

○ SQ3000™ 3D CMM for Socket Metrology

Benefit Summary

From hours to seconds, the SQ3000™ CMM optimized our customer's backend inspection and socket metrology cutting cost and increasing yields for their high-volume manufacturing.

Challenge

Our customer was leveraging a Coordinate Measurement Machine (CMM) to handle the intricate measurements required for their socket metrology, semiconductor jigs and mobile phone sensors. A high-volume manufacturer, they needed a stable, robust and accurate metrology to inspect a variety of parts. Though highly accurate, the slow speed of their outdated CMM system made it difficult for this company to keep up with customer demand, while meeting stringent requirements, taking more than 10 hours to inspect 3,000 contact points. The company's workaround for the slow measurement speed was a <5% sampling test requiring a great deal of resources to measure and verify the correlation.

The CMM system also required intensive training, routine maintenance and multiple adjustments throughout the inspection period to account for variables. Though the market has machines developed specifically for high-volume manufacturing that have greatly improved the speed of inspection, these machines have a limited field of view (FOV), preventing proper inspection of new, larger socket designs.

To meet increasing customer demand and standards, the company needed a way to accelerate inspection without wavering on quality or accuracy.

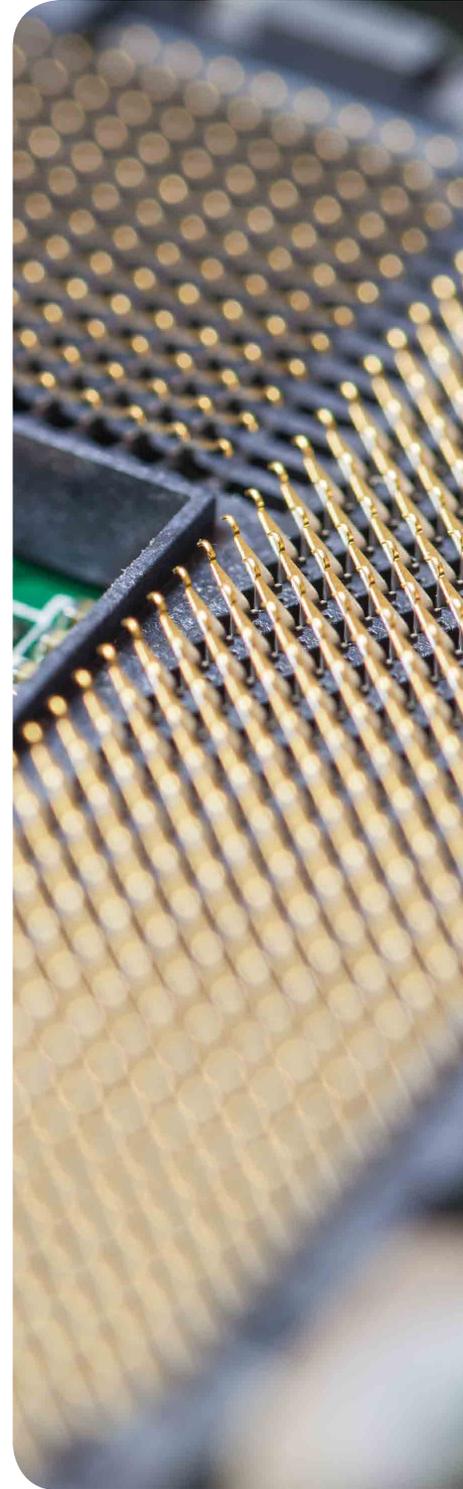
Solution

We worked with our customer to implement the SQ3000™ CMM in their backend inspections, accelerating and optimizing production.

The proprietary Multi-Reflection Suppression (MRS) sensor technology and advanced measurement algorithms allowed for fast, stable, accurate and repeatable measurements, while accounting for variations in lighting, focus, illumination angle and other parameters.

This system meets and exceeds expectations for full-coordinate measurements. What once took eight hours with the original CMM, now takes less than 13 seconds, including all points and CTFs. The precision gantry provides a larger FOV for a more complete view of the component, allowing our customer to scan a wider range of socket and part sizes.

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Solution (continued)

The system is equipped with a comprehensive software suite for online measurement inspection making it easy to pinpoint and assess defects, reducing engineering overhead required for correlation and matching. The ease of use, seamless integration and customized CMM cut down on time and resources required for training and maintenance.

Across the board, the SQ3000™ CMM has proven to be highly accurate and significantly faster than traditional CMMs, with repeatable and reproducible measurements for metrology applications in the manufacturing of a wide variety of products such as PCBs, semiconductors and consumer electronics.

For more information on CyberOptics products, services, or solutions, visit our website at www.cyberoptics.com.



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