



Glossary of Terminology & Acronyms

Automatic Identification & Data Capture (AIDC)

2D - Two-Dimensional bar code

802.11 - IEEE 801.11 Standard for Wireless LAN Interoperability

A

Active Tag - Active Tags are radio frequency identification devices which require batteries for their operation

AI - Application Identifiers

AIDC - Automatic Identification and Data Capture

Alignment - In an automatic identification system, the relative position and orientation of a scanner to the symbol

A/N - See "Alphanumeric"

Alphanumeric - The character set which contains letters, numbers and may contain other characters such as punctuation marks or control characters

ANSI - The American National Standards Institute is a non-governmental organization responsible for the development of voluntary industry standards

Antenna - In a radio frequency identification system, the antenna is the device which radiates and/or receives the RF energy

Aperture - The opening in an optical system (scanner) implemented by a physical baffle that establishes the field of view

ASCII - The character set and code described in American National Standard 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

ASN - Advanced Shipping Notice

Aspect Ratio - In a bar code symbol, the ratio of bar height to symbol length

Autodiscrimination - The ability of bar code reading equipment to recognize and correctly decode

more than one symbology

Average Background Reflectance - Expressed as a percent; the simple arithmetic average of the background reflectance from at least five different points on a sheet

B

Background - The spaces, quiet zones, and area surrounding a printed symbol.

Bar - The darker element of a printed bar code symbol.

Bar code - An automatic identification technology which encodes information into an array of varying width parallel rectangle bars and spaces.

Bar code Character - A single group of bars and spaces that represent an individual number, letter, punctuation mark, or other symbol.

Bar code Density - The number of data characters which can be represented in a linear unit of measure. bar code density is often expressed in characters per inch (CPI).

Bar code Label - A label which carries a bar code symbol and is suitable to be affixed to an article.

Bar code Reader - A device used to read a bar code symbol.

Bar code Symbol - See "Symbol".

Bar Height - See "Bar Length"

Bar Length - The bar dimension perpendicular to the bar width. Also called height

Bar Width - The thickness of a bar measured from the edge closest to the symbol start character to the trailing edge of the same bar.

Bar Width Reduction - Reduction of the nominal bar width dimension on film masters or printing plates to compensate for systematic errors in some printing processes

Base Line - A reference line used to specify the desired vertical position of characters printed on the same line

BCD - Binary Coded Decimal (see "Decimal, Binary")

Bi-Directional - A bar code symbol capable of being read successfully independent of scanning direction

Bi-Directional - Read See "Bi-directional"

Binary - The number system that uses only 1's and 0's

Bit - An abbreviation for "binary digit". A single element (0 or 1) in a binary number

C

Capture Window - In an automatic identification system employing RF, that volume which defines the active portion of the radio frequency antenna pattern

CCBBA - Committee for Commonality in Blood Banking in America.

Centerline - The vertical axis around which character elements are located for letters, numerals, or symbols.

Character - 1) A single group of bars and spaces which represent an individual number, letter, punctuation mark, or other symbol. 2) A graphic shape representing a letter, numeral, or symbol. 3) A letter, digit, or other symbol that is used as part of the organization, control, or representation of data.

Character Alignment - The vertical or horizontal position of characters with respect to a given set of reference lines.

Character Set - Those characters available for encodation in a particular automatic identification technology.

Check Character - A character included within a message whose value is used for the purpose of performing a mathematical check to ensure the accuracy of that message.

Check Digit - See "Check Character" .

Clear area - See "Quiet Zone".

Codabar - (2 of 7 Code, Code 27). A numbers only bar code consisting of seven modules, two of which are wide. See ANSI/AIM X5-3 USS-Codabar for specifications.

Code - See "bar code".

Code 39 - (3 of 9 Code). A full alphanumeric bar code consisting of nine modules, three of which are wide.
See ANSI/AIM X5-2 USS-39 for specifications.

