

OPTICAL AND IMAGING SYSTEM

1 Top View Camera XGA 3CCD color camera (1024 x 768)
 4 Angled View Cameras XGA mono camera (1024 x 768)
 Lighting Multi-segment, multi-angle RGB LED (coaxial lighting optional)
 Optical Resolution 10, 15, 20 & 25µm
 Imaging Method High-speed dynamic imaging

IMAGING / INSPECTION SPEED

25µm 110cm²/sec
 20µm 72cm²/sec
 15µm 40cm²/sec
 10µm 18cm²/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 1µm

PCB AND CONVEYOR SYSTEM

PCB Size
 TR7550 50 x 50mm – 510 x 460mm
 TR7550L 50 x 50mm – 660 x 610mm
 TR7550LL 50 x 50mm – 850 x 610mm
 TR7550 Dual Lane Determined by customer

PCB Thickness
 TR7550 0.5mm – 5mm
 TR7550L & TR7550LL 0.6mm – 5mm
 TR7550 Dual Lane Determined by customer

Max. PCB Weight
 TR7550 3kg or 5kg (optional)
 TR7550L & TR7550LL & TR7550 Dual Lane 5kg or 8kg (optional)

PCB Carrier Stepping motor

PCB Fixing
 TR7550 Stepping motor
 TR7550L & TR7550LL & TR7550 Dual Lane Pneumatic

Clearance
 Top 40mm
 Bottom 40mm
 Edge
 TR7550 3.5mm
 TR7550L & TR7550LL & TR7550 Dual Lane 3mm

SIZE SPECIFICATIONS

Dimensions
 TR7550 (W) 1220mm x (D) 1425mm x (H) 2107mm
 TR7550L* (W) 1400mm x (D) 1813mm x (H) 2121mm
 TR7550LL* (W) 1600mm x (D) 1813mm x (H) 2121mm
 TR7550 Dual Lane* Determined by specifications

*Signal tower and open keyboard panel included.

Weight
 TR7550 850kg
 TR7550L 1085kg
 TR7550LL 1126kg
 TR7550 Dual Lane Determined by specifications

Power Requirement 200-240V Single phase, 50/60 Hz 3KVA
 Air requirement TR7550L, TR7550LL and TR7550 Dual Lane 0.5MPa (73psi) compressed air

