



## A

**Alpha Channel** - An 8-bit channel reserved by some image-processing applications for masking (such as Adobe PhotoShop) or additional color information.

**Anti-Aliasing** - The rendering of hard-edged objects so they blend smoothly into the background. A technique for merging object-oriented (line) art into background. A technique for merging object-oriented (line) art into bitmaps (dots).

**ASCII** - The character set and code described in American National Standards Code for Information Interchange, ANSI X3.4-1977. Each ASCII character is encoded with 7-bits (8 bits including parity check). The ASCII character set is used for information interchange between data processing systems, communication systems and associated equipment. The ASCII set consists of both control and printing characters. It is pronounced "Ask-ee," used to represent upper and lower case, punctuation marks and operations.

## B

**Banding** - A visible stepping of shades of color in a gradient.

**Baud** - A measure of the rate at which data is transmitted, expressed in terms of the number of bits per second.

**Bezier Curves** - In object-oriented programs, (such as Adobe Illustrator) a curve whose shape is defined by anchor points.

**Binary System** - A vision system which creates a digitized image of an object in which each pixel can have one of only two values, such as black/white, or one/zero.

**Bit** - An abbreviation for binary digit, the smallest unit of information that can be stored and processed by a computer. In image processing, the quantized image brightness at a specific pixel site is represented by a sequence of bits.

**Bitmapped** - An image formed by a rectangular pattern of individual pixels. Each pixel has a value from one bit of information (black or white), to as much as 24 bits per pixel (for full color images) assigned to it.

**Byte** - Equivalent to the storage space required for one character of information. In most small computers, a byte is equal to eight (8) bits.

## C

**Cache** - A portion of RAM or disk space used to keep often-used data for quicker access.

**Calibration** - Setting equipment (monitors, image setters, etc.) to a standard measure to produce reliable results.

**CIE** - Commission Internationale de l'Eclairage is an international group that has developed a set of color definition standards endorsed by Adobe for PostScript Level 2.

**CMYK** - Cyan, Magenta, Yellow, Black are the process colors, or subtractive primaries, used in color printing. Black (K) is added in order to print a true black.

**Color Correction** - The process of adjusting an image to compensate for deficiencies or imperfections in that image or for the characteristics of the output device.

**Color Transparency** - A photographic image on transparent film, usually in positive form, 35mm, 4" x 5" and 8" x 10" are commonly used formats.

**Comp** - Creating comprehensive artwork to represent the general color and layout of a design.

**Compression** - Software used to decrease the size of a computer file for storage with little or no distortion of the image data and quality.

**Character** - In computer terminology, a character can be any letter, digit, punctuation mark or symbol. Is usually represented by a unique binary code consisting of at least eight bits. It may also be defined as a graphic shape representing a letter, numeral or symbol. Or, a letter, digit, or other symbol that is used as part of the organization, control, or representation of data.

**CT** - Continuous Tone is a file format used for exchanging high-level scan information.

**Code Reading** - Recognition of alphanumeric or other sets of symbols, e.g. bar codes, UPC codes, etc. by a code reader.

## D

**DCS** - Desktop Color Separation is a process by which five PostScript files (cmyk and a low resolution place holder) are created for each color image.

**DOS** - An acronym for disk operating system.

**Database** - A large collection of well-organized data that can be retrieved by a computer. For example, a mailing list.

**Decompression - Restoring** a compressed image to its full file size.

**Digital** - The representation of data as discrete points. The process of digitizing an image converts analog light into an array of elements each having a discrete value. An image in digital format is obtained by partitioning the area of the image into a finite, two-dimensional array of small, uniformly shaped mutually exclusive regions which are called resolution Cells. Then assigning a representative gray shade to each such spatial region. A digital image may be thought of as a function whose domain is the finite, two-dimensional set of resolution cells and whose range is the set of gray shades.

**Digital Proofing** - Producing page proofs directly from digital information (such as; laser, ink-jet, thermal transfer and dye sublimation prints).

**Dpi** - Dots Per Inch is a measurement of the output resolution produced by a printer, image-setter or monitor.

## E

**Emulsion** - The coating of light-sensitive material on a piece of film.

**Emulsion Down** - When the emulsion of the film can directly contact the emulsion on the surface of a printing plate and still be right reading.

**EPS** - Encapsulated PostScript is a file format used to transfer PostScript image information from one application to another.

## F

**Function Keys** - Special keys on a computer key board that can initiate a special function within a program; dependent on how a programmer defines the keys in that program.

