

TR7600LL SII TR7600M SII SERIES

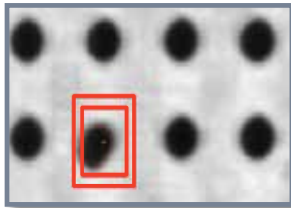


- Ultra-Fast 3D Inline AXI
- Precise 3D CT Imaging
- Rapid Intelligent Programming
- Extra Large Board Inspection
- Automated Defect Evaluation

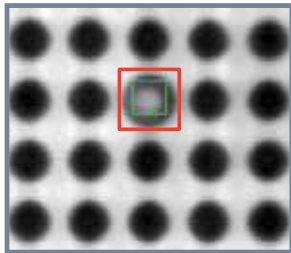
**AUTOMATED
X-RAY INSPECTION**

TR7600LL SII/TR7600M SII

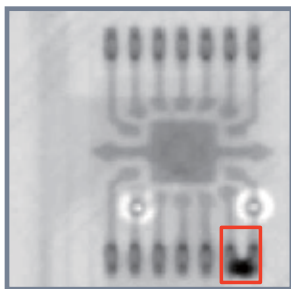
Defect Symptom Images



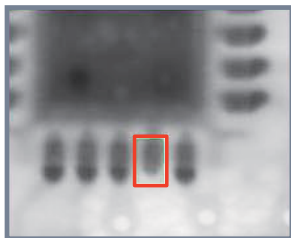
BGA Head-In-Pillow



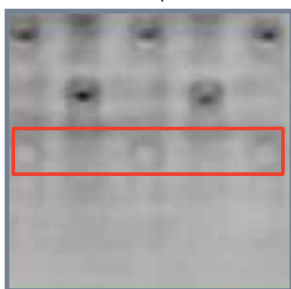
BGA Void



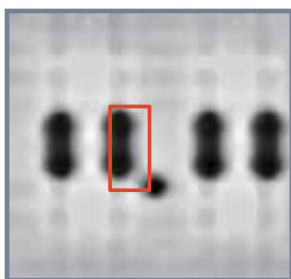
Bridging



QFN Open



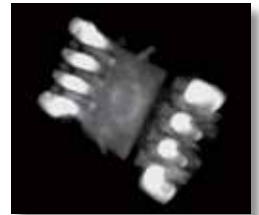
PressFit Pin Defect



Solder Ball

Inline 3D Automated X-ray CT Inspection

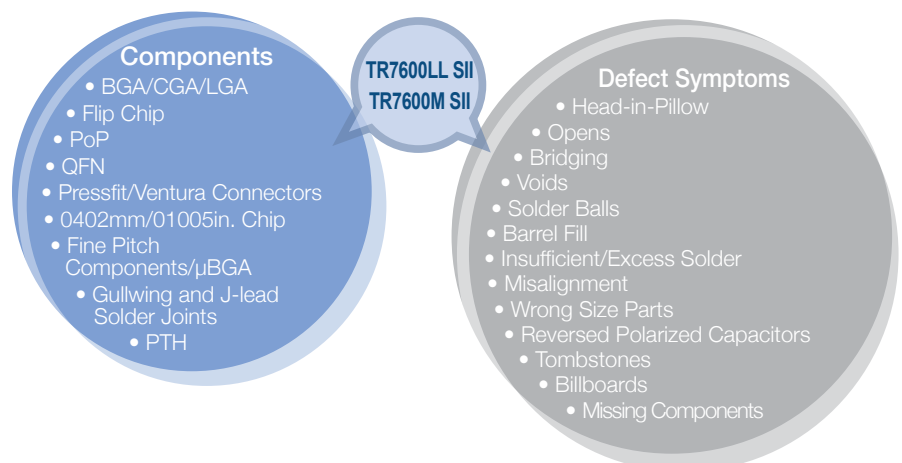
- Ultra fast inline automated X-ray inspection of PCBAs
- 2D + 3D images using multiple angled cameras
- Automated inspection and pass/fail evaluation
- User selectable X-ray power up to 130 kV/300 μ A
- Patented 6-axis motion control for maximum flexibility
- Edge-to-edge large board inspection up to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