Code 93 - A full alphanumeric bar code capable of encoding all 128 ASCII characters. See ANSI/AIM X5-5 USS93 for specifications.

Code 128 - A full alphanumeric bar code capable of encoding all 128 ASCII characters. See ANSI/AIM X5-4 USS128 for specifications.

Code 16K - See stacked codes. See ANSI/AIM X5-6 Code 16K for specifications.

Code 49 - See stacked codes. See ANSI/AIM X5-7 Code 49 for specifications.

Code Reader - See "bar code reader".

Continuous Code - A bar code symbology where all spaces within the symbol are parts of characters, e.g. USS 1 2/5. There is no inter-character gap in a continuous code.

CPI - Characters per inch (see "Bar code Density")

D

Data Capacity - The amount of memory available in an RF tag or in a buffer.

Data Rate - In an automatic identification system employing RF, the rate at which data is communicated between the identification tag and interrogator. Typical units are bits per second or bytes per second.

Decimal, Binary Coded (BCD) - A numbering system using base 2 that represents each decimal digit by four binary bits, with the place values equal to 8, 4, 2, and 1, reading from left to right.

Decoder - As part of a bar code reading system, the electronic package that receives the signals from the scanner, performs the algorithm to interpret the signals into meaningful data, and provides the interface to other devices.

Density - See "Bar code density".

Depth of Field - The distance between the maximum and minimum plane in which a code reader is capable of reading symbols.

Diffuse Reflection - The component of reflected light, which emanates in all directions from the reflecting surface.

DISA - Data Interchange Standards Association.

Discrete Code - A bar code symbology where the spaces between characters (inter-character gap) are not part of the code, e.g. USS-39.

Dot Matrix - A system of printing where individual dots are printed in matrix (5x7, 7x9, etc.) forming bars, alphanumeric characters, and simple graphics. See AIM document T11, "Matrix Impact Printing", for specifications.

Dot Size - (Ink Jet, Dot Matrix, Thermal) The size of the printed dot laid down on a substrate in a matrix or line to form characters.

Dot Size - (Scanner) The diameter of the beam of light used to scan a bar code symbol - ideally the beam width should be the same as the width of the narrow bar.

DSSG - Distribution Symbology Study Group

E

EAN - European Article Numbering System, the international standard bar code for retail food packages.

EAS - Electronic Article Surveillance.

EC - Electronic Commerce.

ECN - Engineering Change Notice.

EDI - Electronic Data Interchange.

EDIFACT - EDI for Administration, Commerce, and Trade.

EDP - Electronic Data Processing

Electrostatic - A method of printing that utilizes a special electrostatic paper or a charged drum, both of which attract toner to the charged area. See AIM document T-12, "Electrostatic Printing".

Element - In a bar code symbol, a single bar or space.

ERP - Enterprise Resource Planning

F

Film Master - A photographic film representation of a specific bar code or OCR symbol from which a printing plate is produced.

First Read Rate - See "Read Rate".

Fixed Beam Scanner - Either a visible light or laser scanner reading in a fixed plane. Requires a more exact positioning of bar code than with a moving beam scanner.

Foil - See "Ribbon".

Font - A specific size and style of printer's type.

Formed Font Impact - A printing method for labels consisting of a rotating drum etched with raised bars and characters. A one time ribbon and the label move between the drum and a micro controlled hammer.

G

Guard Bars - The bars which are at both ends and center of a U.P.C. and EAN symbol. They provide reference points for scanning.

GUI - Graphic User Interface

H

Hand Laser Gun - See "Laser Scanner".

Helium Neon Laser - A type of laser commonly used in bar code scanners. It emits coherent red light at a wavelength of 633 nanometers..

He-Ne - Common name for helium neon laser.

Horizontal bar code - A bar code or symbol presented in such a manner that its overall length dimension is parallel to the horizon. The bars are presented in an array, which look like a picket fence

I

ID - Identification.

IEC - International Electrotechnical Commission.

Impact Printing - Any printing system where a micro processor controlled hammer impacts against a ribbon and a substrate.