## G

**Gamma** - Measures the contrast that affects the midlevel grays (midtone) of an image.

**Gamma Correction** - Changing the brightness values of the middle range of gray tones without dramatically altering the shadows and highlights.

**Gamut** - The range of colors available in a particular color system, (i.e. RGB, CMYK, Nature).

**GCR** - Gray Component Replacement is a technique for reducing the amount of cyan, magenta and yellow in an area and replacing them with an appropriate level of black.

**Gigabyte** - A GIG is a unit of measure equal to 1,024 megabytes (one giga denotes one billion).

**GIGO** - An acronym for garbage in, garbage out. A saying that refers to the inability of obtaining good results with bad data.

**Gradation** - A smooth transition between one color and another or no other color and another or no other color.

## H

**Hard Disk** - A disk that is similar to a floppy disk but is not flexible. It has greater storage capacity than a floppy disk but is also more expensive.

**Hard Dot** - A dot in a halftone screen that has smooth, crisp edges.

**High Resolution** - The quality and accuracy of detail that can be represented by a graphics systems with a display device such as video and/or a printer. Resolution quality depends on the number of basic image-forming units (pixels) within a given area; the greater the number, the higher the resolution.

**HLS Color Model** - A color model based on three coordinates; hue, lightness or luminance and saturation.

**Hue** - Is the wavelength of light reflected from or transmitted through an object. Commonly called color.

## I

**Image Processing** - Encompasses all the various operations which can be applied to image data. These include, but are not limited to, image compression, image restoration, image enhancement, preprocessing, quantization, spatial filtering, and other image pattern recognition techniques. In the computer field, image processing is a method of inputting two-dimensional images into a computer and then enhancing or analyzing the imagery into a form that will be more meaningful to the user.

**Impression** - In printing, the pressure of the type, plate or blanket as it comes in contact with the paper. Same is true for diecutting.

**Ink-jet Printer** - A type of printer in which dot matrix characters are formed by ink droplets electrostatically aimed at the paper surface. Some advantages are high resolution, color reproduction, and quiet operation.

**Input Device** - A device capable of accepting data and converting it into electrical impulses. Which can be processed by a computer.

**Input/output (IO)** - A general term used to describe the external equipment connected to a computer. Also refers to the two-way exchange of information that goes on between a computer and the equipment.

**Interpolate** - Software used (such as with a scanner) to assign an intermediate color to a pixel based on the colors of the pixels around it to provide higher resolution than otherwise could be attained.

**ISDN** - Integrated Service Digital Network is a standard of telecommunications that will allow digital information of all types to be transmitted over phone lines.

## J

**JPEG** - Joint Photographers Experts Group is a set of standards developed by this group for compressing and decompressing digitized images with computers.

## K

**Kilobyte** - K, KB is a unit of measure of digital information corresponding to 1024 bytes.

**Knockout** - A shape or object printed by eliminating (knocking out) all background colors. Also the removal of an underlying color to keep it from changing the color the shape or object that would print over it.

## L

**LAN** - Local Area Network is group of connected computers in a relatively small area that share access to printers, modems etc.

**Laser Printer** - A printer technology that focuses laser beams to form images on photo-sensitive drums in a principle similar to that used in xerographic copiers. Laser printers are used as output devices for computers. They are high speed, high quality, and have relatively high first costs compared to other printer technology.

**Lossy** - A term used to describe a file compression scheme that may discard information (and thus detail in an image) as it reduces the size of the file. You lose information.

**Lpi** - Lines Per Inch is a measure of the frequency of a halftone screen (such as 150lpi or 200lpi). Lpi refers to the frequency of the horizontal and vertical line that were, at one time, made by placing an etched glass plate or film over an image and exposing it to produce dots.

**Luminosity** - The brightness of color.

## M

**Mb or M-Byte** - Acronyms for megabyte (1,024 kilobytes). Megabyte -A MB is a unit of measure of stored data corresponding to 1,048,576 bytes.

**Microprocessor** - A computer-type device that permits one to program it to do logic switching which includes sequencing and interlocking, timing, counting, open and close loop control, arithmetic and communications. As opposed to program controller, it can program a number of operations simultaneously.

**Midtones** - The range of colors or levels of gray between the brightest and darkest colors in an image.

**Modem** - An acronym for Modulator - DEModulator. A device that connects peripherals and that converts and reconverts digital signals from a computer into tone variations for transmission over standard telephone communications lines.

**Monitor Calibration** - The process of correcting the color rendition settings of a monitor to match selected colors of printed output.

