

**OPTICAL AND IMAGING SYSTEM**

1 Top View Camera XGA 3CCD color camera, FOV image size (1536 x 2048 pixel)  
 4 Angled View Cameras XGA mono camera, FOV image size (1536 x 2048 pixel)  
 Lighting Multi-segment, multi-angle RGB LED (coaxial lighting optional)  
 Optical Resolution 15 or 10 µm  
 Imaging Method High-speed dynamic imaging

**IMAGING / INSPECTION SPEED**

15 µm 93 cm<sup>2</sup>/sec  
 12 µm 69 cm<sup>2</sup>/sec  
 10 µm 44 cm<sup>2</sup>/sec

**PRE-/POST-REFLOW INSPECTION**

Component Defects Missing, tombstone, billboard, polarity, skew, marking, and defective components  
 Solder Joint Defects Insufficient/excess solder, bridge, through-hole pins, lifted leads, and golden finger scratch/blur

**X-Y TABLE AND CONTROL**

Linear motor + linear scale with DSP-based motion controller  
 X-Y Axis Resolution 1 µm

**PCB AND CONVEYOR SYSTEM**

	TR7550 SII	TR7550L SII	TR7550LL SII	TR7550 SII DUAL LANE
PCB Size	50x50 mm – 510x460 mm (1.97x1.97 in – 20.0x18.0 in)	50x50 mm – 660x610 mm (1.97x1.97 in – 25.9x24.0 in)	50x50 mm – 850x610 mm (1.97x1.97 in – 33.4x24.0 in)	50x50 mm – 510x230 mm (1.97x1.97 in – 20.0x9.06 in) 50x50 mm – 510x295 mm (1.97x1.97 in – 20.0x11.6 in)
PCB Thickness	0.5 mm – 5 mm		0.6 mm – 5 mm	
Max. PCB Weight	3 kg (5 kg optional)	5 kg (8 kg optional)		3 kg
PCB Fixing	Stepping Motor	Pneumatic		
Clearance				
Top	40 mm (1.57 in)		40 mm (1.57 in)	
Bottom	40 mm (1.57 in)		40 mm (1.57 in)	
Edge	3.5 mm (0.14 in)		3 mm (0.12 in)	

**SIZE SPECIFICATIONS**

	TR7550 SII	TR7550L SII	TR7550LL SII	TR7550 SII DUAL LANE
Dimensions (W)x(D)x(H)	1220x1486x1622 mm (48.03x58.5x63.8 in) (without signal tower [520mm])	1400x1813x1591 mm (55.1x71.3x62.6 in) (without signal tower [520mm])	1600x1813x1591 mm (62.9x71.3x62.6 in) (without signal tower [520mm])	PCB size 510 x 230 mm: 1220 x 1486 x 1622 mm (48.0 x 58.5 x 63.8 in) PCB size 510 x 295 mm: 1220 x 1813 x 1603 mm (48.0 x 71.3 x 63.1 in) (without signal tower [520mm])
Weight	897 kg (1977 lbs)	1190 kg (2623 lbs)	1224 kg (2698 lbs)	PCB size 510 x 230 mm: 825 kg (1818 lbs) PCB size 510 x 295 mm: 1087 kg (2396 lbs)
Power Requirements	200 - 240 V Single phase, 50/60 Hz 3 kVA			
Air Requirements	0.5 MPa (73 psi) compressed air			

**OPTIONAL DEVICES**

Coaxial lighting, barcode scanner, repair station, offline editor, OCV, OCR and dual lane

