▸ PrintQual

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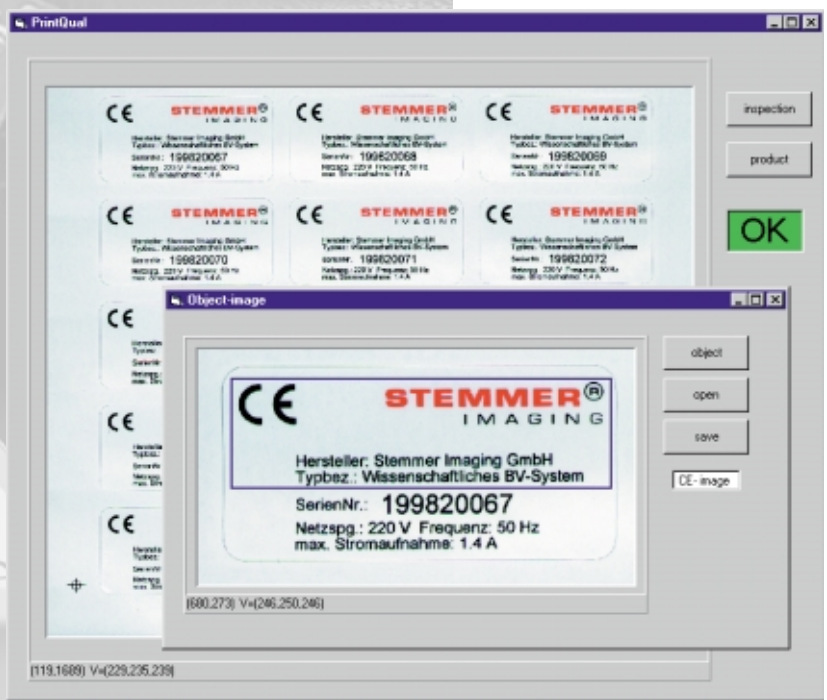


Software tool for print quality inspection

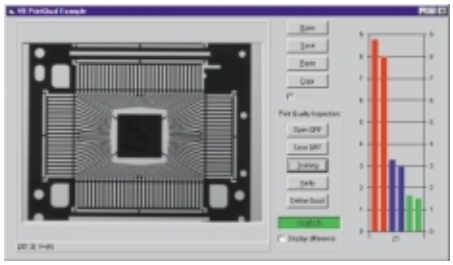
STEMMER IMAGING

▸ PrintQual

Thanks to the highly specialized software tool PrintQual (Print Quality Inspection) it is now possible to solve applications in every sector of print inspection. An extremely wide range of print substrates such as paper, cardboards, labels as well as overprints of every type can be inspected. Even highly complex workpieces such as lead frames and printed circuit boards can be inspected for errors using PrintQual.
Work with PrintQual is divided into a learning or training phase and the subsequent automatic inspection of the items.

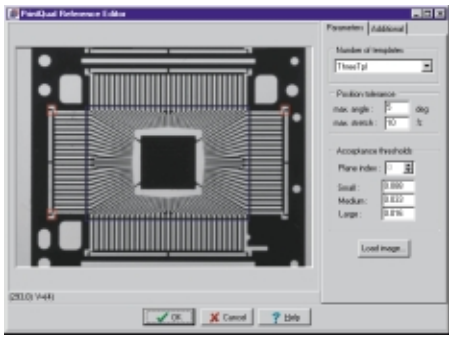
▸ Training phase

First of all the system is shown an image of a correct item for sampling in which the area for inspection is marked. To permit position correction at runtime, up to three templates can be specified in the image.



▸ Inspection procedure

At runtime, the specified templates are first searched in order to correct the position (one template), the size (two templates) and the rotation (three templates) of the object with reference to the learned position. The test image that is generated in this way is then compared with the learned reference image. PrintQual calculates three different numerical values which provide information about small, medium and large divergences from the reference image. By presenting a number of correct items the system determines suitable threshold values for the three types of errors. As a result, the system can be trained in such a way that, for example, small errors are tolerated whereas medium or large errors result in a warning. If color images are used then separate numerical values are determined for the red, green and blue channels thus permitting a more precise specification of the error.



▸ Sensitivity on error detection

Unlike with the conventional correlation, PrintQual makes it possible to distinguish between a large number of small and a single large error. The algorithm is so sensitive that errors of only a few pixels in size can also be identified.

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