

Automated X-ray Inspection System Transmission & SFT™



X2

High-Speed Inline X-ray system

The **X2** is an advanced inline X-ray inspection system designed for high-speed automatic inspection in production lines. Transmission X-ray technology is combined with patented Slice-Filter-Technology (SFT) for double-sided PCB assembly and component inspection. It features fully automated inspection based on a CAD compiled inspection list and uses an inspection model library for the test-strategy definition. The motion system as well as the image acquisition chain meets all demands of high-speed inspection.

MIPS_Tune is an off-line programming software package including automatic CAD import, CAD compile, inspection parameter setting & rule generation. The **MIPS_Verify** module included in the **MIPS_Process** unit with its closed-loop repair concept is capable for in-line or off-line verification using a graphical board layout display and X-ray image with defect marking. **MIPS_Verify** can be linked to combined AOI platforms.

A test coverage display allows optimized inspection concept analyses & balancing. All relevant inspection data can be stored and maintained in a dedicated inspection data base. Our **MIPS_SPC Real Time** module is providing real-time process control with immediate production line feedback.

Features and Benefits

- High-speed AXI system
Transmission: up to 6 images/s
- Transmission X-ray & Slice Filter Technology™
- Inline board handling with automated width adjust
- Microfocus x-ray tube (sealed)
- Dual 3/2 inch image intensifier
- 1k x 1k digital camera with programmable exposure time
- 3 axes programmable motion system with variable field of view
- Automated grey-level and geometrical calibration
- Barcode scanner (1D/2D) for serial number and product type selection

Inspection & Process Software

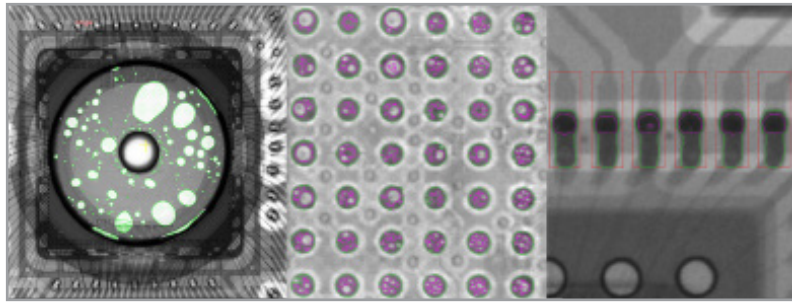
- PC-Station with multi-core processor setup
- Windows 7 or Windows 10 platform
- Advanced algorithm library for solder joint & component inspection
- Slice Filter Technology™ (SFT) for double-sided boards
- Automatic Tree Classification (ATC) for auto-rule-generation
- Off-line programming with auto program generation

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 components
- Specific BGA and QFN algorithm
- Cooling plates/heatsink void inspection



Specifications

Facilities

Dimensions:

1550 mm (H) x 1800 mm (W) x 1600 mm (D)

Adjustable conveyor height:

(SMEMA): 950 mm

Weight: 3.500 kg

Safe Operating Temperature:

15° - 32 °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

Part Handling / Motion

High-speed sample table with linear drives (X,Y)

Driving distance x,y: 510 x 410 mm

Position repeatability: +/-5 µm

Z drive: x-ray tube

Z movement with continuous magnification (FoV) change

X-ray Source (sealed tube)

Energy: 130 kV/40 W

Focal Spot Size: 5 microns

X-Ray Tube Orientation: End window tube

X-ray Imaging

Detector type: 3" / 2" image intensifier

Camera: 1k x 1k, 10 bit

Video output: Camera link interface

Video display: High resolution 19" TFT

Inspection features

Inspection area

Max. board size: 18" (x) x 14" (y) /
460 mm (x) x 360 mm (y)

Max. inspection area: 8" (x) x 14" (y) /
460 mm (x) x 360 mm (y)

Max board weight: 5.5 lbs (2,5 kg)

Board thickness: 0.03" – 0.2" (0,8-5 mm)

Standard FoV setup

Transmission FoV: 0.4" (10 mm) to 1.2" (30 mm)

Object resolution (@min. FoV): 8-10 µm

Assembly clearance

Top side (incl. board thickness): 30 mm

Bottom side (excl. board thickness): 30 mm

For more information, speak with your MatriX representative.

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