

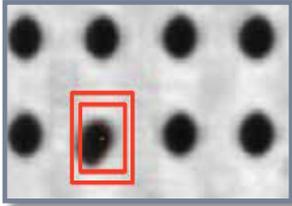
TR7600X SII SERIES



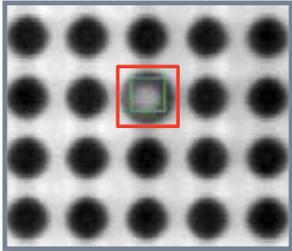
AUTOMATED
X-RAY INSPECTION

TR7600X SII FEATURES

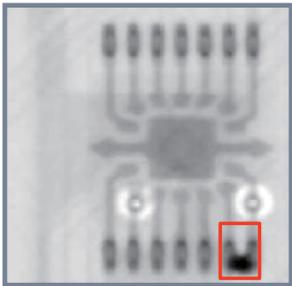
Defect Symptom Images



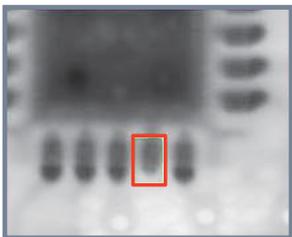
BGA Head-In-Pillow



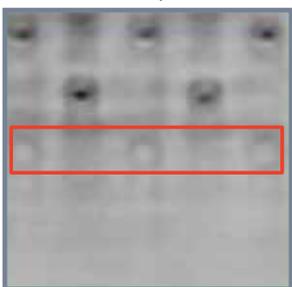
BGA Void



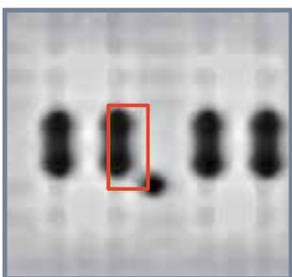
Bridging



QFN Open



Press Fit Pin Defect



Solder Ball

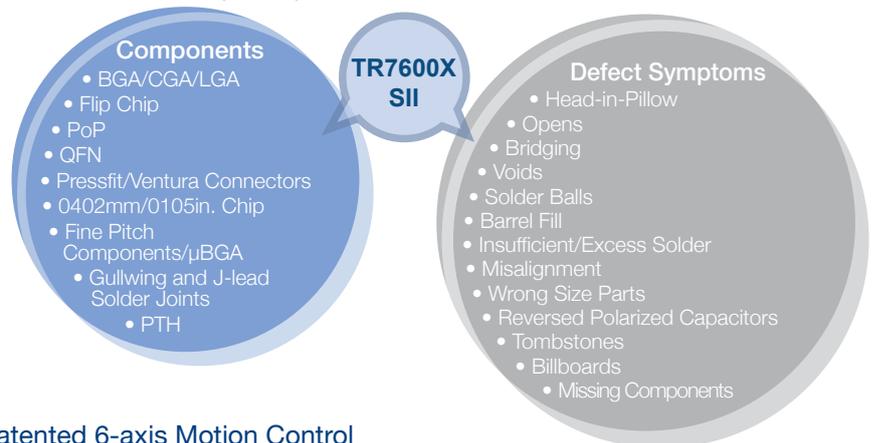
Maximum Performance Inline 3D Automated X-ray Inspection

- Ultra-Fast Inline Automated X-ray Inspection of PCBAs
- 2D + 3D Images using multiple angled cameras
- High Speed Bi-directional Dynamic imaging
- 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
- Hardware and Software Upgrade for 3D CT Capability

Intelligent Software Solution

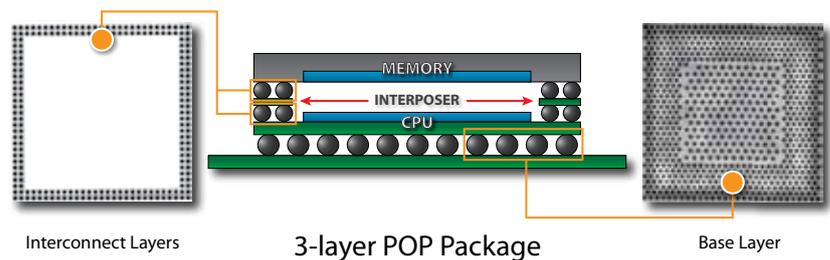
- Rapid Automated or Manual programming
- Intelligent detection of solder and assembly defects
- Automatic Image quality enhancement for overlapping components and complex defects
- Automatic board warp compensation
- Automated 3D Slice Extraction

Defect Detection Capability



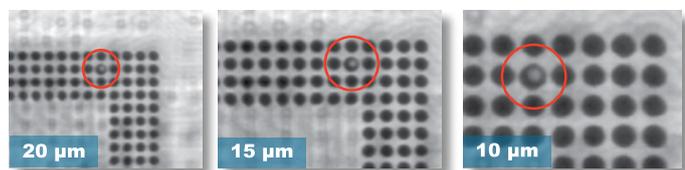
Patented 6-axis Motion Control

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, Press Fit and metal shielded components. Using BlockScan, TRI AXI can reliably inspect up to 3-layer PoP packages.



Multiple Resolutions in One Program

CT Inspection Upgrade

Enhanced 3D inspection with planar CT imaging can recreate a complete 3D model of each solder joint, enabling clear analysis of shape irregularities and voiding problems for reliable visual review of borderline solder joints.



Eliminate Board Warp Issues

The TR7600X SII 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 press-fit connectors.

