



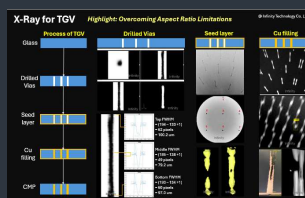
Yamantaka Technology
Co., Ltd. Taiwan

X-Ray Non-Destructive Inspection Solutions for Next-Generation Semiconductor Packaging

Advanced AI-driven Inspection for TGV, TDV, TSV, and Wafer Technologies

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- ◆ Through glass vias (TGVs) are vertical electrical connections formed in glass substrates.
- ◆ TGVs are utilized in advanced packaging to enable 2.5D/3D integration.
- ◆ X-ray inspection is essential for examining TGV defects.

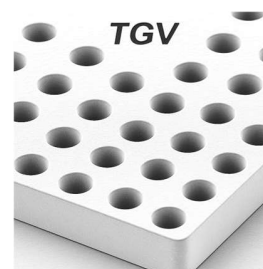


Why Choose Infinity Technology's 3D-AXI for TGV?

- **Through Glass Via (TGV) Inspection**
Advanced 3D X-ray technology reveals via geometry, taper, microbubbles, voids, and incomplete connections in glass interposers.
- **Patented Eccentric Scanning Design**
Enables non-destructive imaging with optimized speed and minimal sample damage.
- **Sub-Micron 3D Imaging**
Resolution $< 3 \mu\text{m}$, suitable for critical defect detection in **semiconductors, AI hardware, PCBs, and automotive electronics.**
- **AI-Enhanced Defect Detection**
Built-in AI algorithms automatically detect defects, reducing operator workload and human error.
- **Flexible Scan Modes**
Easy setup for **full-board scan, local area scan, and spot scan.**

Key Features

- ✓ **3D Reconstructed Imaging** with $< 3 \mu\text{m}$ resolution.
- ✓ **Customizable AI Inspection** – 100% adaptable to customer process flow.
- ✓ **Real-Time Process Monitoring** – detects defects, voids, and drilling precision deviations instantly.
- ✓ **Automatic & Manual Loading** – suitable for high-volume inline inspection and offline analysis.
- ✓ **User-Friendly Interface** – intuitive control panel, fast setup, minimal training required.



X-Ray Non-Destructive Inspection System

Specification

	2D X-RAY Inspection	3D X-RAY Inspection
Model Number	CMCT R25A01	CMCT R25A01-1
Mode	In-line, full inspection	Off-line, 3D via-hole reconstruction
Optical Technology	X-RAY	
Panel / Wafer Size	200mm x 200mm (Min); 700mm x 600mm (Max) 12" (Max)	
Thickness	0 – 4.8 mm	
Inspection Features	Shape analysis of vias, taper, and hole geometry.	Internal via inspection for taper, hole geometry, microbubbles, voids, and incomplete connections.
Accuracy	$X < 3\ \mu\text{m}$, $Y < 3\ \mu\text{m}$ (@40–100× with variable FOV)	$X < 3\ \mu\text{m}$, $Y < 3\ \mu\text{m}$, $Z < 3\ \mu\text{m}$ (@40–100× with variable FOV)
Inspection Capability	Fast inspection, shape analysis, unconnected features	Provides detailed internal inspection of via holes to identify microbubbles, voids, and incomplete connections.
Dimensions/Weight	L3.5m x W2.1m x H2.2m / 5600 KG	
Power	200-240 VAC · 50/60 Hz · 6.8kW	

🔍 Notice on FOV (Field of View)

- Definition: FOV represents the observable area at a given magnification. In X-ray inspection, it directly affects resolution and inspection coverage.
- Variable FOV (40–100×):
 - At higher magnification (100×) → smaller FOV, higher resolution, suitable for fine defect detection (e.g., microbubbles, voids).
 - At lower magnification (40×) → larger FOV, lower resolution, suitable for macro-level inspection (e.g., via distribution, overall geometry).
- Implication:
 - A balance must be made between inspection speed (large FOV) and accuracy (small FOV).
 - For 3D inspection, Z-axis precision ($< 3\ \mu\text{m}$) is highly dependent on the selected FOV setting.

For TGV / TDV / TSV / Wafer

SERVICES AVAILABLE

Yamantaka Technology Co., Ltd. Taiwan

Yamantaka Technology specializes in cutting-edge X-Ray inspection systems designed for semiconductor, PCB, and advanced packaging industries. With patented 3D reconstruction algorithms and eccentric scanning designs, our solutions provide sub-micron level accuracy, ensuring quality, reliability, and yield improvement in high-end manufacturing processes.

Technical Support
Installation and Setup
Maintenance
Application Support
Hardware Support
Guaranteed Warranty

Product Highlights

- ✓ Through Glass Via (TGV) inspection with advanced 3D X-ray technology.
- ✓ Patented eccentric scanning design for optimized non-destructive imaging.

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