powerspector

S1 S1XL S1DL S1DLX S1s

5D Solder Paste Inspection System

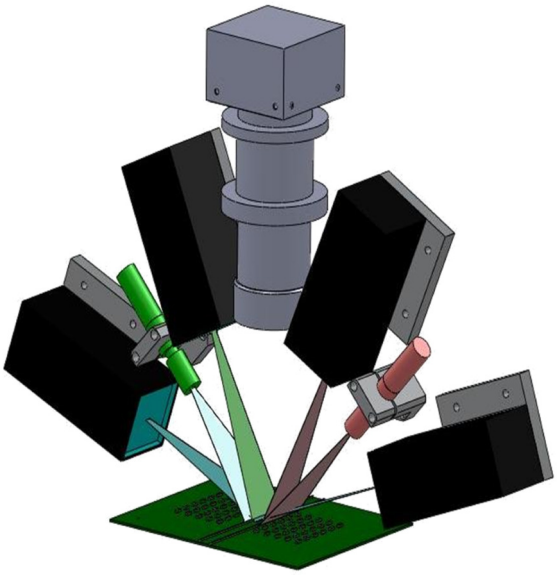
• **Automatic inspection of solder paste after the printing process**	Measure and control your print quality with realtime feed back
• **Detects anomalies in the printing process**	Tune your printing process before defects occur
• **Measures: True- volume, height, area, offset and shape and bridging**	Measure all major parameters of the solder paste printing process without compromise, And find defects and optimize your process
• **High speed inspection with 5D technology, measuring beyond the bounds of apertures**	Patented advanced sensor technology for 3D and 2D simultaneous inspection, with 2D to 3D comparative analysis to
• **Accurate and precise volume and height measurement (3D)**	Adjust your solder paste printer for immediate yield improvement
• **True area measurement and offset and shape inspection (2D)**	Improve fast moving yield fluctuations and incidental printing defects. Find solder paste slumping
• **Area normalization**	Bring the real world in to your analysis and get tighter tolerances for tighter control
• **Onboard extensive SPC tool**	Integrated real time statistics for instant feedback. Simple to use and understand
• **Topographical zero referencing**	Accurate and precise measurement of the solder pad height reference level including warped PCB's with true col-
• **Shadow free measurement**	Minimize blind spots; reliable solder paste volume and height measurement
• **Multi colour lighting system**	Accommodates light and dark PCB's of any colour
• **Step by step simple and fast programming**	Create full inspection programs in minutes

