

XCT8500

Industrial CT/3D X-ray Inspection Equipment

XCT8500 is an offline industrial CT/3D X-ray inspection system. It features a COMET open-type X-ray tube design and is equipped with innovative self-developed intelligent Inspection software as well as professional CT analysis and visualization software. It offers 360-degree arbitrary angle inspection with defect Inspection capabilities down to less than 1 μ m. The system is suitable for quality inspection, 3D measurement, and non-destructive analysis. It is capable of characterizing micro-scale features of a sample's internal structure and, combined with qualitative and quantitative analysis software, enables multi-angle measurement and analysis of samples, providing effective data for product quality inspection.

Product Features

360° Observation: Inspect product defects from any angle.

Unique Auto-Follow Technology: Ensures the Inspection area stays centered in the image during the tilting and rotation of the detector.

CT Functions: Supports both planar CT and cone beam CT.

Intelligent Inspection Software: Equipped with innovative self-developed intelligent Inspection software.

Image Enhancement: New image enhancement processing and preset filter algorithms.

Rapid Programming: Guided Inspection template editing for simplicity and efficiency.

Barcode Data Traceability: Barcode information linked to Inspection results, supporting integration with MES systems.

Custom Inspection Algorithms: AI-based intelligent Inspection algorithms can be customized based on user needs.

Multiple Safety Protections: Real-time radiation monitoring, safety interlocks, and automatic shutdown of the X-ray source when idle.

Super-Resolution Fusion Algorithm: Image fusion and super-resolution technology that highlights defect features.

Stitching Navigation Function: Automatically stitches together images from each scanned area to create a full image, which can be used as a navigation map.

Application Fields

◆ SMT/ Electronic Manufacturing application

PCB/PCBA (BGA, LGA, QFN/QFP, THT/PTH etc.)

IGBT

LED

◆ Semiconductor Applications

Wafer and Integrated Circuit (IC)

Chip Soldering Connection, 3D IC Wiring, TSV Silicon Through-Hole

Sensor

MEMS and MOEMS (Micro Electro Mechanical Systems)

◆ Support more applications

Automotive electronic microcontroller (tin penetration rate and connectivity performance)

PCB processing drilling (residual copper inspection)

Other process optimization and scientific research analysis scenarios

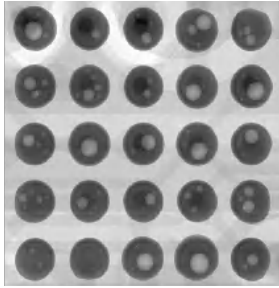


Product Parameters

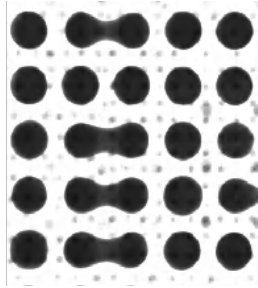
Model No.		XCT8500
X-ray Tube	Tube Type	Open Microfocus Transmitted Ray Source
	Tube Voltage Range	20-160Kv
	Tube Current Range	0.01mA~1.0mA
	Maximum Tube Power	64W
	Maximum Target Power	15W
	Minimum Object Distance (FOD)	<300 μ m
	Micro Focus Size	<2 μ m
	Minimum Defect Inspection Capability	<1 μ m
Flat Panel Detector	Flat Panel Type	Amorphous Silicon Flat Panel Detector (Optional)
	Pixel Matrix	1536*1536
	Field of View	154mm*154mm
	Resolution	5.0Lp/mm
	Image Frame Rate (1x1)	30fps
	Ad Conversion Digits	16bits
3D/CT Parameters (Optional Function)	CT Scanning Mode	Supports ACT and PCT Modes
	3D visualization	Professional 3D Visualization Analysis Software
Equipment Specifications	Maximum Sample Size	520mmx520mm
	Maximum Inspection Area	500mmx500mm
	Image Geometric Magnification	2000X
	Input Power	220V 10A 50-60Hz
	Operation System	DELL OptiPlex7000MT 12th Generation i9 Graphics Workstation (Workstation with Equivalent or Higher Performance)
	Dimensions	L1500mm*W1650mm*H2000mm
	Net Weight	3210kg

Application Cases

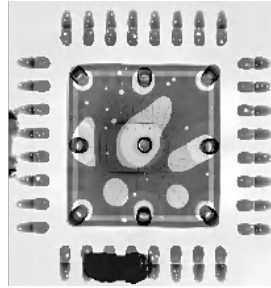
Example of 2D Inspection Effect



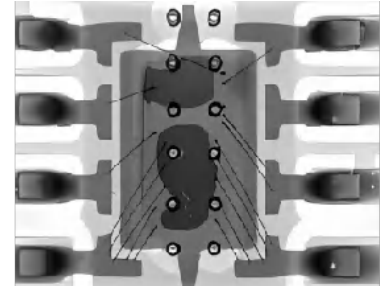
BGA (Void)



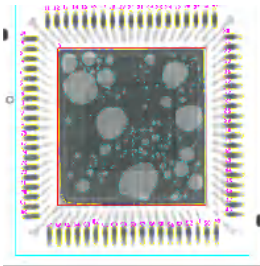
BGA (tin)



