollution in the environment.

Bulk Ink
Ink in large containers, supplying the printer in quantity. See *Continuous Ink System.*

Burnish
To rub a surface to smooth and polish, or to help it adhere or transfer to another surface.

Bus
The connection or path between the CPU and input and output devices. The number of bits used in the bus affects the data transfer rates between input and output devices.

Byte
A standard unit of digital measurement where 8 bits = 1 byte.

C

Cable Modem
A device that allows the connection to a network over the coaxial cable of a cable television network. Cable modem speeds can range from 500 Kbps to 10 Mbps.

Cache
A bank of high-speed memory set aside for frequently accessed data.

CAD (Computer-Aided Design)
The application of computers in the design process.

Calibration
Adjusting a device to known specifications to help compensate for color "drift" over time. The second step in the color management process. See *Color Management.*

Calibration Bars
A strip of color/tonal values used to check quality on a negative, proof, or printed piece.

Camera-Ready Art
Any artwork or type that is ready to be submitted for prepress and printing.

Capture
Digitally acquiring image information with a device such as a scanner or digital camera.

Cartridge
The container for inks in inkjet printers. "Chipped" cartridges have electronic chips on them that can prevent refilling. "Unchipped" cartridges can be reused, or used with inks other than those of the manufacturer.

CCD (Charged Coupled Device)
A light-sensitive device that collects electrical charges in a potential well proportional to the incident light. The charge is then read out digitally.

CCITT (Consultative Committee for International Telephony and Telegraphy)
See *ITU.*

CD (Compact Disc)
The original standards for compact audio discs now refer to any 4.75-inch optical disc, which can store data in various forms.

CD Array
See *Area Array.*

CD-I (Compact Disc Interactive)
A CD-ROM format that holds audio, MPEG video, digital data and still graphics allowing a user to interact with the content on the disc by use of a mouse or other pointing device.

CD-R (Compact Disc Recordable)
A format that allows CD writers to record data to a blank CD-ROM disc.

CD-ROM (Compact Disc Read-Only Memory)
A storage medium using CDs to hold computer data. A CD can hold about 650 MB of data, or about 300,000 pages of text.

CD-ROM*XA (Compact Disc Read-Only Memory Extended Architecture)
An extension of the CD-ROM format, introduced in 1991 by Sony, Phillips, and Microsoft. This format allows for interleaved compressed audio and data sectors on a track, making it possible for text and video to be narrated in CD-ROM software.

CD-RW (Compact Disc ReWriteable)
A format that allows a recordable CD to be rewritten several times.

CGA (Color Graphics Adapter)
An early IBM video standard with 320 horizontal pixels by 200 vertical pixels in 4 colors.

CGM (Computer Graphics Metafile)
A vector-based graphic file format.

Channel
A component of a digital image that carries data for one color layer (RGB or CMYK). When all channels are combined, a full-color image is created.

Characterization
Determining the color reproduction characteristics of a device by measuring the device's actual RGB or CMYK color values with a colorimeter or spectrophotometer. The third step in the color management process. See *Color Management.*

Chip
A piece of silicon with additional electronic circuitry components embedded in it. Also called an integrated circuit.

Chroma
The purity or intensity of a color. The strength of a particular color by which we can distinguish a strong color from a weak one.

Chromagenic Print
A color print made from a color transparency or negative in which the print material has at least three emulsion layers of silver salts. Each layer is sensitized to one of the three primary colors and records information about the color makeup in the photograph. In the initial development, a silver image is formed in each layer. With further development, dye couplers are added that, when united with the silver, form dyes of the appropriate colors in the emulsion layers. When seen against a white print stock, the layers appear in full color.

Chromatic
Perceived as having a hue. Not white, gray or black.

Chromaticity
The quality of color, independent of brightness.

Chromaticity Coordinates
The ratio of a set of tristimulus values to the sum of the coordinates.

Chrome
A positive film image; multimedia technology of Microsoft that acts as an interface to DirectX, using a set of XML tags.

Chrominance
The color and saturation information in a video signal.

CIE (Commission International de l'Eclairange)
The main international organization concerned with color and color measurement and the definition of standards related to color measurement.

CIE 1931 Standard Colormetric Observer
An ideal colormetric observer with color matching functions determined by the CIE in 1931.

CIE Colorimetry
The measurement of color according to the spectral responsivities of a CIE standard observer.

CIE LAB (L*a*b*)
The color model that best describes human vision. The model consists of three variables: L* for luminosity, a* for one color axis, and b* for the other color axis.

Client-Server Network
A network in which the processing responsibilities are split between the server and the client.

Clipping
A condition where all values lighter than a specific tone are converted to white and all values darker are converted to black. Also, the loss of visual information caused by too little contrast, in which certain gray scale values are lost or compressed either into the range of pure white or pure black. This is usually an unwanted effect.

Clone
Copying pixels of data to new spatial locations in an image; computing systems based upon IBM design using Windows operating systems.

Closed Architecture
Computer systems that are "closed architecture" severely limit the addition of peripheral devices to the system, especially devices from other manufacturers.

CMOS (Complementary Metal Oxide Semiconductor)
An electronic component used for RAM and fast data switching. CMOS semiconductors are made of two metal-oxide field effects transistors for high speed and low power use. However, they can be damaged by static electricity.

CMY (Cyan, Magenta, Yellow)
The three primary colors of the subtractive color model, used in color printing. In theory, the combination of pure CMY inks produces black; in reality, black must be added to produce a full color gamut.

CMYK (Cyan, Magenta, Yellow, Key (Black))
Cyan, Magenta, Yellow, and Black (or Key) are the four colors used in process-color printing.

Coating
The process of treating a media or substrate to accept inkjet inks. Also, a thin covering that provides protection from UV-induced fading, smudging and fingerprints, which may or may not improve the permanence of the print because most fading is due to visible light.

Cockling
Describes the wavy or wrinkled appearance of paper when ink absorption limits have been exceeded. Or, a printing defect typically seen as deforming wrinkles on paper and usually caused by heavy ink loads or moisture.

Code Value
The digital value assigned to each color plane of a pixel.

Cold Press Paper
Printmaking and watercolor paper made in a mold, roughly textured.

Color
Visual perception created when light of varying wavelengths in the region of approximately 400-700 nm is detected by the receptors of the eye and processed by the brain.

Color Balance
The ability to reproduce all of the colors in a scene within an acceptable standard.

Color Calibration
Software and/or hardware that adjusts and coordinates colors between two or more digital devices. Color calibration systems commonly compare device color profiles and translate one color model into a device-independent language.

Color Cast
An unwanted tint of one color in an image. This can occur due to an input or output device, or lighting conditions.

Color Compression
Shrinking the color gamut of an original to the color gamut a device can represent or reproduce.

Color Copier
Color printing device using electrostatic and CMYK pigments.

Color Correction
The process of adjusting an image to correct for color imbalances or for the characteristics of the chosen output device.

Color Curve
A graphic mechanism for displaying color measurements and for making color changes to an image. User adjustments to the angle and slope of the curve implement color changes to one or all of an image's color channels.

Color Electronic Prepress Systems (CEPS)
A digital system used to prepare color images for mechanical printing. Usually this includes separation of the color image to CMYK values.

Color Gamut
A range of colors that can be reproduced by a given system.

Color Look-Up Table (CLUT)
A table of color values that is used to either convert from one color space to another for inputting or outputting data to different types of devices.

Color Management
The process that helps overcome variations in color reproduction workflows by creating data files that describe the unique characteristics of individual digital devices. The result enables color matching between devices, including from monitor to print, between an original photograph and a digital file, and even between two prints created on different media with different inks. The four stages of color management are consistency, calibration, characterization and conversion. See *Profile.*

Color Management System (CMS)
A combination of software and/or hardware devices used to produce accurate color results throughout a digital-imaging system.

Color Model
A color measurement scale or system that numerically specifies the perceived attributes of color. Examples include RGB, CMYK and HSL.

Color Profile
See *Profile.*

Color Proof
A color print output that is designed to provide designers and print buyers with an approximation of the color characteristics that will appear on a press.

Color Separation
A process of separating a color original into its individual components in a specific color model.

Color Space
A three-dimensional mathematical model that includes all possible colors. The parts of the visible spectrum that can be reproduced, such as RGB for computer monitors, CMYK for print and web safe index colors for the Web.

Color Temperature
A scale used to refer to the visible energy system of various light sources. The scale uses degrees Kelvin as a measure of the mixture on a scale from red to blue-white. Daylight = 5,500 Kelvin, a blue-white color. The tungsten in a light bulb produces approximately a 3,200 Kelvin, an orange color.

Colorant
Any substance that imparts color to another material or mixture. Colorants can be dyes or pigments.

