Color 3D SPI
TROI-7700H Series
3D Inline Solder Paste Inspection System

TROI-7700HL

PEMTRON

Technology and Features

Dual Projection

Combination of 2D & 3D inspection eliminates common shadow problem with SPI systems.

64 bit Windows 7 Operation System

Fast & Stable Operating System for high density PCB.

User Friendly Graphical Interface

Self-developed Gerber Editor controls the main functions on one page which means it's eliminating the effort of switching between multiple screens. It is also possible to register or edit the data quickly and easily by any users.

Color 3D SPI

Conventional SPI methods could only calculate heights above silk print levels, but by using patented color enhancing algorithm TROI™ could overcome these problems.
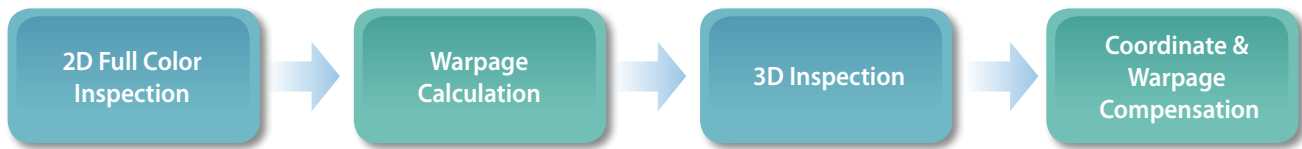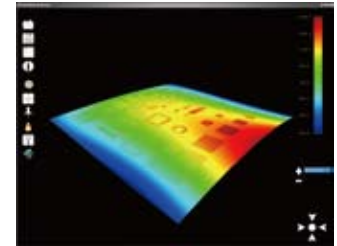In addition, a fully rotational 3D view of the solder form is displayed. This enables users to view a "life like' image of the pad eliminating the need to extract the board from the line to view the defect under a microscope.
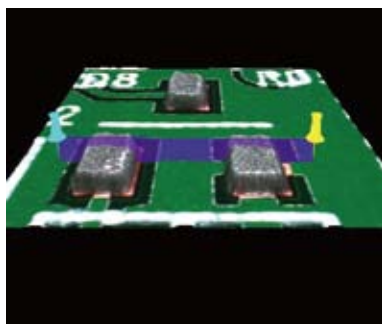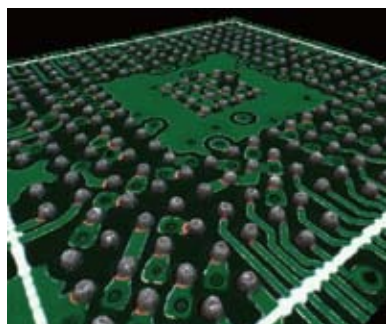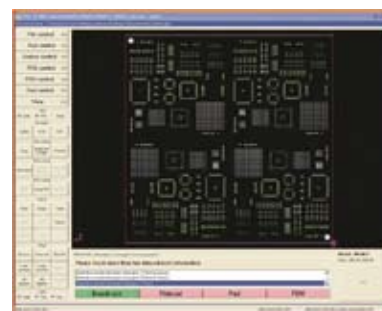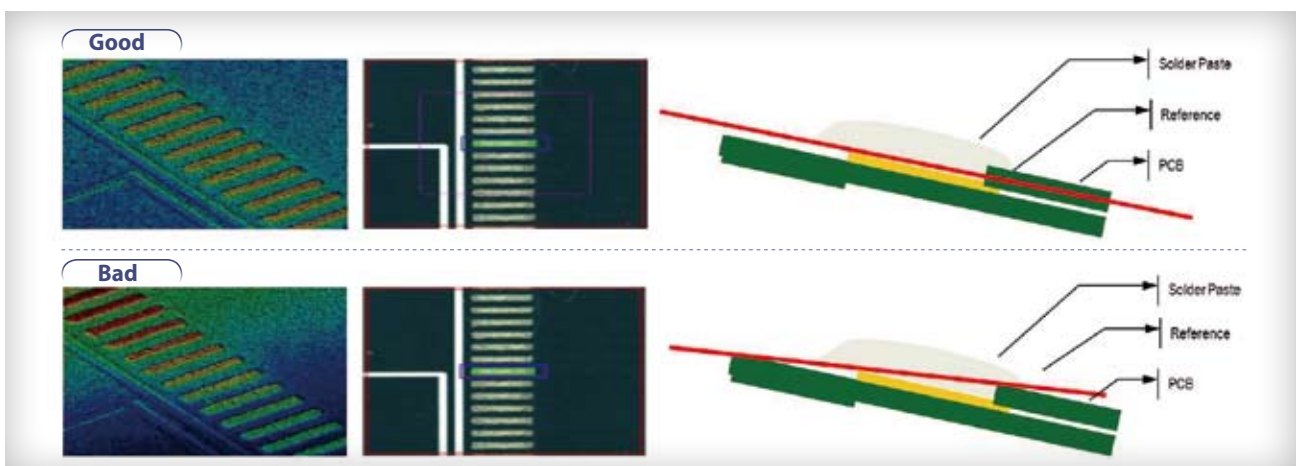
Warpage compensation

