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
Inline 3D Automated X-ray CT Inspection
- Ultra fast inline automated X-ray inspection of PCAs
- 2D + 3D images using multiple bidirectional angled cameras
- Automated inspection and pass/fail evaluation
- User selectable X-ray power up to 130 kW/300 µA
- 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 PCAs 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 PCAs, including fine pitch µBGAs, PressFit and metal shielded components. Using BlockScan, TRI AXI can reliably inspect up to 3-layer PoP packages.
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.

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 AXII 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.
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
- **15 μm**: 50 mm (1.97 in.)
- **10 μm**: 30 mm (1.18 in.)
- **7 μm**: 15 mm (0.59 in.)
- **Bottom**: 7 μm (0.28 in.)
- **Edge**: 70 mm (2.75 in.)
- **Clearance**: 3 mm (0.11 in.) [5 mm (0.20 in.) optional]

* SMEMA Compatible

Dimensions

- **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

**Notes**

- Specifications are subject to change without notice. Content may not be used as acceptance criteria. All trademarks are the property of their owners.
- TRI has a patent in System and Method for Laminography Inspection

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