

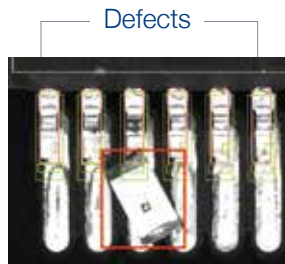
TR7700QI SERIES



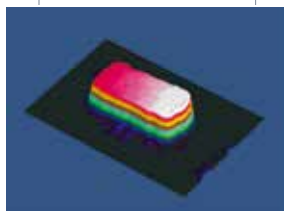
- High Accuracy Stop-and-Go 3D AOI
- 3D Height Range up to 30mm
- 0201mm Chip Inspection Ready
- Quad Digital Fringe Pattern Technology

**3D AUTOMATED
OPTICAL INSPECTION**

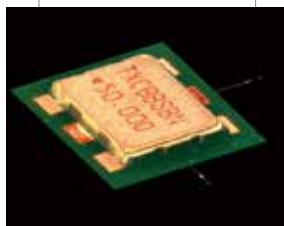
TR7700QI FEATURES



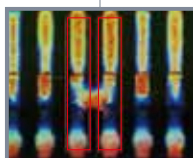
Foreign Material



Lifted Components



Metal-cased Reflective Components



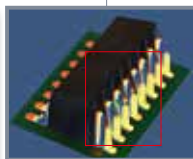
Bridging



Skew



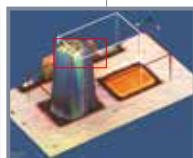
No Solder



Lifted Lead



Missing



Tombstoning



Bent Pin



Upside Down

TR7700QI - The High Performance 3D AOI Solution

The TR7700QI Automated Optical Inspection combines the latest of 2D and 3D technologies based on digital quad fringe pattern projection to revolutionize PCB assembly inspection.

Maximum Precision with 4-way Projection

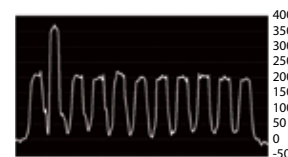
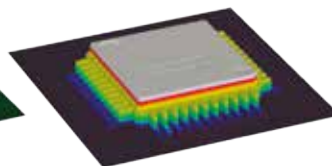
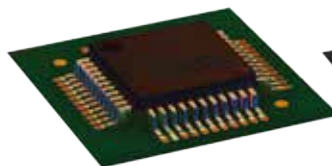
TR7700QI combines a high resolution orthogonal camera and quad multi-angle digital fringe pattern projection for best inspection coverage.

- **1** High Speed Top Camera
- **4**-way Adaptive Digital Fringe Projection
- **30** mm height inspection range



Intuitive Inspection Results

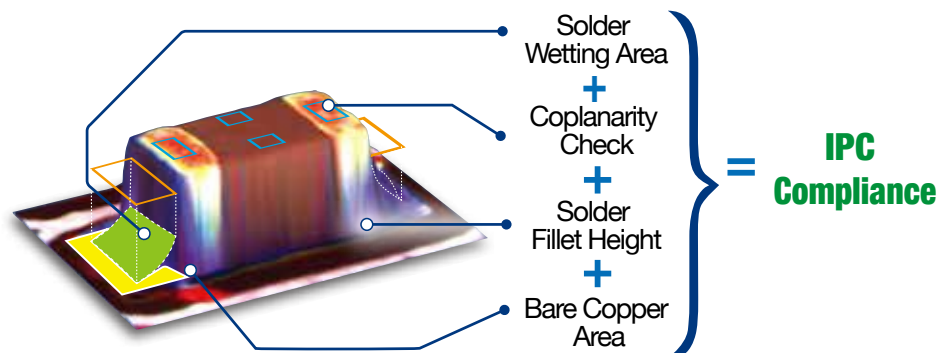
Reviewing defects on TR7700QI is a breeze with intuitive profile visualization.



Easy to identify defects shown in specialized display modes

Four-Strategy Solder Inspection

TR7700QI analyzes several solder joint parameters to locate non-compliant soldering defects.



Smart Inspection Library

Ready to Inspect in minutes, quickly setup your production line Inspection with TRI's preloaded Smart Inspection Library.



Load CAD File



Scan Map + Alignment



Fiducial Mark and Library



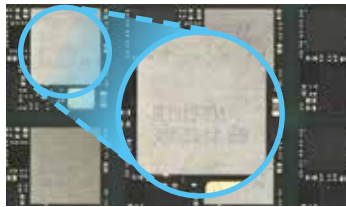
Inspect/ Fine Tune

Reduce False Calls with Leading-edge 3D AOI Inspection

Angled 3D Laser Height Measurements for Reflective & Transparent Components. Bare silicon die inspection requires Coaxial Lighting to improve marking and body outline visibility.



