planarCT

Easy 2D plane and 3D volume inspection of complex printed circuit boards

Key features & benefits

• 2D slice view provides significant better result quality compared to conventional X-ray inspection with overlaying features

• Excellent image quality and high magnification for wide defect coverage

• Slice and ROI CT volume evaluation in any direction with GE’s 3D viewer

• Available with phoenix microme|x and nanome|x systems

• Upgrade option for already installed systems

Conventional double side BGA topdown view with overlaying solder balls in the X-ray image

Advanced planarCT slice of the lower BGA view clearly revealing soldering defects
The challenge:
Increasing complexity of electronic assemblies

Double-sided multilayer boards and increased numbers of BGAs, POP or QFN make conventional X-ray inspection more and more difficult due to overlaying structures in the X-ray image. GE offers full 3D micro- and nanoCT options for high resolving scans of small components such as sensors or packages since a long time. But high resolving CT scans of printed circuit board assemblies to examine single layers or packages are not possible without damaging the board by cutting.

The solution:
planarCT based slice and ROI volume inspection

1) For planar Computed Tomography, the board to be inspected is just placed in the system at the laser crossmark other positions for planarCT scans of larger, non centric features are possible. While the high precision manipulation table rotates the region of interest in the X-ray beam, the DXR detector captures the 2D X-ray image series for slice reconstruction.

2) Reconstructed planarCT slice or multislice views allow exact inspection results of a single plane or a whole package of interest without overlaying structures from other board areas. In the right hand case, an exact die attach voiding calculation could be performed.

3) Full 3D CT visualization and evaluation of multiple slice volumes like these THT solder joint defects with GE's included 3D|viewer.

planarCT - Your Advantages

- 2D X-ray inspection of any board or package slices without destructive cutting and overlaying structures
- Easy to adjust 3D CT without any sample preparation of fixing in a rotation stage for 3D pore evaluation etc.
- No additional software required: acquisition, reconstruction and 2D or 3D evaluation with GEs proprietary phoenix|x-ray software