

# TR7710 SERIES



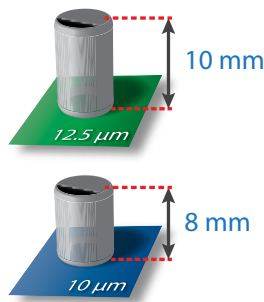
- Economical Customizable Inline AOI
- High Speed Stop-and-Go Inspection
- NPI-Optimized Easy Programming Wizard
- Clear Imaging with Large DOF

**AUTOMATED  
OPTICAL INSPECTION**

# TR7710 FEATURES

## Economical Customizable AOI Solution

TR7710 combines a precise high resolution camera system and TRI's exclusive multi-phase lighting to capture detailed PCB panel images. New optical solution offers increased DOF range for tall components with optional high clearance. TRI Series III AOI-compatible inspection software combines excellent defect detection and easy smart CAD-based programming into a cost effective, customizable AOI solution designed to fit any budget.

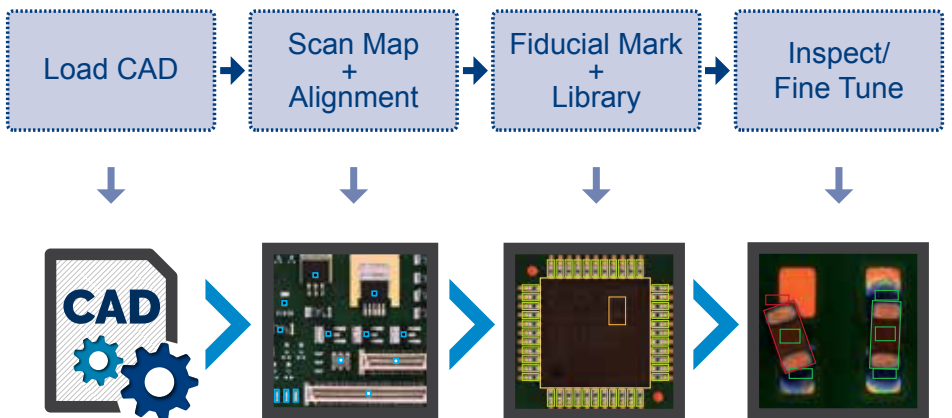


Wide DOF Range Ensures Clear Marking Inspection on Tall Components

## Intelligent Easy Programming Interface

New intelligent programming process significantly reduces programming time using intelligent component library and integrated board warp compensation.

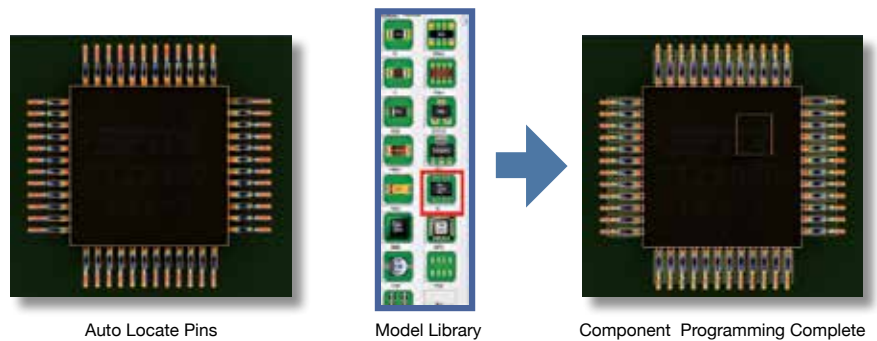
### Programming Flowchart



TRI AOI Programming Flow in a Few Simple Steps

## Smart Library + Model Library

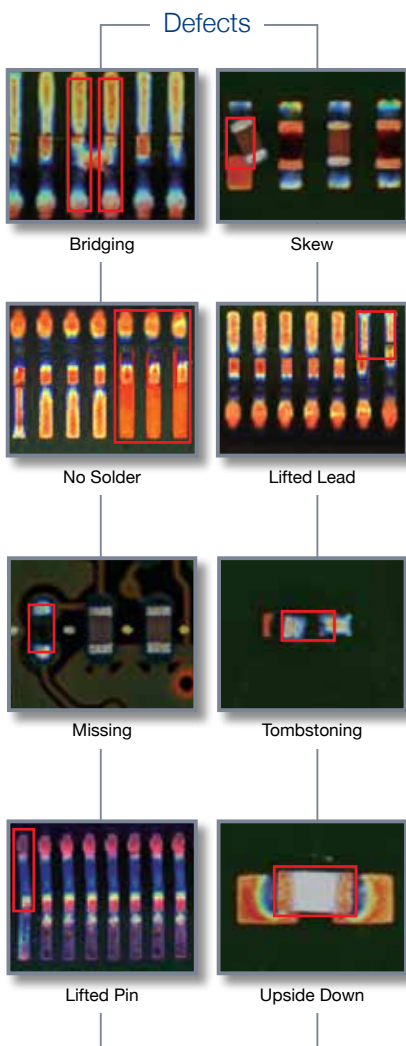
Smart Library speeds up programming by automatically allocating inspection windows for IC leads.



