

# SATURN

3D Inline Solder Paste Inspection System



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### TECHNOLOGY AND FEATURES

PEMTRON SATURN machine's existing head type has been upgraded to new head for 3D formation that is identical to the real image and more stable based on the accumulated technology for decades.

#### **Dual & Quad Projection**

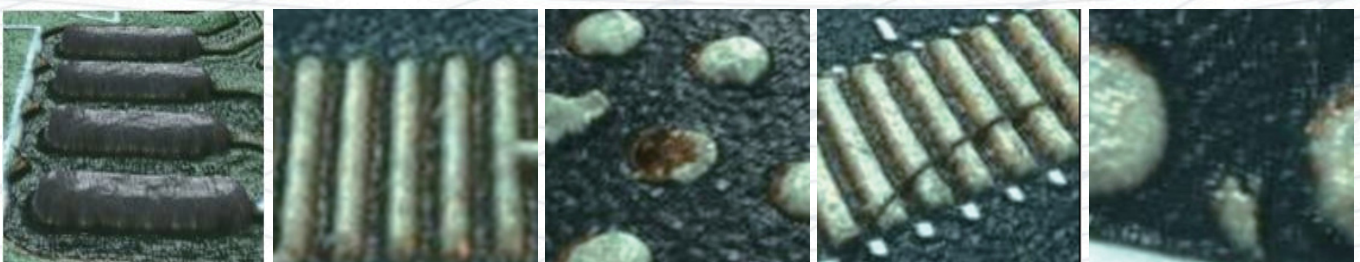
By combining 2D&3D and adding dual & quad projection, it can eliminate more shadow effect with SPI systems.

1. Convenient Maintenance, Concise Assembly and Setting
2. More Precise 3D  
Existing projection : 2-way-> Upgraded : 4-way, Additional Projection  
=>3D Formation Same as Real Image
3. Improved Repeatability  
> Accurate 3D makes repeatability more reliable.
4. More stable and accurate 3D realization by installing additional projectors  
SPI: 2-way -> 4-way
5. The new head is also possible to inspect 2mm height for glue inspection
6. Change to Module Format  
- Easy and Fast Replacement and Maintenance.



#### **Real Color 3D**

By combining 2D color images with 3D measurement data, 3D color images are implemented to provide convenience to the operator and dramatically improve accuracy during inspection.

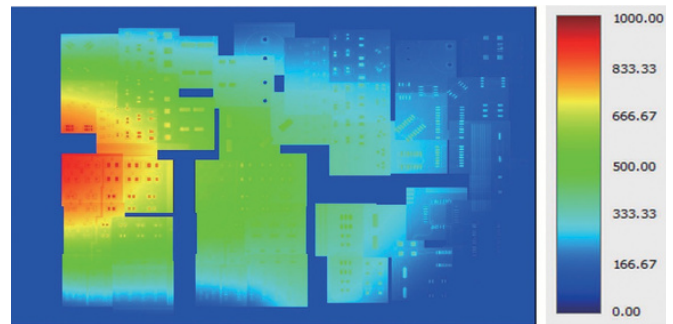




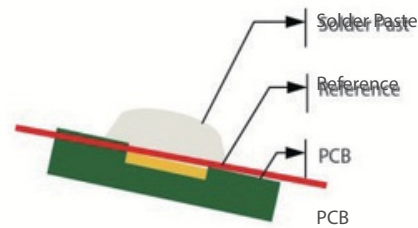
## Warpage Compensation

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

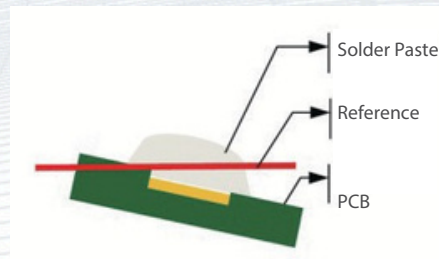
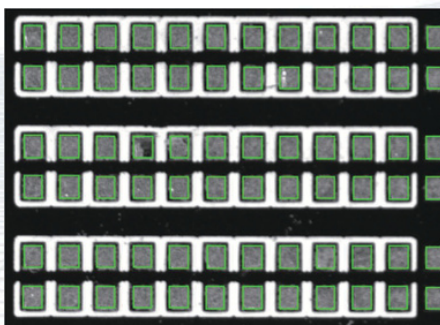
- Accurate height calculation
- Able to compare pads within ROI
- Better repeatability



