

True  Smart Factory Solutions
Powered by the AI Platform

ZENITH

The World's First True 3D AOI Solution



True 3D Inspection
Performance



Fast, Intuitive
Programming



A 3D Measurement
based SMT Process
Control System



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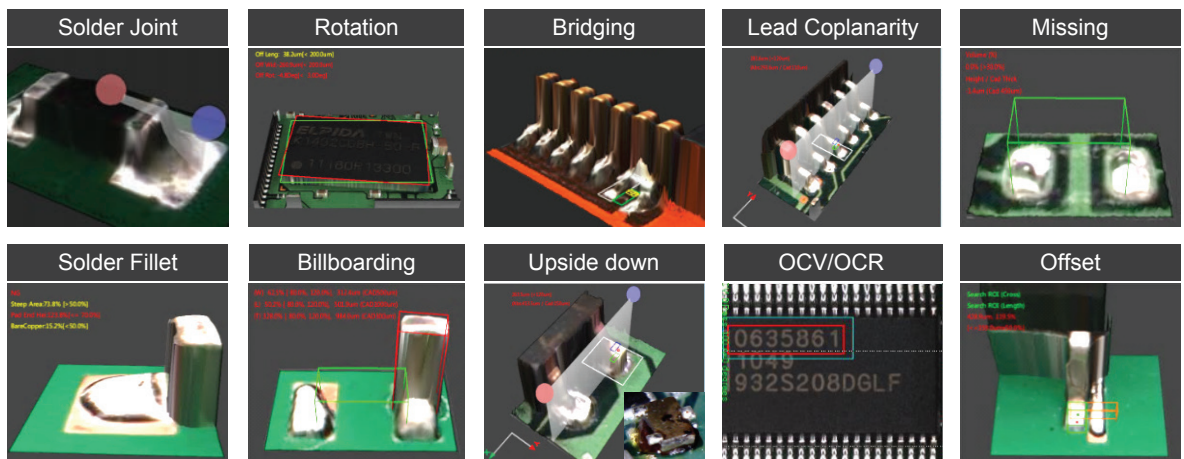
Zenith's patented AOI system effectively measures true profilometric component shapes, foreign materials, patterns, and solder joints on assembled PCBs to overcome the vulnerabilities and shortcomings of 2D AOI's



Perfecting Inspection Performance with True 3D

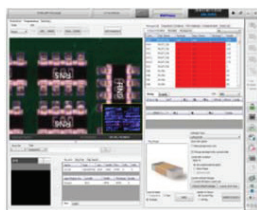
o Measurement & Inspection of an Array of Defects

Zenith has the ability to make a clear and concise 'go-or-no-go' decision for a solder joint inspection, detecting an array of potential defects including Missing solder, Offset, Rotation, Polarity, Upside down, OCV/OCR, Solder fillet, Billboarding, Lifted Lead, Lifted Body, Tombstone, Bridging and more.



Template Management for Fast and Intuitive Programming

Zenith's intuitive interface makes setup easy, reducing programming time in package registration and setting of inspection conditions. The evaluation benchmark can then be easily managed by an operator, simplifying and speeding up programming, while also making identification universal.



