

X#-series SMT setup



Solder Joint
Inspection



PTH



Power devices
Cooling plates

Flexible Inline AXI Platform

The X#-platform series is an inline automated X-ray system which covers a wide range of AXI applications. It is a flexible platform with very versatile fields of use depending on the application requirements. The SMT setup focuses on components and solder joints inspection on PCB's.

The Nordson MATRIX system solutions present a modular inspection concept. The platforms feature up to 4 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).

The X#-series platform is available in the following configurations:

- X2#** Transmission (2D) + SFT™
- X2.5#** Transmission (2D) + SFT™ + Off-Axis (2.5D)
- X3#** Transmission (2D) + SFT™ + Off-Axis (2.5D) + 3D SART



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; X3# only)
 - 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

- Flexible AXI system for inline setups
- Microfocus X-ray tube (sealed tube / maintenance free)
- Multiple programmable motion system with servo drives
- Digital CMOS flatpanel detector
- Automatic grey-level and geometrical calibration
- Barcode scanner for serial number and product type selection
- Flexible setup for inline pass through or same-side in/out configuration
- Full product traceability via various Industry 4.0 MES-Interfaces
- IPC-CFX ready



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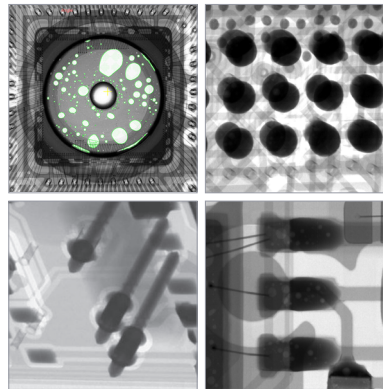
Applications

Electronic components and solder joint

A unique advanced algorithm library is available for electronic applications, specifically for component and solder-joint inspection on PCB, hybrid or chip level assembly processes.

All standard SMD and THT/PTH components

- BGA & dedicated off-axis head-in-pillow (HIP) algorithm
- Comprehensive QFN & gullwing algorithm
- Robust solder surface / heatsink void inspection
- Pin in paste barrel fill measurement
- Discrete down to 1005 pitches



Specifications

Facilities

Dimensions:	1775 mm (H) x 3100 mm (W) x 1760 mm (D)
Adjustable conveyor height (SMEMA)	890 – 980 mm
Weight:	2.800 kg
Safe Operating Temperature:	15° - 28 °C optimal 20° - 25° C
Power Consumption:	max. 6 kW
Line Voltage:	400 VAC, 50/60 Hz 3 phase, 16 A/ 208 VAC, 50/60 Hz 3 phase, 25 A
Air:	5-7 Bar, < 2 l/min, filtered (30µ), dry, oil free

X-ray Image Chain

X-ray Source (sealed tube)	
Energy:	SMT Setup 130 kV/40 W
Grey resolution:	14 Bit
CMOS Flatpanel Detector	75 µm pixel size (2,25 MPix) 50 µm pixel size (5 MPix)

Inspection features

Max. sample size:	510 mm x 400 mm
Max. inspection area:	480 mm x 400 mm
Min. sample size	100 mm x 80 mm
Sample thickness	0,8-10 mm
Max. sample weight:	5 kg
Angle shot capability:	up to 40 deg
Resolution	down to 3 µm /pix

Inspection speed

Transmission (X2, X2.5, X3)	up to 3-4 views /s
Off-Axis (X2.5, X3)	up to 2-3 views /s
3D SART (X3)	up to 3 s /FoV

Motion System

Multiple axes programmable motion system

Installed axes	
x,y (linear drives)	sample table
z (servo)	magnification
u,v (linear drives)	detector movement
Conveyor setup	
pass through	single lane
in-out same side	dual lane

Assembly clearance

Topside (incl. sample thickness):	100 mm
Bottom side (excl. sample thickness):	40 mm
Min. edge clearance for clamping:	3 mm

Options

Barcodereader
Low-dose radiation filter
Auto BCR scanning station (x-y gantry)

For more information, speak with your Nordson MATRIX representative.

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