

X T-1300

Automatic X-Ray Inspection System
for automotive modules and
assemblies



The **XT-1300** is an automatic x-ray inspection system, especially designed for the fully automatic inspection of high modules and complete assemblies. The system is equipped with a maintenance-free 130kV microfocus x-ray tube and a flexible carrier system that can be easily adapted to customer specific applications. The integrated test library includes algorithms for standard SMD joint inspection as well as for the inspection of joints on flexible circuit boards.

MIPS_Tune is an off-line programming software package for test program generation with automatic CAD import or alternatively without CAD data. The software supports automatic inspection list generation based on an advanced algorithm library for transmission and off-axis joint inspection.

The integrated rule generation feature allows manual and automatic creation of reliable rules.

The **MIPS_Verify** module 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 inspection platforms.

The **MIPS_SPC Real Time** module provides real-time process control with immediate production line feedback.

FEATURES

XT-1300 System Features

- Transmission X-RAY & 3D Slice-Filter Technology
- 130 kV Microfocus X-RAY Tube (sealed)
- Digital Flat Panel Detector (1,5k x 1,5k)
- Efficient Board Handling with conveyor system and programmable XY Table
- Flexible, sample fixture carrier, that can be easily adapted to customer specific applications
- Z-Axis motion for variable field of view size
- Automatic grey-level and geometrical calibration
- Barcode Scanner (1D/2D)
- Single-side load/unload or alternatively pass through setup
- Optional: detector motion system for off-axis images

Matrix Inspection & Process Software

MIPS Hardware

- PC-Station with multi-core processor setup
- Windows 7 Platform

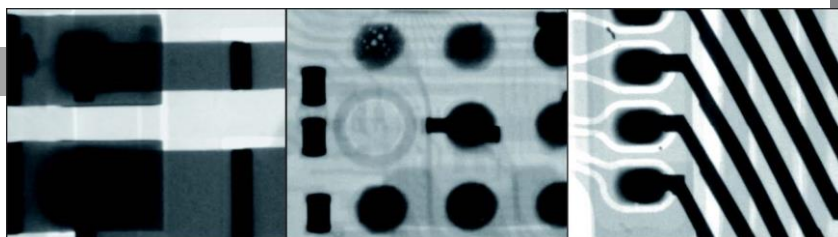
MIPS-Inspection Platform

- Advanced Algorithm Inspection Library for solder joint and component inspection
- Slice-Filter-Technique (SFT) for double-sided boards
- Automatic-Tree Classification (ATC) with Auto-Rule-Generation
- Off-line programming with test-coverage display & auto program generation

Verification & Process Control

- **MIPS_Verify** link with closed-loop repair
- **MIPS_SPC Real Time** with real-time SPC

APPLICATION / PROCESS



Applications

Inspection of big and high modules or assembled devices.

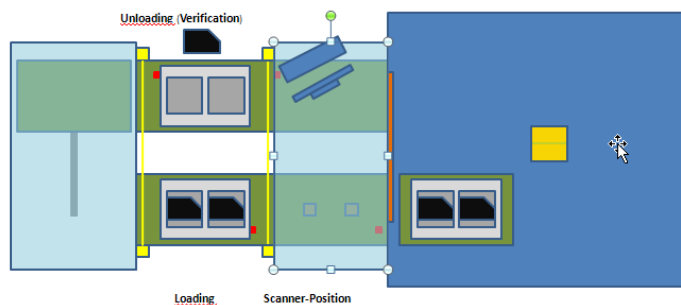
- All standard SMDs and THT/PTH components
- Specific BGA and QFN algorithms
- Advanced PTH/THT algorithms with Filling level check (OA setup)
- Cooling plates/heatsink void inspection

Plus inspection of flexible printed circuit boards:

- Voids
- Soldering defects
- Splash & solder balls

Process Overview (parallel track setup)

- Conveyor system with flexible work-piece holder
- Programmable XY Table
- Loading Station
- Unloading Station with Verification Unit



SPECIFICATION

Dimensions

Cabinet2100 mm(H) x 1850 mm(D) x 1835mm(W)
 Conveyor system 1050 mm(D) x 1670mm + 750mm(W)
 Weight approx. 3 t
 Conveyor System Height 900 -1000 mm
 Safe Operation Temperature (Temperature) 15 - 32°C
 Line Voltage400V, 50/60 Hz, 10A avg., 32 A max,
3 phase
 Air5-7 bar

Motion System

Programmable X-Y Sample Table
 Driving Distance 500 x 770 mm
 Position Repeatability +/- 25 µm
 Z-Drive X-Ray Tube
 Z-Axis Driving Distance 220 mm
 Z-Movement with cont. magnification for every FOV change
Optional:
 Angle Shot Capability programmable u, v detector axes

X-Ray Source

Target Voltage 40 - 130kV
 Target Current 0 - 300 µA
 Focal Spot Size 5 - 10 micron
 X-Ray Tube Orientation End-Window

Image Detector

Detector Type CMOS Detector (1,5k x 1,5k)
 Active Inspection Area 115 x 115 mm
 Grey Value Resolution 14 bit
 Video Output Camera Link Interface
 Video Display High Resolution 22" TFT

Sample & Conveyor System

Size Workpiece Carrier 640mm x 320mm
 Max. Sample Height 240mm
 Max. Sample Weight 10 kg

Image Performance

Max. Inspection Area 570mm x 250mm
FOV & Resolution
 Field-of-View 15 mm to 35mm

Safety / Regulatory

Full safe, interlocked enclosure. Complies with all U.S. and International standards for cabinet radiography systems. CDRH directives / CE compliant.