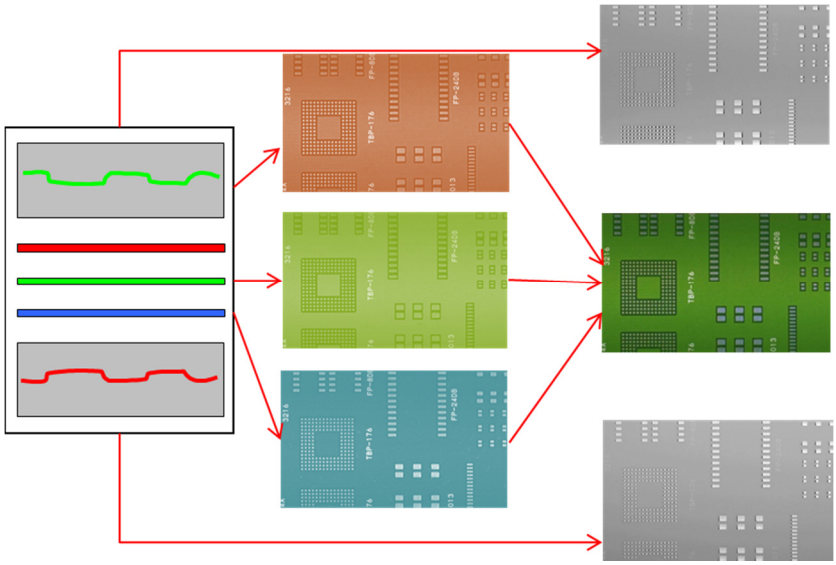
mek®
marantz electronics ltd

spi

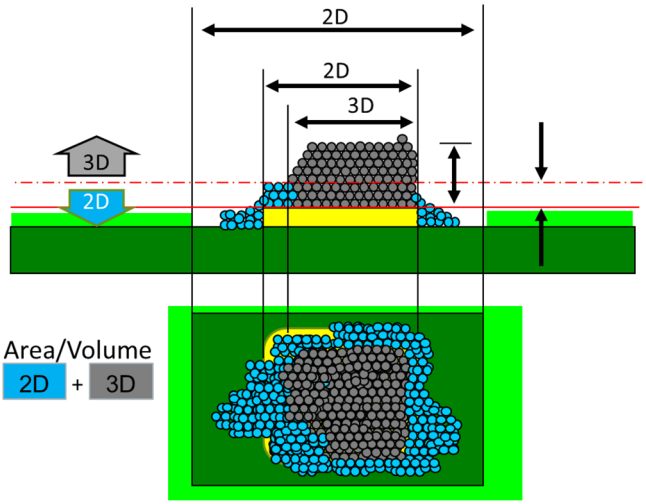
because inspection matters

Solder paste inspection (SPI) equipment is used to monitor and control one of the most critical steps affecting the finished quality of printed circuit boards (PCBs). Solder paste deposition is the key process in board assembly operations and modern manufacturing trends are increasingly abandoning costly repairs in favour of prevention through improved process control.
Research has identified that over 60% of end of line defects can be traced back to printing errors. Intercepting these defects before they happen reduces rework costs, provides Instant yield improvement and accelerates return on investment



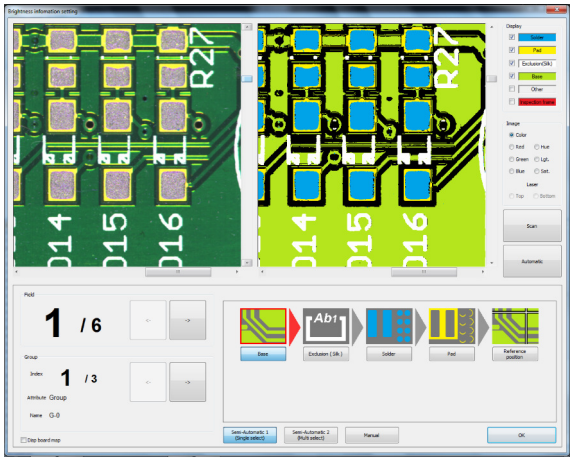


Our 5D post-print solder paste inspection process incorporates patented new sensor technology and simultaneously combines 3D and 2D image processing methodologies that deliver defect detection beyond that was previously possible.

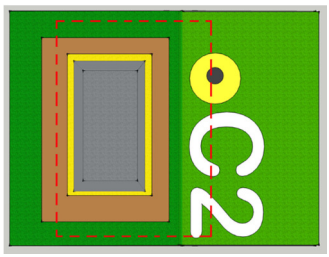


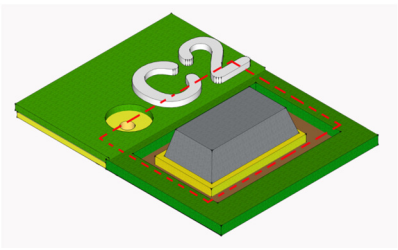
Delivering true area, shape, offset, volume and height measurement in combination, PowerSpector delivers true process control and provides the perfect solder paste printer adjustment tool. Enabling manufacturers to correct printer settings before a problem spreads across an entire product, PowerSpector SPI delivers a major inspection breakthrough for unbeatable process reliability and optimal print results leading to increases in productivity and profitability.

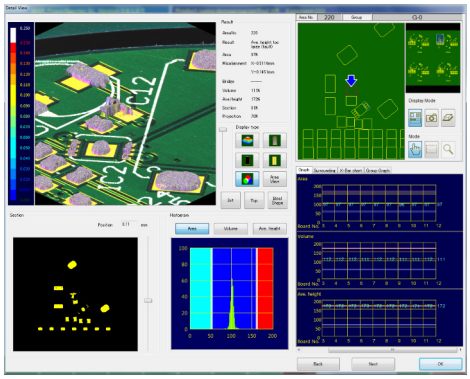
The Mek S1 is a new breed of powerful process control tool, which enables the users to quickly and easily tune and adjust their print process. The patented 5-D inspection Sensor technology allows for simultaneous capture of colour 2D imaging and accurate and repeatable 3D images. Using a single sensor. High speed capture with switchable resolution on the fly. Shadow free measurements using dual combined 3D and 5D image processing. Inspecting beyond the Aperture. Inspection of volume, area, height offset, bridge, slumping and detect anomalies in printing machines.



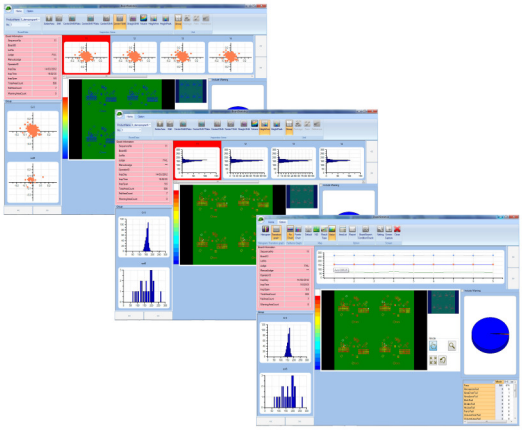
Using either Stencil Gerber, paste layer gerber or golden board programing is typically less than 5 minutes. Utilising our own proprietary gerber conversion software, Either online or offline. Full program transportability between
Multisampling laser and colour 2D imagine allows for the accurate capture of the PCB and paste, Colour extraction of the PCB enables the correct determination of the required zero reference. As well as below zero reference solder paste issues. And true area inspection.

