HLBS
Reflecting Technologies

Barcode Solutions

Barcode Reader

A **barcode reader** (or **barcode scanner**) is an electronic device for reading printed barcodes. Like a flatbed scanner, it consists of a light source, a lens and a light sensor translating optical impulses into electrical ones. Additionally, nearly all barcode readers contain *decoder* circuitry analyzing the barcode's image data provided by the sensor and sending the barcode's content to the scanner's output port.

Pen-Type Reader

Pen-type readers consist of a light source and photodiode that are placed next to each other in the tip of a pen or wand. To read a bar code, the person holding the pen must move the tip of it across the bars at a relatively uniform speed

Laser Type Scanner

Laser scanners work the same way as pen type readers except that they use a laser beam as the light source and typically employ either a reciprocating mirror or a rotating prism

CCD Readers

CCD readers use an array of hundreds of tiny light sensors lined up in a row in the head of the reader. Each sensor measures the intensity of the light immediately in front of it. The important difference between a CCD reader and a pen or laser scanner is that the CCD reader is measuring emitted ambient light from the bar code whereas pen or laser scanners are measuring reflected light of a specific frequency originating from the scanner itself.

Camera Based

Two-dimensional imaging scanners are the fourth and newest type of bar code reader. They use a camera and image processing techniques to decode the bar code.
Video camera readers use small video cameras with the same CCD technology as in a CCD bar code reader except that instead of having a single row of sensors, a video camera has hundreds of rows of sensors arranged in a two dimensional array so that they can generate an image.
Large field-of-view readers use high resolution industrial cameras to capture multiple bar codes simultaneously. All the bar codes appearing in the photo are decoded instantly or by use of plugins have been realized options for resolving the given tasks.

Omni Directional

Omni-directional scanning uses "series of straight or curved scanning lines of varying directions in the form of a starburst, a lissajous pattern, or other multi-angle arrangement are projected at the symbol and one or more of them will be able to cross all of the symbol's bars and spaces, no matter what the orientation.