Colorimeter
A device that measures color through red, green, and blue filters and calculates values in three-dimensional color spaces that closely represent human vision.

Colorimetry
Colorimetry is a way of measuring and quantifying the color of an object based on a standard light source and a standard model of human vision. Three basic types of color measurement instruments are used in the graphic arts. Listed in increasing sophistication, they are densitometers, colorimeters, and spectrophotometers.

Color-Matching Function
The amounts of three primary stimuli required to match equal radiant power at each wavelength.

Communications Port (com port)
The connector on a microcomputer for a communications interface, typically a serial port.

Compact Flash
A non-volatile type of storage media using flash memory technology (see *Flash Memory)* that is used with some makes of digital cameras and portable computer devices.

Complementary Colors
Two colors that, when combined, create neutral gray. On a color wheel, complements are directly opposite the axis from each other, such as blue - yellow, red - green, etc.

Compression
The process of removing irrelevant information and reducing unneeded space from a file in order to make the file smaller. Compression can cause losses and distortion, depending on the method. The two types of compression schemes are lossy and lossless.

Consistency
Ensuring the device in a color workflow, such as a monitor, scanner or printer is able to reproduce color consistently. The first step in the color management process. See *Color Management.*

Continuous Tone
An image that consists of a visually infinite tonal range of colors or gray values. Value changes appear as a continuous gradient. For printing purposes, continuous-tone images are converted to dot patterns (halftones).

Contrast
Tonal gradation between the highlights, midtones, and shadows in an image. High contrast implies dark black and bright white. Medium contrast implies a good spread from black to white, and low contrast implies a narrow spread of values from black to white.

Conversion
The process of matching color as closely as possible between input and output devices. For example, if an image is captured by an RGB scanner, edited in a design application, then printed on a CMYK printer, it must be converted many times. This occurs in a device-independent color space known as CIE LAB, or profile connection space. The fourth step in the color management process. See *Color Management.*

CPU (Central Processing Unit)
The primary device in which computation and logic are carried out in a computer.

Crash
A sudden, unexpected termination of a program caused by a hardware or software error.

Crop Marks
Printed lines used for final trimming, showing the trim size of the final printed piece.

Cropping (or Crop)
The digital or manual process of cutting away unwanted portions of an image.

CRT (Cathode Ray Tube)
The display tube used in most televisions and standard computer monitors. An electron beam moves across the back of the screen exciting phosphor dots inside the glass tube, which causes an image to be displayed.

Curves
Graphic tools in image manipulation software that allow the user to change the contrast and color values of an image.

Cyberspace
Not a real location but rather the "world" created by computers, specifically the Internet.

D

D65
The CIE Standard Illuminant that represents a color temperature of 6,504 Kelvin. Widely used as the standard white point for monitor calibration. See *Kelvin.*

Dark Current
The voltage from a CCD when no light is present, directly related to noise.

Data
Information stored in digital files including text, pictures, and sound.

Database
Text, graphics, pictures, sound or video or other information stored and arranged in an orderly manner.

Database Management System (DBMS)
The system that controls the organization, storage, and retrieval of fields, records or files from a database.

Decompression
The process by which the full data content of a compressed file is restored.

Delta-E
Delta-E is used to describe (mathematically) the distance between two colors. To calculate the Delta-E of any two colors, you need to know their LAB values. Once you have these values, all that you need to do to calculate Delta-E is to calculate the distance between the two points in the LAB color space.

Densitometer
An instrument used to measure the optical density of a transmitting material, or the negative log of the reflectance of a reflecting material. They do not measure color, but rather indicate the percentage of a given area that is covered by halftone dots in density units or percentage dots. Densitometers are widely used in the graphic arts and photographic industries to ensure consistency and for process control. See *Density.*

Density (Optical Density)
The degree of opacity of an image; a measure of reflectance or transmittance equal to log10 (1/reflectance) of log10 or (1/transmittance); the ability of a material to absorb light - the darker it is, the higher the density. Density measurements of solid ink patches are used to control ink on paper. See *Densitometer.*

Descreening
The application of controlled blur when scanning halftone images to make them appear more like a continuous tone image and to minimize moiré patterns.

Desktop Color Separation
A file format consisting of four .eps files, one for each of the process colors: CMYK.

Desktop Publishing
The use of desktop computers to create and perform some prepress operations for printing and publishing.

Device Dependent Color
A color space that is unique to a specific device and its color-rendering capabilities.

Device Profile
Mathematical equations or look-up tables used to transform from a common color space to the specific color space of a device.

Device-Independent Color
Color specifications that are based on an independent color model rather than the gamut of an output device.

DHCP (Dynamic Host Configuration Protocol)
A Windows server protocol that provides a means to dynamically allocate IP addresses to PCs running on a LAN.

Diffuse Highlight
A large highlight area of a photographic print or transparency that contains detail.

Digit
A single character in a data system.

Digital
Type of data consisting of (or systems employing) discrete steps or levels, as opposed to continuously variable analog data.

Digital Audio Tape (DAT)
A recording format that stores data in digital form on magnetic tape. DATs are used for backup and archival storage but are too slow in access time for normal operating purposes.

Digital Camera
Any camera system that is capable of capturing image data into a digital file.

Digital Color Printing
A non-impact printing technology in which digital data is output to inkjet, electrostatic thermal transfer, dye sublimation, and photographic printing devices on a pixel-by-pixel basis.

Digital C-Print
Another term for digital photoprint, these are actual photographic prints that are exposed to laser or LED light, then processed in traditional RA-4 wet chemistry.

Digital Halftone
The reproduction of color and spatial resolution for digital image data using a series of dots arranged in a square pattern.

Digital Imaging
The process of image capture, manipulation and final image form, accomplished by digital systems.

Digital Photographic Printing
Any of a number of printing devices that expose photographic paper to LED, laser, or CRT light sources using a digital data input and pixel-by-pixel exposure.

Digital Printer
Any device that is capable of translating digital data into hard-copy output. Typically refers to one of the digital output technologies, such as inkjet, electrostatic, thermal transfer, or laser photoprinting.

Digital Signal Processor
A special chip created for high-speed data transmission and manipulation particularly in communications, graphics, and audio-intensive applications.

Digital-to-Analog Converter (DAC)
A device that converts digital data into analog signals so the data can be retrieved from a digital device.

Digitize
Convert analog signals or images to digital values.

Direct Memory Access
The ability to transfer data from a storage device to memory without going through the processor.

Direct-to-Press Printing
The printing process that allows for the elimination of film separations from the printing process.

Disc
Any thin, round platter that stores various types of information in analog or digital formats. Not to be confused with the magnetic storage medium, which is called a *disk.*

Disk
A circular, enclosed magnetic storage medium on which information may be accessed randomly, as opposed to sequentially. Not to be confused with the optical storage medium, which is called a *disc.*

Dithering
The process used by some output devices to simulate shades of gray or color variations with a randomizing technique that uses varying sizes of and shapes of pixel groupings instead of an ordered array of halftone dots. (Diffuse dithering is a method for printing continuous tone images on a laser printer, in which the grayscale information is represented by randomly located printer dots.)

Dmax
A measure of maximum density. It can apply to many things. When talking about paper and inks in digital printing, it is the blackest black possible.

Dmin
The lowest level of density.

Domain Name
The name corresponding to the numeric Internet Protocol (IP) address of a computer on the Internet.

Dot Gain
The phenomenon that occurs when ink expands its coverage during printing onto a substrate; often caused by abnormal or excessive absorption by the substrate.

Dot Pitch
The distance between the dots on a computer monitor, typically 0.24 to 0.38 mm. The closer the dots, the sharper the image on the monitor.

Download
To transfer data or code from one computer to another, typically from a large host or server to a smaller client. Compare to *Upload.*

Down-Sampling
The process of receiving data from another computer, server or system. The reduction in resolution of an image that results in a loss of detail.

dpi (Dots Per Inch)
A measure of printer resolution that indicates how many ink dots the printer can place in one inch either vertically or horizontally.

D-RAM (Dynamic Random Access Memory)
A type of computer memory using transistors and capacitors to retain data. Because the capacitors lose charge they must be refreshed every millisecond. D-RAM is cheaper, takes up less space, and uses less power than S-RAM.

Driver
A program that allows a hardware peripheral device to communicate with a computer.

Drum Scanner
A type of optical scanner where a flexible original is mounted to a rotating drum. As the drum spins, light is captured from the image point by point, using a photomultiplier tube detector.

Dry Down
The amount of time it takes for inks to become stable.

DSL (Digital Subscriber Line)

Technology used to transmit data on regular copper phone lines. It can send analog or digital signals on the same line at very high transfer speeds.

Duotone

A two-color representation of a single-color image. A duotone can be created by taking the tonal range, from lightest tones to darkest, and allocating a different color to specific areas of the tonal range.

