

TR7500 SIII 3D SERIES

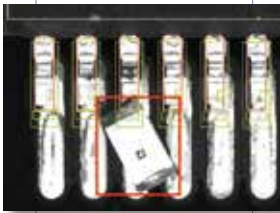


- High Performance Multi-angle 3D PCBA Inspection
- High Defect Coverage Using Hybrid 2D+3D Inspection
- Dual Laser True 3D Profile Measurement
- Accurate Bare Silicon Package Inspection

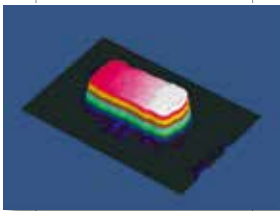
**AUTOMATED
OPTICAL INSPECTION**

TR7500 SIII 3D FEATURES

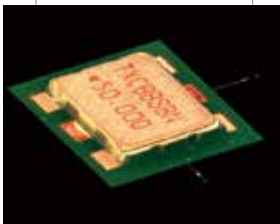
Defects



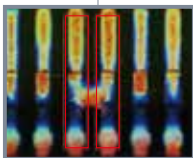
Foreign Material



Lifted Components



Metal-cased Reflective Components



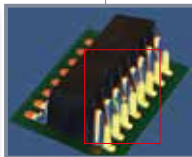
Bridging



Skew



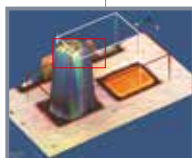
No Solder



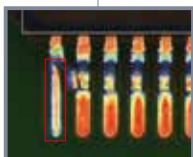
Lifted Lead



Missing



Tombstoning



Bent Pin



Upside Down

TR7500 SIII 3D - High Performance and Total Inspection Coverage

The TR7500 SIII 3D AOI combines the best of 2D and 3D technologies with new generation software in a high performance system for PCB assembly inspection. Built on TRI's high-speed dynamic imaging technology, TR7500 SIII 3D is the ideal AOI for the industry's largest PCBs.

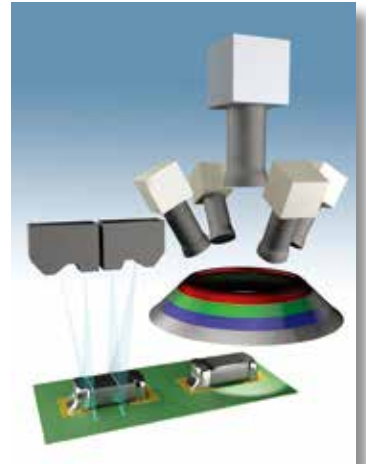
Complete Coverage at Full Speed

High resolution images from five multi-angle color cameras and true 3D profile measurement eliminate blind spots even on complex automotive and smartphone assemblies. TR7500 SIII 3D inspection range covers everything from basic SMT components to large thru-hole capacitors, switches, connectors and hidden solder joints.

Wide Range 3D Inspection

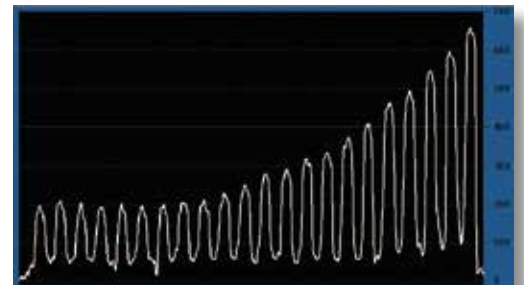
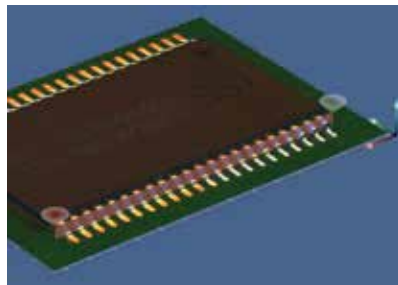
Military grade blue laser sensors go beyond other 3D technology boundaries. Their height measurement range ensures that components up to 20 mm high can be inspected with maximum precision.

Laser sensors are an effective solution for polished bare silicon chips and wafer level packages. They also eliminate problems with black components on low contrast background.



Complete 3D PCB Assembly Inspection

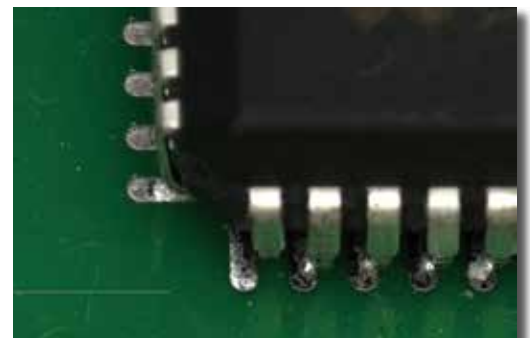
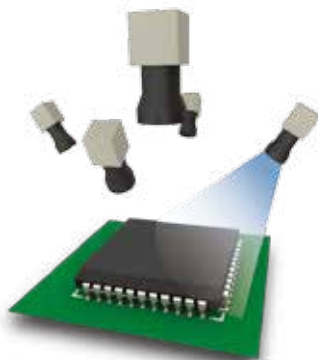
Interactive 3D models help operators quickly review found defects, such as lifted components, IC leads, connectors, switches and other mounted devices for enhanced post-reflow inspection.



