Glossary

Aperture The opening in an optical system defined by a lens or baffle that establishes the field of view.

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.

Autodiscrimination The ability of an interface controller to determine the code type of a scanned bar code. After this determination is made, the information content can be decoded.

Bar The dark element in a printed bar code symbol.

Bar Code Density The number of characters represented per unit of measurement (e.g., characters per inch).

Bar Height The dimension of a bar measured perpendicular to the bar width.

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

Baud Rate A measure of the data flow or number of signaling events occurring per second. When one bit is the standard "event," this is a measure of bits per second (bps). For example, a baud rate of 50 means transmission of 50 bits of data per second.

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 1	This is the lowest power CDRH laser classification. This class is considered intrinsically safe, even if all laser output were directed into the eye's pupil. There are no special operating procedures for this class.
CDRH Class 2	No additional software mechanisms are needed to conform to this limit. Laser operation in this class poses no danger for unintentional direct human exposure.
Character	A pattern of bars and spaces which either directly represents data or indicates a control function, such as a number, letter, punctuation mark, or communications control contained in a message.
Character Set	Those characters available for encodation in a particular bar code symbology.
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.
CLSI Editing	An option which inserts a space after the 1st, 5th, and 10th characters of a 14-character Codabar symbol. Length includes start and stop characters.
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.
Code Length	Number of data characters in a bar code between the start and stop characters, not including those characters.

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.
CTS	Clear to send.
Dead Zone	An area within a scanner's field of view, in which specular reflection may prevent a successful decode.
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.
Depth of Field	The range between minimum and maximum distances at which a scanner can read a symbol with a certain minimum element width.
Digitized Bar Pattern (DBP)	A digital representation of a decoded bar 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.
Discrete Code	A bar code or symbol in which the spaces between characters (intercharacter gaps) are not part of the code.
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.
Element	Generic term for a bar or space.
Encoded Area	Total linear dimension occupied by all characters of a code pattern, including start / stop characters and data.
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 (825) Class 1	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 - 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.
LED Indicator	A semiconductor diode (LED - Light Emitting Diode) used as an indicator, often in digital displays. The semiconductor uses applied voltage to produce light of a certain frequency determined by the semiconductor's particular chemical composition.
MIL	1 mil = 1 thousandth of an inch.
Misread (Misdecode)	A condition which occurs when the data output of a reader or interface controller does not agree with the data encoded within a bar code symbol.

MSI Plessey A numeric-only bar code type. It can accept a variable number of digits up to 13. MSI Plessey consists of four bars and four adjacent spaces. Each bar\space pair consists of one information bit. A zero bit consists of a narrow bar followed by a wide space, while one bit consist of a wide bar followed by a narrow bar. The zero bit is one unit bar followed by a two-unit space and the one bit is a two-unit bar followed by a one unit space. The primary application for the MSI Plessey code is marking of retail shelves and subsequent scanning with portable devices for inventory purposes.

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

Nominal Size Standard size for a bar code symbol. Most UPC/EAN codes can be used over a range of magnifications (e.g., from 0.80 to 2.00 of nominal).

NOTIS Editing An option that strips the start and stop characters from a decoded Codabar symbol.

Parameter A variable that can have different values assigned to it.

Percent Decode The average probability that a single scan of a bar code would result in a successful decode. In a well-designed bar code scanning system, that probability should approach near 100%.

Print Contrast Signal (PCS) Measurement of the contrast (brightness difference) between the bars and spaces of a symbol. A minimum PCS value is needed for a bar code symbol to be scannable. PCS = $(R_L - R_D) / R_L$, where R_L is the reflectance factor of the background and R_D the reflectance factor of the dark bars.

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.

Random Access Memory (RAM) Memory devices where any location in memory can be accessed as quickly as any other location.

Reflectance Amount of light returned from an illuminated surface.

Resolution The narrowest element dimension which can be distinguished by a particular reading device or printed with a particular device or method.

RTS	Request to send.
RxD	Received data.
Scan Area	Area intended to contain a symbol.
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.
Space	The lighter element of a bar code formed by the background between bars.
Specular Reflection	The mirror-like reflection of light from a surface which can “blind” a scanner.
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.
Substrate	A foundation material on which a substance or image is placed.
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.
Symbol Aspect Ratio	The ratio of symbol height to symbol width.
Symbol Height	The distance between the outside edges of the quiet zones of the first row and the last row.
Symbol Length	Length of symbol measured from the beginning of the quiet zone (margin) adjacent to the start character to the end of the quiet zone (margin) adjacent to a stop character.

Symbology	The structural rules and conventions for representing data within a particular bar code type (e.g. UPC/EAN, Code 39).
Tolerance	Allowable deviation from the nominal bar or space width.
TxD	Transmitted data.
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.
Visible Laser Diode (VLD)	A solid state device which produces visible laser light. Laser light emitted from the diode has a wavelength of 670 to 680 nanometers.