



Automated X-ray Inspection System Transmission with optional Off-Axis

XT-3

Off-line inspection system

The **XT-3** is a high-resolution manual X-ray inspection system designed to address fast intuitive operation, low volume production capacity, and advanced failure analysis for SMT production inspection and quality control protocols. This system addresses more complex SMT solder-joint and semiconductor inspection and analysis. It is easy to learn and easy to use by all production operators, technicians and engineers. The small footprint allows passage through a standard door width. This system offers exceptional image quality and together with the Matrix Image Processing Software (MIPS) provides industry leading analyzing and auto-mated inspection for BGA, QFN, and Pin-in-Paste or Through-Hole Barrel Fill detection.

MIPS_Analyzer is an advanced inspection software package for manual and semi-automated X-ray inspection solutions. Supporting teach-mode with programmable inspection positions. The image capturing is fully programmable via acquisition types and image-filter tool bar. It guarantees repeatable imaging quality and measurements.

An **advanced algorithm library** for solder-joints and material analysing is part of the standard image processing package. Customized algorithms are optionally available upon request.

Features and Benefits

- Transmission X-ray with optional oblique viewing
- High resolution setup up to > 40 LP/mm and up to 720x magnification
- 3 axes stepper motor drive system with optional tilt & rotate unit for off-axis imaging
- Microfocus x-ray tube (sealed) with 100 kV
- 5 micron focalspot size
- Digital high-resolution fatpanel detector
- Up to 50 mm programmable, variable field of view

Inspection & Process Software

- PC station with multi-core processor setup
- Windows 7 or Windows 10 platform
- 24" high resolution monitor inspection platform
- XT series MIPS imaging software
- MIPS_Analyzer software
- Traceability option (barcode reader)
- Algorithms for BGA, QFN, PIP, THT, barrel-fill

Applications

HIGH QUALITY X-RAY ANALYSIS

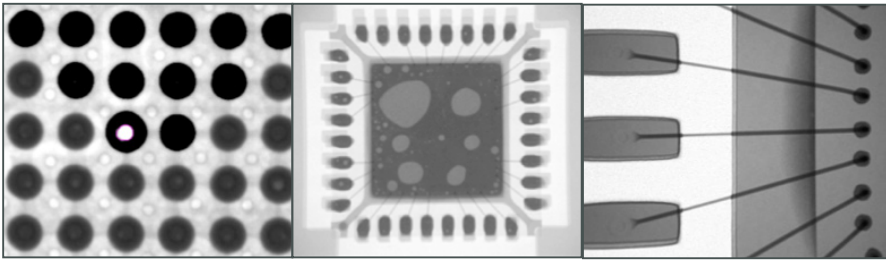
With variable geometric magnification and a 5 micron high resolution image quality, the XT-3 is suitable for advanced electronic applications, specifically for component and solder-joint inspection on PCB, hybrid, or chip level assembly processes.

APPLICATIONS

BGA, QFN, SMT solder-joint inspection, voiding, head-in-pillow (HIP), dewetting and lifted leads/cable connectors, wire bond, die attach, counterfeit component detection void inspection

INSPECTION REPORTING FOR QUALITY CONTROL

Inspect, measure, detect and report to IPC-7095 and IPC-610 standards for BGA, QFN, and SMT devices with MIPS application software



Specifications

Facilities

Dimensions:

910 mm (W) x 1.310 mm (D) x 1.950 mm (H)

Weight: 970 kg

Safe Operating Temperature: 15° to 32° C

Power Consumption: max. 2 kW

Line Voltage: 110/220 VAC, 50/60 Hz, 16A

Part Handling / Motion

3 axis stepper motor drive system (X, Y, Z)

Programmable, variable field of view

Optional, programmable oblique viewing fixture (tile & rotate)

X-ray source

Energy: 100 kV / 20 W

Focalspot size: 5 micron

Tube orientation: End window tube

X-ray Imaging

Digital fatpanel detector

Active inspection area: 65 mm x 65 mm

Pixel count: 1k x 1k

Grey value resolution: 14 bit

Digital fatpanel detector 1512

Active inspection area: 115 mm x 115 mm

Pixel count: 1.5 k x 1.5 k

Grey value resolution: 14 bit

Image performance

Max. magnification: ~720X

Field of view (FoV): up to 50 mm

Spatial resolution:

> 40 LP mm at max. magnification

Inspection features

Max. board size 425 x 457 mm (16.75" x 18")

Max. inspection area: 381 mm x 393 mm (15" x 15.5")

Max. inspection height: typically 200 mm,
up to 300 mm depending on overall sample size

Max. sample weight: 5 kg

For more information, speak with your MatriX representative.

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