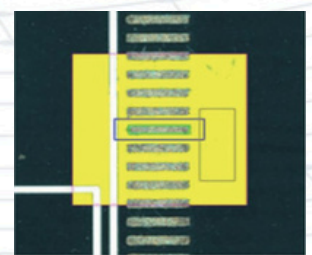
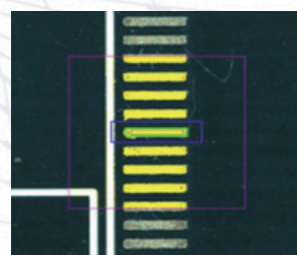
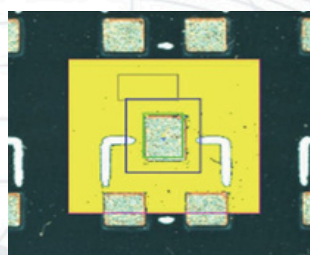
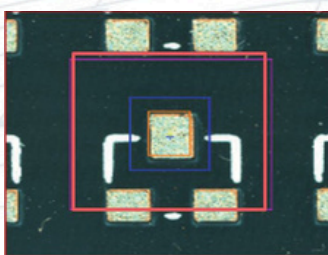
◆ Bad



◆ Good



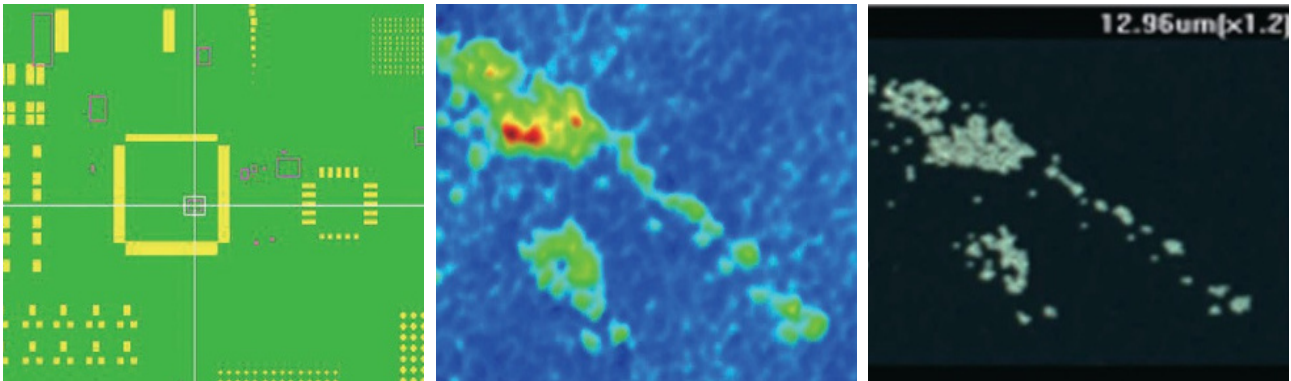
## The Exact Floor Measurement and Automation Capabilities





## Foreign Material Inspection

No matter how diverse the PCB color is, PEMTRON color X&Y is able to distinguish accurately between the foreign material and PCB

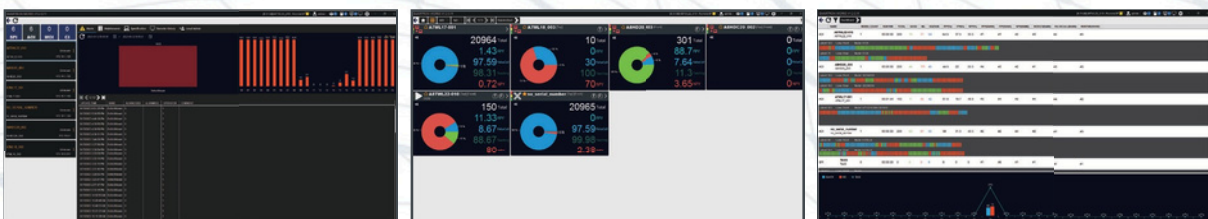
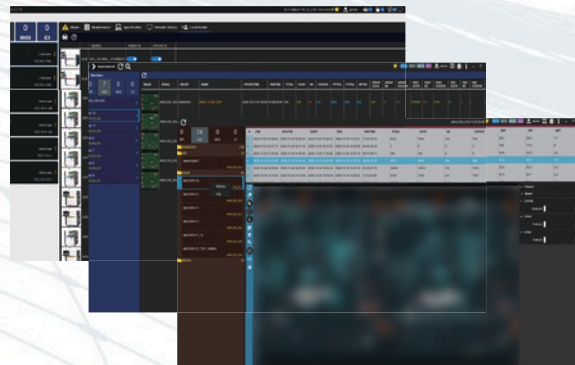


## SMARTRON

Factory Optimization Solution  
System RMS / Alarm / SPC / Job & Library management