Wider range of reference point search area prevents less deviation of recognizing a zero reference point.

- Accurate height calculation
- Compare other pads within ROI
- Better repeatability

| 2D Full Color Inspection | → | Warpage Calculation | → | 3D Inspection | → | Coordinate & Warpage Compensation |

Inspection Sequence

580um meaning as inspection range including the extent of low inspection than 0um.

Good

Solder Paste
Reference
PCB

Bad

Solder Paste
Reference
PCB
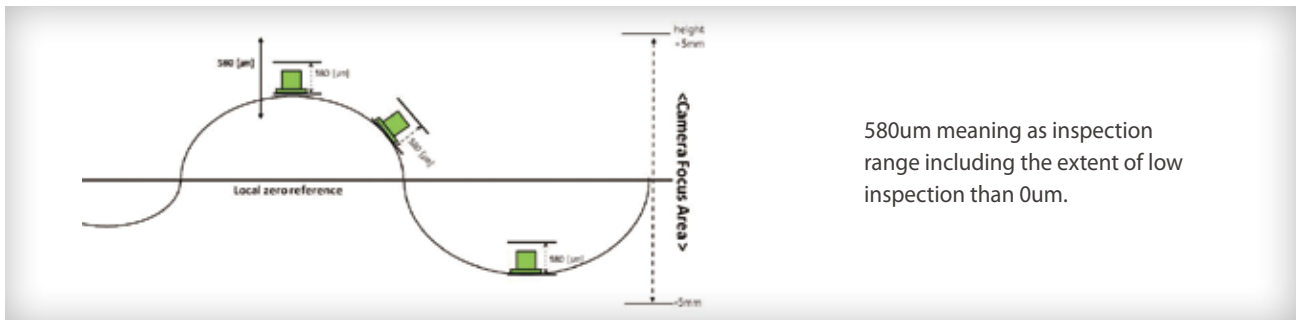
The exact floor measurement and automation capabilities
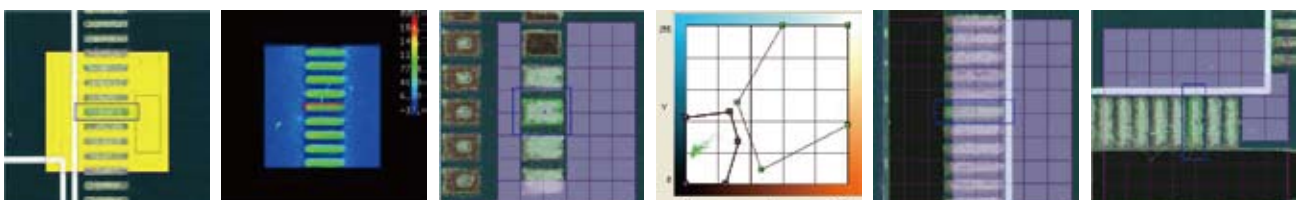
High Accuracy Linear Motor

The use of Linear X and Y stages,
TROI™ provides a high accuracy under ±5μm.

