

High Accuracy Model

3DAOI

AUTOMATED OPTICAL INSPECTION

TR7700Q SII SERIES

 Industry-Leading Inspection Speed up to 57 cm²/sec

 Ease of Programming with TRI's Smart Library

 Multiple 3D Technologies: Zero-escapes Inspection

1 μm
DFF High Resolution*
Inspection


3D Height Range
up to 40 mm


Real Time SPC
Trends



*Optional feature.

TR7700Q SII SEF



High Accuracy 3D AOI Solution

The TR7700Q SII is powered by TRI's Smart Library with auto-learning functionalities, flexible inspection algorithms, and metrology capabilities for exact measurements and data exchange for Smart Factory applications. The TR7700Q SII has a Higher Accuracy, and improved Gauge R&R with Stop-and-Go Imaging Technology.



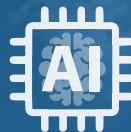
57 cm²/s
High Speed Inspection

Smart Programming

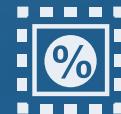
Realize seamless programming and improve your production efficiency with TRI's Smart Library. The Smart Test and Inspection Library promotes ease of programming and maintenance to achieve precise and accurate inspection results.



Scan Board



Setup Inspection



Inspect Board

Smart Inspection

Achieve True 3D Profile Measurement Using Multiphase lighting, Blue Angled Laser and 3D Depth from Focus (DFF) Technology. Powered by IPC-610 compliant algorithms, the 3D AOI system is able to inspect the most intricate solder joint defects, including THT components. Interactive 3D models help operators quickly review found defects, such as lifted BGA components, IC leads, connectors, switches and other mounted devices for enhanced post-reflow inspection.



True 3D Inspection



Accurate 3D Height



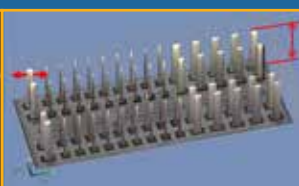
Highly Reflective Surface



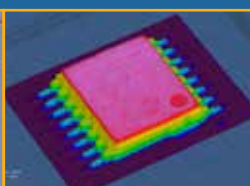
Shadow-free Inspection



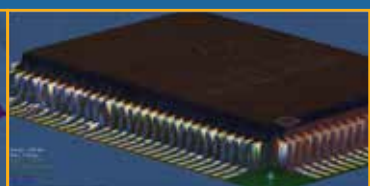
Solder Joint Defects



3D Pin Height Inspection



3D Polarity Check



Lifted Lead Profile

Foreign Material Inspection

Reduce false calls and perform no escape inspections with the foreign inspection functionality. The 3D AOI solution auto learns the PCB design will identify the extra components, solder balls, fibers, and any other foreign object, thus eliminating these defects.



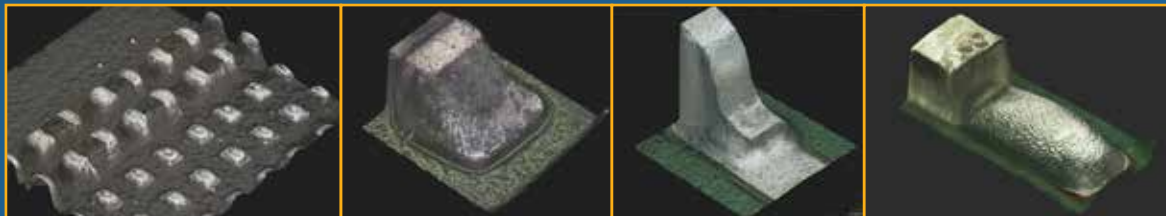
Multi-Scan Inspection

Multi-Scan Function enables it to easily inspect a board with different heights, without compromising your cycle time. The Multi-Scan Function enables reliable inspection results and more cost-efficient solutions.



Reduce Operator Re-inspection with 3D DFF Technology

Complete 3D PCB Assembly Inspection with Depth from Focus (DFF) Technology. TR7700Q SII ensures all visible solder joints meet IPC specifications or your chosen criteria. Depth from focus (DFF) is a revolutionary 3D sensing technique that searches for optimal focus position, supporting 1 μm ultra high resolution inspection.



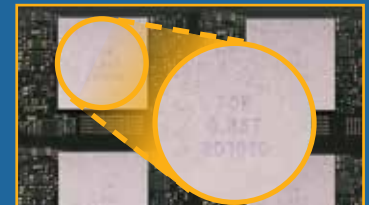
3D Depth from Focus High Resolution Imaging

Blue Angled Laser Technology

The Blue Angled Laser precisely measures the height and surface of Reflective & Transparent Components. Bare silicon die inspection requires Coaxial Lighting to improve marking and body outline visibility. The Blue Angled Laser achieves shadow-free inspection of low components near high components.