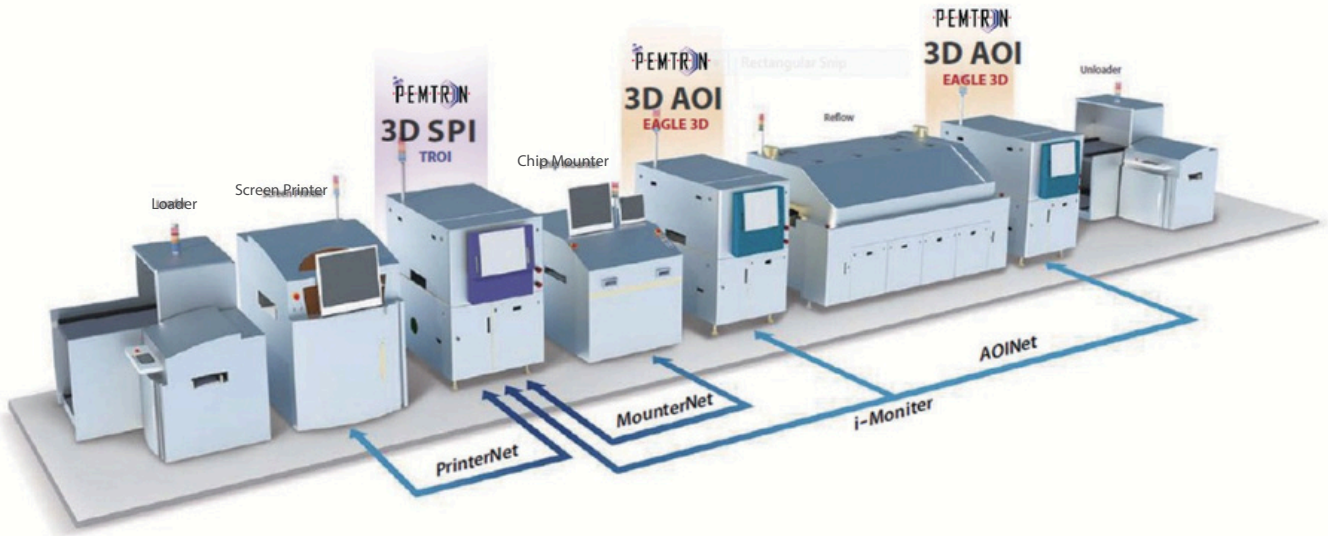
- Real-time Line Monitoring and Control
  - RMS(Remote Monitoring System)
  - Registered System status
- Data Analytics and Reporting
  - Yield / CpCpk / Job & Part analysis etc.
  - Statistical Chart / Process Chart / Alarm History
- Quality Management Solution
  - Multiple line & systems maintenance management
- Job & Library management
  - Optimizing based on classified result data



# Real Time Process Management Quality Management Solutions

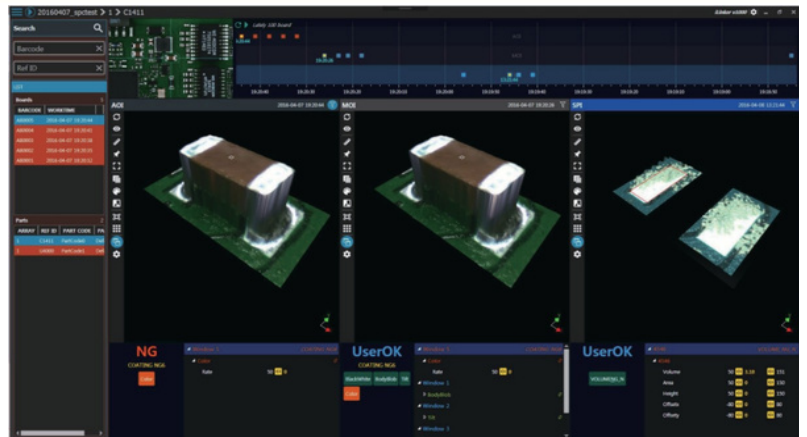
Inspection Result Information Auto Sync.

