TR7007 SII Plus

S E R I E S

TRI innovation

- Industry Leading Inspection Speed
- Shadow Free Fringe Pattern Lighting Technology
- Optical Resolution 10 µm or 15 µm
- Linear Motor Design for Stable and Accurate Inspection
- Advanced SPC Functions for Production Quality Monitoring and Evaluation
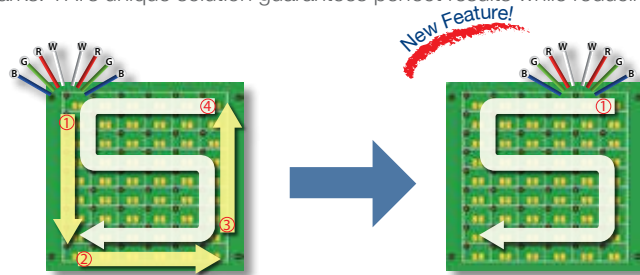
3D SOLDER
PASTE INSPECTION

TR7007 SII Plus

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

SPC

Statistical Report

Multi-panel Histogram

Solder Height Distribution

3D Color Image

SPC 2D Real Image Query
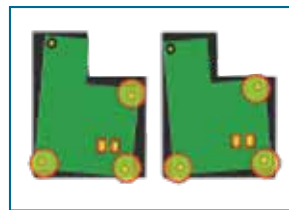
Unmatched Speed & Throughput

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.
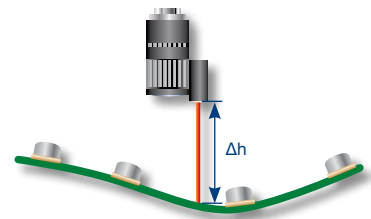

New Feature!

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.
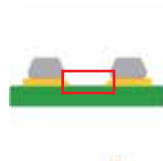

Reliable warp compensation and local fiducial marks guarantee stable results under any conditions.
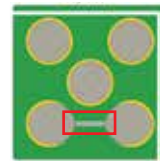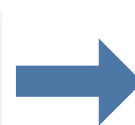
Unique Low Bridge Inspection

World's first inspection of low solder paste bridges under 30 µm 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
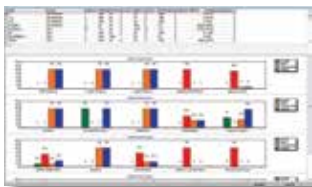
Intuitive SPC Display

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.
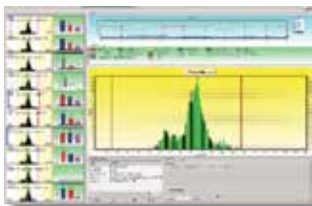
Intelligent Easy Programming Interface

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

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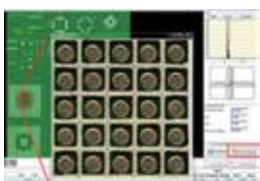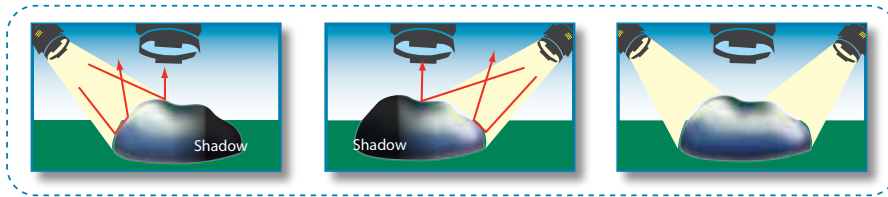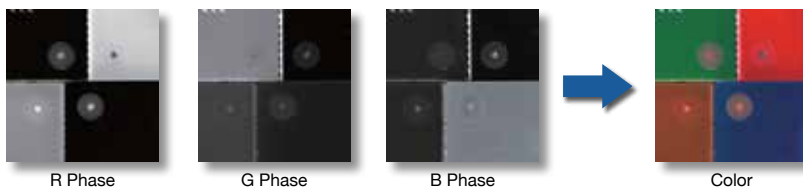
Dual projection design and intelligent software ensure the TR7007 SII Plus delivers completely shadow-free inspection results and eliminates problems with specular reflections.
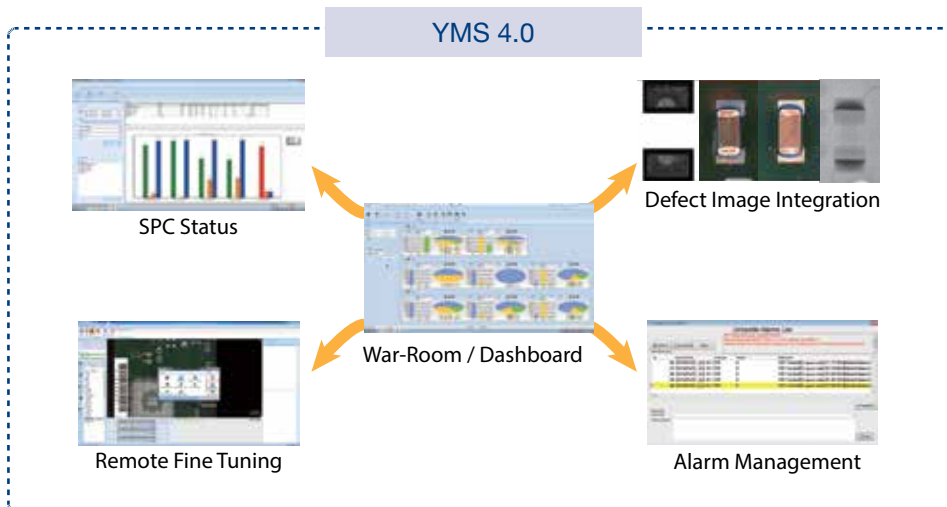

