TR7600 SIII SERIES

- Ultra-high Speed 3D CT X-Ray Inspection
- Excellent Image Quality
- True 3D Solder Joint Viewer
- High Resolution for 0402mm/01005in Chips

AUTOMATED X-RAY INSPECTION
Line Speed 3D X-ray Solution
TRI has worked with mission critical equipment makers to design the TR7600 SIII—a line speed 3D CT X-ray solution for SMT lines around the world. Combining the industry’s fastest X-ray imaging, a new robust hardware platform and a redesigned intuitive software, TRI introduces the next generation inspection platform to ensure the quality of every produced PCB.

The Winning Inspection Strategy
- Ultra high speed 3D imaging
- Selective planar CT inspection
- Automatic defect evaluation
- Intuitive programming and fine tuning
- Large PCB support

Peak 3D Inspection Efficiency
TRI’s combination of 3D slicing and Planar CT allows TR7600 SIII to deliver shortest cycle times and leading inspection coverage. The combined strategy reliably inspects multi layer PCBs, overlapping components, THDs and high-density connectors.

Enhanced Defect Detection
Advanced inspection algorithms analyze both 3D slice images and Planar CT 3D data for reliable inspection results. With access to volumetric 3D information, the TR7600 SIII can directly verify solder and void volume, as well as examine complex 3D structures found on many new PCB assemblies. TRI’s intelligent fine tuning assistant helps intuitively adjust inspection parameters for stable and dependable inspection.

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.

Eliminate Board Warp Issues
The TR7600 SIII 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 press-fit connectors.

Designed for Operator Safety
Designed with safety in mind, TRI’s AXI systems have a number of fail-safe features preventing injury or board damage. Full lead shielding 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 TR7600 SIII 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 a M2M centralized inspection monitoring and remote access fine tuning throughout the SMT line. Built-in support for SPI, AOI, AXI and ICT systems helps track Alarms and SPC data to simplify production quality monitoring. YMS 4.0 is TRI’s Industry 4.0 closed loop software to assure your production line inspection quality and efficiency.

The Yield Management System allows operators to aggregate information from individual TRI inspection systems for statistical analysis of production line defect rates, reviewing and fine-tuning inspection results, and identifying component defect trends and emerging production issues.

• 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, 20 μm (choose 3 resolutions)

**Camera** Ultra-high speed 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 ballscrew + AC servo with motion controller

**X-Y Axis Resolution** 1 μm

### PCB & Conveyor System

**Max. PCB Size** 900 x 460 mm (35.4 x 18.1 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)

**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.) or 5 mm (0.20 in.)

* SMEMA Compatible

### Dimensions

<table>
<thead>
<tr>
<th>Units (mm)</th>
<th>Dimensions</th>
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<tbody>
<tr>
<td>2200 (86.6)</td>
<td>Width</td>
</tr>
<tr>
<td>1470 (57.9)</td>
<td>Depth</td>
</tr>
<tr>
<td>1797 (70.4)</td>
<td>Height</td>
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**Weight** 3850 kg (8488 lbs)

**Power Requirement** 200 - 240 VAC 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
- CAD Convertor
- CT Imaging

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