Ink Jet - A method of printing using liquid ink, projected a drop at a time against a substrate.

Intercharacter Gap - The space between two adjacent bar code characters in a discrete code. For example, the space between two characters in USS-39.

Interleaved bar code - A bar code in which characters are paired together using bars to represent the first character and spaces to represent the second, e.g., USS1 2/5 (see also "Continuous Code").

Interleaved Two of Five Code - (I 2/5) A number-only bar code symbology consisting of five bars, two of which are wide. In this code both the bars and spaces carry information. See ANSI/AIM X51 USS I 2/5 for specifications.

Interrogator - In an automatic identification system employing RF, the device, which triggers the identifying, tags to respond with a modulated RF message.

Ion Deposition - See "Electrostatic".

ISO - International Organization for Standardization.

IT - Information Technology.

IVR - Interactive Voice Response

J

JTC - Joint Technical Committee

L

Ladder Code - See "Vertical bar code".

LAN - Local Area Network.

Laser Scanner - An optical bar code reading device using a low energy laser light beam as its source of illumination. Often hand held.

LED - Light emitting diode. A semiconductor that produces light at a wavelength determined by its chemical composition. The light source often used in bar code readers.

LF - Low frequency. 30-300 KHz.

Light Pen - In a bar code system, a hand held scanning wand, which is used as a contact bar code reader held in the hand (see "Wand Scanner").

Logmars - Logistics of marking and reading symbols. A Department of Defense program to place a Code 39 symbol on all federal items. For specifications see MilStd 1189.

LTL - Less than Truckload

M

MES - Manufacturing Execution System.

MF - Medium Frequency. 300 KHz to 3 MHz.

MH10.8.3 - ANSI Standard for Unit Loads and Transport Packages - Two Dimensional Symbols.

MHI - The Material Handling Institute, Inc.

MICR - Magnetic Ink Character Recognition. The stylized printing on the lower left of personal and bank checks.

Microwave - A radio wave between 0.1 and 100 centimeters in wavelength or 1-100 GHz. Several automatic RF identification systems use this frequency band.

Mil-Std - Military Standard.

MIS - Management Information Systems.

Misread - A condition, which occurs when the data output of a reader does not agree with the data encoded in the bar code symbol.

Module - The narrowest nominal width unit of measure in a bar code.

Modulo Check Digit or Character - See "Check Character".

Moving Beam Scanner - A scanning device where scanning motion is achieved by mechanically moving the light beam through the bars.

MRPII - Manufacturing Resource Planning/2nd Generation

N

Nanometer - A unit of measure used to define the wavelength of light. Many standards require scanning in the B633-B900 range.

NIST - National Institute of Standardized Testing.

Nominal - The exact (or ideal) intended value for a specified parameter. Tolerances are specified as positive and negative deviations from this value.

Non-read - In a bar code system, the absence of data at the scanner output after an attempted scan due to no code, defective code, scanner failure or operator error.

Number System - A method of identifying individual or groups of objects. Number systems are of two types: 1) Significant digit where each item is uniquely identified and 2) Non-significant digit where sequential numbers are assigned regardless of product or item description.

Numeric - A character set that includes only numbers

O

OCR-A - An abbreviation commonly applied to the character set contained in ANSI Std. X3.17-1981 (ISO 1073 Part 1). The code is both human and machine readable.

OCR-B - An abbreviation commonly applied to the character set contained in ANSI Std. X3.49-1975. (ISO 1073 Part II).

OMS - Order Management Systems.

Opacity - The optical property of a substrate material that minimizes show-through from the backside or the next sheet. The ratio of the reflectance with a black backing to the reflectance with a white backing.

Ink opacity is the property of an ink that prevents the substrate from showing through.

Orientation - The alignment of a bar code symbol with respect to the horizontal axis. Two possible orientations are horizontal with vertical bars and spaces (picket fence) and vertical with horizontal bars and spaces (ladder).

