

AXI-300 High-Speed In-Line

3D X-Ray Inspection System

At a Glance

AXI-300 is an inline 3D X-ray inspection platform for electronic assembly and semiconductor packaging, including BGA, QFN/THT, stacked-chip, IGBT, SiC, and advanced-package workflows.

The system uses 3D tomographic fusion and tomosynthesis methods to separate internal layers, inspect welding surfaces, and support void-size and void-rate analysis.

The integrated configuration combines high-speed acquisition, lead-proof transfer rails, software customization, rework support, and inline factory connectivity under the AXI-300 model.



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AXI-300 System Overview

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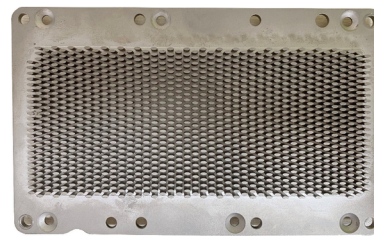
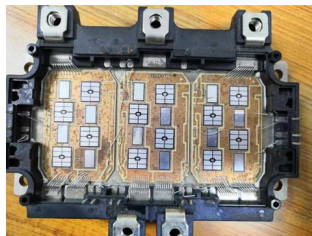
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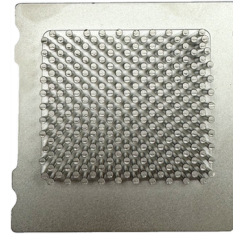
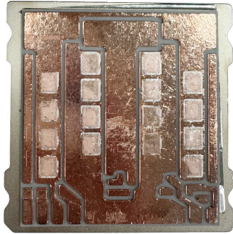
Typical Applications

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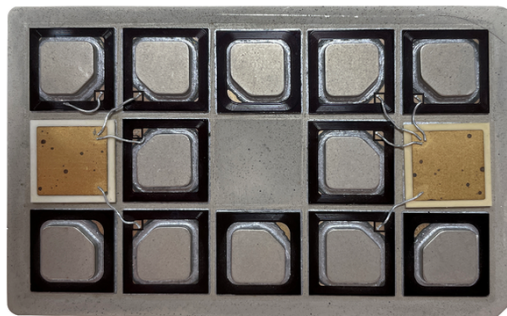
Application Range Schematic

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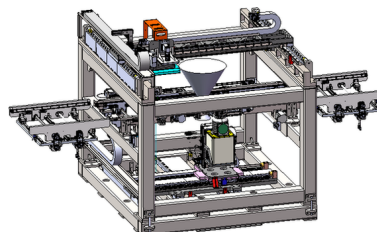
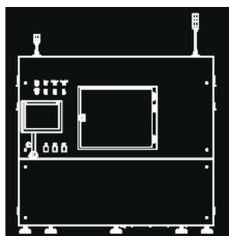
Technology Highlights

- **Maximum Inspection Size**
300(X) mm x 300(Y) mm
- **Minimum Detectable Defect Size**
 $\leq 5 \mu\text{m}$
- **X-Ray Leakage Dose**
 $< 0.5 \mu\text{Sv/h}$
- **Factory Connectivity**
Supports connection with MES, ERP, WMS, and other inline management systems

Inline Motion and Transfer Architecture

The equipment configuration image shows the inline loading and unloading relationship used for lead-room connection.

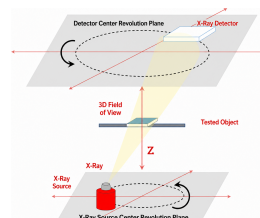
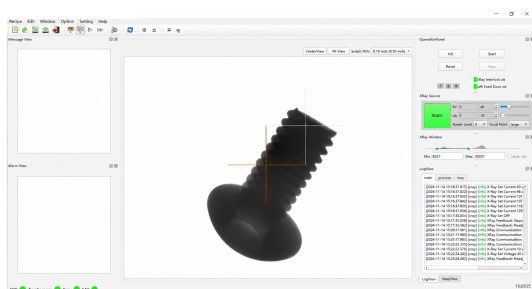
The fly-shooting layout shows the synchronous X-ray source and detector motion used to improve acquisition efficiency.



Working Principle Diagram

The principle diagram places the tested object between the X-ray source and detector, with the detector and source moving around their revolution planes.

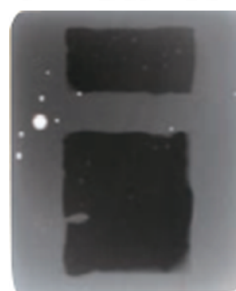
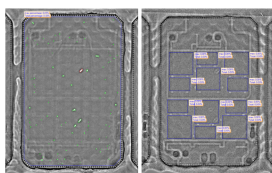
This visual anchors the later inspection examples by explaining how the system acquires layered X-ray information.



2D Projection and 3D Layer Separation

The 2D projection provides the baseline for comparing conventional projection output with separated 3D layer views.

