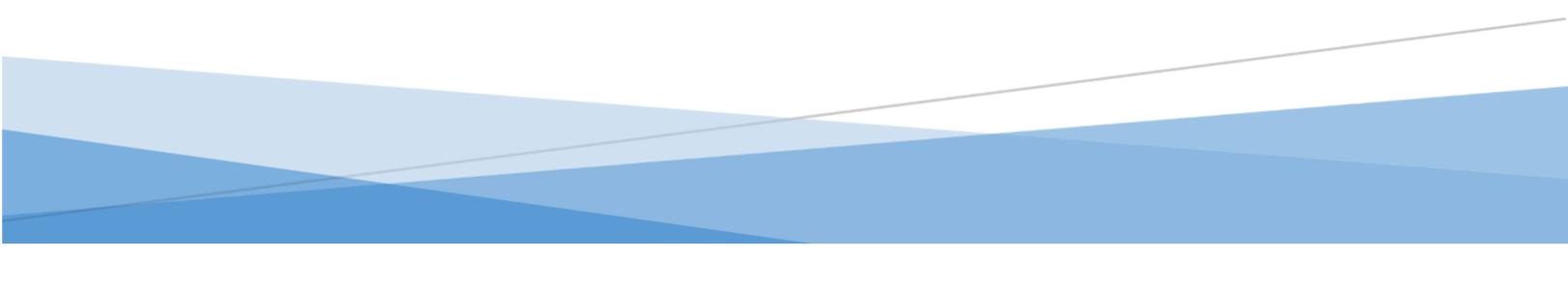


-X-RAY INSPECTION OF BGA,
WIREBONDS, MEMS, LOADED PCB
-MOBILE PHONES, SHAVERS &
WATCHES

Nikon Metrology



X-ray inspection of BGA, wirebonds, MEMS, loaded PCB

With the advent of many newer type components such as BGA and flip-chip devices; traditional microscope inspection is not an option as the majority of solder connections to the PCB are hidden from view. As such real-time X-ray images become more important than ever before.;

Soldering imperfections fall into the following categories:

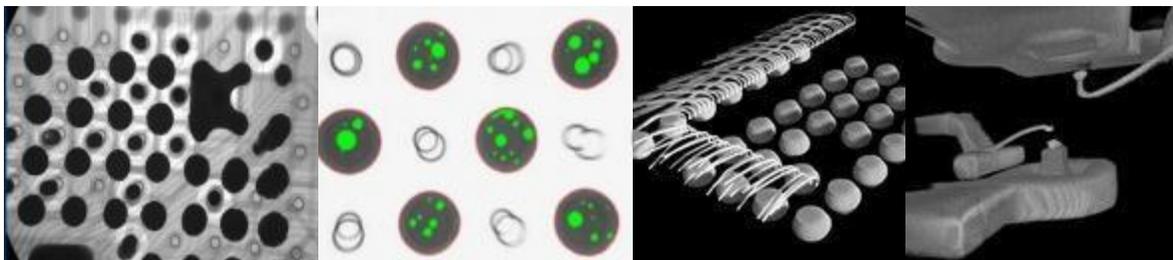
- Dry joints due to insufficient solder
- Bridging/Shorts due to surplus solder
- Voiding due to gas bubbles within the solder
- Misplacement/Misalignment due to inaccurate placement of components

The ease of seeing these defects depends on the image resolution. Defects as bridging and gross misalignment, are detectable with microscopes. Others, such as voiding, requires X-ray with a resolution down to one micron, and power in excess of 100W, particularly for devices such as micro-BGAs.

To detect dry joints high resolution (1 micron) high magnification (100X to 5.000X), complex sample manipulation (to tilt and rotate the PCB or the imaging system), and sophisticated image-processing software is required. XT V systems combine all these into one very user-friendly system. certain systems are available with CT option for a full 3D insight into the electrical components.

Wide range of uses

Any OEM and supplier of electronic subsystems in consumer electronics, automotive, aerospace can enrich its inspection process by adopting X-ray and CT inspection systems.



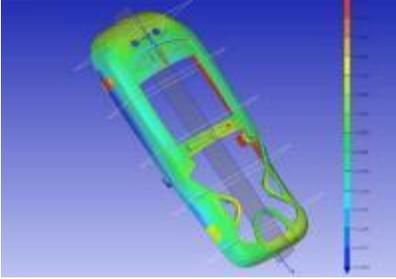
Electronic and electrical components

- Broken wedge bonds
- Lifted ball bonds
- Wire sweep
- Die attach

Populated and unpopulated PCBs

- View surface mount defects i.e. misaligned devices, solder joint porosity, bridging
- Detailed inspection of vias, through hole plating and multi-layer alignment
- BGA and CSP inspection
- Non-lead solder inspection.

Mobile phones, shavers & watches



Complex high-tech plastic parts, such as mobile phone covers, set specific challenges in terms of quality and development cycles. The LC15 high accuracy laser scanner, applying high point density on a small field of view, accurately digitizes these compact and detailed objects with tight tolerances.

The same laser scanner is used for the inspection of plastic shaver parts that are sometimes metal coated. Inspection is used for both inspection and research purposes. XT H 225 is an X-ray and CT system that takes inspection one step further by running quality checks of the razor heads of (disposable) razor units.



Digital cameras and quality watches featuring compact optics, complex mechanics and sensitive electronics also need verification to make sure specifications are met. Ideal for the job are the industrial XT H 225 systems combining stunning imaging with high measuring accuracy.

Individual parts can also be measured using CNC video measuring systems, such as iNEXIV and NEXIV systems, and industrial or measuring microscopes.