Overhead - In a bar code system, the fixed number of characters required for start, stop and checking in a given symbol. For example, a symbol requiring a start/stop and two check characters contains four characters of overhead. Thus, to encode three characters, seven characters are required to be printed

P

Passive Tag - Passive tags are radio frequency identification devices that do not have any internal power source. Their energy source is the power emitted from adjacent antennas.

PCS - Print Contrast Signal. A measurement of the ratio of the reflectiveness between the bars and spaces of a symbol, commonly expressed as a percent. PCS is calculated as:

$PCS = \frac{R1 - Rd}{R1}$ where R1 is the reflectance of the light background and Rd is the reflectiveness of the dark bars.

PDF417 - A 2D Stacked bar code symbology.

Pen Scanner - A pen like device either connected by wire to a device or self-contained, used to read bar codes. Requires direct contact with the symbol.

Photo Comp - Photo composition. A system to produce very high quality labels by computer/photography.

Picket Fence Code - See "Horizontal bar code".

PIN - Personal Identification Number.

Pitch - Rotation of a bar code symbol about an axis parallel to the direction of the bars.

POS - Point-of-Sale.

PPBM - Positive Passenger Bag Matching.

Preprinted Symbol - A symbol that is printed in advance of application either on a label or on the article to be identified.

Print Contrast - See "PCS"

Print Quality - The measure of compliance of a bar code symbol to the requirements of dimensional tolerance, edge roughness, spots, voids, reflectance, PCS, quiet zone, and encodation.

Q

QR Code - A 2D Matrix bar code symbology.

Quiet Zone - A clear space, containing no machine readable marks, which precedes the start character of a bar code symbol and follows the stop characters. Sometimes called the "Clear Area"

R

RF - Radio Frequency. An electro-magnetic wave.

RFID - Radio Frequency Identification (see "Radio Frequency Tag"). See AIM document T-1, "RFID Systems".

Radio Frequency Tag - An electronic tag capable of receiving/storing and/or transmitting digital information by means of, and in response to, RF energy.

Range - In a radio frequency system, range is defined as the maximum allowable distance between the antenna and the tag.

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

Read/Only Tag - In an RF tag that is capable of only being read.

Read/Write - In a RF automatic identification system, the capability of the RF tags to have their stored data changed by an external RF signal.

Read/Write Tag - In an automatic identification system employing RF, an electronic tag capable of receiving, storing, and transmitting digital information.

Read Rate - The ratio of the number of successful reads on the first attempt to scan to the total number of attempts.

Reflectance - The ratio of the amount of light of a specified wavelength or series of wavelengths reflected from a test surface to the amount of light reflected from a barium oxide or magnesium oxide standard under similar illumination conditions.

Resolution - In a bar code system, the narrowest element dimension which can be distinguished by a particular reading device or printed with a particular device or method.

Ribbon - A cloth or plastic tape with several layers of material, one of which is ink-like, that produces the visible marks on a substrate. Used on formed font impact, dot matrix, thermal transfer and hot stamp printers. Also called "Foil".

ROI - Return on Investment.

Rule of "X" - X Dimension

S

SAW - Surface Acoustic Wave. A technology by which radio frequency signals are converted to acoustic signals and confined within a small substrate made from Lithium Niobate or other crystalline materials. SAW waves propagate at relatively low speed with reference to radio waves and, as such, a small substrate may produce relatively long time delays.

SC - Subcommittee.

Scanner - An electronic device to read bar codes that electro-optically converts bars and spaces into electrical signals. For RF systems see "Interrogator".

SCC-14 - Shipping Container Code.

Self-checking - A bar code or symbol using a checking algorithm which can be independently applied to each character to guard against undetected errors.

Show-through - The generally undesirable property of a substrate that permits underlying markings to be seen and may adversely affect read rate.

SI - Systems Integrator.

Skew - Rotation of a bar code symbol about an axis parallel to the symbol's length.