Accurate Inspection Results

TRI's X-ray systems use intelligent analysis of X-ray data to reliably identify various solder and component defects on a range of components. By automatically separating necessary 3D slices of BGAs, PoPs, PTHs, connectors and angled views of other components, the TR7600X SII can reliably identify defective areas even on the most complex PCB assemblies.

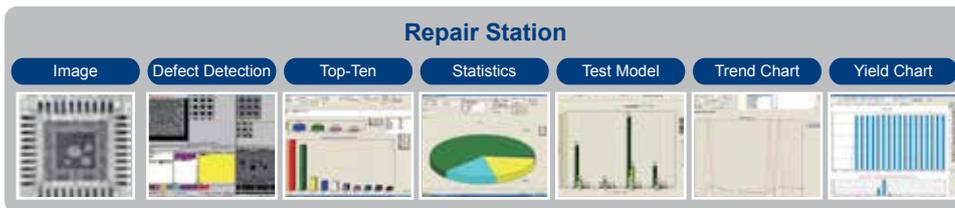
Radiation Safe Design

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.

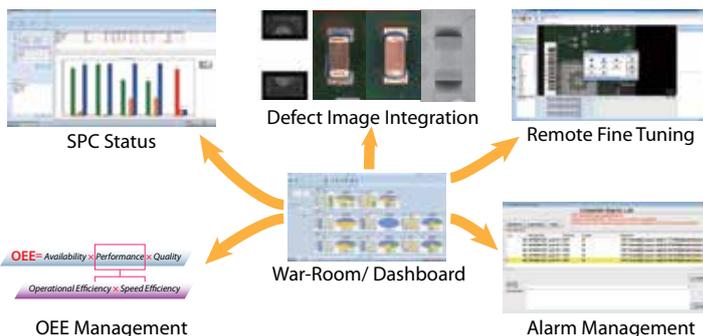
Repair Station

The TR7600X SII 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.

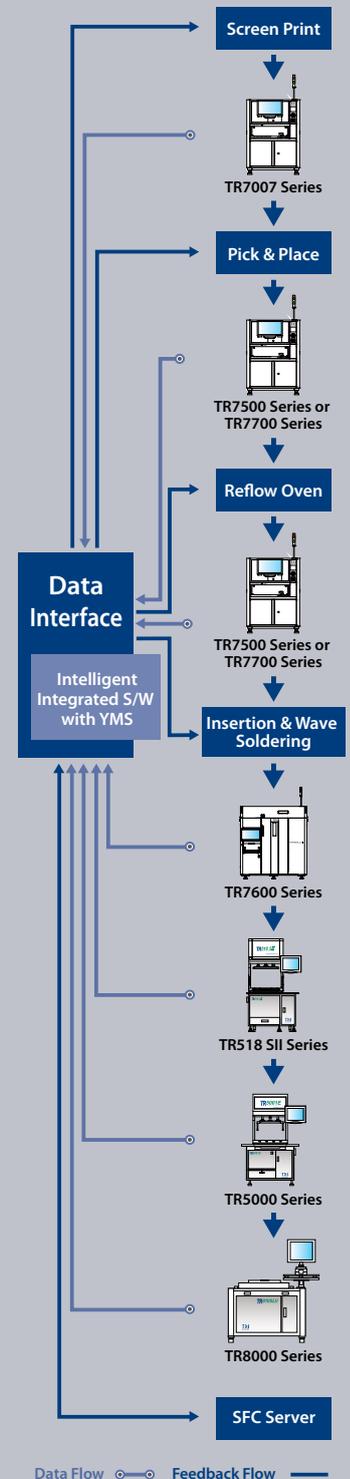


Yield Management System 4.0

YMS 4.0 provides real-time inspection status across SPI, AOI and AXI systems and monitors SPC and Alarm status, and supports remote fine-tune throughout the SMT line. The centralized inspection management provides top 5 to 10 defects and defective images, OEE review and management, issue and root cause drill down line by line, by station and by process, which improves quality and productivity analysis. YMS 4.0 supports Industry 4.0 initiative.



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

* Optional



X-Ray & Imaging System

X-ray Source	130 KV max (user adjustable)
Image Resolutions	10 μm, 15 μm, 20 μm (factory setting)
Camera	High-performance, ultra-sensitive Bi-directional line-scan cameras

Inspection Functions

Component Level Defects	Missing, Misalignment, Tombstone, Billboard, Tantalum Polarity & Rotation
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

	TR7600X SII
Min. PCB Size	50 x 50 mm (1.97 x 1.97 in.)
Max. PCB Size	900 x 460 mm (35.4 x 18.1 in.)
PCB Thickness	0.6 - 5 mm
PCB Transport Height	880 - 920 mm (34.6 - 36.2 in.)*
Max. PCB Weight	3 kg (7 lbs) [8 kg (18 lbs) optional]
PCB Carrier/Fixing	Motor Driven/Clamping
Clearance	
Top	20 μm 15 μm 10 μm
Bottom	40 mm (1.58 in.)
Edge	3 mm (0.12 in.)

Dimensions

	TR7600X SII
Dimensions (W) x (D) x (H)	1500 x 2060 x 1650 mm (59.1 x 81.1 x 65.0 in.) (not include signal tower, height : 515 mm [20.3 in.])
Weight	3250 kg (7165 lbs)
Power Requirement	200 - 240 V Single Phase, 50/60 Hz 4 KVA
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

* SMEMA Compatible

U.S., Taiwan, China and Japan Patented: System and Method for Laminography Inspection

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