DVD (Digital Versatile Disc (formerly called Digital Video Disc))

Any of several formats that record MPEG-2 video with Dolby or MPEG-2 audio. DVDs are capable of storing up to 4.7 GB of data on each side of the disc.

DVI (Digital Video Interactive)

A technology developed by RCA, Intel Corp., and GTE that allows for the compressed storage of full motion video data on a CD-ROM.

Dye

A colorant that does not scatter light, but instead absorbs (and therefore reflects) certain wavelengths and transmits others. Dyes are generally organic and usually soluble in water or some other solvent system.

Dye Sublimation (Diffusion Transfer)

A color printing technology that forms an image by delivering gaseous dyes to the receiver material with a thermal driver.

Dynamic Range

The extent of values from lightest to darkest.

E

E-commerce
The term is short for electronic commerce, conducting business or transactions over the Internet.

Effective Resolution
The final appearance of a scan that has been enhanced to produce more data than the scanner can record. This is done by interpolation.

EGA (Enhanced Graphics Adapter)
A display mode defined by 640 x 350 pixel resolution and 16 colors.

EIDE (Enhanced Integrated Drive Electronics)
A hard drive controller with 32-bit transactions and in some cases direct memory access.

Eight-bit (8-bit) Color
Each pixel has eight bits assigned to it, providing 256 colors or shades of gray. A grayscale image is an example of 8-bit color.

EISA (Extended Industry Standard Architecture)
A standard for IBM-compatible 32-bit data bus that supports more than one processor.

Electrostatic
A process of imaging where a toner is used to form an image by controlled static charges. Toner printing adheres to the charged areas.

Electrostatic Copier
A type of output device in which toner placement is controlled by static charges.

Encryption
The act of encoding a file through use of software programs so that others may not gain access to its content.

EPROM (Erasable Programmable Read-Only Memory)
A storage device that uses electric charges stored in an isolated MOS transistor to simulate data that can be stored for as long as 10 years, can be programmed, and erased.

EPS (Encapsulated PostScript)
A graphic file format used to describe an image in the PostScript page description language denoted by file extension .eps.

Error Diffusion
A printing technology that uses random dot placement to achieve optimal results.

Ethernet
A standard for data communications and networking that allows for transfer rates up to 100 Mbps using coaxial, fiber-optic, or cabling similar to telephone line.

EVGA (Extended Video Graphics Array)
A video display with 1,024 x 768 pixel resolution.

Expanded-Gamut Printing
A printing system where manufacturers add additional colors of ink to expand the range of the standard CMYK inkset. Lighter densities of Cyan and Magenta (LC, LM), Orange and Green (O, G) and multiple Blacks are the most popular.

Extended Graphics Array (XGA)
An IBM standard display mode providing 1,024 x 768 pixels of spatial resolution and 256 colors.

Extensible Markup Language (XML)
A subset of SGML whose objective is to enable SGML to be served, received, and processed on the Web just as HTML.

Extranet
A control access network that uses Internet technology to share public information, but keep private information secure through the use of a firewall.

F

Fast Ethernet
100 Mbps Ethernet.

FAT (File Allocation Table)
A map of the hard drive that defines the exact location of tracks, sectors, and clusters.

Feathering
A technique available in many image-editing programs that softens the edges around a selection.

Fiber Optics
The transmission of data in the form of light pulses through a strand of glass or plastic fiber.

File Format
The particular arrangement of digital information that is saved from an application program for a specific use.

Film Terms
The processing transforms used in some scanner systems to compensate for different film characteristics.

Film Writer (Recorder)
A device used to record digital images onto photographic film.

Filters
Functions found in most image-editing applications that use algorithms to modify digital images by changing the values or arrangement of specific image areas.

Firewall
A security system that prevents unauthorized access to resources or information on a network from being passed on to another network.

FireWire
A high-performance serial bus standard developed by Apple and Texas Instruments that includes transmission speed scaleable from 100 to 400 Mbps, is a hot swappable connection, and allows for up to 63 devices to be connected at once. FireWire is Apple's version of the IEEE 1394 standard.

Firmware
Software programs stored in a computer's read-only-memory (ROM) that are permanent and cannot be changed. Such programs are associated with functions like the boot-up process.

FITS (Functional Interpolating Transformational System)
A software technology that allows the user to edit very large image files in near real-time by accessing only the image data being edited.

Flare
Non-imaging stray light that can cause image degradation.

Flash
A file format used for the delivery of vector graphics and sound over the Internet.

Flash Memory
An EPROM module that has fast access and can be erased.

Flash Pix
An image file format developed and supported by Eastman Kodak, Microsoft, Hewlett-Packard and other companies. This format uses FITS (see *FITS)* technology to facilitate the transmission and manipulation of large image files.

Flatbed Scanner
A type of scanner that captures image data using a linear array detector.

Font
Any given typeface containing all of the numbers, letters and symbols.

Format
A printer's print area, or a media/graphic's width. "Medium format" is generally 11 to 24 inches in width, "large (wide) format" is generally larger than 24 inches in width; and "grand format" is usually larger than 72 inches in width.

Four-Color Process
The use of cyan, magenta, yellow, and black dots to simulate a wide variety of colors.

FPO (For Position Only)
A term for a low-resolution image used in page layouts to define the proper placement of the hi-resolution image.

Fractal
A fractal is a mathematically generated pattern with an infinite amount of image detail.

Fractal Compression
Compression scheme based upon converting image files into mathematical equations. The method can produce very high compression ratios.

Fractal Image
Images converted into mathematical equations that describe the curves and other geometric features of the image.

Frame Grabber
A device that captures and stores single video frames.

Frequency Modulation (FM) Screening
A halftone screening method in which all halftone microdots are the same very small size, but their average number per surface area, or frequency, varies according to the tone value to be reproduced.

FTP (File Transfer Protocol)
A client-server protocol that allows file transfer over a TCP/IP network.

Full Bleed
A printing term used when an image or inked area extends beyond the edge of all four sides of the printed piece.

G

Gamma
A measure of the amount of contrast found in an image according to the slope of a gradation curve. High contrast (steep curve) has high gamma and low contrast (shallow curve) has low gamma.

Gamma Correction
The nonlinear tonal correction editing of an image's gamma curve. This is typically used to manipulate image shadow detail and lighten the image without washing out the highlight areas.

Gamma Ratio
The non-linear characteristic of displays, scanners, and digital cameras in their signal-to-observed light intensity. *output = input ^ gamma.*

Gamut
The range of colors that are available in an image or output process.

Gamut Compression
Editing an image to reduce the color gamut so the image can be displayed or output within the limits of a particular device.

Gamut Mapping
The plotting of an image color gamut into the CIE color space. See *Color Space.*

Gas Ghosting
The phenomenon where uncured inkjet prints, when framed, form a fogged or ghost image on the inside of the glass surface. This happens primarily with "barrier-type" paper, such as RC papers, and can be avoided with thorough or accelerated drying of the print.

Gaussian Blur
An image softening effect using a bell-shaped gaussian distribution to soften the image.

GB
See *Gigabyte.*

GCR (Gray Component Replacement)
The process of removing areas of overlapping cyan, magenta, and yellow inks and replacing that amount with black ink in the black separation. Compare to *UCR.*

Generation Loss
The loss of image quality or data as the image is reproduced multiple times.

Ghosting
The effect of changing an object's level of opacity in image-editing software.

GIF (Graphic Interchange Format)
An image format type generated specifically for computer use. Its resolution is usually very low (72 dpi, or that of your computer screen), making it undesirable for printing purposes.

Gigabit Ethernet
1,000 Mbps Ethernet.

Gigabyte (GB)
A unit of memory or file size that equals 1,024 megabytes.

Global Color Correction
A color correction in a digital image that affects the entire image.

Gloss Differential
See *Bronzing.*

Gradation
A smooth transition between black and white or one color and another.

Graphical User Interface (GUI)
The use of graphical symbols called icons, and menus to carry out commands, open files, and select options of a computer operating system or software application.

Graphics Accelerator Card
A circuit board that reduces the time that a computer takes to produce an image on screen or perform graphic tasks.

Graphics File Format
A file format used to store any of the file formats used to store images in a digital form, e.g., GIF, BMP, JPG, and TIF.

Graphics Tablet
A device that gives users intricate control of cursor movements by use of a stylus or pen in drawing or graphics programs.

Gravure
An intaglio printing process that uses engraved cylinders that retain ink in engraved areas. It is ideal in long-run work and prints on most substrates.

Gray Scale
The number of discrete gray levels that an imaging device is capable of resolving; image whose structure is based solely on brightness information and not color.

GroupWare
A type of software design to let users on a network use the same software and work on projects at the same time.