Multi-Color Vision for any PCB

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

| R Phase | G Phase | B Phase | Color |

Industry 4.0 Production Line Integration

YMS 4.0 lets TRI inspection solutions interface and share inspection data with the shop floor system and other inspection machines. With the central console an operator can control, track, analyze and optimize the inspection process across the entire production line and obtain real actionable data to optimize production quality in the Industry 4.0 environment.

YMS 4.0

SPC Status

Defect Image Integration

War-Room / Dashboard
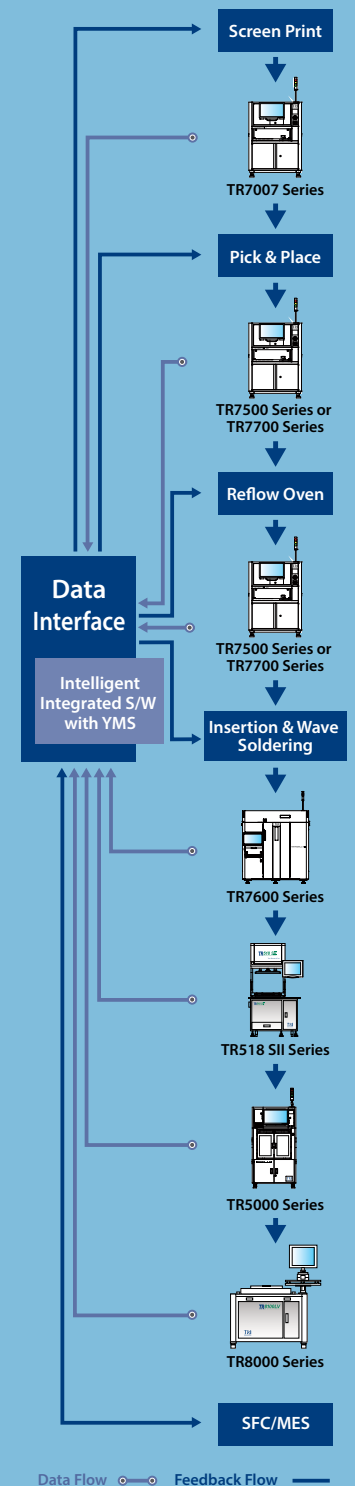
Remote Fine Tuning

Alarm Management

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

Data Interface

Intelligent Integrated S/W with YMS

Screen Print

TR7007 Series

Pick & Place

TR7500 Series or TR7700 Series

Reflow Oven

TR7500 Series or TR7700 Series

Insertion & Wave Soldering

TR7600 Series

TR518 SII Series

TR5000 Series

TR8000 Series

SFC/MES

Data Flow ○—○   Feedback Flow ——

• 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

SPECIFICATIONS

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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 cm²/sec
15 µm	Up to 200 cm²/sec

Inspection Performance

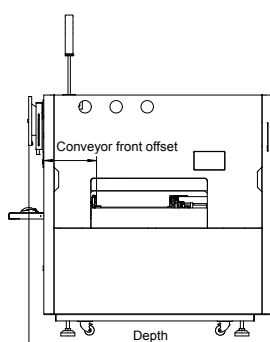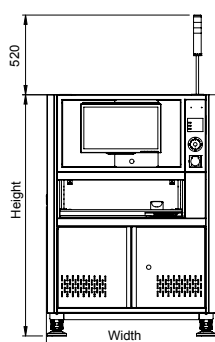|		
Volume Repeatability	Calibration Target (at 3σ)	<1% on TRI calibration target
Height Repeatability	Calibration Target (at 3σ)	<1% on TRI calibration target
	Solder GR&R (± 50% Tolerance)	<<10% at 6σ
Height Resolution	0.4 µm	
Height Accuracy	1.5 µm on calibration target	
Max. Height Range	10 µm 600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

PCB and Conveyor System

	TR7007 SII Plus	TR7007 SII Plus DL
Min. PCB Size	50 x 50 mm (1.97 x 1.97 in.)	
Max. PCB Size	510 x 460 mm (20.1 x 18.1 in.)	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 Top	25 mm (0.98 in.)	
Bottom	40 mm (1.58 in.)	
Edge	3 mm (0.12 in.)	

Dimensions

	TR7007 SII Plus	TR7007 SII Plus DL
Width	1100 mm (43.3 in.)	1100 mm (43.3 in.)
Depth	1570 mm (61.8 in.)	1770 mm (65.7 in.)
Height	1550 mm (61.0 in.)	1560 mm (61.4 in.)
Conveyor front offset	335 mm (13.2 in.)	335 mm (13.2 in.)
Weight	950 kg (2094 lbs)	1100 kg (2425 lbs)
Power Requirement	200 – 240 VAC, single phase, 50/60 Hz, 3 kVA	
Air Requirement	72 psi – 87 psi (5 – 6 bar)	

Unit : mm

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