Sniff Mode - Occurs when some radio frequency based systems are searching for a radio frequency tag. The interrogator continually emits trace amounts of radio waves until a tag is detected. Upon detection, interrogation is made at the maximum power.

SNMP - Simple Network Management Protocol.

Space - The lighter element of a bar code usually formed by the background between bars.

Space Width - The thickness of a space measured from the edge closest to the symbol start character to the trailing edge of the same space.

Spectral Response - The variation in sensitivity of a reading device to light of different wavelengths.

Specular Reflection - The mirror-like reflection of light from a surface.

Spot - The undesirable presence of ink or dirt in a space.

SSCC-18 - Serialized Shipping Container Code.

STAC - Symbol Technical Advisory Committee to the Uniform Code Council, Inc (see "UCC").

Stacked Codes - 16K and Code 49 are examples where a long symbol is broken into sections and "stacked" one upon another similar to sentences in a paragraph. Extremely compact codes.

Standard - A set of rules, specifications, instructions and directions to use a bar code or other automatic identification system to your profit. Usually issued by an organization, e.g. Logmars, HIBCC, U.C.C, etc.

Start Stop Character or Pattern - A special bar code character that provides the scanner with start and stop reading instructions as well as a scanning direction indicator. The start character is normally at the left-end of a horizontally oriented symbol. The stop character is normally at the right-end of a horizontally oriented symbol.

Substitution Error - A mis-encodation, mis-read, or human key entry error where a character that was to be entered, is substituted with erroneous information. Example: Correct information 1,2,3,4, substitution 1,2,3,5.

Substrate - The surface on which a bar code symbol is printed.

Symbol - A combination of bar code characters including start/stop characters, quiet zones/data characters, and check characters required by a particular symbology, which form a complete, scannable entity.

Symbol Density - The number of data characters per unit length.

Symbol Length - The distance between the outside edges of the quiet zones

T

TCP/IP - Transmission Control Protocol/Internet Protocol.

TCS - Transport Case Symbol.

Telepen - A European code capable of encoding the full ASCII set.

Thermal - A printing system where dots are selectively heated and cooled and drag upon a heat sensitive paper. The paper turns dark in the heated areas. See AIM document T-20, "Direct Thermal Printing".

Thermal Transfer - A printing system like thermal except a one-time ribbon is used and common paper is used as a substrate. Eliminates the problems of fading or changing color inherent in thermal.

Tilt - Rotation of a bar code symbol about an axis perpendicular to the substrate.

TSC - AIM USA bar code Technical Symbology Committee

U

UCC - Uniform Code Council, (see Uniform Product Code Council); the organization which administers the U.P.C. and other retail standards.

UCS - Uniform Container Symbol.

UHF - Ultra-High Frequency. 300 to 3000 MHz.

ULF - See "VLF".

U.P.C. - Universal Product Code - The standard bar code symbol for retail food packages in the United States.

UPCC - Universal Product Carton Code - A standard administered by the UCC.

UPN - Universal Product Number.

USS - Uniform Symbol Specification. The current series of symbology specifications published by AIM.

UV - Ultra Violet

V

VAR - Value-Added Reseller.

Verifier - A device that makes measurements of the bars, spaces, quiet zones, and optical characteristics of a symbol to determine if the symbol meets the requirements of a specification or standard.

Vertical bar code - A code pattern presented in such orientation that the axis of the symbol from start to stop is perpendicular to the horizon. The individual bars are in an array appearing as rungs of a ladder.

VLF - Very Low Frequency. Frequency less than 30 KHz.

Void - The undesirable absence of ink in a bar

W

Wand - See "Wand Scanner".

Wand Scanner - A hand held scanning device used as a contact bar code or OCR reader.

Wedge - A device that plugs in between a keyboard and a PC. Includes a pen scanner allowing data to be entered either by keyboard or pen scanner.

WIP - Work in Progress/Process

X

"X" Dimension - The nominal dimension of the narrow bars and spaces in a bar code symbol.