

XS-series Semi Backend setup



Wire Sweep
Bondtest



LED



Sensors

High Speed Inline AXI Platform with minimal footprint

The Nordson TEST & INSPECTION's XS-series with Semi-Backend setup is an automated inspection system platform designed for sophisticated high-resolution and high-speed inspection of semiconductor-backend products on stripes or in Jedec trays (e.g. overlapping wires or wire dense areas). The following setups are available:

High Resolution Setup	Ultra High Resolution Setup
2,5-3 $\mu\text{m}/\text{pix}$ resolution	1-2 $\mu\text{m}/\text{pix}$ resolution
All gold-wires, CU-wires down to 1,5mil diameter	All gold-wires, CU wires down to 0,8mil diameter
Die-attach voiding	Die attach and μbump voiding down 50 μ bump sizes

The Nordson TEST & INSPECTION system solutions present a modular inspection concept. The platforms feature up to 5 advanced technologies in one system: Transmission X-ray imaging (2D) with patented Slice-Filter-Technique™ (SFT), Off-Axis technology (2.5D) and 3D SART (Simultaneous Algebraic Reconstruction Technique), Dynamic Planar CT.

The XS-series platform is available in the following configurations:

XS-2.5 Transmission (2D) + SFT™ + Off-Axis (2.5D)

XS-3 Transmission (2D) + SFT™ + Off-Axis (2.5D) + 3D SART + Dynamic Planar CT



Inspection & Process Software

- PC-Station with multi-core processor setup
- Windows 10 platform
- MIPS 5 Inspection Platform
 - Advanced algorithm library
 - CAD import for automatic inspection list generation
 - Simultaneous Algebraic Reconstruction Technique (3D SART and Dynamic Planar CT; XS-3 only)
 - Machine Learning based Automatic Tree Classification (ATC) for Auto-Rule-Generation
 - Offline programming for AXI program generation & simulation, tuning and defect reference catalogue
- Verification & Process control
 - MIPS Verify link with closed loop repair
 - MIPS Process with real time SPC

Features and Benefits

- Ultra-High Resolution High Speed AXI system for inline setups
- Microfocus X-ray tube (sealed tube / maintenance free)
- Multiple programmable motion system with linear drives
- Digital CMOS flatpanel detector
- Automatic grey-level and geometrical calibration
- Flexible setup for inline pass through or same-side in/out configuration
- Full product traceability via SECS/GEM and various MES interfaces
- Supports IPC-CFX and IPC-Hermes communication
- Industry 4.0 ready

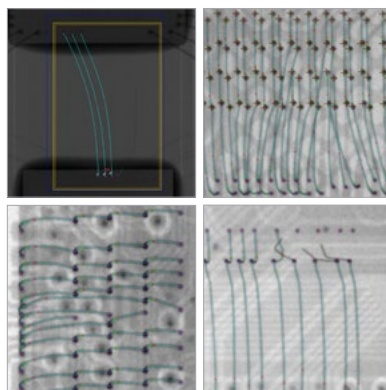
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Applications

Semiconductor/Wire Bond/Flip Chip/PIP/Micro-BGA

A unique advanced algorithm library is available for the inspection of:

- Semiconductor applications
- Wire bond Test (pre & post)
- Multi-die high-resolution PoP inspection
- Light, but complex PCB's
- Flex circuits
- Die-Attach Voiding



Specifications

Facilities	
Dimensions	1760 mm (H) x 1300 mm (W) x 1600 mm (D)
Weight	2.320 kg
Safe Operating Temperature	15° - 28 °C optimal 20° - 25° C
Power Consumption	Max. 6 kW
Line Voltage	208 / 400 VAC, 50/60 Hz 3 phase, 24/16 A
Air	5-7 Bar, < 2 l/min, filtered (30µ), dry, oil free

X-ray Image Chain		
<u>X-ray Source (sealed tube)</u>		
Energy	High resolution setup 100 kV / 20 W	Ultra high resolution setup 160 kV / 20 W
Grey resolution	14 Bit	
CMOS Flatpanel Detector	50 µm pixel size	

Motion System	
Multiple axes programmable motion system	
<u>Installed axes</u>	
x,y (linear drives)	Sample table
z (servo)	Magnification
u,v (linear drives)	Detector movement
<u>Conveyor setup</u>	
Pass through	Single lane
In-out same side	Dual lane

X-ray inspection setup		
<u>Off-Axis capability</u>	Angle shot capability	up to 30 deg
<u>FoV range</u>	Transmission FoV:	2.4mm to 25mm (as per setup)
Sample Inspection Parameter		
<u>Standard setup</u>	Max. sample size:	300 mm x 150 mm (depending on tube and magnification)
	Min. sample size	> 60 mm x 25 mm
	Max. inspection area (Transmission):	300 mm x 140 mm
<u>Assembly Clearance</u>	Topside (incl. board thickness):	+/- 25 mm
	Bottom side (excl. board thickness):	+/- 25 mm
	Edge clearance for clamping:	> 1,5 mm
<u>Sample- Warpage Compensation</u>	Optional item	Top-clamp or Vacuum Jig Technique

Inspection speed	
Transmission (XS-2, XS-2.5, XS-3)	up to 6 views /s
Off-Axis (XS-2.5, XS-3)	up to 5 views /s
3D SART (XS-3)	up to 1 s /FoV
Dynamic Planar CT	up to 3sec/ROI
Single wire deflection detection up to 10000 wire/unit	
Increased Throughput up to 3 times	

Options
Barcodereader
Substrate Handling setup with Magazine loader/unloader/laser-marker
Top-clamp warpage compensation
Semi Compliance

For more information, speak with your Nordson representative or contact your Nordson regional office

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