GUI
See *Graphical User Interface.*

Guide Number
A numerical representation of the power output of an electronic flash.

H

Halftone
A process for representing the tones in an image by dots of varying sizes.

Halftone Cell
A matrix of printer dots that can be combined to produce varying sizes of halftone dots.

HDTV (High-Definition Television)
A video signal that will resolve 1,125 lines in the USA and be capable of receiving digital video broadcasts instead of the current analog broadcasts with the current analog NTSC signal.

Hertz (Hz)
A unit used to measure the number of waveforms per second.

High-Fidelity Color
The extension of the tonal range of color images by means of stochastic printing and the use of six or more color inks to print images rather than the traditional four colors used in the CMYK process.

Highlight
The lightest area of an image.

Histogram
A graphical representation of the tonal values (brightness or color) in a scene based upon the frequency of occurrence of each value.

Holography
A photographic system that uses laser light to expose film to a pattern developed by the interface pattern of the laser and the reflection. When these films are viewed under specific conditions, a 3-D image is visible.

Hot Filter
An infrared cutoff filter that is placed in front of CCD chips to remove the infrared radiation to which the chips are sensitive.

Hot Swap
Standards for input and output devices (i.e., USB) that allow computers to automatically recognize them without rebooting.

HPGL (Hewlett-Packard Graphics Language)
A graphics language used by HP printing devices for printing and storing graphics files.

HSB (Hue, Saturation, Brightness)
A color model in which numerical values describe hue, saturation, and brightness.

HTML (Hyper Text Markup Language)
A computer language using a standard group of tags to tell a Web browser how to display text and graphics.

HTTP (Hyper Text Transfer Protocol)
The standards that let users of the Web transfer information in web pages.

Hub
A device that connects two or more devices so they may communicate.

Hue
One of the characteristics of a color model that relates to its predominant color; the name of a color; a term used to characterize the entire range of color of the spectrum.

Huffman Coding

A form of lossless compression coding that reassigns brightness values to variable length codes based on the frequency of their occurrence in an image. The most frequent brightness values are assigned shorter length codes leading to an overall decrease in file size of the image.

Hybrid Imaging

The use of film for the original capture of an image and the scanning of that film to create a digital file.

Hypermedia

The joining of video, sound, graphics, and other elements to form a non-sequential association of topics; hypertext. *Multimedia, digital media, new media.*

ICC (International Color Consortium)
A group of companies in agreement that develop standards defining color and reproduction characteristics of hardware/software devices and media independent of device-specific characteristics.

IEEE 1394
See *FireWire.*

Illuminant
Mathematical description of the energy emitted by a light source.

Image Enhancement
The processing of an image to improve elements such as color, tonal range, and defects.

Image Pack
A 5- or 6-resolution Photo CD file stored in YCC format.

Image Processing
Any operation that can be performed on digital data to alter its characteristics and thereby the image that it represents.

Imagesetter
A high-resolution laser output device used in the printing industry to image a bitmap to a light-sensitive substrate.

Import
The ability of a software application to bring in files that are not in its native file format.

Imposition
The process of positioning pages of a publication into the correct position to ensure proper page order after printing and binding.

Index Color
A subset of colors of a specific color system that defines the palette used in a specific image.

Ink
A fluid or viscous substance used for writing or printing. In digital printing, the substance in inkjet printing (liquid or solid) that gets sprayed onto the medium; made up of a colorant, a solvent or vehicle, and various additives.

Ink Limiting
A control within a program that limits the percentage of ink applied to an area of print.

Inkjet Printer
A type of non-impact printing technology that sprays tiny drops of ink onto a surface.

Integrated Circuit (IC)
The building blocks of computer hardware in which transistors are combined to perform a particular function or series of functions on one computer chip.

Interface
A communication link in a computer between hardware, software, and the operator.

Interframe Coding
A technique used in compressing motion images that uses similarities between an image frame and a previous reference frame.

Interlaced
A video signal in which two fields, odd-numbered lines followed by even-numbered lines, are interleaved that is common to the NTSC standard.

Internet
A set of interconnected networks that forms a global TCP/IP network.

Internet Protocol Security (IPsec)
The encryption of IP packets in an Internet protocol network. It is most suited for a private network not connected to the Internet.

Internet Service Provider (ISP)
An organization that sells access to the Internet.

Interpolation
A process for increasing image size by using nearby pixels to estimate the color for pixels in the new, larger image; any process used to estimate color.

Intranet
An internal network using the TCP/IP standard allowing the sharing of resources such as printers, files, and storage space on a server.

IP (Internet Protocol Address)
The address of a computer on a TCP/IP network written as four groups of up to three digits separated by periods, e.g., 121.119.115.11.

IPIX
A format for panoramic images often at 360-degree view and requiring special viewing software.

IrDA (Infrared Data Association)
A standard used to transfer data using infrared technology.

ISDN (Integrated Services Digital Network)
A set of telecommunications standards that allows for digital voice, video, and data transmission by using two lines in which data can travel at 128 Kbps.

ISO
A representation of the light sensitivity of an image sensor. The higher the number, the higher the sensitivity to light. Noise may increase as ISO increases.

ISP
See *Internet Service Provider*.

IT8
Standard test targets for color characterization of different devices and media such as scanners and printers established by the Committee IT8 of the American National Standards Institute (ANSI).

ITU
Formerly known as CCITT, ITU is the Committee of the United Nations. Its job is to make sure all telecommunications devices (telephones, fax machines, modems, etc.) can “talk to” each other, no matter what company makes them or in what country they’re used.

J

Jaggies
The effect caused by images or lines being rendered at too low a resolution and producing a stair-stepped effect that gives the image a rough appearance. See *Aliasing*.

Java
A programming language similar to C++ that is optimized for object-oriented, multithreaded, distributed computing. A Java program may be downloaded and run dynamically in a Web browser – *Java Applet.*

JavaScript
A script language that allows for the creation of interactive websites.

Jazz Drive
A proprietary storage device manufactured by Iomega that allows for the storage of up to one gigabyte of data on a single removable disk.

JPEG (Joint Photographic Experts Group)
A standard lossy compression method for full-color or grayscale images using a cascade of compression modes that can achieve compression ratios as high as 100:1.

JPEG 2000 (JPEG 2000: Image Coding System)
Officially called ISO 15444, a standardized format that will expand the ability to manage and transport continuous tone images without noticeable loss of quality.

K

Kb (Kilobit)
A unit of measure for digital data equal to 1,024 bits.

KB (Kilobyte) (K)
A unit of measure for digital data equal to 1,024 bytes.

Kbps (Kilobits Per Second)
A unit of measure for data transmission equal to 1,024 bits per second.

KBps (Kilobytes Per Second)
A unit of measure for data transmission equal to 1,024 bytes per second.

Kelvin
The unit in which color temperature is measured that is used in imaging to define the quality of a light source by referring to the absolute temperature of a black body that would radiate equivalent energy. Generally, a tungsten reading lamp is rated at 2,800 degrees Kelvin, TV or Film quartz lights are rated at 3,200 degrees Kelvin, and outdoor light averages around 5,600 degrees Kelvin. The higher the Kelvin temperature, the more bluish the light appears.

KEPS
Eastman Kodak's system to bring Photo CD to the pre-press industry using the Kodak Precision Color Management System.

Kernel Size
The number of pixels sampled in image manipulation and sharpening processes.

Key
The term for black ink in the CMYK printing process.

KHz (Kilohertz)
Unit of measure for frequency equal to 1,000 wavelengths per second, also called 1,000 cycles per second and 1,000 hertz per second.

Kiosk
A self-serve station set up in a public location that allows customers access to various imaging capabilities and output.

L*a*b* (Lab)
See *CIE LAB*.

LAN (Local Area Network)
A group of computers that operate over a limited distance, for example within an office or building.

Large Format
A printer, media, or print 24 inches or greater in width. See *Format.*

Laser
An intensely focused beam of light with a very narrow spectral distribution. Lasers are used in writing data to storage medium such as CD or in certain types of digital printers. Laser is also an acronym for Light Amplification by Stimulated Emission of Radiation.

Laser Printer
A printer that uses a laser beam to write on a photoconductive revolving drum that is coated with toner (fine, black powder). After the image is transferred to paper, it passes through a pair of heated rollers or a fuser that melts the toner, fusing it with the paper fibers.

Lasso
A tool found in many image editing applications allowing the user to select an area of an image by drawing a line around it.

Layering
In image editing software, the placement of one image or graphic over another. The opacity of the top image can allow the lower image to show through.

LCD (Liquid Crystal Display)
A computer display technology based upon the changing optical density of certain types of molecules when placed in an electric field. LCD displays can be active-matrix or passive-matrix.

LED (Light Emitting Diode)
A semiconductor that emits light when an electric charge passes through it. LEDs are used in displays and also in certain types of digital photo printers.