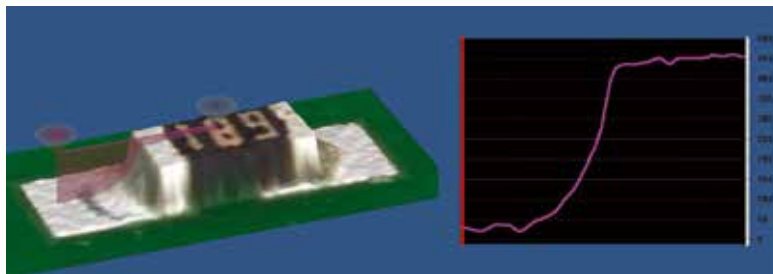
Bare Silicon and Wafer Level Chip Scale Packaging (WLCSP)



Inspection for High Component Density Boards

Complete 3D PCB Assembly Inspection

TR7700QI ensures all visible solder joints meet IPC specifications or your chosen criteria.

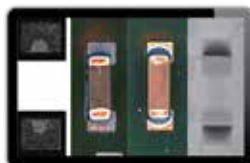


Advanced SPC

TRI's AOI software provides Real-time Monitoring and Statistical Process Control of production for Yield Improvement and quickly Reducing Rework Costs.



Production Analysis



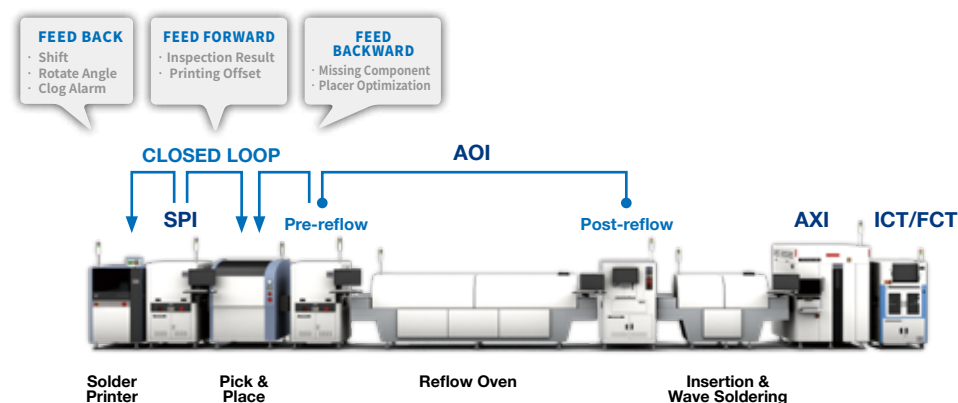
Centralized Inspection Center



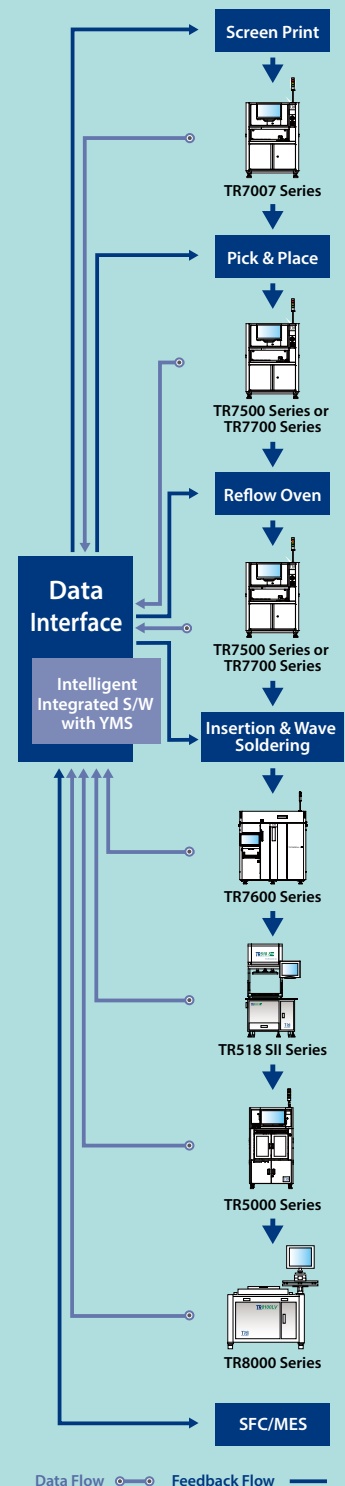
Real Time SPC Trend

Smart Factory Solution

Improve the production's print and placement performance with TRI's Feedback and Forward Ready capabilities. Enjoy the benefits of YMS 4.0, TRI's Industry 4.0 Solution for Smart Factories. YMS 4.0 assures your Closed Loop process integration and optimization from Solder Inspection to MDA Testing.



