

ZEISS Electronics Industry Solutions

Quality Assurance for Data Centers

Inspection and quality data for reliable systems



Seeing beyond



Quality control throughout production

Electrify quality assurance

The integration of AI and machine learning into data centers is racing ahead at breathtaking pace. The next technology revolution is happening right now and companies must adapt. AI enables better resource management and failure prediction, as well as optimized performance.

Drawing on its extensive expertise in electronics, ZEISS has developed a robust portfolio for manufacturers of server products. This enables a streamlined response to the wide-ranging quality challenges they may face. High-precision measurement and inspection systems ensure operational confidence while also improving efficiency, productivity, and repeatability.



Quality control throughout production

Data center applications

AI servers are turning to GPUs that feature many more cores to deliver faster processing speeds. In addition, data centers are now deploying solid state drives (SSDs), high-speed switches, and routers to handle higher data transmission speeds in the cloud. To ensure that increasing demand does not impair sustainability, data centers also look to improve their power usage efficiency (PUE) via liquid cooling.

Switch



Solid state drive



› Nondestructive defect inspection of ROI

AI server

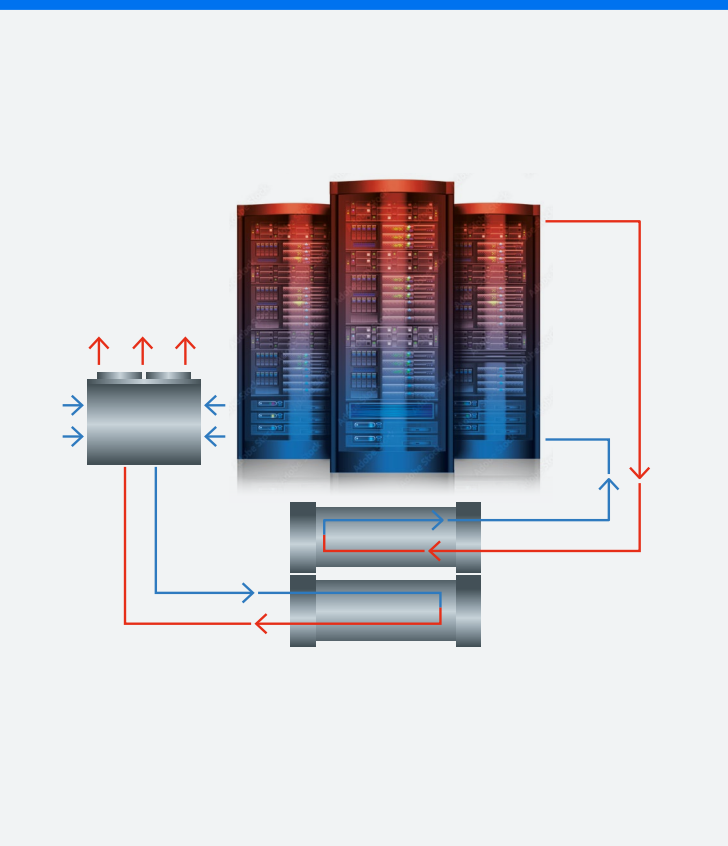


Router



› Nondestructive defect inspection of CPU chip


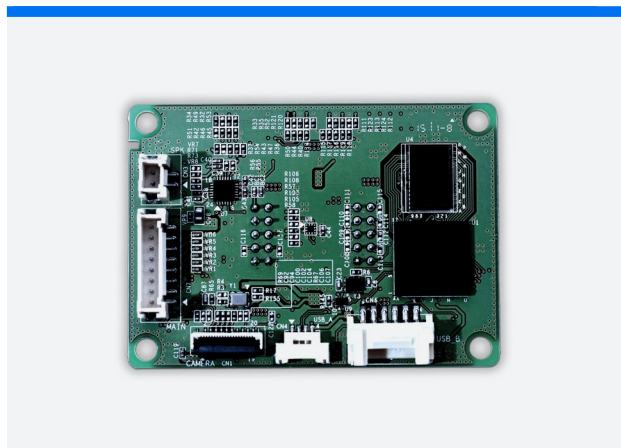

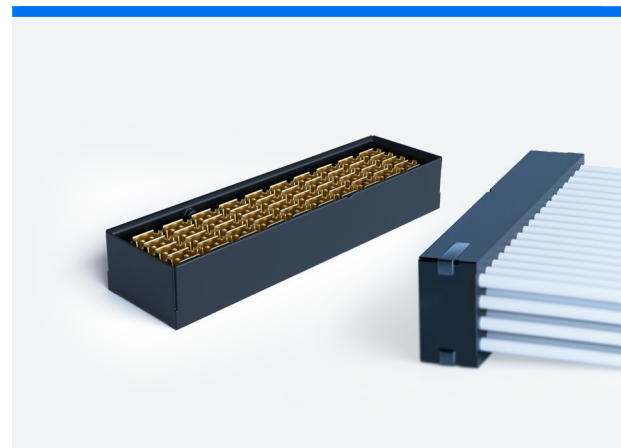



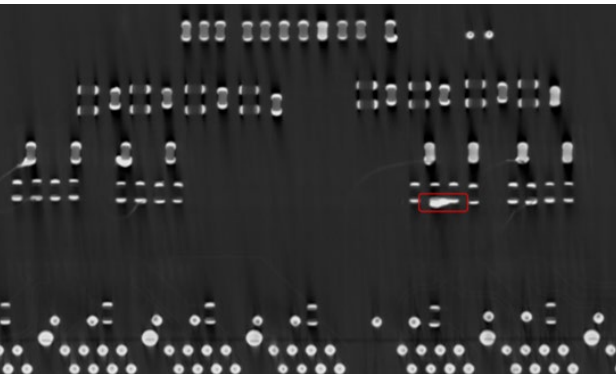
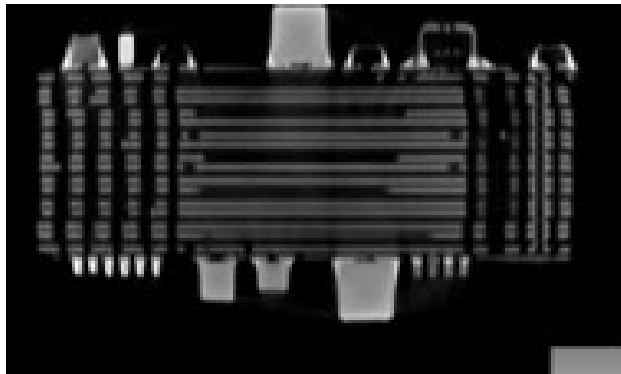
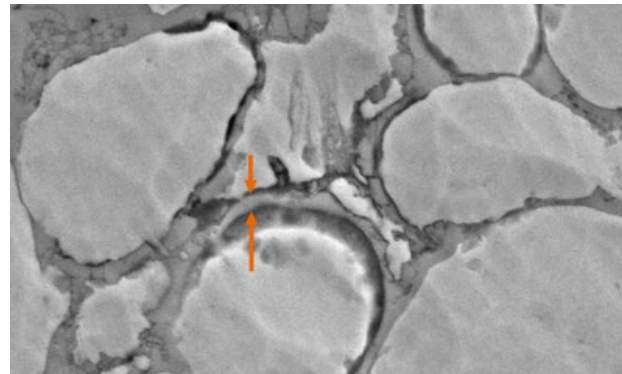
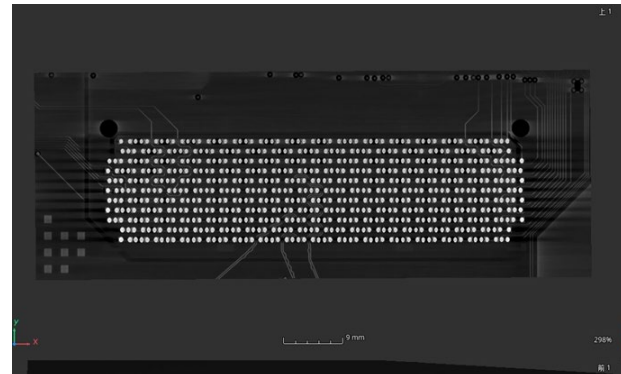

