

TR7600XLL SII CT SERIES

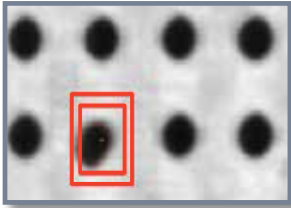


- Ultra-Fast 3D Inline AXI
- Precise 3D CT Imaging
- Rapid Intelligent Programming
- Extra Large Board Inspection
- Automated Defect Evaluation

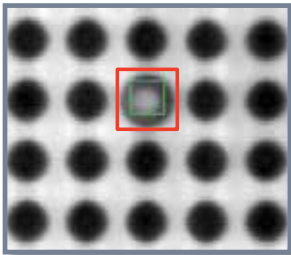
**AUTOMATED
X-RAY INSPECTION**

TR7600XLL SII CT FEATURES

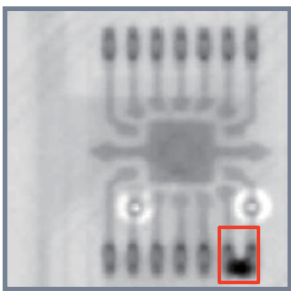
Defect Symptom Images



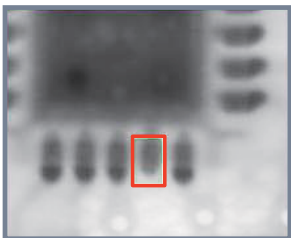
BGA Head-In-Pillow



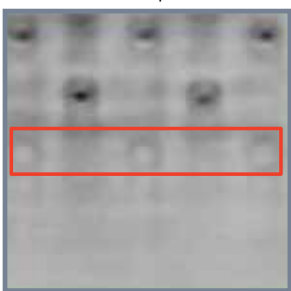
BGA Void



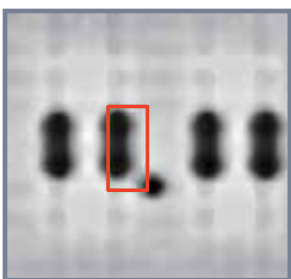
Bridging



QFN Open



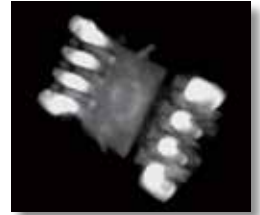
PressFit Pin Defect



Solder Ball

Inline 3D Automated X-ray CT Inspection

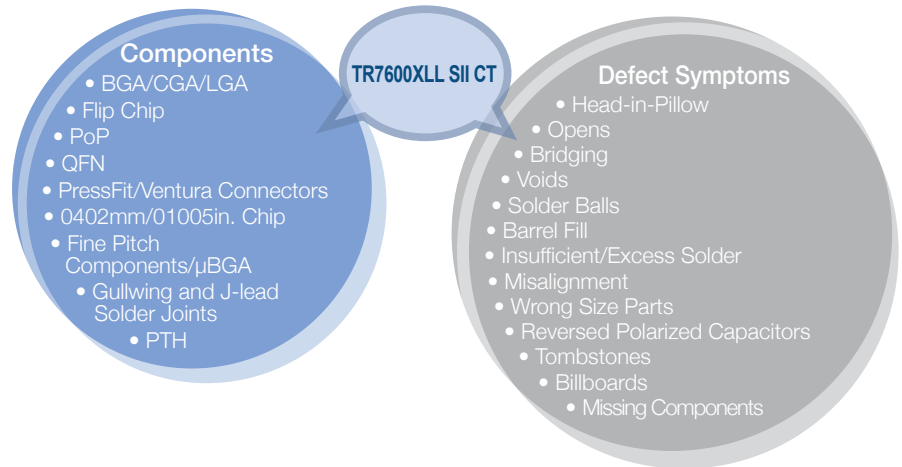
- Ultra fast inline automated X-ray inspection of PCBAs
- 2D + 3D images using multiple bidirectional angled cameras
- Automated inspection and pass/fail evaluation
- User selectable X-ray power up to 130 kV/300 μ A
- Patented 6-axis motion control for maximum flexibility
- Edge-to-edge large board inspection up to 1000 x 660 mm
- Advanced 3D CT capability for vertical slicing of complex solder joints



Intelligent Software Solution

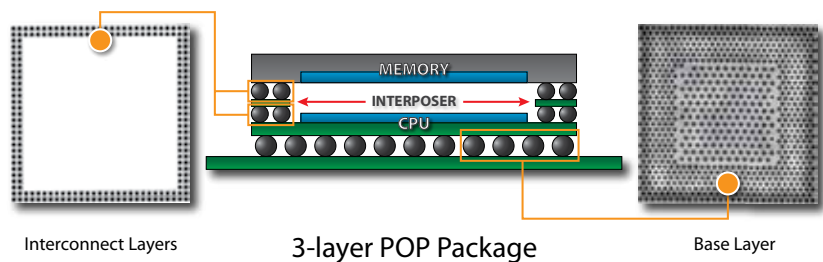
- Intelligent detection of solder and assembly defects
- Automatic image quality enhancement for overlapping components and complex defects
- Automatic board warp compensation
- Automated 3D slice extraction