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TR7550L SII



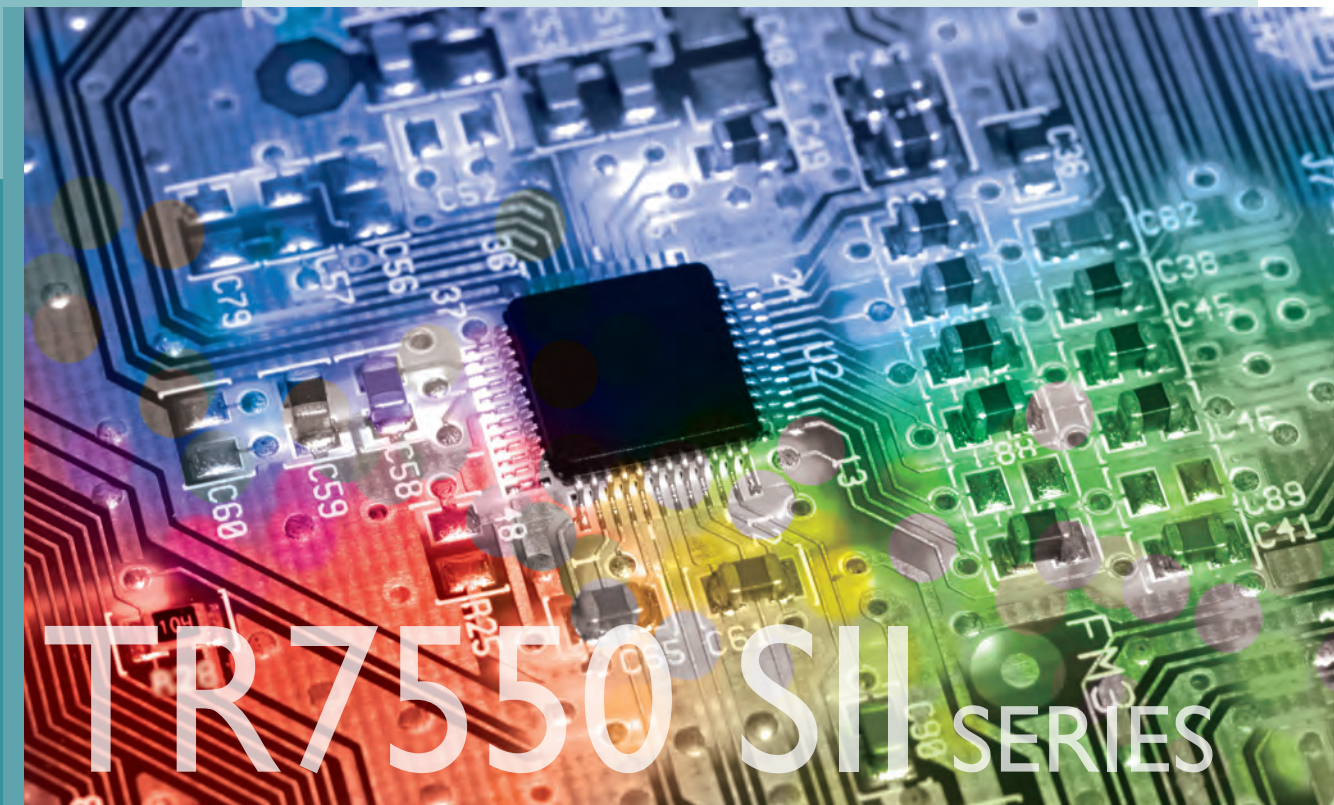
TR7550LL SII



TR7550 SII DUAL LANE  
(PCB Size: 510 x 230 mm)



TR7550 SII DUAL LANE  
(PCB Size: 510 x 295 mm)



- TOP-VIEW DIGITAL 3CCD FULL-COLOR CAMERA + 4 ANGLED CAMERAS FOR THE MOST COMPLETE AOI COVERAGE OF ANY SYSTEM
- RGB MULTI-ANGLED LIGHTING CONTROL SYSTEM PROVIDES THE MOST EFFICIENT AND FLEXIBLE LIGHTING SOURCE
- LINEAR MOTOR AND LINEAR SCALE PROVIDE A HIGH PRECISION, ULTRA STABLE X-Y TABLE MOTION SYSTEM
- FINE-PITCH/01005 COMPONENT READY
- DESIGNED FOR LEAD-FREE AND LEGACY PCB ASSEMBLIES
- ULTRA-HIGH-SPEED, INLINE, PRE-POST-REFLOW COLOR AOI