High Speed & Performance

By improving the camera inspection speed, TROI™ show same
performance as single projection.

Gantry Type

Gantry is a type of structure which allows the movement of the camera
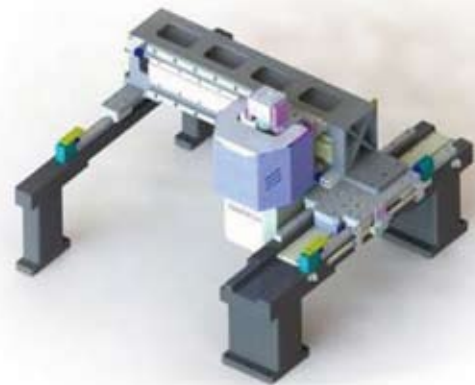head to shift into X/Y direction without moving the conveyor.
It provided a highly stable and precise inspection platform.

Enhanced SPC System

SPC system analyses the defective data and controls the process problems or the production
rate at a look. SPC data can be saved in a various file format such as HTML, Excel, Image and etc as users like.
Also with the enhanced SPC server function, data from multiple lanes can be controlled together or individually.

Real Time Process and Quality Control Solutions

Inspection Result Information Auto Sync.
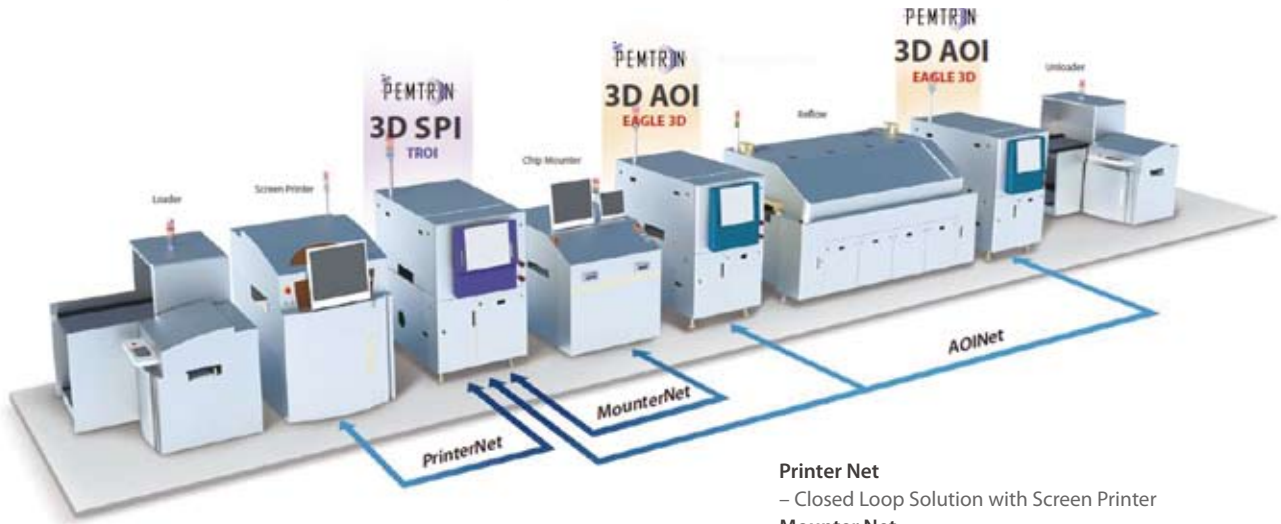
Printer Net
– Closed Loop Solution with Screen Printer
Mounter Net
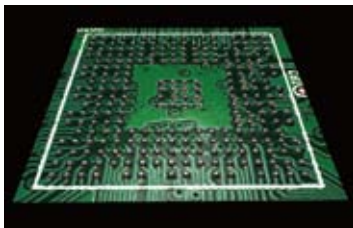– Closed Loop Solution with Mounter
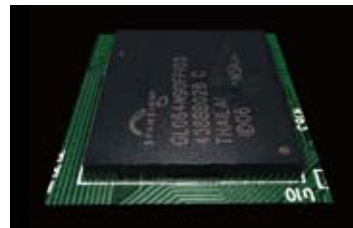* Bad Mark Mounter Sync and Adaptive Process Control
TROI SPI & EAGLE 3D AOI closed loop function
- Real time defect confirm