IC lead inspection using 2D + 3D technologies efficiently reveals lifted leads

Reveal Hidden Defects in Clear Angle View Images

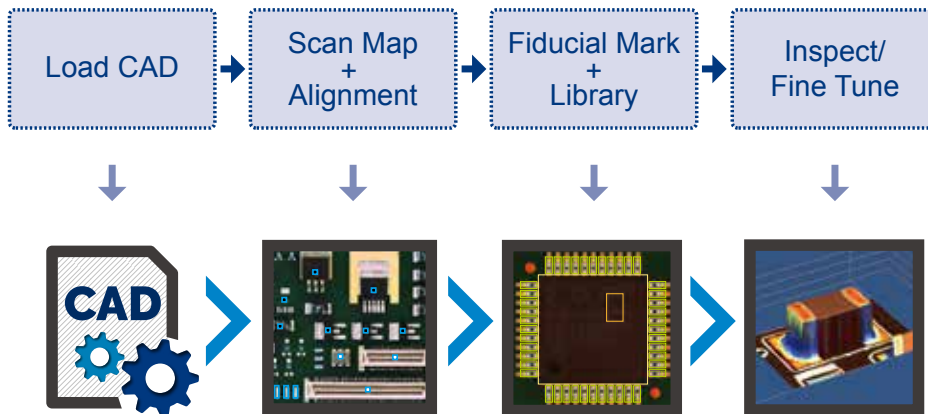
Angle view images reveal soldering issues from another perspective, not available in single camera systems, and help eliminate an important source of defects.



Hidden soldering defects revealed in side view

From CAD to Inspection in Minutes

TRI's intuitive software and smart component libraries streamline new product introduction in a few simple steps.



TRI AOI programming flow in a few simple steps

Intuitive Inspection Results

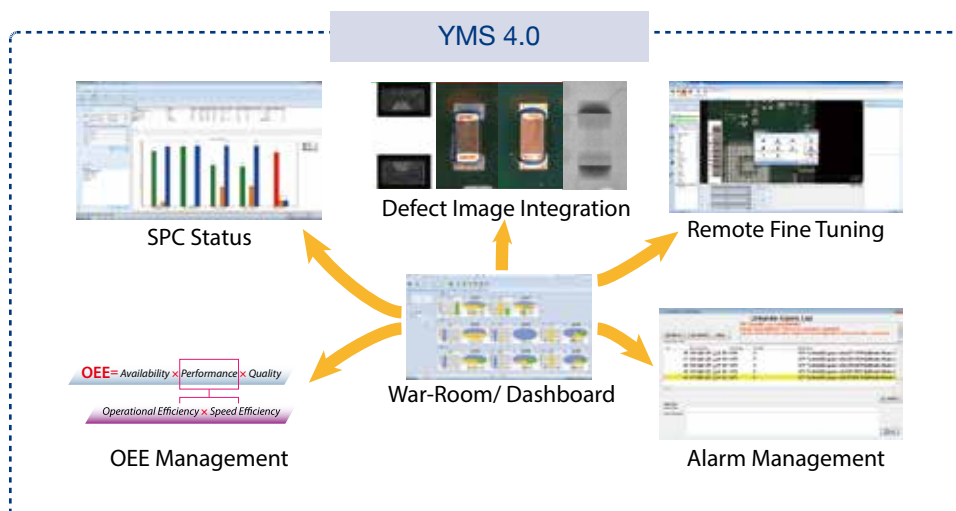
Reviewing defects on TR7500 SIII 3D is a breeze with intuitive height profile visualization.