Defect Detection Capability



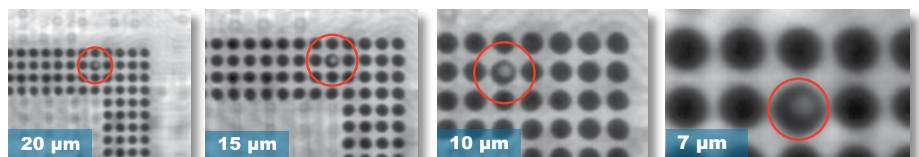
Patented 6-axis Motion Control

TRI's unique motion control system provides clearest images of multi-layer PCBAs and overlapping components, enabling reliable automated inspection of dual-side PCB assemblies without typical shadowing issues.



BlockScan Customized Imaging

BlockScan module enhances AXI test program coverage by re-scanning selected areas of the tested board using customized system settings. This improves image quality and automated defect detection for most complex PCBAs, including fine pitch μ BGAs, PressFit and metal shielded components. Using BlockScan, TRI AXI can reliably inspect up to 3-layer PoP packages.



Multiple Resolutions in One Program

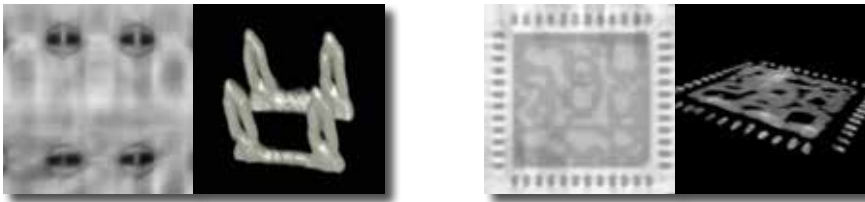
3D CT Inspection

Enhanced 3D inspection with planar CT imaging can recreate a complete 3D model of each solder joint, enabling clear analysis of shape irregularities, head-in-pillow and voiding problems. Vertical cross-section CT images help with reliable visual review of borderline and buried solder joints.



Enhanced Defect Visualization with CT

CT data processing helps clearly visualize solder defects such as voiding, bridging and deformities.



3D CT displays solder joints and defects in much more detail than traditional 3D X-ray slicing

Eliminate Board Warp Issues

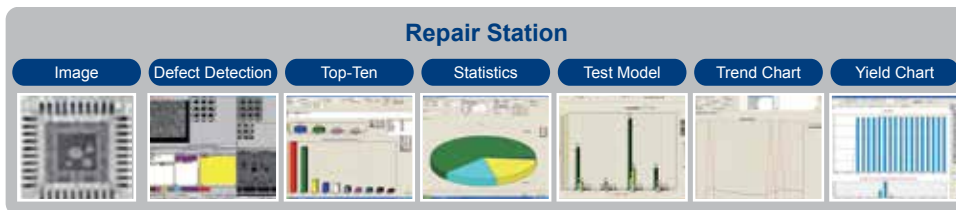
The TR7600XLL SII CT uses multiple laser sensors to accurately measure any PCB assembly deformation and automatically adjusts component inspection parameters to compensate for local board warpage. This ensures reliable inspection of the most complex boards with overlapping and multi-layered components and heavy PressFit connectors.

Radiation Safe Design

Designed with safety in mind, TRI's AXI systems have full lead shielding which prevents harmful exposure in everyday use and reduces X-ray leakage below background radiation levels of 0.5 µSv/hr. The certified safety design conforms to USFDA Code of Federal Regulations Title 21, Part 1020.40.

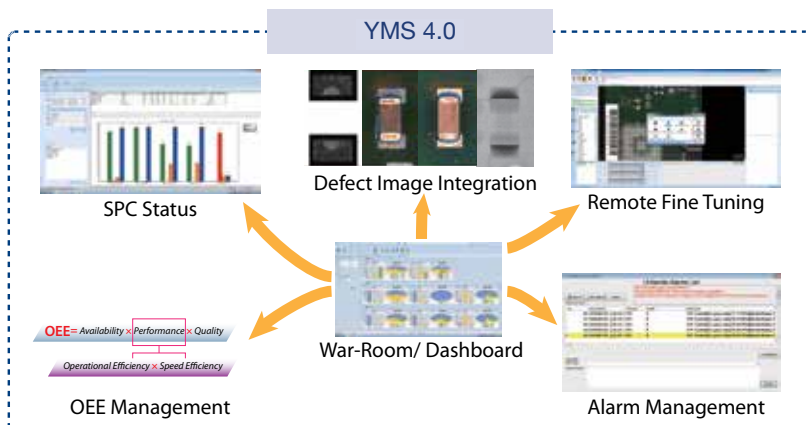
Repair Station

The TR7600XLL SII CT collects a wide range of inspection data to offer instantaneous process monitoring and analysis. This integrated approach offers clear statistical feedback that improves defect management and enhances the efficiency of the inspection process.

