The future of video inspection system products looks bright

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In recent years, many electronics manufacturers have been adopting the use of video inspection systems. These systems utilize digital cameras to perform many of the visual inspection functions formerly performed with optical microscopes. Digital camera technology has improved to the point where the image quality now rivals that of optical instruments for many applications.

The use of video instruments for the inspection of printed circuit boards, individual electronic components, solder joints and conformal coatings has been widely accepted. Some of the major advantages that video inspection systems offer is the software which gives the user the ability to capture, store and share images and videos, perform image enhancement and manipulation, make side-by-side image comparisons, do annotation and take linear and geometric measurements. Additionally, high-resolution video monitors, of various sizes, can be mounted at any height and viewing angle to reduce operator fatigue.

A more recent development has been the introduction of a new generation of compact, hand-held digital microscopes. These versatile and surprisingly affordable instruments usually include integrated LED lighting, standard software and an adjustable stand for fixed mount applications. Image display is usually accomplished through the use of external video monitors or computers connected via a standard USB cable.

Some of the latest versions of these instruments offer lighting options such as UV, near infra-red and polarizing filters (which reduce glare when viewing objects with highly reflective surfaces). The manufacturers of these instruments are also offering a growing list of optional hardware and software accessories to further enhance functionality.

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