SPECIFICATIONS

Optical & Imaging System

Top View Camera	4 Mpx high speed color camera
Lighting	Multi-phase RGB+W LED
Optical Resolution	10 or 15 μm
Imaging Method	Dynamic Imaging

Imaging/Inspection Speed

15 μm	120 cm^2/sec (18.6 in^2/sec)
10 μm	60 cm^2/sec (9.3 in^2/sec)

Pre-/Post-Reflow Inspection Functions

Component	Missing, Tombstoning, Billboarding, Polarity, Rotation, Shift, Wrong Marking (OCV), Defective, Upside Down, Extra Component
Solder Joint	Excess Solder, Insufficient solder, Bridging, Through-hole Pins, Lifted Lead, Golden Finger Scratch/Contamination

X-Y Table & Control

Ballscrew + AC servo with motion controller

X-Y Axis Resolution	1 μm

PCB & Conveyor System

Min. PCB Size	50 x 50 mm (1.97 x 1.97 in)			
Max. PCB Size	TR7700M SIII	TR7700 SIII	TR7700 SIII Plus	TR7700L SIII
	330 x 280 mm (13.0 x 11.0 in)	510 x 460 mm (20.1 x 18.1 in)		660 x 610 mm (26.0 x 24.0 in)
	TR7700 SIII 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	Step motor driven & pneumatic clamping			
Clearance Top Bottom Edge	25 mm (0.98 in) 40 mm (1.58 in) 3 mm (0.12 in) [5 mm optional]			

Dimensions

	TR7700M SIII	TR7700 SIII	TR7700 SIII Plus	TR7700L SIII
Dimensions (W) x (D) x (H) /Weight	850 x 1250 x 1500 mm (33.5 x 49.2 x 59.1 in) (not including signal tower, signal tower height: 520 mm)	1000 x 1555 x 1500 mm (39.4 x 61.2 x 59.1 in) (not including signal tower, signal tower height: 520 mm)	1100 x 1670 x 1550 mm (43.3 x 65.7 x 61.0 in) (not including signal tower, signal tower height: 520 mm)	1300 x 1610 x 1560 mm (51.2 x 63.4 x 61.4 in) (not including signal tower, signal tower height: 520 mm)
	730 kg (1609 lbs)	960 kg (2116 lbs)	1030 kg (2271 lbs)	1210 kg (2668 lbs)
	TR7700 SIII DL			
	1100 x 1670 x 1550 mm (43.3 x 65.7 x 61.0 in) (not including signal tower, signal tower height: 520 mm)			
	1150 kg (2535 lbs)			
Power Requirement	200 - 240 V, single phase, 50/60 Hz 3 kVA			
Air Requirement	0.6 MPa (87 psi)			

Options

Barcode Scanner, Repair Station, Offline Editor, OCR, TRI's Yield Management System (YMS), YMS Lite, Support Pin

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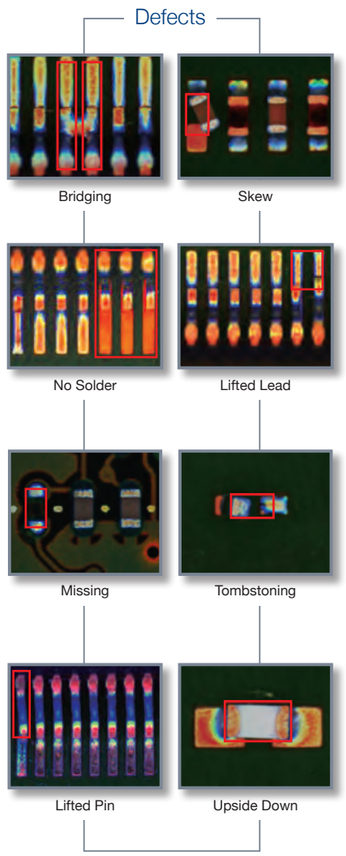
C-7700 SIII-EN-1410

TRI innovation

TR7700 SIII SERIES

AUTOMATED
OPTICAL INSPECTION

TR7700 SIII FEATURES



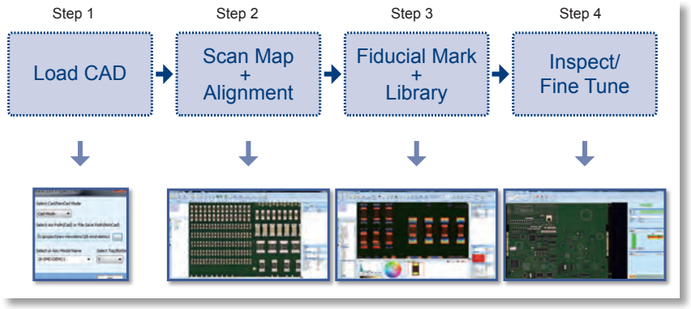
Premium AOI with World Class Performance

TR7700 SIII combines advanced high precision camera system and TRI's exclusive multi-phase lighting to capture full PCB panel images in unprecedented detail. Next generation inspection software combines excellent defect detection and easy automated CAD-based programming into a reliable state-of-the-art AOI solution.

Intelligent Easy Programming Interface

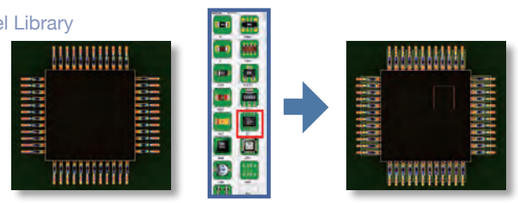
New intelligent programming process significantly reduces programming time using automated component library and integrated board warp compensation.