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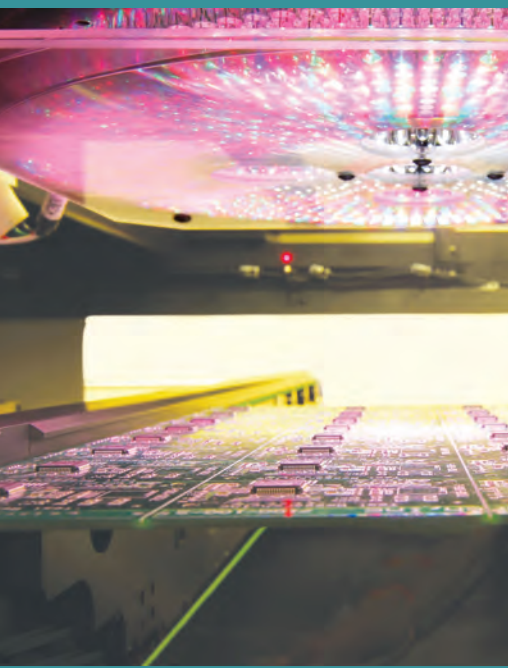
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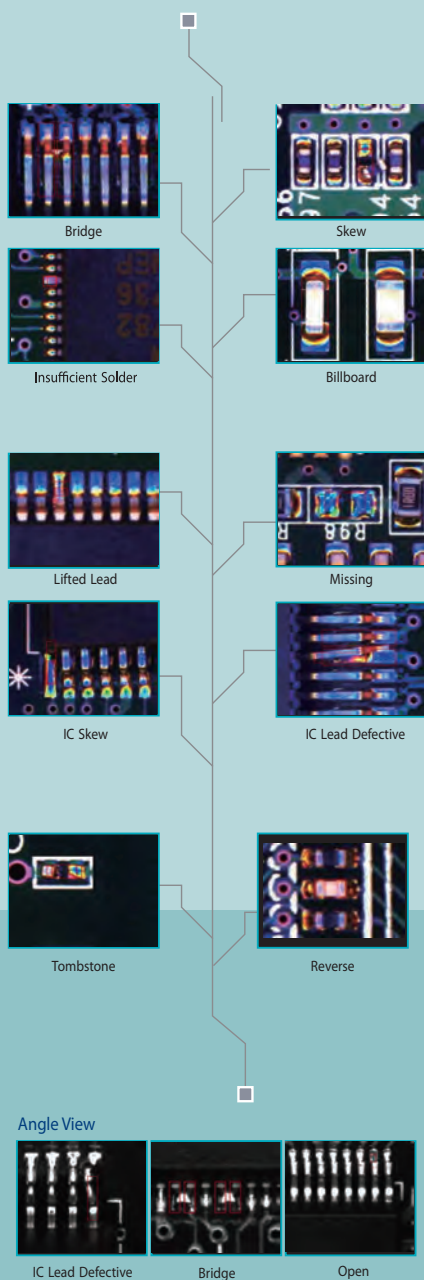
## A NEW AOI SYSTEM FOR A NEW GENERATION OF SMT

### BEST THROUGHPUT FOR INLINE PRODUCTION

- ▶ Dynamic imaging technology provides vibration-free imaging of PCBAs with high throughput.
- ▶ Inspection speed can be reduced to as short as 10 seconds for a medium-sized board (excluding locating fiducial marks and loading time).
- ▶ Safe for pre-reflow inspection.

### HIGH RESOLUTION IMAGING SYSTEM

- ▶ The new 3CCD multiple color and monochrome camera system (top and angled views) and optical resolution (15 or 10 μm) enable the TR7550 SII to capture up to 150 frames/sec. of high resolution images (1536 x 2048 pixels). By combining excellent image processing technology, this system can analyze the colors on a PCB and quickly detect missing or insufficient solder.
- ▶ Four angled cameras provide high accuracy for solder joint and lifted lead inspection.
- ▶ With an ultra high resolution of 10 μm, small components like 01005 chips can be easily inspected.

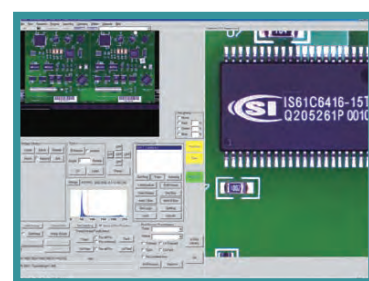


### ADVANCED COLOR LIGHTING

- ▶ The TR7550 SII's advanced color lighting system has a flexible and multi-angle adjustment section that can provide different colors and angled lighting for cameras with different angles. This results in more accurate inspection results of solder fillet on small components like 01005 and fine-pitch (12-mil pitch) leads.
- ▶ Advanced tools with a user-friendly GUI allow easy setting and programming of the RGB color lighting system.
- ▶ The new RGB lighting control and the color imaging system instantly provide operators with easier visual verification of real images.



