Art of 3D Technology

Uncompromising and leading solutions

KY8030-3

World-Fastest Full 3D Solder Paste Inspection

- ⊘ No.1 3D SPI in the market
- ⊘ The strongest printing process optimization tool
- ⊘ The world's best measurement accuracy and reliability

Real Time Warp Compensation

User-friendly Software

3D Data Based SMT Process Control System
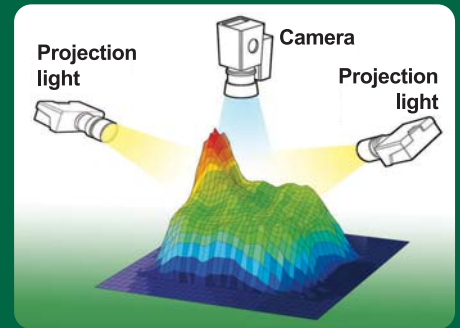
Koh Young Technology
INTELLIGENT INSPECTION

KY8030-3

World-Fastest Full 3D Solder Paste Inspection

High Speed for Maximum Throughput `Optional ☑`
Achieving industry leading inspection
speed at 0.24sec/FOV

Projection light **Camera** **Projection light**

↗ Dual Projection Technology
KY8030-3 delivers true 3D inspection without concern for inaccuracies resulting from shadowing.


Warp Compensation Solution `Optional ☑`

Warp Compensation

○ Z-tracking 3D Compensation Solution

- Koh Young's `Multi-Frequency Moiré Technology` applied   *Patented
- Real time measurement and compensation of board warp, with respect to the ideal plane
- Real time online provision of high quality PCB images with measurement data

○ Pad Referencing 2D Compensation Solution

- Automatic reference teaching by using high quality IR light
- Real time matching of the PCB pad locations with the ideal PCB stencil design as defined by the CAD file

PCB Warp 3D Display
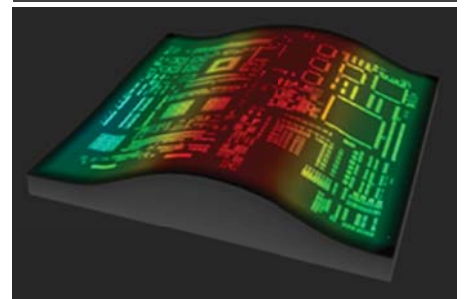
Before Warp Compensation | After Warp Compensation

User-friendly Renewal GUI

- Optimized display for the user with smart menu groupings
- Supports user's defect readability and system usability by more intuitive software
- Detects a wide range of defects using real images and 3D data

Renewal GUI
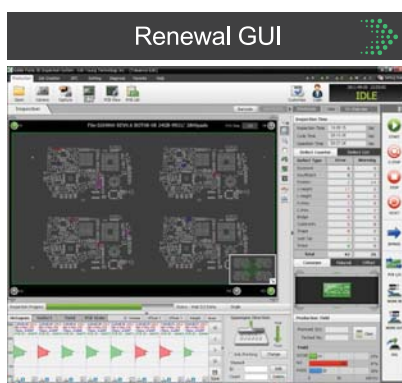
Real Color 3D Image `Optional ☑`

Foreign Material Inspection `Optional ☑`
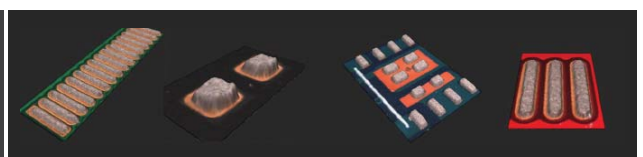
Dust | Hair | Capacitor
PCB Burry | Solder Ball | Resistor