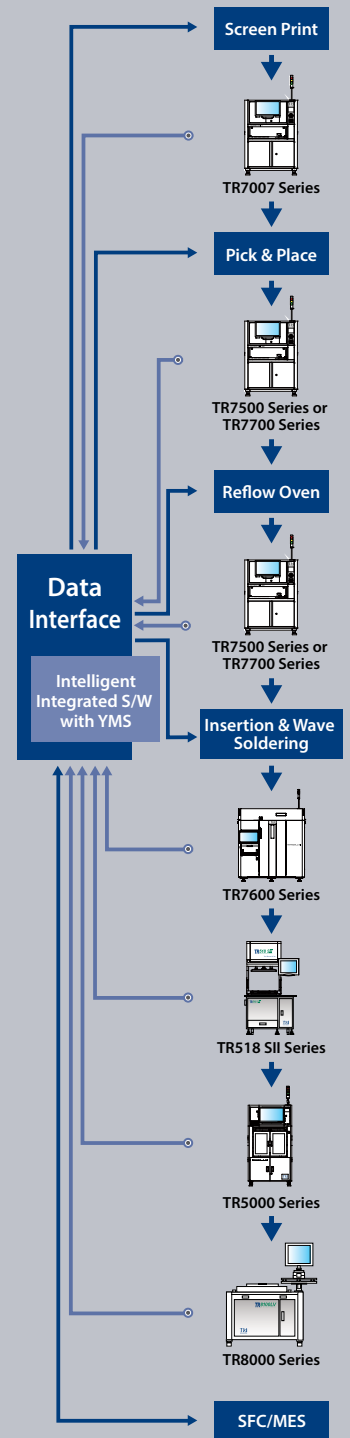


Industry 4.0 Production Line Integration

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



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



X-Ray & Imaging System

X-ray Source	130 kV max (user adjustable)
Image Resolutions	7 μm, 10 μm, 15 μm or 10 μm, 15 μm, 20 μm (factory setting)
Camera	High-performance, ultra-sensitive bidirectional line-scan cameras

Inspection Functions

Component Level Defects	Missing, Misalignment, Tombstone, Billboard, Tantalum Polarity, Rotation, Floating
Joint Level Defects	Insufficient/Excess Solder, Bridging, Open, Solder Ball, Non-wetting, Void & Lifted Lead

X-Y Table & Control

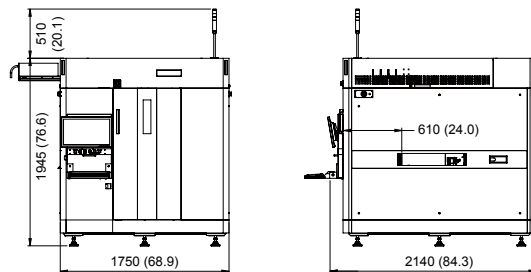
High-precision ball screw/servo motor with DSP-based motion controller	
X-Y Axis Resolution	1 μm

PCB & Conveyor System

Min. PCB Size	50 x 50 mm (1.97 x 1.97 in.)	
Max. PCB Size	1000 x 660 mm (39.3 x 26.0 in.)	
PCB Thickness	0.6 - 7 mm	
PCB Transport Height	880 - 920 mm (34.6 - 36.2 in.)*	
Max. PCB Weight	12 kg (26 lbs) [15 kg (33 lbs) optional]	
PCB Carrier/Fixing	Step motor driven conveyor & pneumatic clamping	
Clearance		
Top	20 μm	50 mm (1.97 in.)
	15 μm	30 mm (1.18 in.)
	10 μm	15 mm (0.59 in.)
	7 μm	7 mm (0.28 in.)
Bottom		70 mm (2.75 in.)
Edge		3 mm (0.11 in.) [5 mm (0.20 in.) optional]

* SMEMA Compatible

Dimensions



Unit: mm (in.)

Weight	4500 kg (9920 lbs)
Power Requirement	200 - 240 VAC three phase, 50/60 Hz, 7 kVA (346-416 VAC optional three phase transformer)
Air Requirement	72 psi - 87 psi (5 - 6 bar)

Optional Accessories

Barcode Scanner, Repair Station, Offline Editor & Yield Management System (YMS 4.0), YMS Lite

TRI has a patent in System and Method for Laminography Inspection

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TRI 德律 TRI INNOVATION

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