Mek to Showcase latest range of AOI Technology at IPC Apex

Mek (Marantz Electronics), will be showcasing the ISO-Spector M1 Full 3D AOI system with Artificial Intelligence at this year's Apex in San Diego on booth 3029.

One of the greatest challenges in programming AOI, (Automatic Optical Inspection) systems is the detection of all non-conforming placements, especially those related to solder joints, without creating a long list of ''False Calls''. The industry has always faced this problem and has had to accept that the more accurately you wish to measure, the more false judgements a system will make. It commonly results in long debugging time and complex programming.

The full 3D ISO-Spector M1A delivers a self-learning algorithm for solder joint inspection that will detect any deviation outside the expected standard appearance of a solder joint. A proprietary solution with Artificial Intelligence is continuously and centrally monitoring production and adjusting hundreds of tolerance values where needed to maximize detection and minimize false calls. The programmer does not have to specify the specific inspection locations, light settings or acceptance criteria. This not only reduces programming time, but more importantly removes the often-unpredictable human variable to ensure that the inspection results are more reliable.

Also being demonstrated at the show is the desktop PowerSpector GTAz designed for maximum defect coverage whilst maintaining short programming times. It is the only desktop AOI in the market that can be equipped with 9 cameras: 1 top and 8 side cameras. For maximum flexibility, the optical unit is configurable to fit your needs today while providing upgrade possibilities for the future.

Completing the line-up of inspection solutions on the booth is a demonstration of the modularity of the SpectorBOX AOI system. SpectorBOX is uniquely engineered to accommodate solder frames on return and/or feed conveyors. The system offers bottom side, top side, simultaneous dual side inspection or conformal coating inspection,

deploying up to 18 cameras, Z axis positioning and auto-focus. SpectorBOX GTAz Bottom-Up AOI is optimized (besides SMT inspection) for the inspection of THT solder joints to identify defects such as presence/absence of solder, wetting problems, meniscus shape, pin insertion problems, bridges with automated 9-image microscopic presentation for classification and repair. SpectorBOX JUz CCI is the ultimate solution for conformal coating inspection. It can be used after manual spray, automatic spray and dip coating applications. The system is able to provide coating defect detection covering the components and around the components. Bubbles and other contaminations can also be detected.
The Nutek Main Frame allows easy integration of one or two SpectorBOX modular AOI systems into the production line and will be displayed at Apex with the bottom up THT AOI and the SpectorBOX JUZ CCI.

Mek offers a complete line of inspection equipment for maximized defects coverage. The Mek PowerSpector BTL AOI system offers synchronized inspection of the top and bottom side of PCBs after Reflow, Wave or Selective soldering & placement of SMT & THT components. Patented synchronized lighting technology delivers new capabilities. 9 cameras per side, with both heads inspecting the PCB at the same time, deliver fastest inspection times but without the high power lighting system of each head affecting the other inspection taking place. The elimination of flipping removes potential for stress on the assembly and improves long term reliability of solder joints.

For customers for whom value for money is an absolute priority Mek offers two systems in the entry level range. The new iSpector JK desktop AOI system is designed to inspect component bodies and solder joints by use of RGB LED light sources from three different angles offering full inspection coverage at an entry level price. Powerful algorithms achieve an optimal balance between defect detection and false reject levels in the shortest time.

Available as a desktop or inline system the Mek iSpector JDz delivers the fastest return on investment for EMS customers that seek optical flexibility, easy programming & usage and the highest inspection performance guarantees. The JDz uses a Z-axis for maximum flexibility in THT and sandwiched SMD inspection. The Z-axis enables inspection of objects at different height levels such as sandwiched PCB's, tall components or positional measurement of tall connector pins.

As well as AOI solutions Mek offers 5D post-print solder paste inspection systems which deliver first rate defect detection. Combining 3D and 2D image processing methodologies Mek ISO-Spector S2 uses MEKs unique production control method, to monitor process stability and reduce tolerance. This is ideally suited to go beyond process control after the print process has been optimized and monitor the users process capability to prevent process drift.

For more information on Mek and the entire range of products visit www.marantz-electronics.com, or visit us at booth 3029 where we can discuss your application requirements.

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