Programming Flowchart



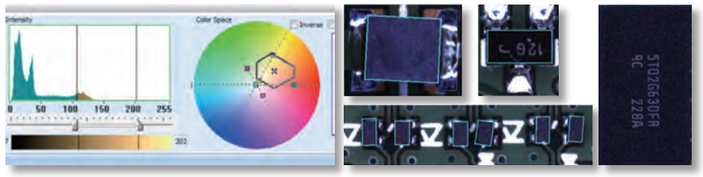
Auto Library + Model Library

Auto Library speeds up programming by automatically allocating inspection windows for IC leads.



New Color Space Algorithms

TRI's new adaptive algorithms use color space processing to increase inspection accuracy, reduce false calls and improve inspection results while reducing time necessary for inspection fine tuning and the number of alternative images required.



Color Differentiation Analysis for Black Resin Parts

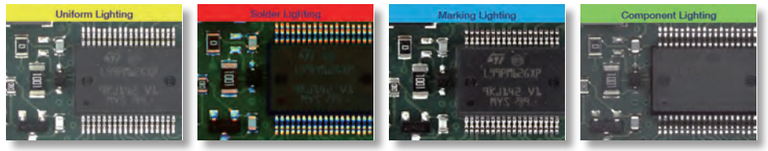
High Speed with Multi-phase Lighting

High speed

• 15 µm: 120 cm²/sec (18.6 in²/sec) • 10 µm: 60 cm²/sec (9.3 in²/sec)

Multi-phase Lighting

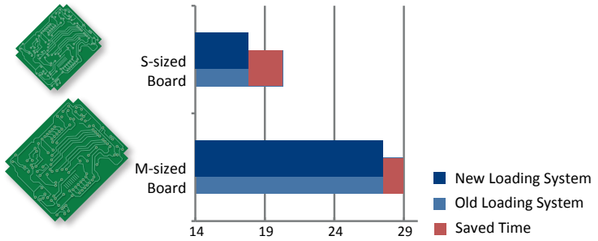
Four individual lighting phases improve inspection of individual defect types using specialized lighting conditions. High speed camera allows inspection at constant speed even with multiple lighting phases.



Intelligent Auto Conveyor System

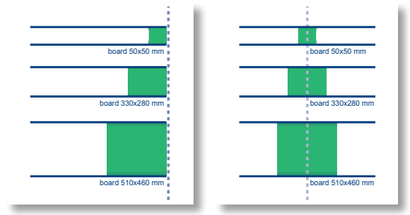
IACS automatically optimizes board stopping position in the conveyor, reducing load and unload time by up to 2.5 seconds, depending on board size.

• Reduced load & unload time (saves 0.5-2.5 sec. per board.)



• Automatic adjustment of conveyor speed based on board size & weight saves time for manual adjustment and training.

• Automatic conveyor width adjustment (Optical direct adjustment system without returning to default position).



SMT Line Integration

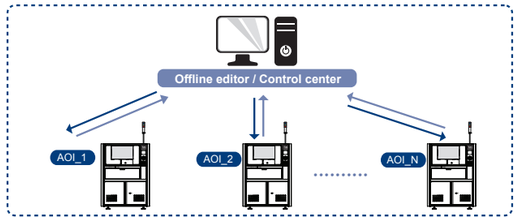
Centralized production line management increases operator productivity and response time. TRI's integrated solution includes the following four components.

• Offline Editor

This application allows for centralized independent adjustment and fine tuning of inspection algorithms on previously scanned images while providing immediate feedback. The completed program can then be uploaded to the in-line inspection machines to improve inspection stability and accuracy.

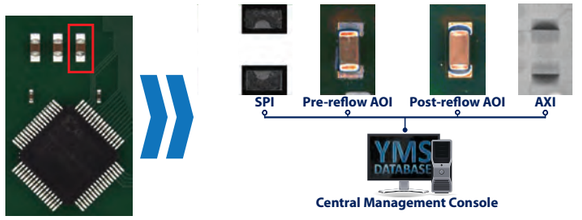
• Control Center

The core component at the heart of a production facility, the control center allows real-time monitoring and operation of multiple inspection machines across production lines.



• YMS Lite

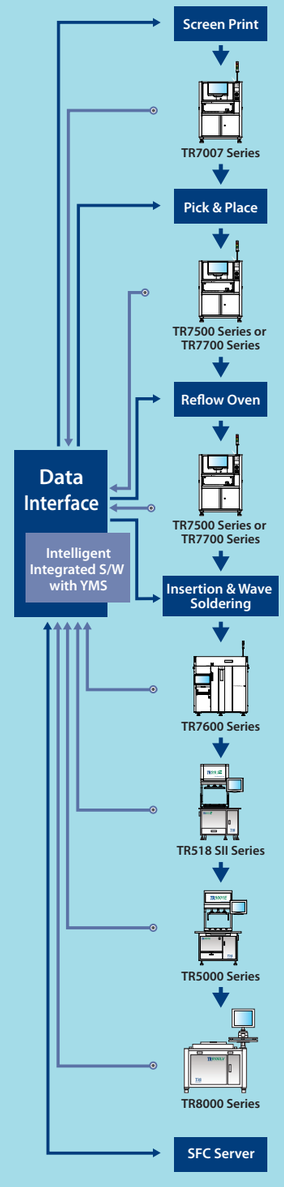
TRI's Yield Management System links inspection data from SPI, AOI and AXI systems to trace defect roots throughout the PCB assembly line. Modular architecture provides centralized inspection management, real time defect monitoring with analysis and defect knowledge management necessary to identify problems and implement solutions to maximize production yields.



• Quality Validation

Fully automated collection of good/failed images from a complete production run allows testing, tuning and verification of adjusted program parameters without reloading tested boards. This allows engineers to save inspection time when fine tuning and significantly speeds up New Product Introduction (NPI).

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