Graphic Lighting Control Panel



Color Panel Image

### ADVANCED, HIGHLY ACCURATE X-Y TABLE SYSTEM

The TR7550 SII uses a linear motor and linear scale that contributes to a more accurate X-Y Table System. The outstanding repeatability of the linear motor, along with low noise, low maintenance, and long lifespan combine with its dynamic imaging system to produce the most stable inspection results of any machine in its class.

### MODULARIZED CONTROL SYSTEM

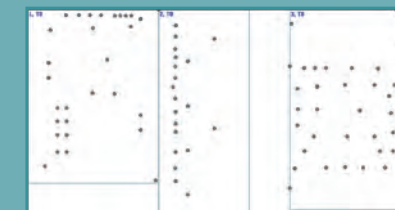
The precision X-Y table, conveyor system, image acquisition system, lighting system and the host PC are all independent modules, making diagnostics and maintenance of the TR7550 SII even easier.

### POWERFUL IMAGE MATCHING ALGORITHM

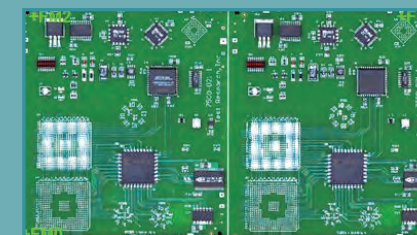
- ▶ OCV (optional): Optical Character Verification learns a character string for direct verification; building a library isn't necessary. Thus, it has a good tolerance for shift, rotation and scale of a string, which is ideal for small characters.
- ▶ OCR (optional): Optical Character Recognition uses a front font database to provide robust and accurate character recognition even in most difficult industrial environments.



OCR Interface



Special Multi-board layout



Multi-Fiducial Function

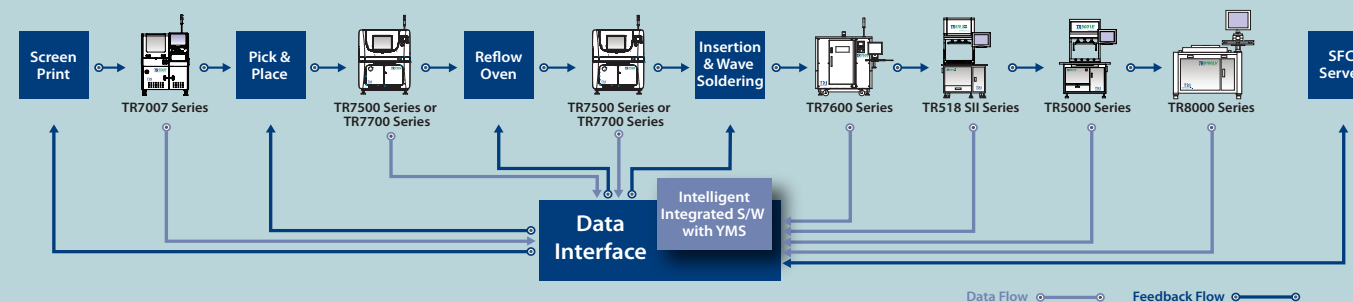


Built-in Model Library Function

### EASY PROGRAMMING ENVIRONMENT

- ▶ Programming is easily accomplished by using the data directly from a CAD file. The only mandatory data fields are the component name, package type, X-position, Y-position, and the rotation angle.
- ▶ PCBs with special layouts can also be easily edited.
- ▶ TRI provides a standard model library for most of the main component types that are presented graphically for ease of use. This greatly reduces the time spent on of creating inspection boxes and setting parameters.
- ▶ Accurate warp compensation and a multi-fiducial finding algorithm ensure correct positioning of inspection windows, leading to accurate and repeatable defect detection.

### YIELD MANAGEMENT SYSTEM \*



- Testers enable process capability control
- Real-time defect information integration and analysis
- Defect knowledge management

\*Optional