- ◆ **Printer Net**
  - Closed Loop Solution with Screen Printer
- ◆ **Mounter Net**
  - Closed Loop Solution with Mounter
  - Bad Mark Mounter Sync and Adaptive Process Control
- ◆ **PEMTRON SPI & AOI Closed Loop Function**
  - Real Time Defect Confirmation
- ◆ **i-Monitor**
  - Control a Maximum of Twelve Machines with One Monitor
- ▼ **AFC MFD**
  - Offset Technology of Mounting Location of Mounter, Using Data of AOI Inspection



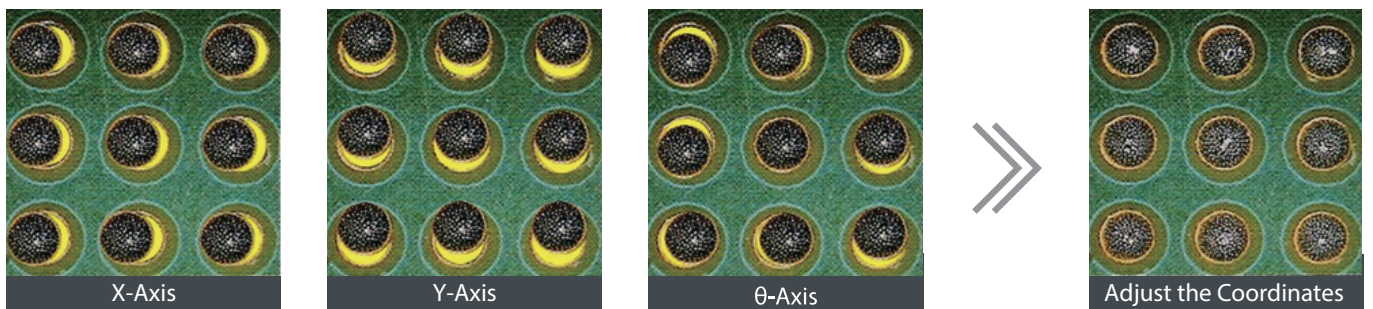
## SPI & AOI Linkage

- Repair Station / Production QC
- Printer Auto Sync / Printing QC



## Inspection Result Information Auto Sync

Closed loop solution with screen printer



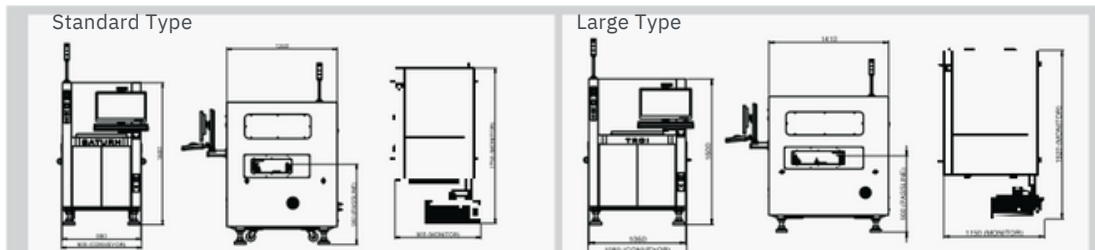
# SPECIFICATIONS

Model	SATURN				
2D/3D Vision Algorithm	2D : Vision Inspection Algorithm 3D : PMP (Phase Measuring Profilometry) Algorithm				
Measurements	Volume, Height, XY Position, Area				
Detection Types	Insuff icient Paste, Excessive Paste, Shape Deformity No Paste, Bridge 2D&3D, Paste Displacement				
X/Y Pixel Resolution	4MP		10MP		
	10µm	15µm	18µm	10µm	15µm
Inspection Speed	16 cm <sup>2</sup> /sec	36 cm <sup>2</sup> /sec	52 cm <sup>2</sup> /sec	38.4 cm <sup>2</sup> /sec	86.4 cm <sup>2</sup> /sec
FOV (Field of View)	20 x 20 mm	30 x 30 mm	36 x 36 mm	32 x 30 mm	48 x 45 mm
Height Accuracy	2 µm*				

Gantry Type Linear Motors

Model		SATURN	SATURN L	SATURN D	SATURN DL	
PCB Specification	Inspection Size	Max. PCB Size	330 x 330mm (13 x 13 inch)	510 x 510mm (20 x 20 inch)	Dual : 330 x 280mm (13 x 11 inch) Single : 330 X 500mm (13 x 20 inch)	Dual : 510 x 330mm (20 x 13 inch) Single : 510 x 600mm (20 x 24 inch)
		Min. PCB Size	50 x 50mm (2 x 2 inch)			
	PCB Thickness	0.4 - 7mm				
	Top Clearance	27mm				
	Bottom Clearance	50mm				
Electrical Requirements		200~240Vac, 1Phase, 50/60Hz				
Power Consumption	2.8kW (16A Max @ 220V AC)					
Dimension (W x D x H)	900x1240x1600mm (36 x 49 x 63inch)	1080x1410x1600mm (43 x 56 x 63inch)	940x1700x1565mm (37 x 67 x 62inch)	1120x1750x1565mm (44 x 69 x 62inch)		
Weight	760kg (1676lb)	930kg (2050lb)	1100kg (2425lb)	1170kg (2580lb)		

\* Specifications subject to change without notice.



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