



Glossary

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| 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. |

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| 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. |
| 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. |

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| 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. |
| 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. |
| 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. |

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| 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. |
| 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). |
| 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%. |

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| 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. $PCS = (RL - RD) / RL$, where RL is the reflectance factor of the background and RD the reflectance factor of the dark bars. |
| Programming Mode | The state in which a scanner is configured for parameter values. See <i>Scanning Mode</i> . |
| Quiet Zone | A clear space, containing no dark marks, which precedes the start character of a bar code symbol and follows the stop character. |
| 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. |
| 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: <ol style="list-style-type: none">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. |

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| 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. |
| 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. |