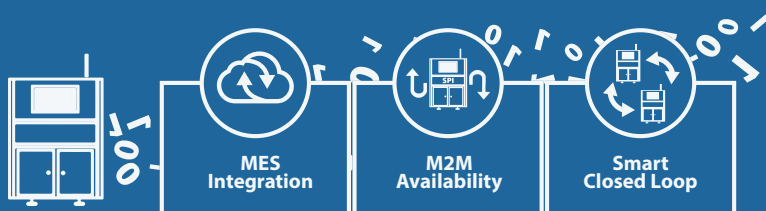


Bare Silicon and Wafer Level Chip Scale Packaging (WLCSP)



Inspection of High Component Density Boards

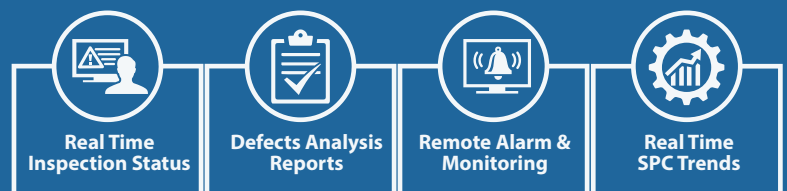
Big Data Ready



Boost your Factory Intelligence and Optimize your production line by easily integrating Big Data Analytics from your Solutions. TRI's Smart Factory Test and Inspection Solutions promote full traceability and data exchange, by generating Big Data for your MES Applications, essential for optimizing your production your yield rate, enabling the Connected Factory.

Smart Monitoring

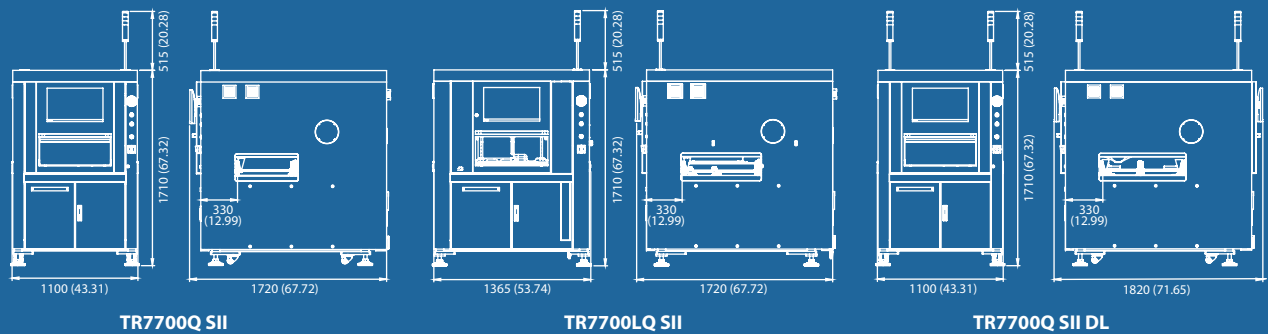
TRI's Smart Factory Solutions allow operators to aggregate information from individual systems for statistical analysis of production line defect rates, reviewing and fine-tuning inspection results, and identifying component defect trends and emerging production issues.



Model	TR7700Q SII	TR7700LQ SII	TR7700Q SII DL
Camera	12 MP High Speed Camera		
Optical Resolution	5.5 μm ⁽¹⁾	10 μm	12 μm 15 μm
Imaging System	7.8 cm^2/sec	25 cm^2/sec	37 cm^2/sec 57 cm^2/sec
Max. 3D Height Range	20 mm (0.79 in.)		40 mm (1.57 in.)
3D Technology Lighting	Quad Digital Fringe Projectors Multi-phase True Color LED		
Pre-/Post-Reflow Inspection Functions	Component Defects Missing, Tombstoning, Billboarding, Polarity, Rotation, Shift, Wrong Marking (OCV), Defective, Upside Down, Extra Component, Foreign Material, Lifted Component Solder Joint Defects Solder Fillet Height, Solder Volume %, Excess Solder, Insufficient Solder, Bridging, Through-hole Pins, Lifted Lead, Golden Finger Scratch/ Contamination		
X-Y-Z Axis Control	Ballscrew + AC Servo with Motion Controller		
X-Y-Z Axis Resolution	1 μm		
Min PCB Size	50 x 50mm (1.97 x 1.97 in.)		
Max PCB Size	510 x 460 mm (20.08 x 18.11 in.)	765 x 610 (30.12 x 24.02 in.)	510 x 310 mm (20.08 x 12.20 in.) x 2 lanes 510 x 590 mm (20.08 x 23.23 in.) x 1 lane Optional: 510 x 680 mm (20.08 x 26.77 in.)
PCB Thickness	0.6 - 5mm (0.02 - 0.20 in.)		
PCB Transport Height ⁽²⁾	880 - 920 mm (34.65 - 36.22 in.)		
Max PCB Weight	3 kg (6.61 lb). Optional: 5 kg (11.02 lb)	3 kg (6.61 lb) Optional: 5 kg (11.02 lb) / 12 kg (26.46 lb)	3 kg (6.61 lb). Optional: 5 kg (11.02 lb)
PCB Carrier / Fixing	Step Motor Driven		
Clearance	Top	20 mm (0.79 in.)	50 mm (1.97 in.)
	Bottom	40 mm (1.57 in.)	
	Edge	3 mm (0.12 in.). Optional: 4 mm (0.16 in.) / 5 mm (0.20 in.)	
Weight	895 kg (1,973.14 lb)	1010 kg (2,226.67 lb)	965 (2127.46 lb)
Power Requirement	200 - 240 VAC, single phase, 50 / 60 Hz, 3 kVA		
Air Requirement	72 psi - 87 psi (5 - 6 bar)		
Optional	Barcode Scanner, Repair Station, Offline Editor, OCR, Yield Management System (YMS 4.0), Support Pin, Synchro Drive 3D Technologies 3D Laser Module or DFF Module Upgrade		

(1) Available for TR7700Q SII & TR7700Q SII DL
(2) Optional: 940-965 mm (SMEMA compatible)

Unit: mm (in.)



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TRI 德律 TRI INNOVATION

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