Lenticular
The combination of interlaced digital images that when viewed with a specially designed, plastic lens creates the illusion of depth or motion.

Lightfast
Resistant to the destructive action of light.

Lightness
The characteristic of certain color models that relates to the visual perception that an area emits or reflects more light.

Line Art
Single color diagrams or drawings. An image that requires sharp edges and high contrast between areas of the image that have ink and those areas that do not. A drawing that consists only of black and white with no intermediate grayscale information. These images require a higher resolution to create the sharpness that is necessary.

Line Screen
A printing term that defines the density of the elements of a halftone cell as the number of lines of ink dots per inch or millimeter.

Linear Array
An image sensor composed of red, green, and blue photo sites arranged in a row.

Linearization
The process of measuring and correcting for a device's inability to see or reproduce a straight line of tones from black to white. Most commonly used to ensure that an imagesetter reproduces the same halftone dot values predicted by the imaging software. Linearization is a critical first stage in setting up any color system.

Linux
A Unix-based computer operating system.

Lithograph
The process of printing from a stone or metal plate on which the image to be printed is ink-receptive and the blank area is ink repellent.

Local Color Correction
Color correcting that only affects a selected area of an image.

Look-Up Table (LUT)
A table of color values that is used to either convert from one color space to another for inputting, or outputting digital data to different types of output devices.

Lossless Compression
A compression technique in which smaller file sizes are achieved without the loss of any of the original data values. This is achieved by a variety of encoding schemes (see *Huffman Coding)* that allow the original data to be re-created from the compressed format.

Lossy Compression
A compression technique in which smaller file sizes are achieved by eliminating some of the original image data. The amount of the original data to be maintained is arbitrarily set by the user based upon the quality needed for the intended use.

lpi (Lines Per Inch)
The number of lines per inch in a halftone screen. As a general rule, the higher the lpi, the higher the printed resolution and quality.

lpm
Lines per millimeter.

Lumen
A measure of the rate at which a source emits light. The ANSI lumen is used to define the brightness of overhead and video display projectors.

Luminance
The rate at which a source emits light in a specific direction. The brightness part of a composite video signal.

LZW (Lempel-Ziv-Welch)
A form of lossless block coding that compresses files by assigning codes to repeating patterns of blocks of pixels.

M

Magnetic Storage
Any storage medium that uses variations in magnetic polarity to record information.

Magneto Optic Storage Disc
A type of storage medium that uses magnetic polarity to record information and lasers to read the data.

Markup
The instructions in a text document that specify formatting features of which SGML is the universal standard.

Marquee
A selection tool in image editing programs typically represented by animated dotted lines around the selected area.

Maser Photo CD
Scans from 35mm transparencies or negatives produced in the Eastman Kodak PIW 2200 or 1200 workstation. Images are written to Kodak-branded media.

Mask
A special effect that can modify images so that only part of the image can be seen, or so that the image blends into the background.

Matrix
Traditionally, the plate or surface upon which an image is inscribed in order to hold ink before transferring the image to a substrate or paper. In digital terms, the matrix becomes the electronic file located on a computer's hard drive or stored on a disk or CD. This matrix is made up of binary encoded information that can describe how the image file should appear on the digital raster screen or print.

Matte Finish
A low-gloss finish with very little reflective quality.

Mb (Megabit)
A measure of data equal to 1,048,576 bits.

MB (Megabyte)
A measure of data equal to 1,048,576 bytes.

Mbps (Megabits Per Second)
A data transfer rate equal to 1,048,576 bits per second.

MBps (Megabytes Per Second)
A data transfer rate equal to 1,048,576 bytes per second.

Media
The material to be printed on, such as watercolor papers, canvas, copper, wood veneer, cotton, or plastic. Media and substrate are the most common terms used in digital printing.

Memory Stick
A type of storage media developed by Sony used in some digital cameras and portable computer devices.

Metafile
A file format that contains both bitmap and vector data that can be used on different machines and in different applications.

Metamerism
The phenomenon that describes the visual match of two or more spectrally different colors under certain viewing conditions but not in all viewing conditions.

Mezzotint
A tonal, rather than linear, engraving process. First, the surface of the plate is roughened with a mesh of small burred dots, then the picture is produced by flattening and burnishing selected areas that print as highlights. Mezzotint is making a comeback as a printmaking technique.

MHz (Megahertz)
A measure equal to 1 million cycles per second.

Microdrive
A micro-sized hard-drive storage device that allows the storage and retrieval of data.

Microporous
An inkjet media that has a receptor coating with voids that fill with ink. The ink is rapidly absorbed within the media rather than applying to the surface. This rapid absorption makes it instantly "dry" to the touch.

Microprocessor
The integrated circuit, known as the CPU, that controls the computer.

MIDI (Musical Instrument Digital Interface)
A set of hardware and software specifications that allows for the digital representation of music that electronic devices, such as keyboards and sound cards, universally understand. It provides a protocol for transforming music into data and vice versa.

Midtones
Tones in an image that are in the middle of the tonal range, halfway between the lightest and the darkest. Also called "middle values."

MIPS (Millions of Instructions Per Second)
A measure of the processing speed of a computer equal to one million instructions per second.

Modem
A device that converts digital data into audio signal for transmission over telephone lines and that converts audio signals back into digital data on reception.

Moiré
An undesirable pattern effect that occasionally appears in combinations of overlapping halftone screens. Changes to screen angles will often eliminate these patterns.

Monitor Calibration
The process of adjusting a video display to a known set of values in order to closely match input and output devices.

Monochrome
An image made of a range of only one color.

Monoprint
One of a series in which each print has some differences of color, design, texture, etc., applied to an underlying common image.

Montage
The seamless combination of divergent images into a singular image.

Morphing
To blend two images together by smoothing moving points from their original position to new positions to form a single image.

MOS (Metal Oxide Semiconductor)
A silicon wafer with channel transistors used to create integrated circuits.

Motherboard
The main printed circuit board in a computer to which all other peripheral devices are attached.

Mottling
A texturing seen in the smooth or monotone areas of an image that can be due to faulty processing and a number of improperly used digital processes, such as excessive unsharp masking.

MP3
A standard digital compression for high-quality audio storage and transmission using very small file sizes.

MPEG (Motion Picture Expert Group) Compression
A variety of video and audio compression techniques that can reduce the data files at ratios of up to 200:1.

MS-DOS
Microsoft Disk Operating System.

Multimedia
A synthesis of digital media types combining texts, graphics, audio, animation, and video in an interactive format.

Multimedia Card
A type of storage device that allows for the storage and retrieval of image data.

Multiplexing
To deliver two or more signals on a single channel.

Multisession
A type of CD-ROM format that allows information to be recorded incrementally in different recording sessions.

Multitasking
The capability of a computer system to process more than one job at a time.

Multithreading
The process of having a computer run several threads inside a program at the same time.

Munsell System (of Color Notation)
A color model that identifies specific colors by their hue, value, and chroma. The system consists of more than 3 million sample observations of what people perceive to be like differences in hue, chroma, and value.

N

Native File Format
The default format in which a specific application saves files.

Network
A group of computers and other peripherals connected to one another for the purpose of passing information and sharing resources.

Newton Rings
A degrading image artifact composed of concentric multi-colored rings caused by the pressing of film to glass, often a problem in scanning from negatives or transparencies.

NIC (Network Interface Card)
A printed circuit board that is installed in a computer so that it can be connected to a network.

Noise
An unwanted electrical signal or data that distorts or degrades the signal.

Non-Impact Printer
Any printing technology in which marks are made on paper without physical contact between the printer and the paper.

Non-Interlaced
A video system that displays all of the horizontal lines across the screen in succession. Computer monitors are usually non-interlaced while television video monitors are often interlaced.

NTSC (National Television Standards Committee)
The committee that prepares standards for television broadcasting for the Federal Communications Committee. The standard for color television is 525 scan lines with odd- and even-numbered lines alternating at every 1/60 second. An entire frame (both even and odd lines) is completed every 1/30 second.

O

Object
In multimedia, a video clip, audio file or graphical representation stored data element; a vector-based drawing.

OCR (Optical Character Recognition)
The technology used to convert scanned text on printed pages into editable ASCII text.

ODBC (Open Database Connectivity)
A standard for transferring data between databases.

Offset Printing (Offset Lithography)
Currently the most common commercial printing method where ink is offset from the printing plate to a rubber roller, then to paper.

OLE (Object Linking and Embedding)
A standard that provides a software channel for inserting an object into a document that still has a link to its original application.

On-Demand Printing
A digital application of printing in which documents can be output from a database directly to the print device in variable quantities as often as demanded.