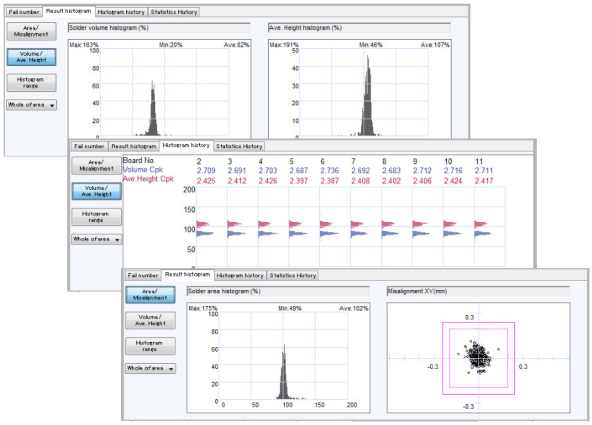






Using live SPC feedback, Process control and Studies can be easily implemented. SQL data storage either locally or on a remote server, And data export to Excel or CSV formats. Transition charts and histogram displays enable simple tuning of the print process. And to understand process indicators.





Multiple Machine configurations are available. The medium format S1, Large format S1XL Dual lane S1DL, Large format dual lane S1DLX and Small format S1s

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About MEK Europe BV

A former division of Marantz well known for its high quality Audio/ Video products, MEK Japan (Marantz Electronics Kabushiki Kaisha), developed its first AOI system in 1994. Developed to inspect PCB assemblies for correct component placement and soldering, the company's original AOI system was designed for use in Marantz factories.

Proving to be a highly successful, cost-effec□ve alterna□ve to tradi□onal human inspec□on, MEK developed its first genera□on commercial system in 1996. With a steadily growing installed base, MEK Japan and its European headquarters, MEK Europe BV, have sold over 5000 units worldwide to date. Now well established as a leading force in AOI technologies.

powerspector

Specifications	PowerSpector S1 SPI Range				
Model	**S1**	**S1XL**	**S1DL**	**S1DLX**	**S1s**
Maximum PCB Size	510 mm x 460 mm 20.1 inch x 18.1 inch	750 mm X 460 mm 20.5 inch x 18.1 inch	510 mm X 300 mm (550 mm single mode) 20.1 inch x 11.8 inch (21.56 inch single mode)	750 mm X 300 mm (550 mm single mode) 20.1 inch x 11.8 inch (21.56 inch single mode)	330 mm X 250 mm 13 inch x 10 inch
Characteristics					
Inspection Items	Volume, Height, Area (section/projection/average), Offset, Shape, Bridging and more				
Minimum PCB Thickness	0.3mm (11.8 mils)				
Maximum PCB Thickness	4.0mm (157.5 mils)				
Minimum Component Size	01005 chip normal mode				
Minimum Pad size	150µm (5.97 mils) diameter in normal mode				
Maximum Paste Height	600µm (23.6 mils)				
Maximum PCB Warp	±5mm (200 mils)				
Inspection Speed	Up to 5000mm²/second (in normal mode)				
Optics					
Camera	Patented advanced 5D sensor				
Lens Type	High Grade Telecentric				
2D Illumination	Multi angle, multi color LED tunnel				
3D Illumination	Multi angle, multi color rhombus laser technology with sub pixel processing				
Conveyor System					
Width Adjustment	Automatic				
Conveyor Height	830 ~ 970 ± 25mm (1")				
Conveyor Configuration	Left to right and right to left with front side fixed or rear fixed				
Minimum PCB Size	50 x 50mm (1.97" x 1.97")				
Interfacing					
Communication Interface	Extended SMEMA				
Controller	Intel™ based PC (included)				
Operating System	Windows™ 7 Pro 64Bit				
General					
Power Supply	200 ~ 240V, 50/60Hz, 1.5KVA				
Air Supply	0.4 ~ 0.5Mpa, 10Nl per minute				
Operation Environment	10 ~ 60 °C				
Operating Humidity	35-85% RH				
External size	W1.100 x D1.356 x H1.987 (43.3" x 53.38" X 78.22")				
Weight	Approx. 400Kg				

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S1 spi

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