• Step1.
For a Non-registered package



• Step2.
Choose a Package registration
- package type
- component type



• Step3.
Apply the selected package

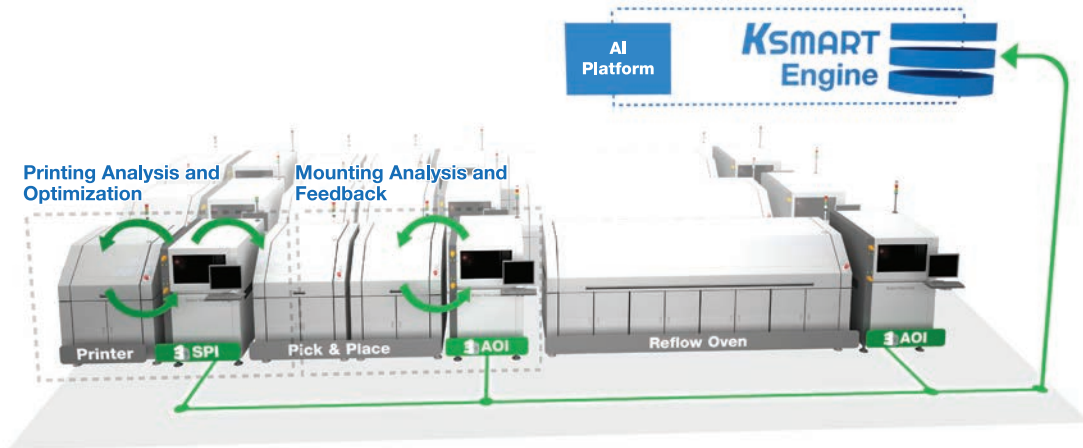


• Step4.
Select a relevant template registered on the server

Approx.
2 Times
Faster



KSMART: Cutting-Edge Process Optimization Tools for Smart Factory Realization

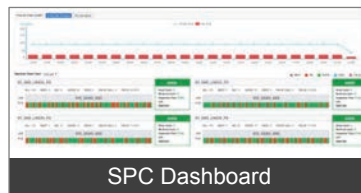


SPC@KSMART

Optional

Reliable 3D Data-based Statistical Process Control

The SPC@KSMART module helps operators perform critical process analyses and accelerate root cause analysis for increased equipment uptime, all from an intuitive graphical interface.



OPO (Offline Program Optimizer)@KSMART

Optional

Job Fine-tuning with Minimum Downtime

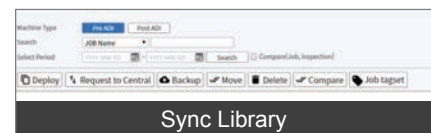
The Offline Program Optimizer makes program creation, debugging and updates seamless, allowing operators to automatically deploy modified inspection conditions and fine tune processes starting from the next PCB without stopping the production line or altering the production schedule.



LM (Library Manager) @KSMART

Job and User Level Management

The KSMART Library Manager simultaneously enhances job and user level management, storing job files and inspection conditions in a centralized database and distributing the data to multiple AOIs in real-time.

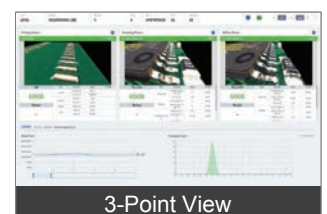


Link@KSMART

Optional

3D data-based SPI-AOI communication solution

Merging images, trends, charts and inspection results including detailed analysis from Koh Young's 3D SPI and 3D AOI Systems for total line communication and process analysis, and tracing the root cause of defects by storing and communicating inspection information.



Must-check Requirements of 3D AOI System



Requirements

- Shadow Problem Solution
- Specular Problem Solution
- Shadowed Area between Tall Components
- Small (01005 inch) Component Inspection
- Wide Measurement Range + Accuracy (Measurement Range Problem)
- Real Time PCB Warp Compensation
- Dark Component & White Body Component Location
- Component Body, Lead Coplanarity Inspection
- Solder Joint Profile Inspection
- 3D Polarity Inspection
- Component Crack Inspection

Solutions

- 3D Shadow Free Moiré Technology & 8-Way Projection
- Multi-Frequency Moiré Technology
- Warp Compensation (Pad Referencing + Multi-Frequency Moiré Technology)
- True 3D Measurement

Inspection Items

Inspection Tasks

Inspection Performance

- Camera Resolution
- FOV Size
- Full 3D Inspection Speed
- Height Accuracy (on KY Calibration Target)
- Camera
- Illumination
- Max. Measurement Height

- Missing, Offset, Rotation, 3D Polarity, Upside down, OCV/OCR, Coplanarity, Solder fillet, Lifted lead, Billboarding, tombstone, Bridging, Dimension

