TRI
innovation

YOUR TEST AND
**INSPECTION
PARTNER**

Test Research, Inc.

Test Research, Inc. is the world's leading supplier of Test and Inspection Solutions for the PCBA Manufacturing Industry. Test Research, Inc. offers the most robust product portfolio in the industry for automatic test and inspection solutions. From Solder Paste Inspection (SPI), Automated Optical Inspection (AOI), Semiconductor Optical Inspection (SEMI AOI) and Automated X-Ray Inspection (AXI) systems to Manufacturing Defect Analyzers (MDA), Functional Tester (FCT), and In-Circuit Test (ICT) equipment, TRI provides the most cost-effective solutions to meet a wide range of manufacturing test and inspection requirements. TRI solutions are designed to interoperate with other manufacturing equipment

YOUR TEST AND
INSPECTION
PARTNER

CORE VALUES

Teamwork
Rapid Response
Integrity
Innovation
Service

MISSION

Develop advanced technologies in automated testing and inspection.

Improve and uplift the product and service quality.

Enhance the quality of people's lives through high-tech solutions.

VISION

Become the leading brand in the Automated Testing Equipment market.

to minimize downtime, optimize production quality and reduce operator workload.

TRI has gained recognition and acceptance by major international brands and other world-class companies. Presently, TRI has more than 950 employees and has established offices in the USA, Germany, Mexico, Japan, Korea, Malaysia, Vietnam, Thailand and Mainland China. We also have distributors in over 30 countries. By introducing excellent inspection and testing equipment to the world, TRI is offering customers not only outstanding products but also comprehensive services. We commit ourselves to fulfill our customers' goals and pride ourselves in customer satisfaction. Our personnel embrace a common prospect and share the reality of excellent performance.

www.tri.com.tw

MILESTONES AND **ACHIEVEMENTS**

USA
Mexico
Germany
Vietnam
Thailand
Malaysia
China
Korea
Japan
Taiwan
TRI HQ

○ **HQ & SUBSIDIARIES**

○ **DISTRIBUTORS / REP.**

Europe	Austria / France / Germany / Hungary / Ireland / Israel / Italy / Poland / Portugal / Romania / Russia / Slovakia / Spain / Switzerland / Turkey / UK
America	Canada / USA / Brazil / Mexico
Africa	Egypt / South Africa / Tunisia
Asia	India / Indonesia / Japan / Korea / Malaysia / Philippines / Singapore / Thailand / Vietnam

2004
Launched SPI Product
Line: TR7006

2001
Established Branch
in Suzhou, China

1999
Established Branch
in Shenzhen, China

1990
Launched MDA
Product Line: TR518

1989
Founding of
Test Research, Inc.

2002
• Established Branch in San Jose, CA, USA
• Listed on the Taiwan Stocks Exchange
• Launched AOI Product Line: TR7100

2000
Launched ICT Product
Line: TR8001

CERTIFICATIONS AND **AWARDS**

2024
- Established Branch in Guadalajara, Mexico
- Established 2nd Stage of Manufacturing Plant in Linkou, Taiwan

2023
Established Branch in Bangkok, Thailand

2022
TRI Certified: ISO 14001/27001/45001

2020
Established Branch in Siheung, Korea

2021
Established Branch in Bắc Ninh, Vietnam

2008
- Established Branch in Tokyo, Japan
- Established Manufacturing Plant in Linkou, Taiwan

2011
Named "Asia's 200 Best under a Billion" by Forbes

2007
- Launched AXI Product Line: TR7600
- Established Branch in Schwabach, Germany

TÜVRheinland
CERTIFIED

EMasia
Innovation Awards

Test & Measurement World
BEST IN TEST

TÜV NORD
TÜV NORD CERT GmbH
ISO 27001 / 14001 / 45001

WINNER
GLOBAL Technology Awards
GLOBAL SMT & PACKAGING

NPI
NEW PRODUCT INTRODUCTION AWARD
WINNER
PRINTED CIRCUIT DESIGN & FAB   CIRCUITS ASSEMBLY

TAIWAN EXCELLENCE

electronics maker
Best Awards

SMTA CHINA

SMART TEST AND INSPECTION SOLUTIONS FOR
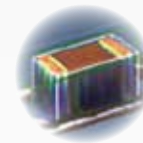## THE CONNECTED FACTORY
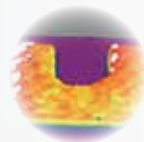
Solder Paste Inspection (SPI)
Ultimate Resolution Shadow-Free 3D SPI