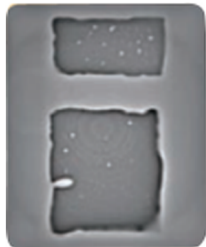
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Chip and DBC Layer Void Views

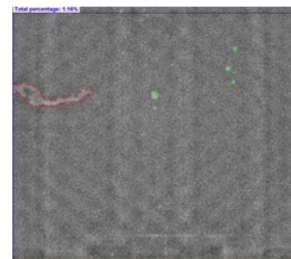
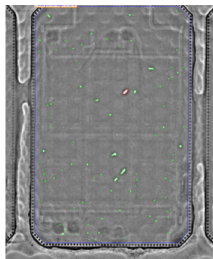
The chip-layer 3D view corresponds to the inspection requirement for locating voids in the chip layer.

The DBC-layer 3D view is paired with the chip-layer example to show depth-specific defect separation.



IGBT Layer Result Samples

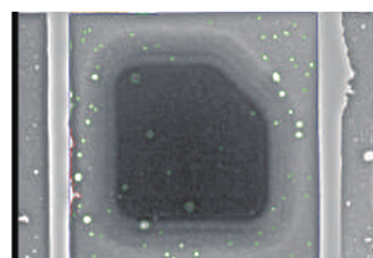
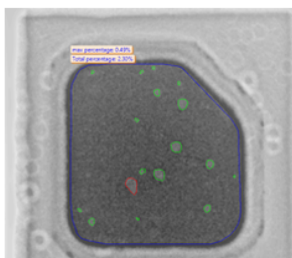
The IGBT result and layered welding samples show how inspection output translates layer information into visible defect regions.



SiC and Molybdenum Result Samples

The high-resolution and molybdenum result samples extend the inspection narrative from SiC and advanced modules to dense difficult-metal structures.

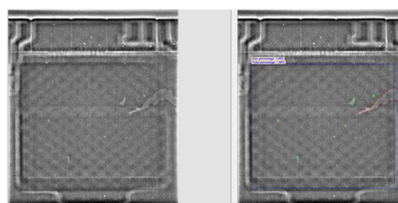
The nearby text keeps the material context readable while the images remain clean result samples.



Special-Material Baseline Views

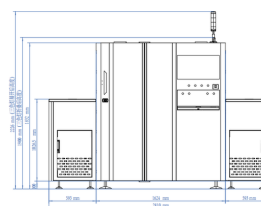
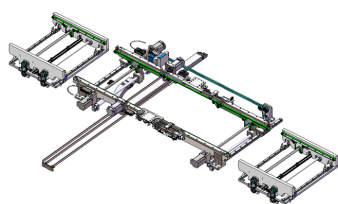
Placing the two references side by side keeps the baseline readable and avoids leaving a small unexplained thumbnail.

The integrated configuration combines high-speed acquisition, lead-proof transfer rails, software customization, rework support, and inline factory connectivity under the AXI-300 model.



Installation Envelope Reference

The rail layout view supports the inline automation story: loading, inspection, and output handling are organized around the equipment body.



Technical Parameters and Specifications

X-Ray Source	
Type	Enclosed
Maximum Voltage	110 kV / 130 kV / 150 kV
Maximum Current	300 μ A / 300 μ A / 500 μ A
Maximum Power	30 W / 39 W / 75 W
Detector	
Type	High-resolution FPD
AD Conversion Bits	16 bit
Effective Detection Area	304 mm x 304 mm
Pixel Matrix	3072 x 3072 pixels
Pixel Size	99 μ m
Computer	
Monitor	24-inch HD monitor
Operating System	Windows 10

Inspection Capability	
Maximum Load Size	350(X) mm x 350(Y) mm
Maximum Inspection Size	300(X) mm x 300(Y) mm
Maximum Sample Weight	8 kg
Minimum Detectable Defect Size $\leq 5 \mu\text{m}$	
Inspection Tilt Angle ≥ 20 degrees	
Software System	
Software Introduction	XGY In-Line 3D X-ray Tomosynthesis Technology Software V1.0
Inspection Functions	2D and 3D scanning inspection welding surface layered inspection, void size and void-rate analysis
Overall Machine Parameters	
Equipment Body Size	1624(L) x 2283(W) x 2226(H) mm, excluding connecting rail
Weight	Approximately 4500 kg
Power Supply	220-230 V / 50 Hz
Power Supply Power	6.5 kW
Safety Control	Emergency Stop Switch / EMO Switch
X-Ray Leakage Dose $< 0.5 \mu\text{Sv/h}$	
Options and Integration	
Customizable Options	Maintenance workstations, offline programming, barcode readers, lead-room connecting tracks, and integrated inline control systems
Factory Connectivity	Supports connection with MES, ERP, WMS, and other inline management systems

Specifications should be confirmed against the latest order configuration before purchase.

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Specifications are subject to change without notice.