

Automated X-ray Inspection System Transmission - Programmable Off-Axis

XT-6

Flexible X-ray inspection system with Hexaglide motion concept

The **XT-6** is a highly flexible X-ray inspection system with a parallel-kinematic Hexaglide manipulation unit for extreme off-axis transmission in the smallest of space with maximum speed and high resolution. It is especially suitable for high-quality X-ray analysis of electronic assemblies and material analysis of parts that require flexible part manipulation with multiple inspection angles. The 6 axes moving fully independently guarantee precise motion. For batch modes and volume inspection the XT-6 can be equipped with a single-sided conveyor setup and magazine load/unload station.

MIPS_Analyzer is an advanced software package for manual and automated inspection, supporting Teach-Mode and CAD import for an optimum inspection sequence generation. Image capturing is fully programmable via acquisition types and image-filter tool bar, guaranteeing repeatable imaging quality and measurements. An advanced algorithm library for solder-joints and material analysing is part of the standard package. Customized algorithms are available upon request. The proprietary **Tree-Classification (ATC)** technique with integrated rule generation can be used for auto-mated detection including graphical measurement & yield display. The verification module MIPS_Verify with its closed-loop repair concept can be adapted together with the XT-6A model-type.

Features and Benefits

- Transmission and programmable Off-Axis
- Image acquisition up to 4 images/sec
- Microfocus X-RAY tube (sealed) with customized configuration - 130kV/40W and optional 150kV/75W
- 6-axes programmable, parallel-kinematic motion system for angle shots up to 60°
- CMOS X-ray Detector (15x12 cm, 14 bit digital output, 2k x 2k)
- Automatic grey-level and geometrical calibration
- Easy and flexible handling operator terminal with space mouse navigator & touchpad keyboard
- Universal individually adjustable sample tray
- XT-6A model: with automatic load/unload setup

Inspection & Process Software

MIPS Hardware

- PC-Station with multi-core processor setup
- Windows 7 or Windows 10 platform

MIPS Analyzer

- Image Processing Software with programmable acquisition types and filter tool-bar
- Advanced Algorithm Inspection Library for solder joint, components and material analysing (voids)

MXI-Setup:

- Inspection List generation via "Teach & Go"
- MXI Algorithm Library

AXI-Setup

- Inspect. list generation via CAD-Import & Compile
- AXI Algorithm Library (compatible to X2/X3 series)
- Tree Classification (ATC) for Auto-Rule-Generation

Applications

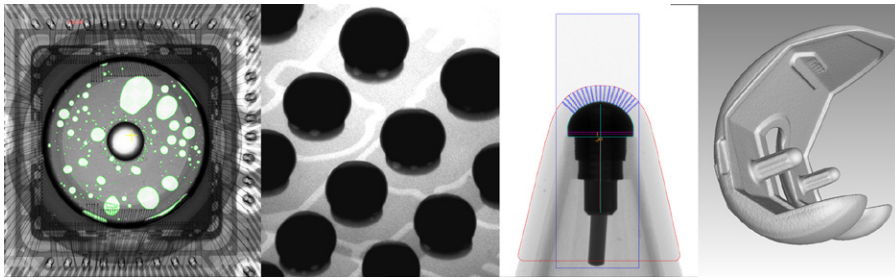
ELECTRONIC COMPONENTS AND SOLDER-JOINT

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 and THT/PTH components
- Specific BGA and QFN algorithm
- Off-axis image analysis of BGA (HIP)
- PTH/THT Barrel Fill Measurement
- Advanced cooling plates/ heatsink void inspection

For non-destructive test of small casting parts, medical implants or small automotive parts.

- Blowhole inspection
- Cracks, form divergences
- Inclusions
- Porosity



Specifications

Facilities

Dimensions:

1940 mm (H) x 1400 mm(W) x 1610 mm(D)

Weight: 1700 kg

Safe Operating Temperature: 15° - 32 °C

Power Consumption: max. 6 kW

Line Voltage: 220 V AC, Single phase, 16 A

Air: 5-7 Bar, < 2 l/min, filtered (30µ), dry, oil free

Part Handling / Motion

Parallel-kinematic Hexaglide-unit with 6 axes

Position repeatability: +/- 5 µm

X-ray tube (sealed): Z drive

X-ray Source (sealed tube)

Energy: 130 kV/ 40 (65) W

Optiona: 150 kV/ 75 W

Focal Spot Size: 5 microns

X-Ray Tube Orientation: End window tube

X-ray Imaging

Detector Type: CMOS Flat Panel (2k x 2k)

Active Inspection Area: 115 mm x 115 mm

Grey value resolution: 14 bit

Video output: Camera link interface

Inspection features

Transmission FoV: 0.4" (5mm) to 4.0" (100mm)

Object resolution (@ min FoV): up to 2-3 µm

Angle shot capability: up to 60 dgr

PCB-Electronic Manual load setup:

Max. board size (X)x(Y): 400 mm x 350 mm

Min. board size (X)x(Y): 100 mm x 50 mm

Max board weight: 5 kg

Board thickness: 0,8 – 5 mm

NDT/ Assembly-Module-Setup (Tray setup)

Dimensions for tray: 400x350x100 mm

Max sample weight: 15 kg

Optional: auto loader /unloader:

450x350x100 mm

For more information, speak with your MatriX representative.

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