EMWI

EMWI GROUP

LINESCAN OCR Systems

Recommendations and Restrictions on Font Styles:

Introduction

Theoretically there are no restrictions on font or character style that can be used with the Linescan Matching Systems, however certain considerations must be taken into account when selecting a font for OCR matching. In general it is advisable to use an OCR font style where possible, although providing the following recommendations are followed the system can perform consistent and reliable OCR.

Spacing

The most critical aspect of any font style is the gap or spacing between individual characters. If the characters overlap the system will not be able to separate them, and misreads will occur. For example:

The result of an OCR read on the above two characters will detect only a single character. The ideal spacing between characters should be a minimum of approximately 20% of the width of the character:

Print Quality

If using an Inkjet printer it is also imperative that the gaps between the dots that make up a character should be significantly less than the gaps between the characters for the same reason as described above.
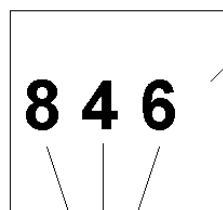Also the clearer and the more consistent the printing of the characters is, the less miss reads will occur.

Position

It is important to keep the characters to be used for matching in an area free from high contrast graphics and patterns. The OCR systems relies on seeing a high contrast edge between characters and background in order to consistently define each individual character from the background. This free area should typically be double the height of the characters above and below the target characters. (Approximately 4 characters high):

Wendover
Bucks
HP22 6BN

Other Characters should not be printed too close to the document identification characters

Area of interest must be free from high contrast objects

8 4 6

Target Characters

Contrast

Some software functions are available within the system to suppress the effects of patterns and colours and enhance contrast between the target characters and the image background. The system also has the capability of extracting the target character string for other features or characters within the image, however it is advisable to always test the document and character designs prior to running production quantities in order to determine the optimum operating set-up and layout.

Size

The Linescan OCR systems use fixed field of view, fixed illumination and fixed working distances. This is to maximise ease of integration and operation, while minimising many of the variables that can otherwise lead to inconsistent reading in a production environment. However as a result they also restrict the font size and number of characters that can be read.

If more flexibility is required, standard vision cameras, optics and lighting can be used. This will increase the complexity of the system but will allow for virtually any size font.

Ink / Toner

All Linescan read heads use LED monochromatic lighting. This has the advantage of long life, consistent uniform intensity and controllability. The LED's are available in several wavelengths depending on the environment and the type of print to be read. The standard uses 880nm LED's as these allow for good filtering and control of any ambient light. However while this wavelength performs well with laser print, it is less successful with most inkjet and offset print where the ink has no IR content. In this case a 660nm light head is supplied. In some cases it may be necessary to supply alternative wavelengths.

Surface

It is important to take into consideration the surface quality of the stock and the effects on reading printed codes. Glossy surfaces require polarising filters, while polywrap, plastic cards and window envelopes require an alternative illumination source. The range of Linescan system takes account of these surfaces and provide a comprehensive solution to most applications.

Ambient Light

Strong ambient light can sometimes interfere with the imaging and reading processes within an OCR or Barcode reading system. The design of the Linescan system and the software functionality is optimised to either cope with these effects or minimise them, however it is advisable to shield strong sun light or factory lighting where possible

Envelope Windows

In order to read a code through an envelope window, additional care must be taken to ensure the code is consistently visible. Consideration must therefore be given to the document and envelope size to minimise the amount of 'float' of the document within the envelope. It is also important to take additional care with the inserter set-up in order to maintain a consistent placement of the documents within the envelope.