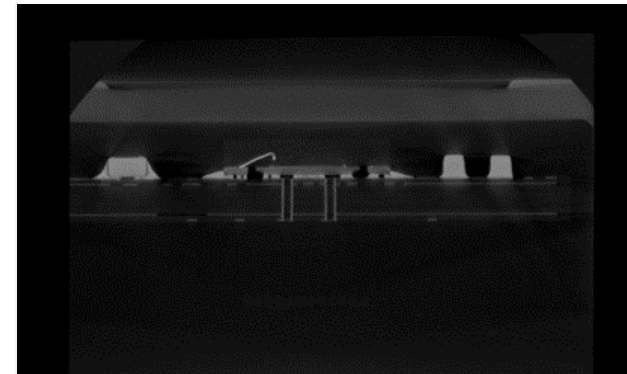
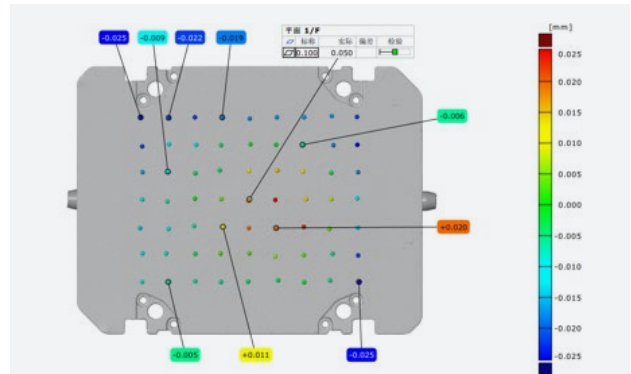
Liquid cooling



Quality control throughout production

New technology trends and quality challenges

The soaring demands of AI servers have generated many new challenges for electronics manufacturers. High-speed switching is provided by the core switch, with transmission between switch and device handled by the optical module. Faster transmission between devices is ensured with high-speed backplane connectors. And the high power requirement of AI servers is met by multiphase power supplies, for which multilayer chip ferrite beads are an ideal inductor. To increase efficiency, high density racks boost the power density – and the cold plate transfers absorbed waste heat to the liquid cooling system. Advanced metrology and inspection techniques are essential for all of these new devices.

Core switch	Multiphase power supply	Multilayer chip ferrite beads	High-speed backplane connector	High density rack	Optical module	Cold plate
						
						
› Nondestructive defect inspection, focus on QSPF port welding	› Nondestructive defect inspection, focus on PCB circuits	› Thickness measurement of covering film in ferrite bead	› Nondestructive defect inspection, dimension measurement	› Front and side dimension measurement	› Nondestructive defect inspection	› Flatness measurement, dimension measurement

ZEISS Portfolio

[› Explore more](#)

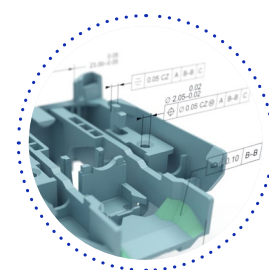
Coordinate measurement solutions



ZEISS CMMs deliver stunning speed, accuracy, and flexibility, while ZEISS VMMs (vision measuring machines) offer outstanding point density for fast optical measurement results.

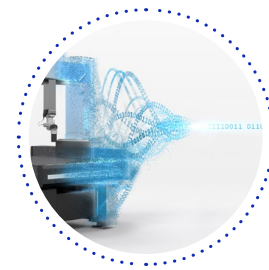
ZEISS CALYPSO

ZEISS CALYPSO is your dimensional metrology software solution for CMMs.



ZEISS Smart Services

ZEISS Smart Services boost safety, availability, and productivity.