Intelligent Software Solution

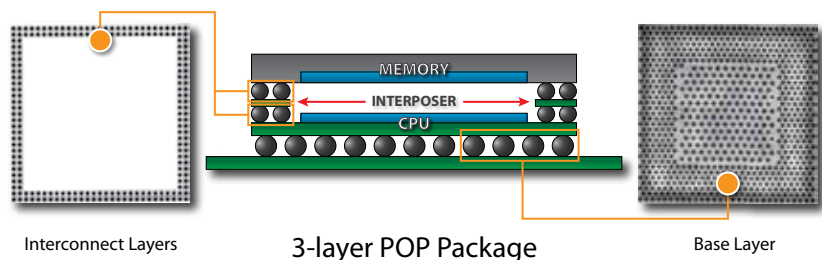
- Intelligent detection of solder and assembly defects
- Automatic image quality enhancement for overlapping components and complex defects
- Automatic board warp compensation
- Automated 3D slice extraction

Defect Detection Capability



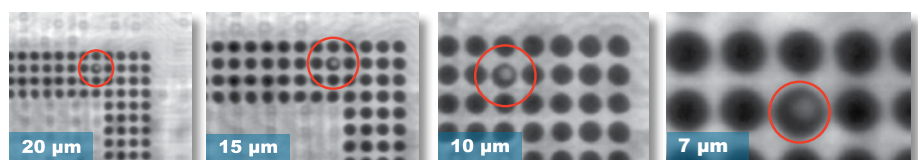
Patented 6-axis Motion Control

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

FEATURES

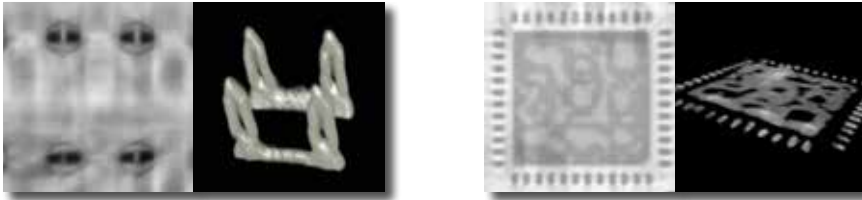
3D CT Inspection Optional Upgrade

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

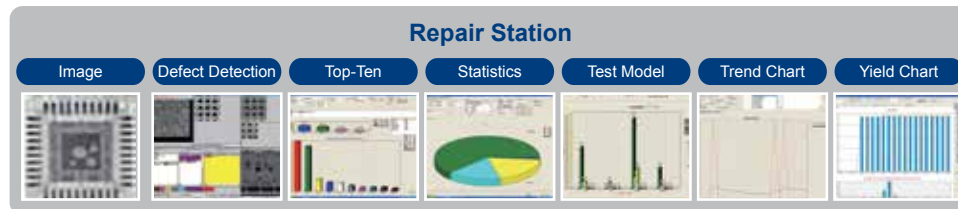
The TR7600LL SII and TR7600M SII use multiple laser sensors to accurately measure any PCB assembly deformation and automatically adjusts component inspection parameters to compensate for local board warpage. This ensures reliable inspection of the most complex boards with overlapping and multi-layered 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 μ Sv/hr. The certified safety design conforms to USFDA Code of Federal Regulations Title 21, Part 1020.40.