Auto Locate Pins

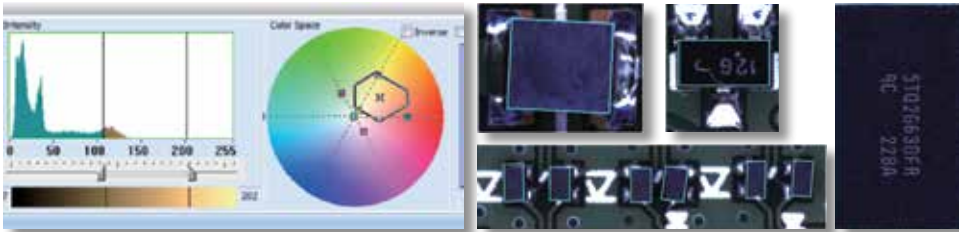
Model Library

Component Programming Complete



### Adaptive Color Space Algorithms

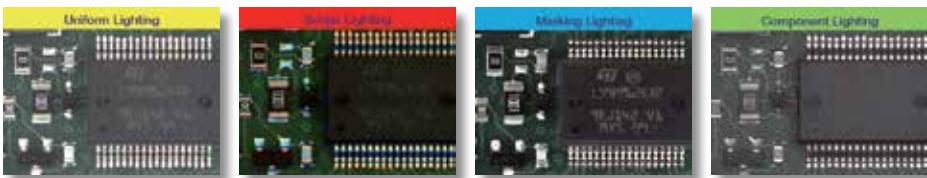
TRI's new adaptive algorithms use color space processing to increase inspection accuracy, reduce false calls and improve inspection results while reducing time necessary for inspection fine tuning and the number of alternative images required.



Color Differentiation Analysis for Black Resin Parts

### Accurate Inspection with Multi-phase Lighting

Four individual lighting phases improve inspection of individual defect types using specialized lighting conditions. High speed camera allows inspection at constant speed even with multiple lighting phases.

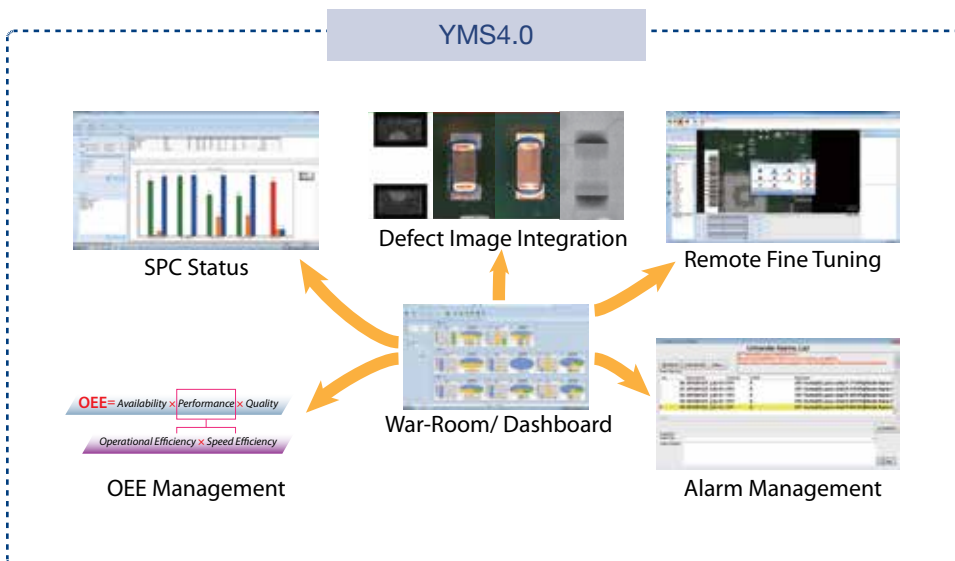


### Intelligent Auto Conveyor System (IACS)

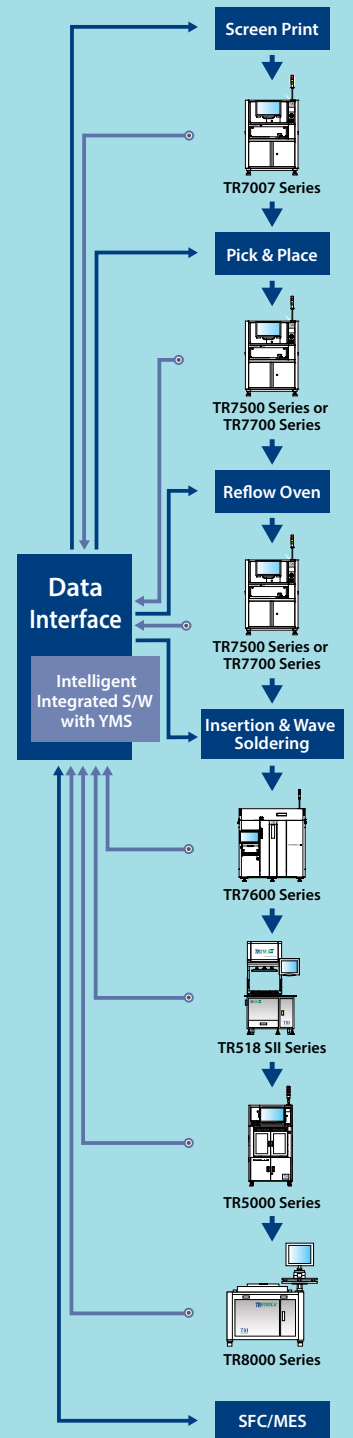
IACS automatically optimizes board stopping position in the conveyor, minimizing product changeover time and eliminating manual conveyor adjustments.