Printer Auto Sync Printing QC	SPI Pad		AOI Part	Repair Station Production QC

Inspection Result Information Auto Sync.

X-Axis	Y-Axis	θ-Axis	Adjust the coordinates

TROI™ Series (Solder Paste Inspection System)

SPECIFICATIONS

Model	TROI-7700H	TROI-7700HD	
2D/3D Vision Algorithm	2D : Vision Inspection Algorithm 3D : PMP (Phase Measuring Profilometry) Algorithm		
Measurements	Volume, Height, XY Position, Area		
Detection Types	Insufficient Paste, Excessive Paste, Shape Deformity No Paste, Bridge 2D&3D, Paste Displacement		
X/Y Pixel Resolution	12 ㎛	15 ㎛	18㎛
Inspection Speed	25.2 ㎠/sec	38.4 ㎠/sec	53.5 ㎠/sec
FOV (Field of View)	24.5 x 24.5 mm	30.7 x 30.7 mm	36 x 36 mm
Height Range / Resolution	0 ~ 450 ㎛ / 0.4 ㎛		
Height Repeatability	±1% (3σ)*		
Volume Repeatability	±1% (3σ)*		
Height Accuracy	2 ㎛*		
Max. PCB Warp	±5 mm		
Gage R&R	< 10%*		

Linear Motor	Accuracy	±3㎛ (Linear Motor)	

				TROI-7700H	TROI-7700HD
PCB Specification	Board Size	Standard Type (H / HD)		24.5Min.50x50mm (2x2inch) Max. 330x330mm (13x13inch)	Single: Min. 50x50mm (2x2inch) Max. 330x500mm (13x20inch)
					Dual: Max. 330X280mm(13X11inch)
		Large Type (HL / HDL)		Min.50x50mm (2x2inch) Max. 510x510mm (20x20inch)	Single: Min. 50x50mm (2x2inch) Max. 510x600mm (20x24inch)
					Dual: Max. 510x330mm (20x13inch)
	PCB Thickness			0.4 – 7.0 mm	
	Bottom Clearance			27mm	
Installation Requirement	Electrical Requirements			200 – 240 VAC, 50/60 Hz	
	Air Requirement			5 Kgf/㎠	
	Power Consumption	Standard Type		3kW (14.0A Max @ 220V AC)	6.5kW (23.0A Max @ 220V AC)
		Large Type		4.5kW (30.0A Max @ 220V AC)	7kW (25.0A Max @ 220V AC)
Control Unit	Control Method			PC Based Control (Windows 7, 64bit)	
	Monitor			24" LED Panel	
Operating	Operating Temperature			20 - 30 ℃ (68 – 86 ℉)	
Machine Dimension	W x D X H / Weight	Standard Type		990 x 1760 x 1550mm(39 x 69 x 61 inch) / About 700kg (1543 lbs)	960 x 2240 x1550mm(38 x 88 x 61 inch) / About 850kg (1873 lbs)
		Large Type		1170 x 1960 x 1550mm(46 x 77 x 61 inch) / About 820kg (1764 lbs)	1210 x 2290 x1550mm(53 x 90 x 61 inch) / About 900kg (1984 lbs)
Options				Telecentric Lens / Barcode Reader (1D&2D) / Touch Panel / UPS (uninterrupted power supply) / Close Loop / Bad Mark Sync	

* Specifications subject to change without notice.

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