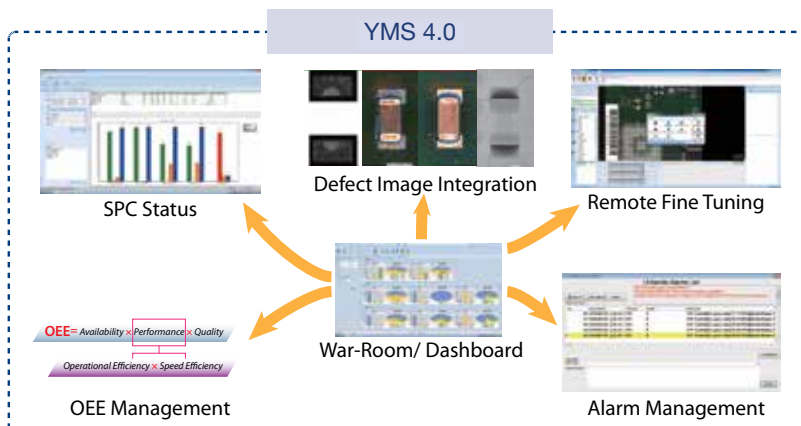
Repair Station

The TR7600LL SII and TR7600M SII collect 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.

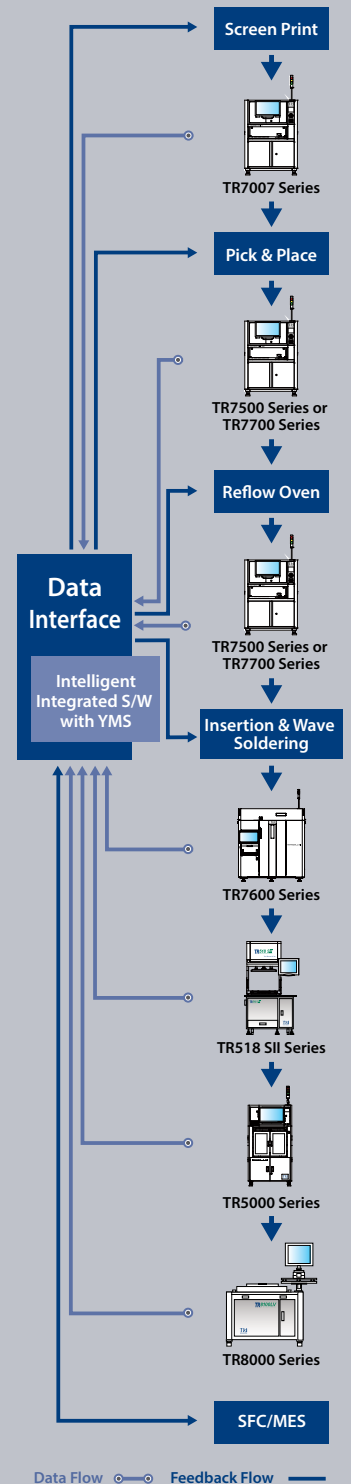


Industry 4.0 Production Line Integration

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



- 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 μ m, 10 μ m, 15 μ m or 10 μ m, 15 μ m, 20 μ m (factory setting)
Camera	High-performance, ultra-sensitive 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 μ m

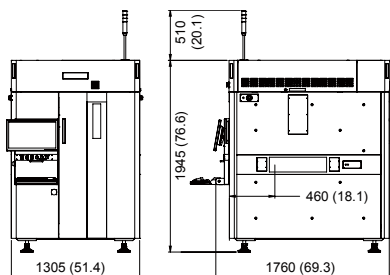
PCB & Conveyor System

	TR7600M SII	TR7600LL SII
Min. PCB Size	50 x 50 mm (1.97 x 1.97 in.)	
Max. PCB Size	700 x 350 mm (27.6 x 13.8 in.)	1000 x 660 mm (39.3 x 26.0 in.)
PCB Thickness	0.6 - 5 mm	0.6 - 7 mm
PCB Transport Height	880 - 920 mm (34.6 - 36.2 in.)*	
Max. PCB Weight	3 kg (7 lbs) [8 kg (18 lbs) optional]	12 kg (26 lbs) [15 kg (33 lbs) optional]
PCB Carrier/Fixing	Step motor driven conveyor & pneumatic clamping	
Clearance		
Top	20 μ m	50 mm (1.97 in.)
	15 μ m	30 mm (1.18 in.)
	10 μ m	15 mm (0.59 in.)
	7 μ m	7 mm (0.28 in.)
Bottom	70 mm (2.75 in.)	
Edge	3 mm (0.11 in.) [5 mm (0.20 in.) optional]	