- Closed Loop Ready
- World-class Gauge R&R
- Industry Leading Speed

`SMT`
`SEMI`

Pre-Reflow Automated Optical Inspection (AOI)
Ultra-High Resolution and Precision 3D AOI

- AI-Powered Inspection
- Multiple 3D-Technologies
- Real-Time SPC Trends
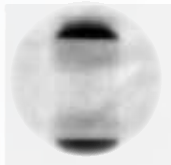
`SMT`
`SEMI`

Solder Printer

Pick & Place

Reflow Oven

Feed Back　　*Feed Forward*　　*Feed Backward*

Electrical Test (ICT + MDA)

In-Circuit Tester (ICT)
Next Generation Parallel Inline in-Circuit Tester

- World-class Testing Accuracy
- Intuitive UI Flowchart-based Programming
- Automated Diagnostics and Calibration
- In-System LED Testing, up to 1080 LED Channels

Manufacturing Defects Analyzer (MDA)
High Accuracy and Reliability Modular MDA Solutions

- Excellent Performance with up to 2560 Testing Points
- Ease of Integration with Robotic Arms
- Easy Operation with USB interface connection

Automated X-Ray Inspection (AXI)
In-depth High-Speed 3D AXI Solutions

- Enhanced CT Planar Imaging
- Smart Board Warpage Compensation
- Ease of MES Integration

SMT
SEMI
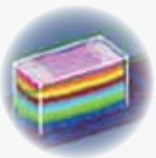
Post-Reflow Automated Optical Inspection (AOI)
Zero Escapes and Zero False Calls 3D Inspection Solutions

- Smart Inspection Library
- Foreign Material Inspection
- Conformal Coating Inspection

SMT
SEMI

Insertion & Wave Soldering

Skip Board Data

Semiconductor & Packaging Industry

The miniaturization of electronic components demands higher resolution and drives the production to increase the need for precise inspection solutions. TRI inspection platforms have robust metrology capabilities that enable high-reliability inspection, lowering the false call rates. TRI's AI-powered solutions can inspect Die and Wire Bonding, wafer surface and bumps, epoxy, and foreign material detection.

Automotive Industry

Intelligent Inspection solutions ranging from Coplanarity to 3D CT X-Ray Inspection are essential for the Automotive Industry. THT components are popular in the Automotive Industry; detect PIN shifts and height measurements with TRI' Inspection Solutions. TRI ICT solutions can test automotive LEDs and modern vehicles ECUs (Electronic Control Units) through CAN-LIN bus tests.

INDUSTRY LEADING TEST AND **INSPECTION AUTOMATION**

Consumer Electronics

TRI's Solutions provide a competitive edge to customers to meet the demands of the Consumer Electronics industry. Accurate inspection algorithms help reduce the cycle time, rework and cost of the production line. TRI's Smart Inspection Library promotes fast deployment and enhances the production quality and throughput.

Medical Industry

As a high fidelity industry, the Medical EMS, require high reliability and flexible algorithms for alignment, measurement, inspection and recognition. TRI Inspection Solutions deliver traceable world-class Gage R&R, high performance, accurate and reliable Inspection results.

LED Industry

Precisely measure the LED strips' coplanarity with TRI's optical inspection technologies. TRI's ICT LED Analyzer can easily test up to 1080 channels per test and measure simultaneously for color, luminance, saturation, hue, color temperature, and intensity.

Telecommunications Industry

With new technical innovations, such as 5G and AIoT, new requirements arise; integrated boards with multilayer and double-sided boards will become more common. TRI's Optical Inspection and Board Test solutions provide the EMS industry with accurate and full-range capabilities.

SMART FACTORY
SOLUTIONS

TRI'S SMART TEST AND INSPECTION LIBRARY PROMOTE EASE OF PROGRAMMING AND MAINTENANCE TO ACHIEVE PRECISE AND ACCURATE INSPECTION RESULTS.

