



Chapter 2 Glossary

ASCII - American Standard Code for Information Interchange. A 7 bit-plus-parity code representing 128 letters, numerals, punctuation marks, and control characters. It is a standard data transmission code in the U.S.

BIT - Binary digit. One bit is the basic unit of binary information. Generally, eight consecutive bits compose one byte of data. The pattern of 0 and 1 values within the byte determines its meaning.

BYTE - On an addressable boundary, eight adjacent binary digits (0 and 1) combined in a pattern to represent a specific character or numeric value. Bits are numbered from the right, 0 through 7, with bit 0 the low-order bit. One byte in memory can be used to store one ASCII character.

CDRH - Center for Devices and Radiological Health. A federal agency responsible for regulating laser product safety. This agency specifies various laser operation classes based on power output during operation.

CDRH CLASS I - This is the lowest power CDRH laser class. Class 1 lasers are safe when used in accordance with the user instructions. They are inherently safe (so that the maximum possible exposure level cannot be exceeded under any condition), or are safe by virtue of their engineering design.

CHECK DIGIT - A digit used to verify a correct symbol decode. The scanner inserts the decoded data into an arithmetic formula and checks that the resulting number matches the encoded check digit. Check digits are required for UPC but are optional for other symbologies. Using check digits decreases the chance of substitution errors when a symbol is decoded.

CODABAR - A discrete self-checking code with a character set consisting of digits 0 to 9 and six additional characters: (- \$: / , +).

CODE 128 - A high density symbology which allows the controller to encode all 128 ASCII characters without adding extra symbol elements.

CODE 3 OF 9 (CODE 39) - A versatile and widely used alphanumeric bar code symbology with a set of 43 character types, including all uppercase letters, numerals from 0 to 9, and 7 special characters (- . / + % \$ and space). The code name is derived from the fact that 3 of 9 elements representing a character are wide, while the remaining 6 are narrow.

CODE 93 - An industrial symbology compatible with Code 39 but offering a full character ASCII set and a higher coding density than Code 39.

CONTINUOUS CODE - A bar code or symbol in which all spaces within the symbol are parts of characters. There are no intercharacter gaps in a continuous code. The absence of gaps allows for greater information density.

DECODE - To recognize a bar code symbology (e.g., UPC/EAN) and then analyze the content of the specific bar code scanned.

DECODE ALGORITHM - A decoding scheme that converts pulse widths into data representation of the letters or numbers encoded within a bar code symbol.

DISCRETE CODE - A bar code or symbol in which the spaces between characters (intercharacter gaps) are not part of the code.

DISCRETE 2 OF 5 - A binary bar code symbology representing each character by a group of five bars, two of which are wide. The location of wide bars in the group determines which character is encoded; spaces are insignificant. Only numeric characters (0 to 9) and START/STOP characters may be encoded.

EAN - European Article Number. This European/International version of the UPC provides its own coding format and symbology standards. Element dimensions are specified metrically. EAN is used primarily in retail.

HOST COMPUTER - A computer that serves other terminals in a network, providing such services as computation, database access, supervisory programs, and network control.

IEC - International Electrotechnical Commission. This international agency regulates laser safety by specifying various laser operation classes based on power output during operation.

IEC CLASS I (IEC 825 Class I) - This is the lowest power IEC laser classification. Conformity is ensured through a software restriction of 120 seconds of laser operation within any 1000 second window and an automatic laser shutdown if the scanner's oscillating mirror fails.

INTERCHARACTER GAP - The space between two adjacent bar code characters in a discrete code.

INTERLEAVED BAR CODE - A bar code in which characters are paired together, using bars to represent the first character and the intervening spaces to represent the second.

INTERLEAVED 2 OF 5 - A binary bar code symbology representing character pairs in groups of five bars and five interleaved spaces. Interleaving provides for greater information density. The location of wide elements (bar/spaces) within each group determines which characters are encoded. This continuous code type uses no intercharacter spaces. Only numeric (0 to 9) and START/STOP characters may be encoded.

LASER - An acronym for Light Amplification by Stimulated Emission of Radiation. The laser is an intense light source. Light from a laser is all the same frequency, unlike the output of an incandescent bulb. Laser light is typically coherent and has a high energy density.

LASER DIODE - A gallium-arsenide semiconductor type of laser connected to a power source to generate a laser beam. This laser type is a compact source of coherent light.

PARAMETER - A variable that can have different values assigned to it.

PROGRAMMING MODE - The state in which a scanner is configured for parameter values. See **SCANNING MODE**.

QUIET ZONE - A clear space, containing no dark marks, which precedes the start character of a bar code symbol and follows the stop character.

SCANNER - An electronic device used to scan bar code symbols and produce a digitized pattern that corresponds to the bars and spaces of the symbol. Its three main components are:

1. Light source (laser or photoelectric cell) - illuminates a bar code.
2. Photodetector - registers the difference in reflected light (more light reflected from spaces).
3. Signal conditioning circuit - transforms optical detector output into a digitized bar pattern.

SCANNING MODE - The scanner is energized, programmed, and ready to read a bar code.

SCANNING SEQUENCE - A method of programming or configuring parameters for a bar code reading system by scanning bar code menus.

SELF-CHECKING CODE - A symbology that uses a checking algorithm to detect encoding errors within the characters of a bar code symbol.

START/STOP CHARACTER - A pattern of bars and spaces that provides the scanner with start and stop reading instructions and scanning direction. The start and stop characters are normally to the left and right margins of a horizontal code.

SYMBOL - A scannable unit that encodes data within the conventions of a certain symbology, usually including start/stop characters, quiet zones, data characters, and check characters.

SYMBOLOGY - The structural rules and conventions for representing data within a particular bar code type (e.g. UPC/EAN, Code 39).

UPC - Universal Product Code. A relatively complex numeric symbology. Each character consists of two bars and two spaces, each of which can be any of four widths. The standard symbology for retail food packages in the United States.