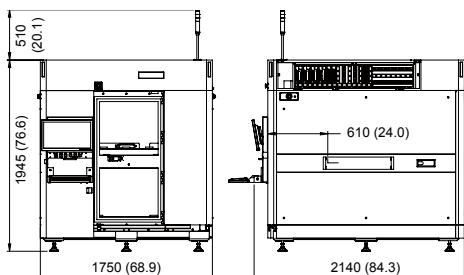
* SMEA Compatible

Dimensions

TR7600M SII



TR7600LL SII



Unit: mm (in.)

	TR7600M SII	TR7600LL SII
Weight	3375 kg (7441 lbs)	4500 kg (9920 lbs)
Power Requirement	200 - 240 VAC single phase, 50/60 Hz, 4 kVA	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, 3D CT Upgrade Kit

TRI has a patent in System and Method for Laminography Inspection

Test Research, Inc.

Headquarters

7F., No.45, Dexing West Rd.,
Shilin Dist., Taipei City
11158, Taiwan
TEL: +886-2-2832-8918
FAX: +886-2-2831-0567
E-Mail: sales@tri.com.tw
http://www.tri.com.tw

Linkou, Taiwan

No.256, Huaya 2nd Rd.,
Guishan Dist., Taoyuan
City 33383, Taiwan
TEL: +886-2-2832-8918
FAX: +886-3-328-6579

Hsinchu, Taiwan

7F., No.47, Guangming 6th
Rd., Zhubei City, Hsinchu
County 30268, Taiwan
TEL: +886-2-2832-8918
FAX: +886-3-553-9786

Shenzhen, China

5F.3, Guangxia Rd.,
Shang-mei-lin Area,
Fu-Tian Dist., Shenzhen,
Guangdong, 518049, China
TEL: +86-755-83112668
FAX: +86-755-83108177
E-mail: shenzhen@cn.tri.com.tw

Suzhou, China

B Unit, Building 4, 78 Xinglin St.,
Suzhou Industrial Park,
215123, China
TEL: +86-512-68250001
FAX: +86-512-68096639
E-mail: suzhou@cn.tri.com.tw

Shanghai, China

Room 6C, Building 14,
470 Guiping Rd., Xuhui Dist.,
Shanghai, 200233, China
TEL: +86-21-54270101
FAX: +86-21-64957923
E-mail: shanghai@cn.tri.com.tw

USA

832 Jury Court, Suite 4,
San Jose, CA 95112 U.S.A
TEL: +1-408-567-9898
FAX: +1-408-567-9288
E-mail: triusa@tri.com.tw

Europe

O'Brien Strasse 14
91126 Schwabach
Germany
TEL: +49-9122-631-2127
FAX: +49-9122-631-2147
E-mail: trieurope@tri.com.tw

Japan

2-9-9 Midori, Sumida-ku,
Tokyo, 130-0021 Japan
TEL: +81-3-6273-0518
FAX: +81-3-6273-0519
E-mail: trijp@tri.com.tw

Korea

No.207 Daewoo-Technopia,
768-1 Wonsi-Dong, Danwon-Gu,
Ansan City, Gyeonggi-Do, Korea
TEL: +82-31-470-8858
FAX: +82-31-470-8859
E-mail: trikr@tri.com.tw

Malaysia

C11-1, Ground Floor, Lorong
Bayan Indah 3 Bay Avenue,
11900 Bayan Lepas Penang,
Malaysia
TEL: +604-6461171
E-mail: trimy@tri.com.tw

Specifications are subject to change without notice. Content may not be used as acceptance criteria.
All trademarks are the property of their owners.

TRI 德律 TRI INNOVATION

The absence of a product or service name or logo from this list does not constitute a waiver of TRI's trademark or other intellectual property rights concerning that name or logo. All other trademarks and trade names are the property of their owners.