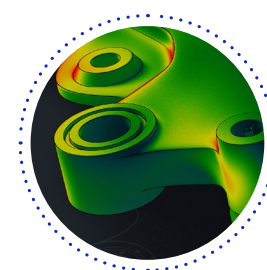
Optical solutions



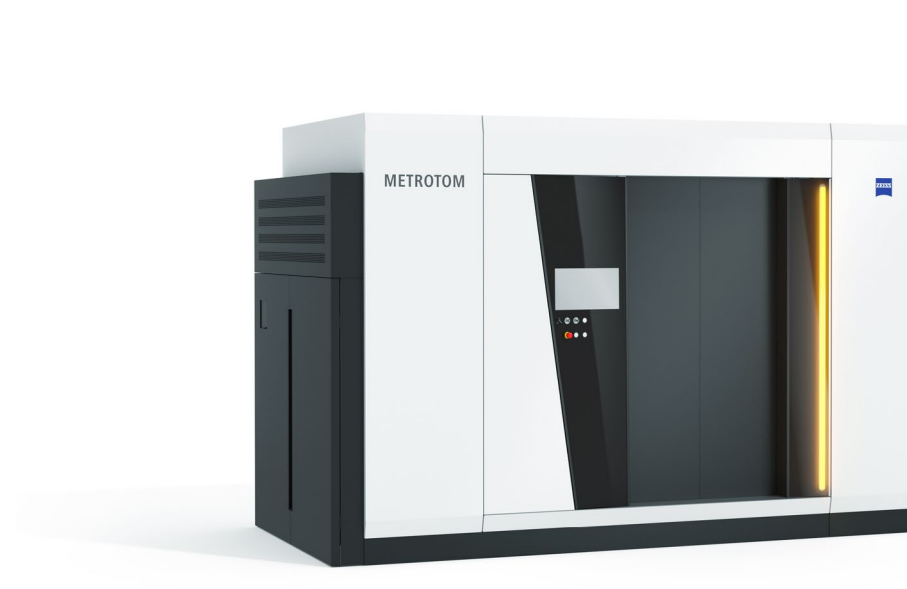
ZEISS manual and automatic scanning delivers fast high-resolution results for small to medium components. ZEISS optical solutions enable dynamic object measurement to test for deformation or movement.

ZEISS INSPECT

ZEISS INSPECT Optical 3D software takes inspection and evaluation to a whole new level with features such as full-field data acquisition and trend analysis.



CT and X-ray solutions



2D and 3D X-ray solutions from ZEISS are ideal for fast and non-destructive part evaluation. ZEISS industrial CT enables precise measurements and defect analyses via the data from a single X-ray scan.

ZEISS INSPECT

ZEISS INSPECT X-Ray software performs in-depth visualization and analyses using the data generated with industrial CT.



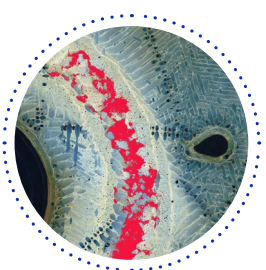
Microscopy solutions



ZEISS offers precision solutions in light, digital, electron, and X-ray microscopy, from specific surface inspection to general material characterization.

ZEISS ZEN core

The powerful imaging and connectivity software ZEISS ZEN core enables traceable analysis and ensures compliance with regulatory demands.



Supporting software

Data exchange

The truth from a single source: ZEISS CONNECTED QUALITY enables agnostic, traceable, secure and global quality processes, offers access to system health and utilization data, and contributes to centrally managed global quality operations.



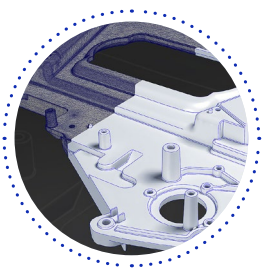
Data management

ZEISS PiWeb scalable reporting and quality management software combines metrology results from different measuring technologies for efficient tracking of production quality. Its powerful features and intuitive templates handle huge amounts of data and provide immediate results.



Reverse engineering

ZEISS REVERSE ENGINEERING surface reconstruction software promotes the automated, interactive, and highly precise creation of CAD models. The additional tool correction option helps improve CAD data quality.





ZEISS Electronics Industry Solutions

Electrify quality assurance

We are happy to provide you with more
information about our products and services
for your telecom electronics application.