

GLOSSARY of Printed Circuit Design and Manufacturing

No.	GLOSSARY	Meanings
1	active component	<p>1.A component which adds energy to the signal it passes.</p> <p>2. A device that requires an external source of power to operate upon its input signal(s).</p> <p>3. Any device that switches or amplifies by the application of low-level signals. Examples of active devices which fit one or more of the above definitions: transistors, rectifiers, diodes, amplifiers, oscillators, mechanical relays and almost all IC's (Contrast with passive component)</p>
2	AlN	Aluminum Nitride, a compound of aluminum with nitrogen.
3	AlN Substrate	A substrate of aluminum nitride.
4	alumina	A ceramic used for insulators in electron tubes or substrates in thin-film circuits. It can withstand continuously high temperatures and has a low dielectric loss over a wide frequency range. Aluminum oxide (Al ₂ O ₃)
5	analog circuit	A circuit in which the output varies as a continuous function of the input, as contrasted with digital circuit .
6	anode	<p>1. The positive element such as the plate of a vacuum tube; the element to which the principal stream of electrons flows.</p> <p>2. In a cathode-ray tube, the electrodes connected to a source of positive potential. These anodes are used to concentrate and accelerate the electron beam for focusing.</p>
7	aperture	<p>1. An indexed shape with a specified x and y dimension, or line-type with a specified width, used as a basic element or object by a photoplotter in plotting geometric patterns on film. The index of the aperture is its Position (a number used in an aperture list to identify an aperture) or D code .</p> <p>2. A small, thin, trapezoidal piece of plastic used to limit and shape a light source for plotting light patterns on film, and mounted in a mechanical disk called an " aperture wheel " which in turn is mounted on the lamp head of a vector photoplotter . An aperture is mostly opaque, but with a transparent portion that controls the size and shape of the light pattern. A vector photoplotter plots images from a CAD database on photographic film in a darkroom by drawing each line with a continuous lamp shined through an annular-ring aperture , and creating each shape (or pad) by flashing the lamp through a specially sized and shaped aperture .</p> <p>3. A line of textual data in an aperture list describing the index names (D code and position), the shape, the usage (flash or draw) and the X and Y dimensions of an aperture . Some aperture lists leave out certain of those types of data. For example, laser photoplotters don't need to know whether an aperture is a flash or draw, so a modern-day aperture list might leave that datum out</p>
8	aperture list	<p>1. An ASCII text data file which describes the size and shape of the apertures used by a photoplotter for any one photoplot. 2. A print-out of this file. 3. A binary version of this file. [Also called "aperture table."]</p>
9	aperture table	Aperture list .
10	aperture wheel	<p>A component of a vector photoplotter , it is a metal disk having cut-outs with brackets and screw holes arranged near its rim for attaching apertures . Its center hole is attached to a motorized spindle on the lamp head of the photoplotter. When a D code denoting a particular position on the wheel is retrieved from a Gerber file by the photoplotter, the wheel is caused to rotate so that the aperture in that position is placed between the lamp and the film.</p> <p>In preparation for a photoplotting, the aperture wheel is set up by a technician who reads a printed aperture list , selects the correct aperture from a set of them stored in a box with compartments and, using a small screw driver, installs the aperture onto the position on the wheel which is called for on the list. This process is subject to human error and is one of the disadvantages of vector photoplotters as compared with laser photoplotters .</p>



GLOSSARY of Printed Circuit Design and Manufacturing

No.	GLOSSARY	Meanings
11	artwork	Artwork for printed circuit design is photoplotted film (or merely the Gerber files used to drive the photoplotter), NC Drill file and documentation which are all used by a board house to manufacture a bare printed circuit board.
12	ASCII	American Standard Code for Information Interchange. A text and control-code character set used in computers. Pronounced "ASS-key."
13	ASCII text	A thoroughly unofficial subset of US-ASCII which contains the space character, numbers, most basic punctuation, and unaccented letters a-z and A-Z, but lacks the control codes
14	assembly	1. The process of positioning and soldering components to a PCB . 2. Act or process of fitting together parts to make a whole electronic Product
15	assembly drawing	A drawing depicting the locations of components, with their reference designators , on a printed circuit. Also called "component locator drawing."
16	assembly house	A manufacturing facility for attaching and soldering components to a printed circuit. Aka assembler and also CM, for contract manufacturer.
17	ASTM	American Society of Testing and Materials.
18	ATE	Automatic Test Equipment
19	AWG	American Wire Gauge. A PCB Designer needs to know diameters of wire gauges to properly size E-pads . The American Wire Gauge, formerly known as the Brown and Sharpe (B + S) Gauge, originated in the wire drawing industry. The gauge is calculated so that the next largest diameter always has a cross-sectional area that is 26% greater.
20	Auto-router	automatic router, a computer program that routes a PC board design (or a silicon chip design) automatically.