**Monochrome** - A black-and-white version of an image with no gray tones.

**Monochromatic** - Refers to a display unit having a dark background for contrast to a light color character, such as a dark green background with light green characters, on a computer.

## N

**Non-lossy** - A term used to describe a file compression scheme that reduces the size of file without losing any of the information in the file or detail in the image.

## O

**Object-oriented** - Also referred to as vector, defines an image mathematically (line between two points) rather than as pixels in a bitmap.

**Output** - Results produced by a computer and then transferred from memory to the outside world by means of a printer, plotter, display screen or into a mass storage device.

**Output Devices** - Devices such as solenoids, motor starters, etc., that receive data from the computer.

## P

**PMS Colors (Pantone Matching System)** - A series of standard colors commonly used by package designers and manufacturers. These are published by Pantone, Inc. communication of specified colors which can be made with a code number.

**Peripheral** - Any device connected to a computer or network to give it input, output or external storage capabilities (such as scanner or printer).

**Permanent Memory** - One that continues to hold data after power has been disconnected from the computer. Also known as non-volatile memory.

**PICT** - A common format for defining bitmapped or object-oriented images on the Macintosh.

**PICT/PICT2** - A common format for defining bitmapped or object oriented images on Macintosh. The more recent format (PICT2) supports 24-bit color.

**Pixel** - A modified acronym for picture element, i.e. the dots that form the picture on a TV monitor or display screen. The more pixels per inch the higher the resolution of the display. For example, a small element of a package is measured for average brightness and then used to represent that portion of the package. Pixels are arranged in a rectangular array to form a complete image of the package. In machine vision; the object viewed is called the scene.

Pixel Depth - Is the measurement of the number of bits of stored information per pixel (i.e. 24 bits per pixel).

**PMS** - Pantone Matching System is a commonly used system for identifying specific ink colors.

Plotter -A machine used to draw graphic information from a CAD system onto materials such as paper, mylar or die board.

**Ppi** - Pixels Per Inch is a measure of the amount of pixels in one square inch. The more pixels contained in the space the higher the resolution of the image and the larger the file size.

**Prepress** - A collective term for the steps necessary to go from original artwork to the film, from which printing plates are made. In the digital prepress process, these steps are carried out by computerized systems.

**Process Colors** - The four color inks, cyan, magenta, yellow and black, that are combined to print a wide range of colors.

## Q

## R

**RAM** - An acronym for random access memory. It is the temporary storage device for programs and data for the CPU to process. RAM is volatile and its contents will be erased when the power has been disconnected.

**Rasterization** - The process of converting mathematical and digital information into a series of dots by an imagesetter for the production of negative or positive film.

**Read/only** - Read/only identification systems employ radio frequency identification tags, which contain pre-programmed data.

**Read/only tag** - A radio frequency identification tag that is capable of only being read, i.e., the pre-programmed data on the tag can be read but its stored data cannot be changed.

**Reflective Art** - Artwork prepared so that it may be photomechanically reproduced or scanned into a computer.

**Resolution** - (1) A measure of the smallest possible increment of change in the variable output of a device. (2) In a bar code system, the smallest element dimension which can be distinguished by a particular reading device or printed with a particular device or method. Resolution is generally a function of the number of pixels in the image. The greater the number of pixels, the better the resolution will be.

**RGB** - Acronym for red, green, and blue; a three primary color system used for sensing and representing color images in a machine vision system, for example.

**RIP** - Raster Image Processor is part of an output device (i.e. imagesetter) that rasterizes (RIPS a file) to a single format (dots) so that it may be imaged into film or paper.

**RISC** - Reduced Instruction Set Computing is a type of processor capable of faster computation because it uses simpler and more regular instructions.

**ROM** - Read-Only Memory is permanent data storage that contains key instructions for the computer to start up and operate. This storage cannot be erased by power disconnection.

**Rosette** - The pattern created when all four-color halftone screens are placed at the traditional angles.

## **S**

**Saturation** - The amount of gray in a color. The higher the gray content, the lower the saturation.

**Scanner** - An electronic device that electro-optically converts optical information into electrical signals.

**Screen Frequency** - The number of lines or dots per inch on a halftone screen used in printing.

**SCSI** - Small Computer Systems Interface is a type of connector used to attach peripherals (such as an external hard drive or scanner) to a computer.

**Separations** - Separate pieces of film output, each representing only one printing color.

**Sharpness** - The level of detail in an image.

**Subtractive Primaries** - The inks Cyan, Magenta, and Yellow used in the printing process to create different colors.

## **T**

## **U**

## **V**

## **W**

## **X**

## **Y**

## **Z**