SMART PROGRAMMING

Achieve seamless programming and improve your production efficiency with TRI's Smart Library. The Smart Test and Inspection Library promote ease of programming and maintenance to achieve precise and accurate inspection results.
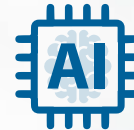
Scan Board ➡ Setup Inspection ➡ Inspect Board

READY TO INSPECT IN MINUTES

SMART INSPECTION FEATURES

- AI Driven Inspection
- Deep Learning OCR
- Remote Production Monitoring
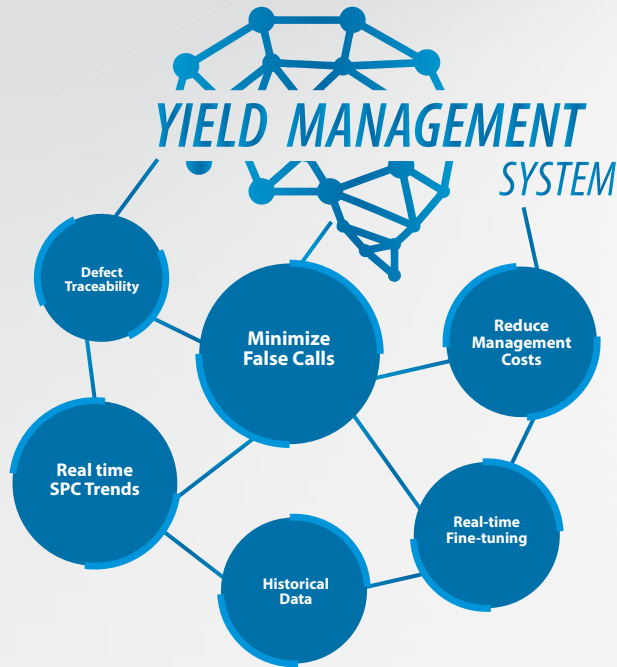- Auto Calibration
- AI Smart Programming
- Metrology Applications
- Smart Board Warpage

YIELD MANAGEMENT SYSTEM (YMS)

YIELD MANAGEMENT SYSTEM

- Defect Traceability
- Minimize False Calls
- Reduce Management Costs
- Real time SPC Trends
- Historical Data
- Real-time Fine-tuning

Strengthen your decision process and improve the efficiency of the operators while reducing the overall management cost with TRI's Yield Management System (YMS). The Smart Factory Software simplifies the production line monitoring as it integrates the test and inspection data and promotes productivity, data traceability, defect root cause and data integration.
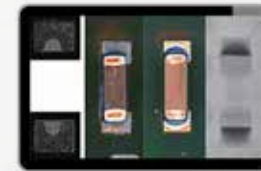
| Centralized Production Management	Total Yield Management Solution	Line Performance Monitoring	Automated Defect Tracking

PRODUCTION ANALYSIS

CENTRALIZED INSPECTION CENTER

REAL TIME SPC TREND

SMART MONITORING

TRI's Smart Factory Solutions allow operators to aggregate information from individual systems for statistical analysis of production line defect rates, reviewing and fine-tuning inspection results, and identifying component defect trends and emerging production issues.

- Real Time Inspection Status
- Defects Analysis Reports
- Remote Alarm & Monitoring
- Real Time SPC Trends
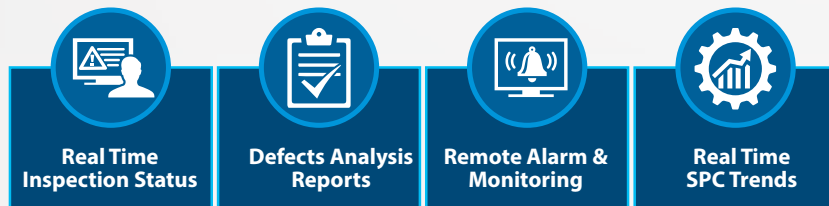
BIG DATA READY

Boost your Factory Intelligence and Optimize your production line by easily integrating Big Data Analytics from your Test and Inspection Solutions. TRI's Smart Factory Test and Inspection Solutions promote full traceability and data exchange, by generating Big Data for your MES Applications, essential for optimizing your production your yield rate, enabling the Connected Factory.

- MES Integration
- M2M Availability
- Smart Closed Loop
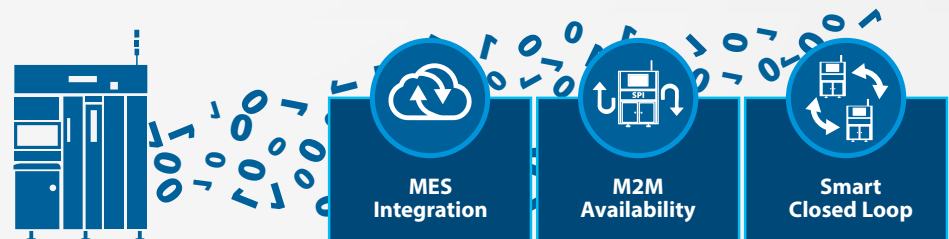
Industry leading provider of
test and inspection solutions

TRI
innovation

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