

# TR7007 SII Plus SERIES



3D SOLDER  
PASTE INSPECTION

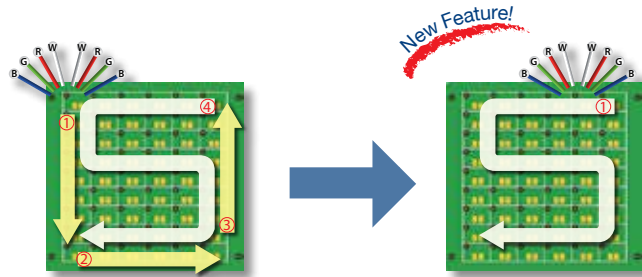
# TR7007 SII Plus FEATURES

## TR7007 SII Plus

Highly Accurate shadow-free SPI solution with class-leading inspection performance and easy programming brings maximum value to your production line.

### Unmatched Speed & Throughput

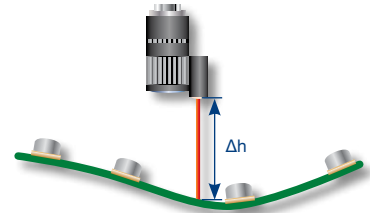
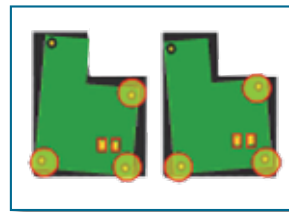
Industry-leading inspection speed using TRI's Dynamic Imaging technology keeps up with the production line beat without slowing down for even the most complex boards with multiple local fiducial marks. TRI's unique solution guarantees perfect results while reducing expensive cycle time.



TRI's Color Imaging needs to scan only one Fiducial Mark on every board, saving cycle time.

### Stable and Reliable Performance

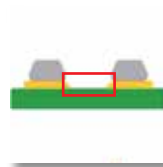
Fully optimized for maximum stability, the TR7007 SII Plus delivers reliable inspection results 24 hours a day, and automatically compensates for manufacturing tolerances and board warp.



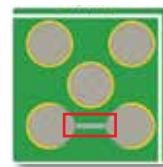
Reliable warp compensation and local fiducial marks guarantee stable results under any conditions.

### Unique Low Bridge Inspection

World's first inspection of low solder paste bridges under  $30\ \mu\text{m}$  ensures no printing defects are missed, and guarantees accurate results under any conditions.



3D Height Profile cannot reveal low bridges

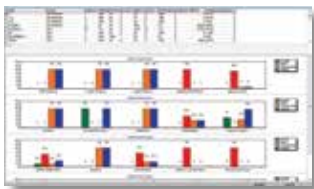


Top Color View

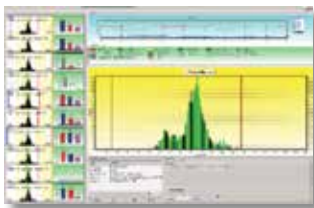


2D+3D Image with clear low bridge defect

## SPC



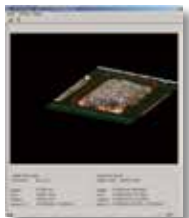
Statistical Report



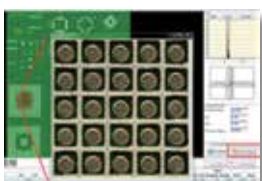
Multi-panel Histogram



Solder Height Distribution



3D Color Image



SPC 2D Real Image Query

### Intuitive SPC Display

Full panel maps and real color images allow engineers to quickly monitor and diagnose problematic areas on the stencil, saving management time and reducing rework costs.

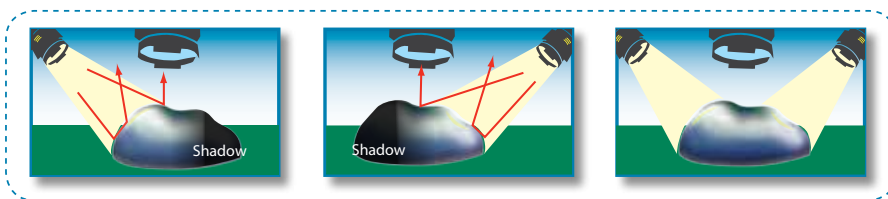
## Intelligent Easy Programming Interface

Rapid intelligent 5-step programming interface ensures fast changeovers, minimal idle time and helps reduce operator work load.