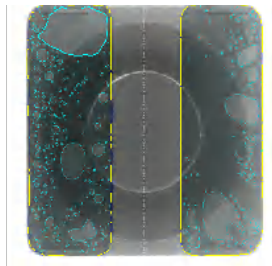
QFN



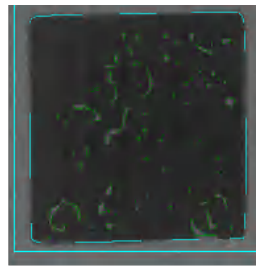
Bonding Wire



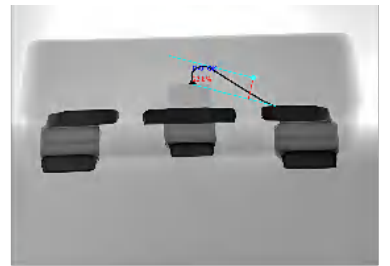
QFN



Inductor (Void)

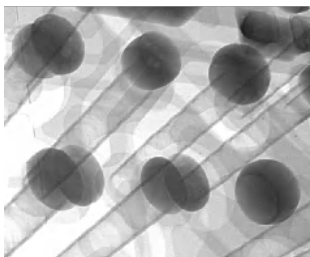


IGBT



Diode

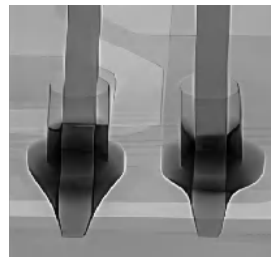
Example of 2.5D Inspection Effect



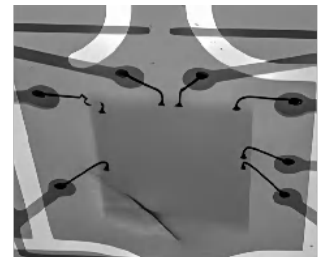
BGA(HIP)



Through Silicon Via



MCU Tin Climbing



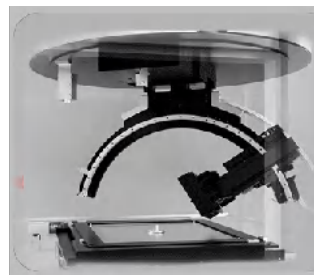
Bonding Wire



MCU Tin Climbing Rate



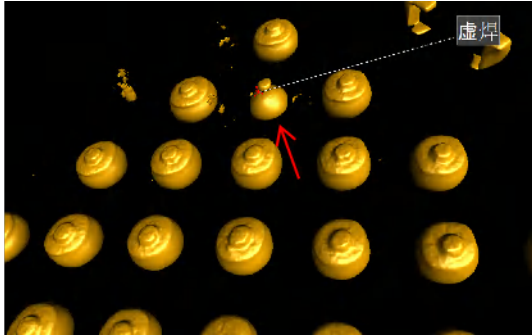
PTH Pin Insertion Depth



2.5D Tilt Inspection Mode

Independently innovative institutional design, based on 2.5D oblique imaging characteristics, fully meets Inspection needs in all directions.
Rotation: 360°
Tilt angle: +/-65°

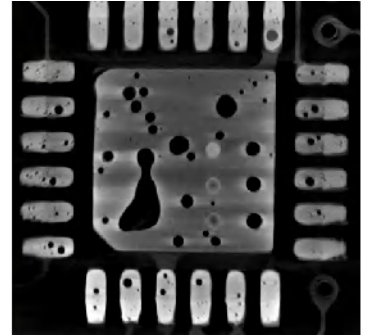
Example of 3D Inspection Effect



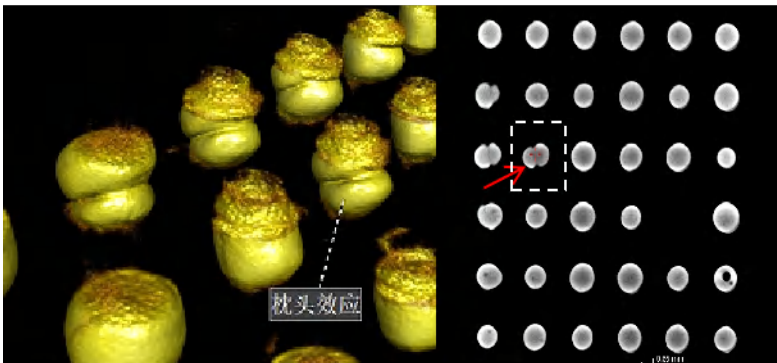
BGA Virtual Soldering



Bonding Wire



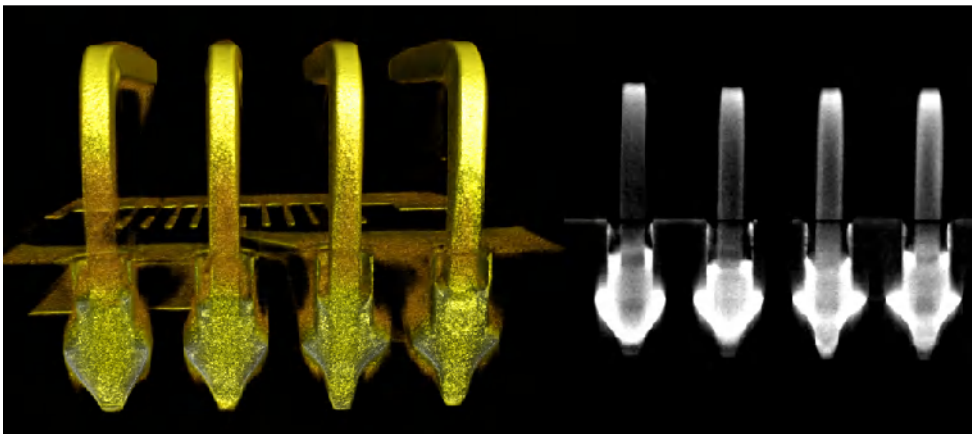
QFN CT Slice Image



HIP



Through Silicon Via



DIP Solder Climbing Height