Opacity
Lacking transparency or translucence. The measure of the amount of light that can pass through a material. The property of a film that prevents "show through" of dark printing or marks on a substrate (media). The degree to which a material obscures a substrate, as opposed to transparency, which is the degree to which a material does not obscure a substrate.

Open Architecture
A computer design with open standards so that they are available to other manufacturers of hardware and software. This allows computer systems to be modified using many different manufacturers' components.

Operating System
The system used by the computer to control basic input and output operations and allow the operation of software applications. Examples include Mac OS, Windows, UNIX, and Linux.

Optical Disc
A disc on which digital data may be read with reflected laser light that bounces off the surface of the disc.

Optical Resolution
The maximum physical resolution of a device. Optical Resolution provides better image quality than interpolated resolution that uses software to create additional image information.

Orientation
The direction that the page is printed; horizontal = landscape, vertical = portrait.

OSI (Open System Interconnection)
A network model in which peer-to-peer communication is divided into seven layers.

Output
In digital printing technology, to translate information from the computer to an external device, such as a printer or monitor, to print. Also, the visual display of digital information.

Overlaminate
A protective clear film that extends an image's durability and enhances its visual quality. Most often used in commercial signage.

P

Packet
A unit of binary information organized in blocks for transmission including control data about the type of information, the length of the packet, the data, error detection and correction bits.

Packet Internet Groper (ping)
A program that sends a request to a designation on a network and waits for a reply.

Packet Switching
A method of transferring data by addressing blocks of information into packets. The data network then determines the routing of the packets.

PAL (Phase Alternation Line)
The European standard for color television, which operates at 25 frames per second with a full resolution of 768 pixels by 625 lines.

Palette
The range of color or tone available in the imaging process, or a movable menu of tools or options found in software applications.

Parallel Port
The computer interface that uses a data transmission scheme over wires connected in parallel and is usually found between a computer and a peripheral, most commonly a printer.

Passive Matrix Display
A type of liquid crystal display (LCD) that uses one transistor for each row and one transistor for each column.

PC Card
A storage device with a 68-pin connector containing two rows of 34 pins, used in digital cameras and notebook computers.

.PCD
A Proprietary file format used with the Eastman Kodak Photo CD system.

PCI (Peripheral Component Interconnect) Bus
A 32-bit local bus standard that supports up to 16 physical slots used to connect peripheral devices to a computer.

PCL (Printer Control Language)
A page description language used by Hewlett-Packard for its inkjet and laser printers.

PCMCIA (Personal Computer Memory Card International Association)
The industry group that established the standards for PC cards. See *PC Card.*

PCS (Profile Connection Space)
A scheme used to connect a series of color profiles.

PCX
A Paintbrush file extension.

PDF (Portable Document Format)
A document type created by the Adobe Acrobat Software Application to provide a cross-platform method to transfer information. Text, graphics or PostScript files are converted to PDF format that can be opened on any computer system with the free Adobe Acrobat PDF Reader.

PDL (Page Description Language)
A programming language used to control the formatting and layout of a printed page, e.g., PCL and PDF.

Peripheral
Any external device that may be connected to a computer.

Phase Change Printer
An inkjet printer where the ink starts as a solid but is then heated, liquefied, and sprayed onto a substrate.

Phosphor
A material that emits light when excited by electric charge used in the creation of cathode ray tube display units.

Photo CD
A trademarked Eastman Kodak-designed storage system for photographic images using CD as media.

Photo YCC
A color standard established by Eastman Kodak that is used to define the color space for digital imaging in Photo CD and desktop publishing.

Photon
A packet (quantum) of light or of other electromagnetic radiation.

Pica
A unit of measurement used in the graphic arts industry that equals approximately 1/6 inch.

PICT
A graphic file format used by Apple computers.

Pigment
A type of colorant consisting of particles made up of many synthetic dye molecules or carbon black; generally more stable than dyes of the same color. Pigmented inkjet inks are credited with better longevity and may have a narrower color gamut.

Pincushion Distortion
The distortion of an image that occurs when the center of the image compresses toward the center, most noticed at the center of the horizontal and vertical edges.

Pixel
The smallest element of a raster image where brightness or color values have been measured. Derived from **pi(x)**cture **el**ement.

Pixel Depth
The amount of data used to describe each colored dot on a computer screen. For example, monochrome is 1 bit deep, grayscale is 8 bits deep, RGB is 24 bits deep. Images to be printed as CMYK separation should be 32 bits deep.

Planographic
In printmaking, a surface that has ink on its flat plane as opposed to being engraved or embossed to hold ink.

Platen
The glass surface of a flatbed scanner on which reflective art is placed for scanning.

Plug and Play
The ability of an operating system to identify and configure the system to incorporate peripherals.

PMS (Pantone Matching System)
A scheme for representing 3,000 distinct colors by means of a numbering system.

PMT (Photomultiplier Tube)
A light-sensing device usually found in drum scanners. These vacuum tubes are much more sensitive to light than CCD chips.

Portrait (Mode)
The orientation of an image that is taller than it is wide. A setting controlling an output device to properly fit a computer document to the print medium. Vertical.

Postcoat
Clear material applied as a final coat to protect prints or artwork.

Posterization
The conversion of an image to a more elementary form by reducing the number of tonal values, creating a surrealistic, stark result.

PostScript
A standard page description language in desktop publishing that describes the appearance of text, graphical shapes, and images as printed or displayed pages in a device-independent way.

ppi (Pixels Per Inch)
A measure of the amount of image information density.

Pre-Flight
The process of checking a job for possible problems (such as missing fonts and pictures, or incompatible color systems) prior to entering the job into normal workflow.

Prepress
The process of getting a piece ready to be printed on press including text layout and color separations.

Print Density or Optical Density (OD)
The visually perceivable and measurable absorption of light on the surface of a medium due to the presence of a colorant. OD only measures the surface density of a dry hard copy, not the density of the total amount of ink that was sprayed onto the medium.

Print on Demand
The ability of digital printing to consistently produce prints individually or sporadically over an extended period of time, allowing orders of a small number of prints when needed.

Print Permanence
The resistance of a print to physical change of any type, from any source, such as light, heat, acids, etc.

Print Service Provider (PSP)
A commercial, digital printing agency or firm that takes an artist's image file and prints it to the artist's specifications.

Printer Driver
Printer-specific software that allows a computer to communicate with the printer. See *RIP*.

Pro Photo CD
Photo CD images scanned on the Eastman Kodak 4045 or 4050 scanner, allowing for an optional Base x64.

Process Color
The mechanical process of reproducing a full-color image with the three primary subtractive color inks plus black (CMYK: Cyan, Magenta, Yellow and Black or "K"). When viewed under a loupe, the individual color halftone dots can be seen in a process color image.

Profile
A mathematical equation used to transform from one color space to another color space in order to more accurately match the output of devices. In digital printing, generally used to refer to a color profile, especially of a specific piece of equipment (monitor, printer, scanner, etc.) that enables the user to correlate color consistently on various devices. See *Color Management.*

Proof
A prototype that shows the printer and customer what the job will look like after printing, so any necessary changes can be made before the job goes to press.

Protocol
A standard procedure or a set of procedures with which software and hardware systems must comply in order to be compatible.

Q

Quadtone Inks
Special multimonochromatic (B&W) inks.

Quantize
To measure or record data that can only have discrete values.

Queue
A series of tasks or operations waiting to be performed by a computer or peripheral device.

Quick Time
A video and sound playback application originally developed by Apple Computer.

R

RAID (Redundant Array of Inexpensive Disks)
A more fault-tolerant disk storage technique that spreads one file over several disk drives. If any drive fails, the data can be reconstructed from data on the remaining files.

RAM (Random Access Memory)
The standard type of memory in central processing units (CPU) of computers in which data is stored and accessed randomly enhancing storage and access time.

Raster Image
An image composed of lines of pixels in a grid layout or bitmap.

Rasterization
The conversion of vector image information to raster image information.

RC (Resin Coated) Paper
A term used for photographic paper used in most color and some black-and-white printing applications that has a polyethylene coating on each side.

Receptor Coating
A chemical layer adhered to a surface that receives and binds the ink from the printhead nozzle.

Reflectance
The measure of light that is reflected off a surface; varies according to the wavelength distribution of the light.

Reflectance, Specular
Mirror-like reflectance. The magnitude of the specular reflectance on glossy materials depends on the angle and on the scattering of the light by an uneven surface.

Reflectance, Total
Reflectance of radiant flux reflected at all angles from the surface, thus including both diffuse and specular reflectances.

Reflective Art
A term that refers to any physical image, be it original art, photo, or printed piece, that reflects light when viewed.

Register
To align all the layers of a CMYK separation so all layers are printed exactly on top of each other for proper printing.

Registration Marks
Guide lines on the sides of each layer of a CMYK separation to ensure proper registration or alignment.