### Industry 4.0 Production Line Integration

YMS 4.0 lets TR7710 interface and share inspection data with shop floor system and other inspection machines. Analyze and track defects on the fly from a central console.



### Yield Management System



Data Flow Feedback Flow

- 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

## Optical & Imaging System

Top View Camera	6.5 Mpix high speed color camera
Lighting	Multi-phase RGB+W LED
Optical Resolution	10 or 12.5 $\mu\text{m}$ (factory setting)
Imaging Method	Stop-and-Go

## Imaging/Inspection Speed

12.5 $\mu\text{m}$ ( $\text{cm}^2/\text{sec}$ )	43
10 $\mu\text{m}$ ( $\text{cm}^2/\text{sec}$ )	27

## Pre-/Post-Reflow Inspection Functions

Component	Missing, Tombstoning, Billboarding, Polarity, Rotation, Shift, Wrong Marking (OCV), Defective, Upside Down, Extra Component, Foreign Material
Solder Joint	Excess Solder, Insufficient Solder, Bridging, Through-hole Pins, Lifted Lead, Golden Finger Scratch/Contamination

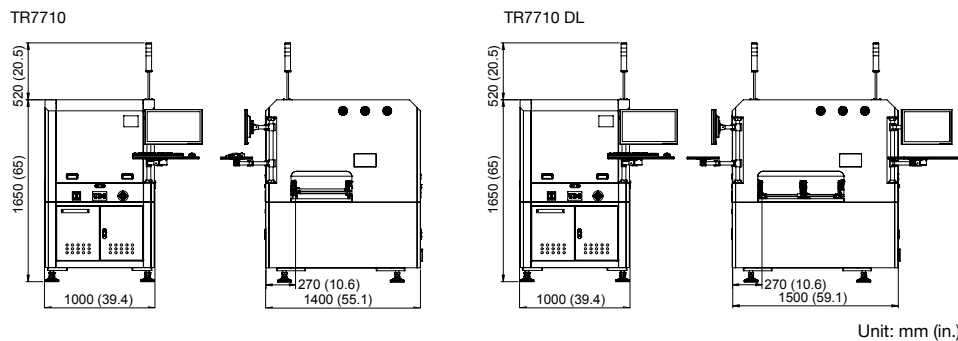
## X-Y Table & Control

Ballscrew + AC servo with motion controller	
X-Y Axis Resolution	1 $\mu\text{m}$

## PCB & Conveyor System

	TR7710		TR7710 DL	
	12.5 $\mu\text{m}$	10 $\mu\text{m}$	12.5 $\mu\text{m}$	10 $\mu\text{m}$
Optical Resolution	12.5 $\mu\text{m}$	10 $\mu\text{m}$	12.5 $\mu\text{m}$	10 $\mu\text{m}$
Min. PCB Size	50 x 50 mm (1.97 x 1.97 in.)			
Max. PCB Size	400 x 400 mm (15.7 x 15.7 in.)	330 x 250 mm (13.0 x 9.8 in.)	n/a	
Speed mode				
Normal mode	510 x 460 mm (20.0 x 18.1 in.)		510 x 310 mm x 2 lanes (20.1 x 12.2 in. x 2 lanes) 510 x 590 mm x 1 lane (20.1 x 23.2 in. x 1 lane)	
Max. PCB Thickness	0.6 - 5 mm			
PCB Transport Height	880 - 920 mm (34.6 - 36.2 in.)			
Max. PCB Weight	3 kg (6.61 lbs)			
PCB Carrier/Fixing	Step motor driven conveyor & pneumatic clamping			
Clearance				
Top	25 mm (0.98 in.) [48 (1.89 in.) mm optional]			
Bottom	40 mm (1.58 in.) [100 mm (3.94 in.) optional]			
Edge	3 mm (0.12 in.) [5 mm (0.04 in.) optional]			

## Dimensions



	TR7710	TR7710 DL
Weight	600 kg (1323 lbs)	650 kg (1433 lbs)
Power Requirement	200 - 240 VAC, 15 A, single phase, 50/60 Hz 3 kVA	
Air Requirement	72 psi - 87 psi (5 - 6 bar)	

## Options

Barcode Scanner, Repair Station, Offline Editor, OCR, Yield Management System 4.0 (YMS 4.0), YMS Lite, Support Pin, Dual Lane

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