3D Data based SMT Process Control System

○ Koh Young's KSMART Solution

Centralized Result DB

Feed-forward

Feedback

3D SPI | **3D AOI** | **3D AOI**

Review Station

SPC Analysis

Centralized Defect Review & Root Cause Analysis

Remote Process Review & Multi-Line Monitoring & Fine Tuning
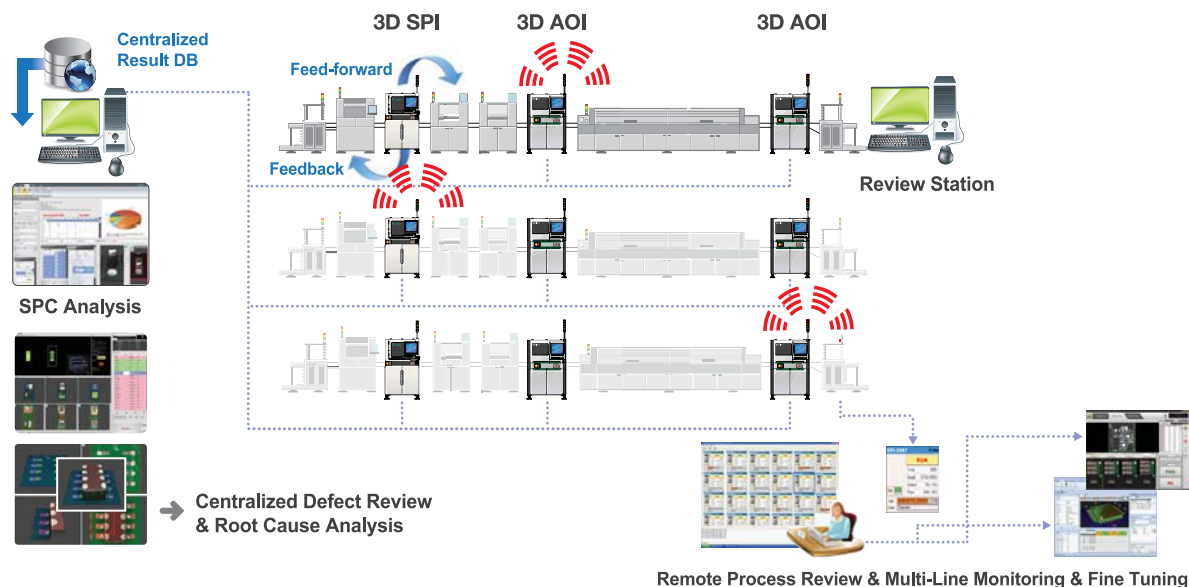
Closed Loop Real Time Screen Printer Communication   Optional ☑

Offset Histogram before and after using feedback

Defective Panel Marking
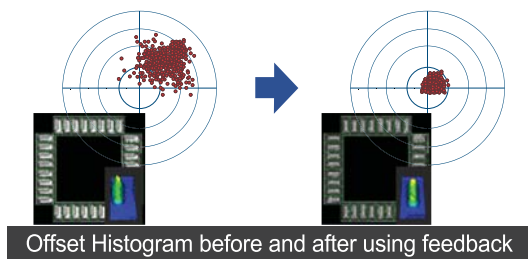
- Real time communication of printing process monitoring data with screen printers
- Result reporting after optimization by Koh Young's SPC software

- Real time communication of pick-and-place process monitoring data with mounters
- Supports process optimization by controlling panels containing defects

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SPC Plus Printing Process Optimization Tool

- Review, diagnosis and optimization of printing, pick-and-place and reflow processes
- 3D data based SPI-AOI communication solution
- Traces root cause of defects by storing and communicating inspection results from Koh Young's 3D SPI and 3D AOI Systems

PCB Histogram | Defect Data Analysis | Process Capability Index Display

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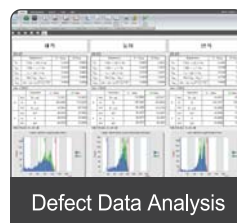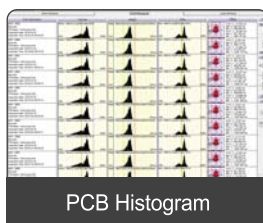
KSMART Link Communication Solution

KSMART Link | KSMART Review
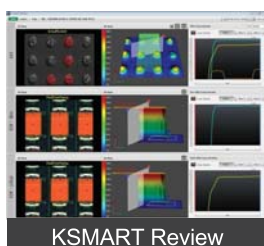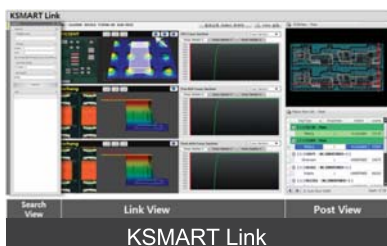
- Provides intuitive statistical process analysis data by using reliable 3D measurement data
- Communicates with a wide range of production management systems

↗ Must-check Requirements of 3D SPI System

KOH YOUNG TECHNOLOGY
INTELLIGENT INSPECTION

Requirements	Solutions
Solution to Shadow Problem	• 3D Shadow Free Moiré Technology & Dual Projection
Real Time PCB Warp Compensation (2D+3D Solution)	• Warp Compensation (Pad Referencing + Z-tracking)
Operator User-friendliness	• Renewal GUI, Real Color 3D Image
Inspection Range	• Up to 2mm(optional)
Foreign Material Inspection	• 3D Foreign Material Inspection (optional)