Relational Database
A database that stores data across multiple tables of files that are related by common information in each of the tables of files.

Relief Process
In printmaking, a process using printing plates that are incised, etched, or sandblasted before the surface is inked. Lines or areas that have been cut away do not print. The ink is transferred from the surface of the plate to the paper either by hand-rubbing or with a press.

Removable Storage Media
A storage device that can be removed and inserted into any similar playback device.

Rendering
The application of color shading or shadows to a computer image to make it more realistic in appearance.

Repurpose
The use of images, text, or information stored in documents for purposes other than its original intent.

Res
A term used to define image resolution in pixels per millimeter; e.g., Res 12 is 12 pixels per millimeter. Multiplying Res by 25.4 results in the equivalent resolution in dots per inch (dpi).

Resampling
Changing the resolution of a bitmap without changing the file size.

Resolution
The amount of detail in spatial or color variation that can be identified in an image. Refers to the number of smallest discernable dots or pixels.

Retouching
The manual or digital process of removing imperfections or unwanted portions of an image.

RGB (Red, Green, Blue)
A color model composed of the primary additive colors of light. These colors can be mixed to obtain all other colors.

RIFF (Raster Image File Format)
A file format used to store grayscale images.

RIP (Raster Image Processor)
"Bridge" software that allows a computer to give specific instructions to a printer. Often includes add-on features such as color-calibration routines and various tools for a color-managed workflow.

RISC (Reduced Instruction Set Computing)
A microprocessor architecture that processes a small set of instructions rapidly. RISC is found in Power PC and other types of computer systems.

RLE (Run-Length Encoding)
A method of compressing image data that encodes the brightness or color values of adjacent pixels that have the same value with a single value for the brightness or color information and a run-length equal to the number of adjacent pixels that have this value.

ROM (Read-Only Memory)
A type of memory that can be read but not altered in any way.

Rosettes
The pattern created in a printed image when color halftone screens are placed at conventional screen angles.

Router
A network interconnection device and associated software that links two networks.

S

Sampling
A primary way in which analog information is digitized by measuring the analog information periodically.

Saturation
The purity of a color; the amount of the gray component of a color. More saturated colors are more pure with a lesser gray component and less saturated colors contain more gray.

Scale
To enlarge or reduce an image by increasing or decreasing the number of scanned pixels or the sampling rate, relative to the number of samples per inch needed by the printer or other output device. See *Interpolation.*

Scan
The process of converting an optical image into digital data.

Scanner
A hardware device for capturing an optical image as digital data.

Screen
A process used to produce halftone dots.

Screen Printing (Screenprinting)
Stencil-based impact printing technology.

Script
A sequence of commands that a computer executes at the touch of a button (a macro).

SCSI (Small Computer Systems Interface)
A standard for parallel interfaces that can transfer data up to 80 MBps and in which up to 7 peripheral devices can be attached to a single port.

SD Memory Card
The secure digital memory card about the size of a postage stamp used in digital cameras and portable computing devices to store personal data in a secure format.

SECAM (System Electronique Couleur Avec Memorie)
A standard for color television in parts of Europe and Asia with 625 line resolution.

Selection
Any of several processes by which the digital artist can isolate a portion of a digital image in order to perform additional work or protect the selected area from manipulations applied to the remaining “unprotected” areas. Similar to frisket paper and masking tape in traditional painting.

Separation
The splitting of continuous tone images into separated CMYK components for printing.

Serigraph
A form of printmaking utilizing stencils attached to porous screens that support delicate areas of the cut design. In the fine art world, most often issued in signed and numbered editions. A screen print (silk screen).

Server
The control computer on a local area network (LAN). The server controls software, access to printers, and other parts of the network.

SGML (Standard Generalized Markup Language)
The universal standard specifying formatting features for text documents to be displayed and transmitted over the Internet. XML documents and HTML documents are applications of the SGML standard.

Shadow
The darkest parts of an image.

Shadow Detail
Subtle features in the darker part of an image.

Shadow Point
The darkest tone printable in an image without being black. All tonal values below this threshold will print as black with no detail.

Sharpening
An image enhancement technique in which the contrast between specific pixels is enhanced.

Show-Through
Occurs when ink penetrates the paper substrate and is visible from the back; also termed "print-through."

Silhouetting
A masking or image blocking that isolates an image from the background.

SLR (Single-Lens Reflex)
A form of small-format (35mm or 6cm) camera that has a reflecting mirror that retracts when the shutter is released. An SLR allows the photographer to view the image exactly as it will be framed in the photo.

Smart Media
The storage media used in some digital cameras and portable computer devices.

Soft Proof
Viewing a digital image with a monitor instead of generating a hard-copy proof. Can be done from a remote location via the Internet.

Solid Ink
Solid ink technology involves the use of solid, resin-based ink. The printhead and ink supply are heated to melt the ink and bring it to very low viscosity. The ink is ejected hot and "freezes" on the surface of the medium or onto a drum from which it is transferred like an offset press, onto paper. Solid ink technology can be printed and transferred, or can be printed directly. Also called "phase change."

Spatial Resolution
The smallest feature of an image that can be detected as a fraction of the total image.

Spectrophotometer
A device that measures light reflectance across the visible spectrum of light, from approximately 380-720 nm wavelengths. This very precise data can then be converted into densitometric or colormetric data. The spectrophotometer is the most useful measurement device because it can be used for density calibration as well as ICC profiling.

Spectrum
The spatial arrangement of components of radiant energy in order of their wavelengths, wave number, or frequency. In this context, the full range of visible wavelengths of light energy radiation.

Specular Highlight
The small highlight area of an image that contains little to no detail.

SQL (Structured Query Language)
A widely used programming language for defining, modifying, and accessing information in relational databases. SQL allows queries to be made from other programs.

S-RAM (Static Random Access Memory)
A type of memory used in a cache that preserves information as long as power keeps the device running.

sRGB
One of several standard RGB color working spaces. Best used for images on the Internet.

Stochastic Screening
A print screening process in which the size and location of uniformly sized dots are placed to appear random in order to create the illusion of tone levels. Also called FM screening.

Stylus
A tool that is used on a graphic input tablet as a drawing instrument, or as a mouse.

Subsampling
Scanning at a less-than-optimum sampling rate.

Substrate
A material that receives a printed image, sometimes called “media” in digital printing.

Subtractive (Reflective) Color
The color-mixing system associated with pigments, as opposed to pure light. Also, a color model that works by removing selected colors of light that are reflected off, or transmitted through them. The term refers to the CMYK color space used by conventional and digital printing devices to produce full-color printing. See *CMY.*

Subtractive Primaries
The three colors (Cyan, Magenta, and Yellow) that are used to create all other colors in color photographic printing.

S-VGA (Super Video Graphics Array)
A video standard that allows for resolution of up to 800 x 600 pixels.

SWOP (Standard Web Offset Printing)
The standards that define the color and dot gain characteristics of a web press.

T

T1
A high-speed data transmission circuit with a transmission rate of 1.544 Mbps.

T3
A high-speed data transmission circuit with a transmission rate of 44.76 Mbps.

TB
See *Terabyte.*

TCP/IP (Transmission Control Protocol/ Internet Protocol)
The standard for Internet communications that determines how packets of information are sent and addressed over the Internet. IP is packet addressing method and TCP checks, tracks, and corrects transmission errors.

Telnet
Terminal emulator that allows a user to connect to a remote computer through the use of the Internet.

Terabyte (TB)
A measure of file size or memory equal to 1,024 gigabytes.

Thermal Inkjet Printer
Printer using inkjet print heads with a heat (thermal) system used to produce the ink drop.

Thermal Transfer Printer
A machine that digitally prints by transferring inks (resin- or wax-based) from a foil or ribbon onto media such as paper or vinyl.

Thin Client
A computer that relies on a server to do most, if not all, of its processing.

Thumbnail
A small version of a larger graphic image used for indexing databases of images or to preview a very large image.

TIFF or TIF (Tagged Image File Format)
A platform independent image file format specifically designed for bitmapped images.

Tiling
The process of breaking down an image into sections for editing or printing purposes.

Tone Curves
A curve describing the relationship between the input values and output values for brightness or color that can be used to adjust the contrast of the image.

Toner
A dry, powdery pigment used by printers and copying machines that contains a colorant, an electrostatic thermoplastic, a charge-control agent, and often a magnetic material.

Topcoat
The coating applied to the surface of inkjet or other type media during the manufacturing process. The topcoat enhances ink adhesion and other performance characteristics and helps to control dot gain, drying time, and moisture resistance.

Transform
The mathematical conversion from one color space to another; i.e., RGB to CMYK.

Translucent
Diffuse transmission of light. No clear image can be seen.