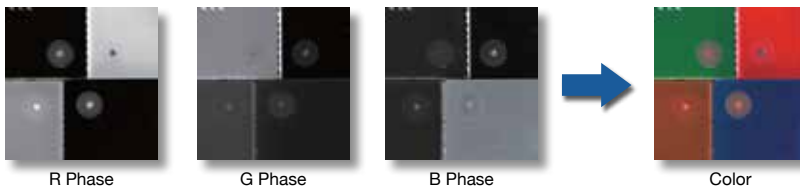
## Shadow Free Inspection Technology

Dual projection design and intelligent software ensure the TR7007 SII Plus delivers completely shadow-free inspection results and eliminates problems with specular reflections.



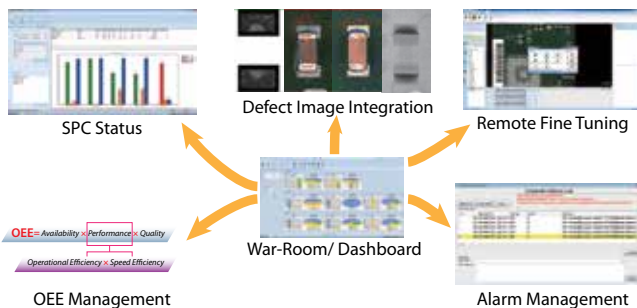
## Multi-Color Vision for any PCB

Multi-phase color lighting guarantees accurate inspection results on any PCB color and finish combination, without sacrificing inspection speed.



## Yield Management System 4.0

YMS 4.0 provides real-time inspection status across SPI, AOI and AXI systems and monitors SPC and Alarm status, and supports remote fine-tune throughout the SMT line. The centralized inspection management provides top 5 to 10 defects and defective images, OEE review and management, issue and root cause drill down line by line, by station and by process, which improves quality and productivity analysis. YMS 4.0 supports Industry 4.0 initiative.



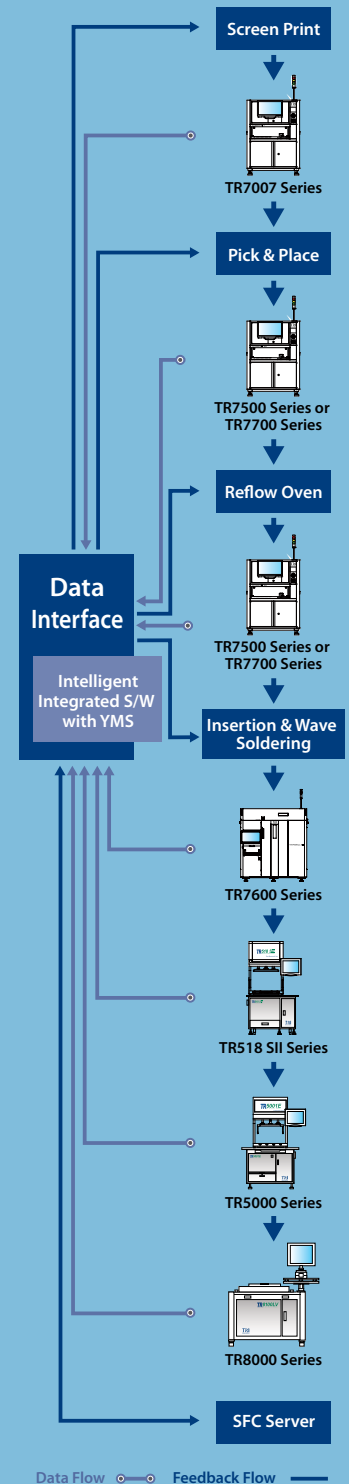
## Closed Loop Function

TRI SPI systems share inspection results with connected SMT line equipment to help improve production yields and stabilize production quality while minimizing line stops and reducing production costs.