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

Optical & Imaging System

Top View Camera	4 or 12 MP camera (factory setting)		
Lighting	Multi-phase True Color LED		
3D Projection	Quad Digital Fringe Projectors		
Optical Resolution	4 MP 15 μ m	12 MP 10 μ m	5.5 μ m
3D Height Range	0 - 30 mm*	0-30 mm*	0-4 mm
Imaging Method	Stop-and-Go		

*Needs GPU card upgrade

Imaging/Inspection Speed*

	4 MP 15 μ m	12 MP 10 μ m	5.5 μ m
Standard	21 cm ² /sec	14.5 cm ² /sec	4.3 cm ² /sec (2D only: 12.2 cm ² /sec)
CoaXPress	n/a	23 cm ² /sec	n/a

*Depending on component distribution

Pre-/Post-Reflow Inspection Functions

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

X-Y-Z Table & Control*

Ballscrew + AC servo with motion controller	
X-Y-Z Axis Resolution	1 μ m with linear encoder

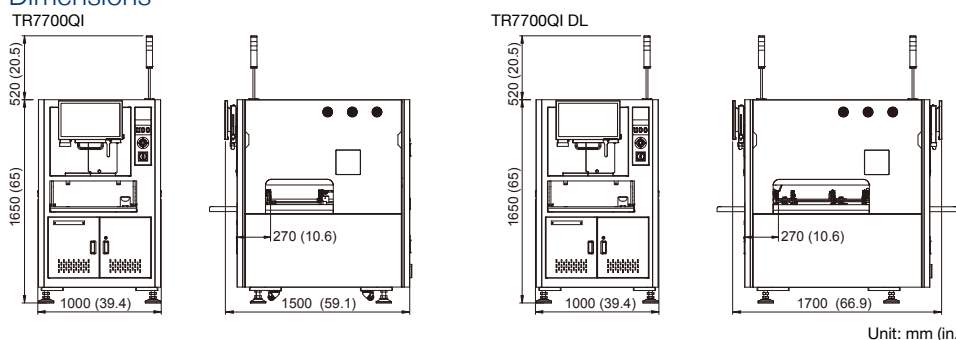
* Z Axis is optional

PCB & Conveyor System

	TR7700QI			TR7700QI DL	
Top View Camera	4 MP	12 MP		4 MP	12 MP
Optical Resolution	15 μ m	10 μ m	5.5 μ m	15 μ m	10 μ m
Min. PCB Size	50 x 50 mm (1.97 x 1.97 in.)				
Max. PCB Size	510 x 460 mm (20.08 x 18.11 in.)	510 x 460 mm (20.08 x 18.11 in.)	330 x 330 mm* (12.99 x 12.99 in.)	510 x 310 mm x 2 lanes (20.08 x 12.20 in. x 2 lanes)	510 x 590 mm x 1 lane (20.08 x 23.23 in. x 1 lane)
PCB Thickness	0.6 - 5 mm				
PCB Transport Height	880 - 920 mm (34.65 - 36.22 in.)				
Max. PCB Weight	3 kg (6.61 lbs)				
PCB Carrier/Fixing	Step motor driven				
Clearance					
Top	40 mm (1.57 in.)	50 mm (1.97 in.)	25 mm (0.98 in.)	40 mm (1.57 in.)	50 mm (1.97 in.)
Bottom	40 mm (1.57 in.). Optional: 100 mm (3.94 in.)				
Edge	3 mm (0.12 in.). Optional: 5 mm (0.2 in.)				

*Depending on component distribution, the available PCB size could be different

Dimensions



Unit: mm (in.)

	TR7700QI	TR7700QI DL
Weight	650 kg (1433 lbs)	685 kg (1510 lbs)
Power Requirement	200 - 240 VAC, single phase, 50/60 Hz, 3 kVA	
Air Requirement	72 psi - 87 psi (5 - 6 bar)	

Options

Barcode Scanner, Repair Station, Offline Editor, OCR, Yield Management System (YMS 4.0), YMS Lite, Support Pin, 3D Laser Module, Coaxial Lighting, CoaXPress Module Upgrade, GPU Card Upgrade

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TRI 德律 TRI INNOVATION

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