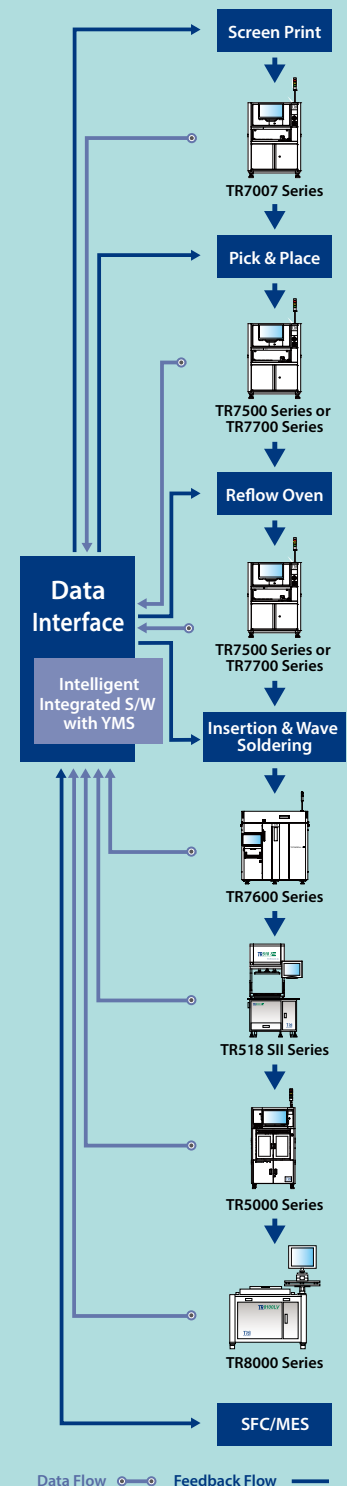
Easy to identify defects shown in specialized display modes

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.



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 Mpix high speed color camera |
| 4 Angled View Cameras | 1.3 or 6.5 Mpix (factory setting) |
| 3D Laser Sensor | Dual 3D laser sensors |
| Lighting | Multi-phase RGB+W LED |
| Optical Resolution* | 10 μ m/15 μ m |
| Laser Resolution* | 10 μ m (optional)/20 μ m/50 μ m |
| Imaging Method | Dynamic imaging with true 3D profile measurement |
| 3D Inspection Range | 20 mm |

* Factory setting

Imaging/Inspection Speed

| Mode | 2D | 2D+3D |
|-----------------------------------|-----|-----------|
| 15 μ m (cm ² /sec) | 120 | 40 - 60** |
| 10 μ m (cm ² /sec) | 60 | 27 - 39** |

** Depending on board size and laser resolution

Pre-/Post-Reflow Inspection Functions

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

X-Y Table & Control

Ball screw + AC servo with Motion Controller

X-Y Axis Resolution 1 μ m

PCB & Conveyor System

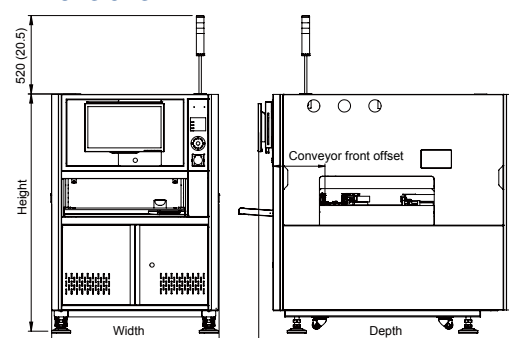
| | TR7500 SIII 3D | TR7500L SIII 3D | TR7500 SIII 3D DL |
|----------------------|---|---|--|
| PCB Size | 50 x 50 - 510 x 460 mm (1.97 x 1.97 - 20.1 x 18.1 in.) | 50 x 50 - 660 x 460 mm (1.97 x 1.97 - 26.0 x 18.1 in.) | 50 x 50 - 510 x 250 mm x 2 lanes (1.97 x 1.97 - 20.1 x 9.84 in. x 2 lanes) 50 x 50 - 510 x 550 mm x 1 lane (1.97 x 1.97 - 20.1 x 21.7 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 conveyor & pneumatic clamping | | |
| Clearance | | | |
| Top | 15 mm (0.59 in.) / 25 mm (0.98 in.) / 48 mm [(1.89 in.) optional**] | | |
| Bottom | 40 mm (1.58 in.) | | |
| Edge | 3 mm (0.12 in.) | | |

** (1) Top clearance for laser resolution @ 50 μ m is 25 or 48 mm (optional)

(2) Top clearance for laser resolution @ 20 μ m is 25 mm

(3) Top clearance for laser resolution @ 10 μ m is 15 mm

Dimensions



| | TR7500 SIII 3D | TR7500L SIII 3D | TR7500 SIII 3D DL |
|-----------------------|--|--------------------|--------------------|
| Width | 1100 (43.3) | 1300 (51.2) | 1100 (43.3) |
| Depth | 1670 (65.7) | 1630 (64.2) | 1770 (69.7) |
| Height | 1550 (61.0) | 1655 (65.2) | 1550 (61.0) |
| Conveyor front offset | 335 (13.2) | 365 (14.4) | 335 (13.2) |
| Weight | 1010 kg (2227 lbs) | 1250 kg (2756 lbs) | 1150 kg (2530 lbs) |
| Power Requirement | 200 - 240 VAC, single phase, 50/60 Hz, 3 kVA | | |
| Air Requirement | 72 psi - 87 psi (5 - 6 bar) | | |

Unit : mm (in.)

Options

Barcode Scanner, Offline Editor, OCR, Yield Management System (YMS 4.0), YMS Lite

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TRI 德律 TRI INNOVATION

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