Improved quality control with USB cameras

Precisely sighted

Up to now function and circuit tests had two essential disadvantages: the check adapter had to be programmed for every printed circuit board separately. Secondly in spite of careful programming there could be contact problems. With the new custom specific development CtC Paneltester, IC automation breaks new ground and detects contacts optically.

IC automation's CtC Paneltester executes an electronic devices function test of optical sensors automatically. The circuit boards are loaded from a magazine and are placed under a specific check adapter. Thereafter the single electronic devices are contacted and tested. As common in-curcuit-test this is a very fast and 100 % test method.
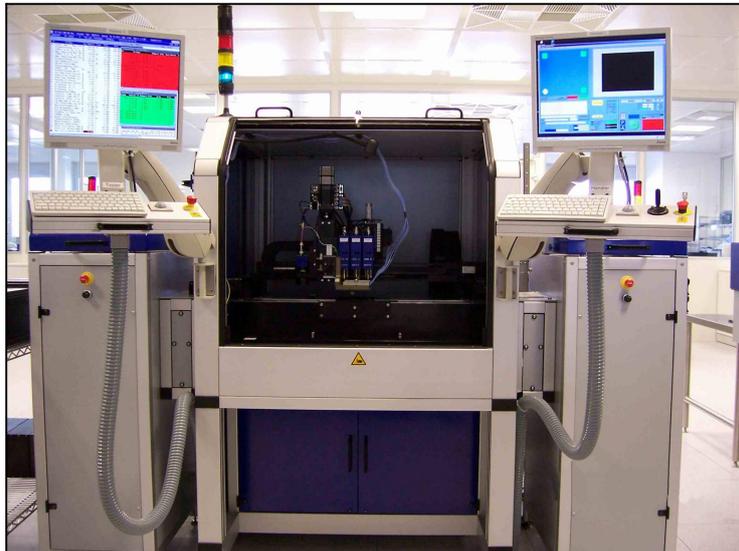

Figure 1: Paneltester

Advantages of the Paneltester

Compared with an ITC, the Paneltester offers several essential advantages (Figure 1).
The Paneltester uses a camera to detect the connection contacts of the circuit boards (Figure 2). With the images taken by the camera, the measuring adapter of the Paneltester can be placed on the contacts exactly. Consequently possible contact problems as they exist with ICTs are omitted.

Furthermore, before the function test the camera checks the presence of the components and after the test it checks the good/bad markings, which were printed on the components.
As a further speciality of the Paneltester, test parameters and other relevant data can be applied on the circuit board using inkjet and coded as a Datamatrix.

Optical component

IC automation plumped for a USB based solution to be flexible during the

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About the USB camera system

The mvBlueFOX with a size of 38.8 x 38.8 x 58.5 mm (width x height x length) is a compact industrial camera with USB 2.0 interface. Area scan sensors are available, CCDs up to 1600 x 1200 pixels ans CMOS' up to 1280 x 1024 pixels. Furthermore, the camera contains two digital I/Os and lens holder for C-, CS-, S-Mount lenses. For time critical I/O and acquisition there is a Hardware Real-Time Controller (HRTC).
Additionally for developping own application, mvIMPACT Base library is included in the scope of supply. Especially for OEMs, the industrial camera mvBlueFOX is available as a manageable and flexible camera module.
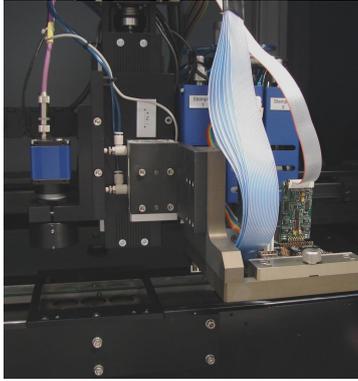
Figure 2: mvBlueFOX as optical component (left).

Figure 3: mvBlueFOX from MATRIX VISION.

the intergration of the camera and addtionally to save a frame grabber. The USB 2.0 camera mvBlueFOX from MATRIX VISION was chosen (Figure 3). The camera satisifed in many ways. First the housing is very compact, second MATRIX VISION is offering many different camera models within the same housing.

The latter was an important criterion during the decision, because IC automation uses up to five cameras with different resolutions in one machine and as a result they need a standard housing.

Also the possiblity, that the camera can be controlled via chain cable compatible cables with an industrial connector was judged as good, given that the cameras are often moved. The easy intergration to the existent software add to the decision of the camera.

Conclusion

The usage of industrial image processing offers extensive space for improvements in many industrial areas. The example of IC automation's CtC Paneltester shows that with the help of optical systems established

exercisers can be extended, improved and thus again new possibilities are opened. Furthermore the image processing industry uses more and more standard interfaces like USB 2.0 and Gigabit Ethernet, which additionally creates incentives, due to the easy handling, the fast intergration in existent projects and the prevalence on customer's side.