

Explanation of Standard Bar Code Search Direction

(Using Adrenaline Image Processing Engine (AIPE) 4.0 technology)

Application Note

Date	December 05, 2012
Applies To	Adrenaline Image Processing Engine (AIPE) 4.0 VRS 4.x and 5.x (Elite)
Summary	This application note provides an explanation of the Adrenaline Image Processing Engine (AIPE) technology used to read bar codes.
Revision	1.2

Standard Bar Code Algorithm Search Overview

The Standard Bar Code orientation and driver search directions used by the Adrenaline Image Processing Engine technology are described below.

Bar Code Orientation

Bar codes can be oriented on an image in four general directions as described below.

Orientation	Direction on the Image	How read
0 Horizontal	Rotated 0 degrees	Read left to right
90 Vertical	Rotated 90 degrees to the right	Read top to bottom
180 Horizontal	Rotated 180 degrees to the right	Read right to left
270 Vertical	Rotated 270 degrees to the right	Read bottom to top

Standard Bar Code Search

The bar code driver can search for and read horizontal and/or vertical bar codes, but you must specify how the bar codes are oriented on the image. The bar code driver can find bar codes that are skewed from the specified orientations by as much as ± 45 degrees.

The Standard Bar Code driver searches for bar codes in a linear fashion, probing the search area for potential bar codes. For example, when using horizontal bar codes with an orientation of 0, it works down the image starting on the left edge and probing toward the right edge. For vertical bar codes, it works across the image starting on the top edge and probing top to bottom.

The distance between probes is calculated by dividing the specified bar code height by the specified quality (BarHeight/BarQuality) as follows:

Quality	Number of Probes
Normal	Ensures 1 probe per height of bar code.
Poor	Ensures 4-5 probes per height of bar code.
Very Poor	Ensures 1 probe for every (DPI/50) lines. For example: <ul style="list-style-type: none"> • 100 DPI image = 1 probe every 2 lines. • 200 DPI image = 1 probe every 4 lines. • 300 DPI image = 1 probe every 6 lines.

Standard Barcode Search Direction Explanation

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Moreover, when enabled with selected search direction setting, the bar code driver is capable of detecting bar codes that are skewed on either side of the search path. Skew detection is built into the driver and occurs automatically. Each selected direction covers a 90-degree window (45 degrees on either side of the search path). For example, if the search direction is 90 degrees, bar codes can be read in the range 90 degree +/- 45 degree.

If all search directions are selected, the bar code driver can read bar codes oriented from 0 to 360 degrees on the image and, the bar code driver searches in this order: 0, 180, 90, and then 270.