OPTIONAL DEVICES

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

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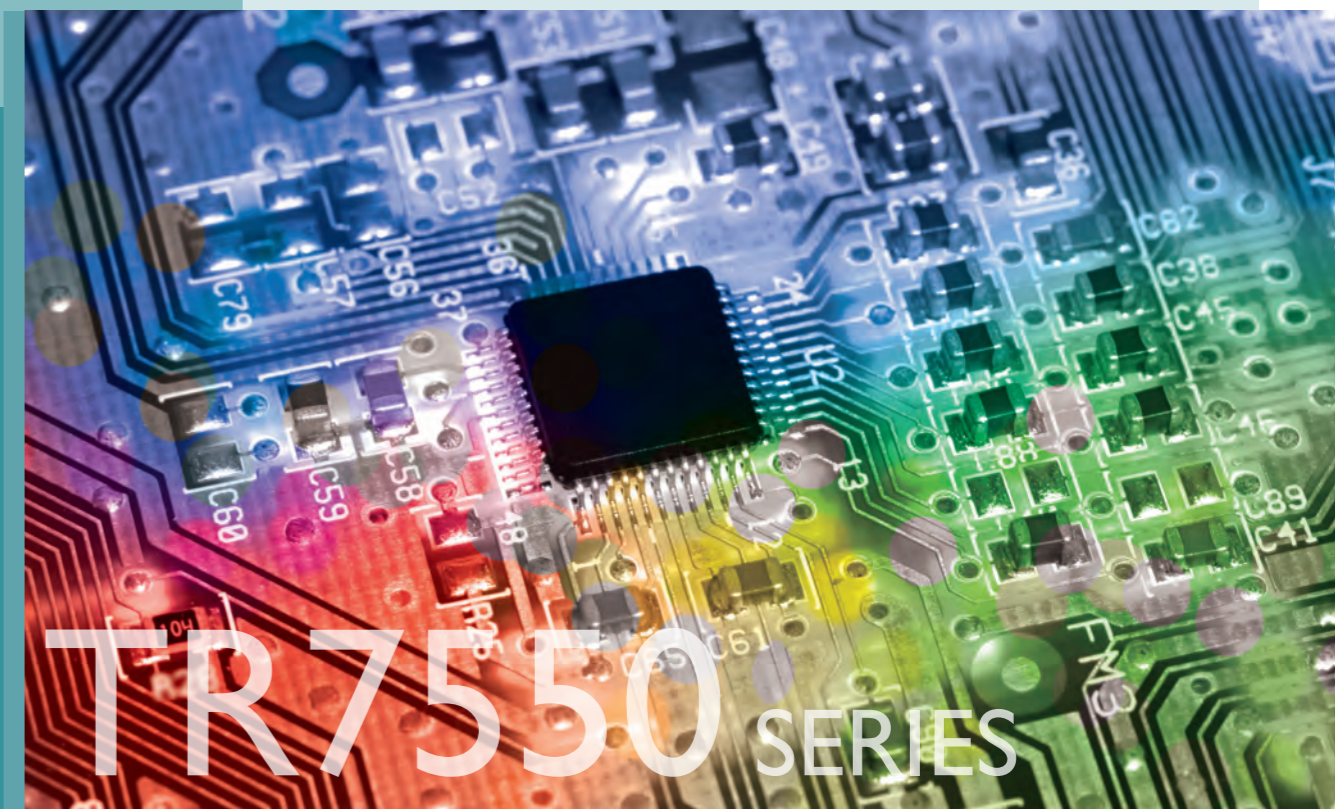
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- TOP-VIEW DIGITAL 3CCD FULL-COLOR CAMERA + 4 ANGLED CAMERAS FOR THE MOST COMPLETE AOI COVERAGE OF ANY SYSTEM
- RGB MULTI-ANGLED LIGHTING CONTROL SYSTEM PROVIDES THE MOST EFFICIENT AND FLEXIBLE LIGHTING SOURCE
- LINEAR MOTOR AND LINEAR SCALE CREATES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



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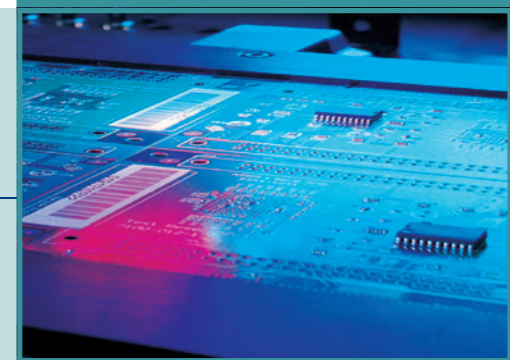
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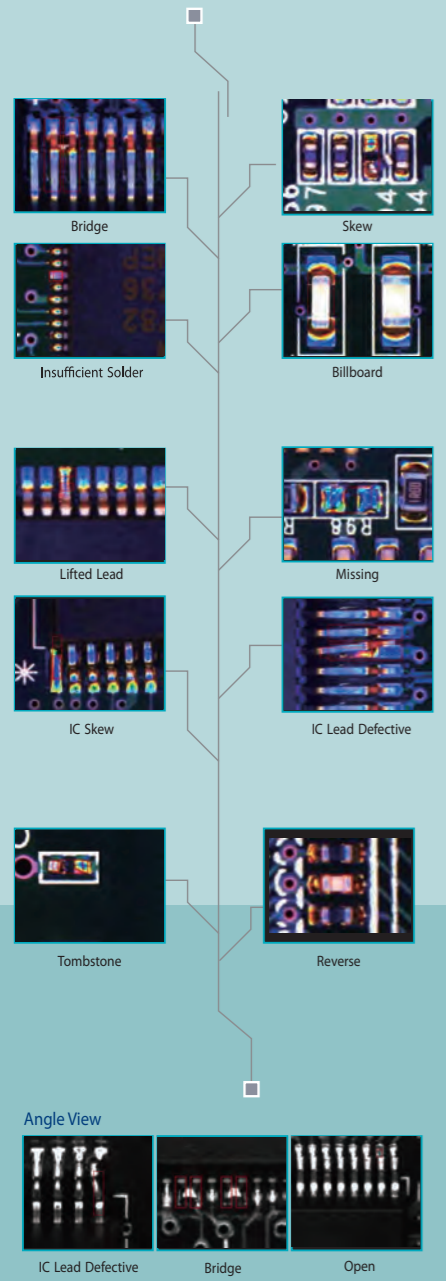
A NEW AOI SYSTEM FOR A NEW GENERATION OF SMT