Transparent
Adjective to describe a material that transmits light with minimal diffusion or scattering. Clear, not opaque.

Trapping
A prepress technique that allows for slight variations in registration during the press run.

Trilinear Scanner
A scanning device that uses three linear array charge-coupled devices (CCDs) utilizing red, green, and blue filters to capture color scans in a single pass.

True Color Image
A digital color model that uses eight bits of each of the three additive colors (Red, Green and Blue), and can reproduce 256 shades of each. Each pixel has 24 bits assigned to it, representing 16.7 million colors. Eight bits - or one byte - is assigned to each of the red, green, and blue components of a pixel. Also known as 24-bit color.

TWAIN (Technology Without An Interesting Name)
The software interface that allows graphics software to capture bitmap images from a scanner or digital camera.

Twenty-Four-Bit (24-Bit) Color
See *True Color Image.*

U

UCR (Under Color Removal)
The process of eliminating equal amounts of yellow, magenta, and cyan from the neutral shadow areas and replacing them with black ink in the black separation. Compare to *GCR*.

Ultraviolet (UV) Light
Radiant energy with wavelengths slightly shorter than the visible spectrum.

Unix
A multi-user, multitasking operating system written in the C language and designed for both mainframes and minicomputers.

Unsharp Masking (USM)
A process used to sharpen images.

Unzip
To decompress a file.

Upload
To send a file to a networked host or to another machine.

URL (Uniform Resource Locator - Previously Universal Resource Locator)
A standardized address for documents and media accessible over the Internet.

USB (Universal Serial Bus)
A type of input/output bus capable of data transfer at 12 MBps and up to 127 devices in the chain.

UV Ink
Term used in relation to ultraviolet properties in inkjet ink in two different manners: (1) ink that is resistant to UV light degradation, or (2) ink that is “cured” or dried by exposure to UV light.

UV Protective Glaze
An acrylic sheet used in framing art that has ultraviolet light inhibitors capable of filtering out 99 percent of UV rays (one of the causes of print fading).

UV Resistance
The resistance of something to change under UV light sources, including daylight.

V

Variable Data Printing
A digital printing application in which documents can be customized during the printing process using data from a database of images or text.

VCD (Video CD-ROM)
A full motion digital video format on CD-ROM using MPEG-1 video compression and incorporating a program control bar with controls similar to those of a VCR.

Vector Image
An image represented by mathematically defined shapes, such as lines, polygons, text, and groups of objects as opposed to bitmaps of them.

VGA (Video Graphics Array)
A display standard providing 640 x 480 resolution with 16 colors.

Virtual Memory
A type of hard-drive space that mimics actual memory (RAM).

Virtual Reality
A computer-generated 3-D environment in which users interact with the environment and objects in it through the use of specialized input devices such as goggles, headphones, and gloves.

Virus
A malicious program designed to destroy data or halt operations on computer systems.

V-RAM (Video Random Access Memory)
A special type of RAM that can perform reads and writes at the same time, allowing it to send information to the monitor at the same time it receives new information from the video processor.

VRML (Virtual Reality Modeling Language)
A programming language that supports animation of virtual spaces on web pages.

W

WAN
See *Wide Area Network.*

Watermark
A faint background image on a printed piece or included in digital files as a security feature (such as on printed currency or checks) or to denote a copyright of an image. An identifying mark or symbol imbedded in the substrate on which the art is made, usually referring to the maker of the substrate.

wav
A sound file format used for storage and transmission of audio files denoted by the file extension .wav.

Web Press
A high-speed printing press that prints on both sides of a continuous roll of paper. Web presses are used for high-volume printing such as newspapers and magazines.

White
The result of combining the additive primary colors (Red, Green, and Blue). In the subtractive color mixing system, "white" is the result of the absence of any color.

White Balance
The balancing of color components to create pure white when photographing or scanning a white object. A substitute for a color temperature setting.

White Point
The color and intensity of a device's brightest white. With printers, this is usually the white of the paper. With scanners, the color that when scanned produces values of 255, 255, 255 (RGB). Ideally, the white point is 100 percent neutral reflectance or transmittance. See *Reflectance.*

Wide Area Network (WAN)
A network that covers a wide geographical area and usually operates at speeds lower than local area network (LAN) speeds.

WORM
Write once, read many. A storage device that can have data written to it once and read many times. The data cannot be overwritten.

WWW
World Wide Web.

WYSIWYG
What you see is what you get. A display interface that accurately represents on a monitor how fonts and images will appear when printed.

X

XGA (Extended Graphics Array)
An IBM standard display mode providing 1,024 x 768 pixels of spatial resolution and 256 colors.

XML (Extensible Markup Language)
A subset of SGML whose objective is to enable SGML to be served, received, and processed on the Web just as HTML.

Y

YCC
A color space optimized for color television display using one luminance channel (Y) and two chrominance channels (C and C).

Z

Zip
To compress a file.

Zip Disk
A removable storage device, approximately the size of a 3.5-inch disk that holds 100 or 250 MB of data.

Zip Drive
A peripheral device that reads and writes to the proprietary Zip Disk storage medium.

Zoom
The magnification of one part of an image.

Common File Formats

Amiga IFF (Amiga Interchange File Format)

Extension: .iff

A bitmap, 24-bit color file format originally associated with Commodore Amiga computers. This file format is supported by various applications and uses RLE lossless compression.

BMP (Microsoft Windows Bitmap File Format)

Extension: .bmp

A bitmap, up to 24-bit color file format originally designed to support imaging applications operating on Microsoft Windows platform. This file format is supported by various applications and uses RLE lossless compression.

EPS (Encapsulated PostScript)

Extension: .eps

A metafile file format developed by Adobe that supports both bitmap- and vector-based images and graphics. This file format is supported by various applications and is commonly used to transfer files between applications. The file format supports RGB, CYMK, and LAB color spaces.

FlashPix

Extension: .fpx

A file format developed by key manufacturers in the imaging field. This format stores multiple resolutions of an image allowing the user to access the appropriate file without having to load the entire "full resolution" image. The file format supports uncompressed as well as lossy JPEG file compression.

GIF (Graphics Interchange Format)

Extension: .gif

A bitmap, 8-bit color file format originally used by CompuServe to facilitate the transfer of images online. This file format is supported by various applications and uses LZW lossless compression.

JPEG (Joint Photographic Experts Group)

Extension: .jpg

A bitmap, 24-bit color file format that allows the user to specify the amount of lossy compression applied to the file. This file format is supported by most imaging applications and is most appropriately used on continuous tone images.

PCX (Paintbrush File Format)

Extension: .pcx

A bitmap, up to 24-bit color file format originally designed to support graphics applications operating on the Microsoft Windows platform. This file format is supported by various applications and uses RLE lossless compression.

PDF (Portable Document Format)

Extension: .pdf

This file format was developed by Adobe for use with its software Acrobat. A bitmap, vector, font, and page layout file format that accurately represents all the elements regardless of the application used to create the file. In the Photoshop PDF file, only single images can be used.

Photoshop

Extension: .psd

The proprietary Adobe Photoshop file format that supports all the application's features including layers, masks, and channels. This file format may not be able to be accessed by other applications.

PICT File (Picture)

Extension: .pct

A bitmap, up to 32-bit color file format originally designed to support graphics applications operating on the Apple Macintosh platform. This file format is supported by various applications and is commonly used to transfer files between applications. This file format can utilize JPEG lossy compression schemes.

Pixar (Pixar RIB, RenderMan Interface Bytestream)

Extension: .pxr

A scene description file format designed for use in photo-realistic modeling, 3-D, and animation programs such as PIXAR workstations. This file format is typically used to transfer images to and from PIXAR workstations.

PNG (Portable Network Graphics)

Extension: .png

A bitmap, 24-bit color file format originally designed as an alternative to the GIF format for transfer and display of images online. The file format utilizes lossless compression. This file format is not completely supported by all Web browsers and other applications at this time.

RAW

Extension: .raw

A file format that allows the user to specify the file type, file creator, and header information. This format supports up to 48-bit color information with no compression. Due to the amount of information and knowledge required to use this format, novices seldom use it.

Scitex CT (Scitex Continuous Tone)

Extension: .sct

A file format used to transfer images to Scitex high-end imaging workstations. Typically used in high-end printing applications.

Targa

Extension: .tga

A bitmap, up to 32-bit color file format originally designed to support imaging, graphics and paint applications utilizing Truevision graphics adapters. This file format is supported by various applications and uses RLE lossless compression.

TIFF (Tagged Image File Format)

Extension: .tif

A bitmap, up to 24-bit color file format originally designed by Aldus to support imaging and desktop publishing applications. The TIFF file format is a cross-platform, cross-application file format. The format is supported by almost all imaging, graphics and paint applications and uses various lossless compression schemes. Probably the most versatile file format!