## High Production Value = Maximum Cost Savings

- Industry Leading Inspection Speed
- Stable and Reliable Results
- Early Defect Detection
- Enhanced 100% Defect Coverage
- 98% Rework Cost Reduction

## Yield Management System\*



- Inspection results and data integration
  - Real time SPC and production yield management
  - Quality reports and closed loop tracking
  - Support defect component analysis and improvements
  - Knowledge Management (KM)
  - Productivity and Quality Management
- \* Optional

## Optical & Imaging System

Camera Type	4 Mpx camera	
Optical Resolution	10 μm or 15 μm (factory setting)	
Field of View	10 μm	20.0 x 20.0 mm (0.79 x 0.79 in)
	15 μm	30.0 x 30.0 mm (1.18 x 1.18 in)

## Inspection Functions

Defects Detected	Insufficient Paste, Excessive Paste, Shape Deformity, Missing Paste & Bridging
Measurement	Height, area, volume and offset

## Mechanical Stage

X-axis linear motor and linear scale with DSP-based motion controller	
XY Resolution	0.5 μm
Z Resolution	1 μm

## Inspection Speed

10 μm	Up to 90 cm <sup>2</sup> /sec
15 μm	Up to 200 cm <sup>2</sup> /sec

## Inspection Performance

Volume Repeatability	Calibration Target (at 3 σ)	<1% on TRI calibration target
Height Repeatability	Calibration Target (at 3 σ)	<1% on TRI calibration target
	Solder GR&R (± 50% Tolerance)	<<10% at 6 σ
Height Resolution	0.4 μm	
Height Accuracy	1.5 μm on calibration target	
Max. Solder Paste Size	12800 x 10240 μm at 10 μm	
Min. Solder Paste Size	100 x 100 μm at 10 μm	
Min. Solder Paste Pitch	100 μm	
Max. Height Range	10 μm	600 μm
	15 μm	550 μm



## PCB and Conveyor System

Min. PCB Size	50 x 50 mm (1.97 x 1.97 in.)		
Max. PCB Size	TR7007M SII Plus	TR7007 SII Plus	TR7007L SII Plus
	350 x 350 mm (13.8 x 13.8 in.)	510 x 460 mm (20.1 x 18.1 in.)	660 x 610 mm (26.0 x 24.0 in.)
	TR7007 SII Plus DL		
	510 x 310 mm x 2 lanes (20.1 x 12.2 in. x 2 lanes) 510 x 590 mm x 1 lane (20.1 x 23.2 in. x 1 lane)		
PCB Thickness	0.6 - 5 mm		
PCB Transport Height	880 - 920 mm (34.6 - 36.2 in.)		
Max. PCB Weight	3 kg (6.61 lbs)		
PCB Carrier/Fixing	Belt/Pneumatic		
Clearance	25 mm (0.98 in.)		
	Top	40 mm (1.58 in.)	
	Bottom	3 mm (0.12 in.)	
	Edge		
Dimensions	TR7007M SII Plus	TR7007 SII Plus	TR7007L SII Plus
	1000 x 1555 x 1500 mm (39.4 x 61.2 x 59.1 in.) (not including signal tower, height: 520 mm)	1100 x 1570 x 1550 mm (43.3 x 61.8 x 61.0 in.) (not including signal tower, height: 520 mm)	1300 x 1610 x 1560 mm (51.2 x 63.4 x 61.4 in.) (not including signal tower, height: 520 mm)
	870 kg (1918 lbs)	950 kg (2094 lbs)	1250 kg (2756 lbs)
	TR7007 SII Plus DL		
	1100 x 1770 x 1560 mm (43.3 x 65.7 x 61.0 in.) (not including signal tower, height: 520 mm)		
	1100 kg (2425 lbs)		
Power Requirement	200 - 240 V, single phase, 50/60 Hz 3 kVA		
Air Requirement	72 psi - 87 psi (5 - 6 Bar)		

## Optional

SPC, Offline Editor, Gerber Tool, Barcode Scanner (linear & 2D) and Support Pins, Closed Loop Function, Dual Lane, Y-Axis Linear Motor, TRI's Yield Management System (YMS 4.0), YMS Lite

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**TRI 德律 TRI INNOVATION**

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