Inspection Items		Solutions
	Metrology Capability	• Volume, Area, Height, Offset, Bridging, Shape Deformity, Coplanarity
	Types of Defects	• Insufficient/Excessive/Missing Paste, Bridging, Shape Deformity, Paste Offset, Coplanarity

Inspection Performance				
	Camera Resolution	10µm	15µm	20µm
	FOV Size	20×20mm(0.79×0.79 inch)	30×30mm(1.18×1.18 inch)	40×40mm(1.57×1.57 inch)
	Full 3D Inspection Speed	13.7~43.5 cm²/sec (Inspection speed varies by PCB and inspection condition.)		
	With High Speed Option	16.2~50.8 cm²/sec (Inspection speed varies by PCB and inspection condition.)		
	Min. Distance between Paste Deposit	100µm (3.94 mils)	150µm (5.91 mils)	200µm (7.87 mils)
	Camera	• 4M Pixel Camera		
	Illumination	• IR-RGB LED Dome Styled Illumination		
	Z Resolution	• 0.37µm		
	Height Accuracy (on KY Calibration Target)	• 1µm		
	X, Y Accuracy	• 2.5 nano meter (PZT Accuracy)		
	01005 Inspection Capacity Gage R&R (±50% tolerance)	• < 10% at 6σ		
	Max. Inspection Size	• 10×10mm	0.39×0.39 inch	
	Max. Inspection Height	• 400µm (2mm optional)	15.75 mils (78.74 mils optional)	
	Min. Distance between PADs	• 100µm (150µm paste height)	3.94 mils (5.91 mils paste height)	
	Various colored PCB Inspection	• Possible		

PCB Handling		Solutions
	Conveyor Width Adjustment	• Automatic
	Conveyor Fix Type	• Front / Rear Fixed (factory setting)

Software		Solutions
	Supported Input Format	• Gerber data (274X, 274D), ODB++ (optional)
	Programming S/W	• ePM-SPI
	Statistical Process Control Tool	• SPC Plus: - Histogram, X-bar & R-Chart, X-bar & S-Chart, Cp & Cpk, %Gage R&R - Real Time SPC & Multiple Display - SPC Alarm • KSMART Remote Monitoring System
	Operator User-friendliness	• Library Station: Size Dependent Library for Inspection Condition Setting • KYCal: Auto Camera Calibration, Auto Illumination Calibration, Auto Height Calibration
	Operating System	• Windows 7 Ultimate 64bit

Add-on Solutions	
• 1D & 2D Handy Barcode Reader • 1D & 2D Inline Barcode Reader • Offline Programming Station • Offline SPC Plus Station • Standard Calibration Target • UPS	• KSMART Remote Monitoring System • Warp Compensation • Foreign Material Inspection • Review Station • Closed Loop • Real Color 3D Image Display

※ Above specifications are subject to change without notice.

	M	L	DL	XL
Max. PCB Size	330X330mm (13X13 inch)	510X510mm (20X20 inch)	Dual: 510X320mm (20X12.6 inch) Single: 510X580mm (20X22.8 inch)	850X690mm (33.4X27.1 inch)
Min. PCB Size	50X50mm (1.97X1.97 inch)			70X70mm (2.7X2.7 inch)
PCB Thickness	0.4~5mm (0.015~0.20 inch)			0.5~8mm (0.02~0.31 inch)
Max. PCB Weight	Standard: 2kg, Heavy Weight Option: 5kg			10Kg (22 lbs)
Machine Weight	550Kg (1212 lbs)	600Kg (1322 lbs)	700Kg (1543 lbs)	850Kg (1874 lbs)
Bottom Side Clearance	50mm (1.97 inch)			
Supplies	200~240VAC, 50/60Hz Single Phase, 5Kgf/cm²			
W	820mm (32.2 inch)	1000mm (39.3 inch)		1350mm (53.1 inch)
D	1265mm (49.8 inch)	1265mm (49.8 inch)	1445mm (56.9 inch)	1445mm (56.9 inch)
H	1627mm (64 inch)			
F	985mm (38.7 inch)		1165mm (45.8 inch)	

KOH YOUNG TECHNOLOGY INC.