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 14 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 (10, 15, 20, and 25µm) enable the TR7550 to capture up to 250 frames/ sec. of standard XGA format images (1024 x 768 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.
- ▶ Using the ultra-high resolution of 10µm, small components such as 01005 chips can be easily inspected.

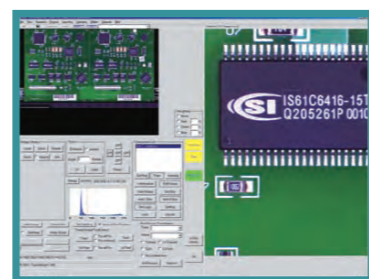


ADVANCED COLOR LIGHTING

- ▶ The TR7550'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 accurate and better inspection results for solder fillet on small components such as 01005 and fine-pitch (12-mil pitch) leads.
- ▶ Advanced tools with a friendly graphical user interface allow easy setting and programming of the new 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 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, no 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

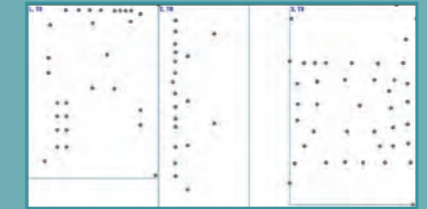
The precision X-Y table, conveyor system, image acquisition system, lighting system and the host PC are all independent modules that facilitate easy diagnostics and maintenance of the TR7550.

POWERFUL IMAGE MATCHING ALGORITHM

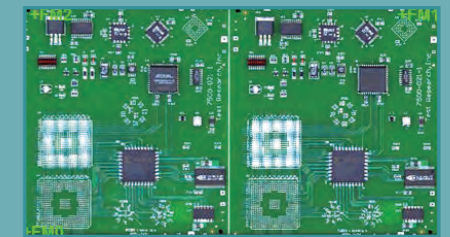
- ▶ OCV (Optional): Optical Character Verification learns a character string for direct verification; building a library isn't necessary. Thus, it has a good tolerance for shift, rotation and scale of a string, which is especially good for small characters.
- ▶ OCR (Optional): Optical Character Recognition 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

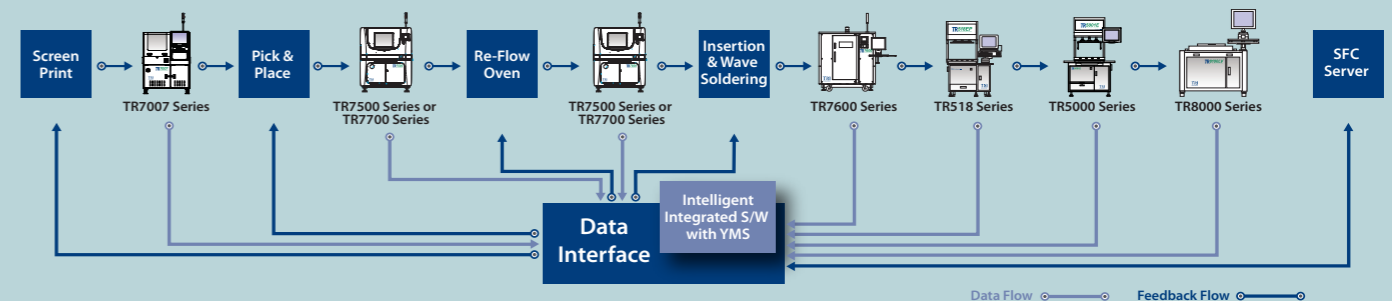


Built-in Model Library Function

EASY PROGRAMMING ENVIRONMENT

- ▶ Programming is easily done 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