	15µm	20µm
	30x30mm (1.18x1.18 inches)	40x40mm (1.57x1.57 inches)
	18.3~30.4 cm²/sec (Inspection speed varies by PCB, and inspection condition.)	
	• ±3%	
	• 4M Pixel High Speed Camera	
	• IR-RGB LED Dome Styled Illumination	
	• 5mm	

PCB Handling

- Conveyor Width Adjustment
- Conveyor Fix Type

- Automatic
- Front / Rear Fixed (factory setting)

Software

- Supported Input Format
- Programming S/W
- Operating System
- Statistical Process Control Tool
- Operator User-friendliness
- Operating System

- GERBER Data (274X, 274D), ODB++, Placement file, Mounter JOB file, Allegro, Zuken, Mentor (optional)
- ePM-AOI, AOI GUI
- AOI GUI
- SPC@KSMART
- Review Station
- Remote Monitoring System
- Library Manager@KSMART
- KYCal: Auto-Camera Calibration, Auto-Illumination Calibration, Auto-Height Calibration
- Intel i7-3970X (6Core), 32GB, Windows 7 Ultimate 64bit

Add-on Solutions

- 1D & 2D Handy Barcode Reader
- 1D & 2D Inline Barcode Reader
- Offline Programming Station
- Offline SPC Pro Station
- Standard Calibration Target

- SPC@KSMART
- OPO@KSMART
- Foreign Material Inspection
- Review Station

※ Above specifications are subject to change without notice.

	M		L		XL	
	Single Lane	Dual Lane	Single Lane	Dual Lane	Single Lane	Dual Lane
Max. PCB Size (X x Y)	330 X 330mm (12.9 x 12.9 inches)	Single Mode: 330 x 580 mm (12.9 x 22.8 inches) Dual Mode: 330 x 325.5mm (12.9 x 12.8 inches)	510 x 510 mm (20.0 x 20.0 inches)	Single Mode: 510 x 580 mm (20.0 x 22.8 inches) Dual Mode: 510 x 320 mm (20.0 x 12.5 inches)	850 x 690 mm (33.4 x 27.1 inches)	Single Mode: 850 x 580 mm (33.4 x 22.8 inches) Dual Mode: 850 x 320 mm (33.4 x 12.5 inches)
Min. PCB Size	50 x 50 mm (1.9 x 1.9 inches)				70 x 70mm(2.7x2.7inches)	
PCB Thickness	0.4 ~ 4 mm (0.01 ~ 0.15 inches)		0.4 ~ 5 mm (0.01 x 0.19 inches)		0.6 ~ 8 mm (0.02 ~ 0.31 inches)	
Max. PCB Weight	Standard: 2 kg (4.4 lbs), Heavy weight option: 5 kg (11.0 lbs)				10 kg (22.0 lbs)	
Machine Weight	550 kg (1212.5 lbs)	600 kg (1322.7 lbs)	600 kg (1322.7 lbs)	700 kg (1543.2 lbs)	850 kg (1873.9 lbs)	900 kg (1984.1 lbs)
Bottom Clearance	50 mm (1.9 inches)					
Supplies	200~240VAC, 50/60Hz Single Phase, 5Kgff/cm ² (0.45MPa)					
W	820 mm (32.2 inches)	820 mm (32.2 inches)	1000 mm (39.3 inches)	1000 mm (39.3 inches)	1350 mm (53.1 inches)	1350 mm (53.1 inches)
D	1265 mm (49.8 inches)	1445 mm (56.8 inches)	1265 mm (49.8 inches)	1445 mm (56.8 inches)	1445 mm (56.8 inches)	1445 mm (56.8 inches)
H	1627 mm (64.0 inches)	1627 mm (64.0 inches)	1627 mm (64.0 inches)	1627 mm (64.0 inches)	1627 mm (64.0 inches)	1627 mm (64.0 inches)

