



Automated Vision Inspection

Enhances Semiconductor Yields

“Our product requirements demand higher image processing speed, disk and memory bandwidth with a low cost, small footprint. Captec provided a solution that met our packaging and reliability goals, with a 20% improvement in typical processing time. We are very satisfied with the lead time and terms provided by Captec.”

**Senior Director of
Inspection Technology**

Our customer supplies innovative, data-driven solutions for semiconductor manufacturing and advanced packaging processes, which accelerates development and enables their customers to be first to market with premium products at premium prices. Customised industrial computers delivering high performance are integral to enhancing the accuracy, throughput and dependability of the customer's vision inspection solution for semiconductor components.



Requirements & Issues

- Design of a highly custom and powerful industrial computer within a compact footprint for integration into the customer's new 2D and 3D inspection solution
- The customer's solution needs to analyse defects down to one micron, so image processing quality is paramount
- Components under inspection must be analysed in realtime, making processing performance and speed crucial to operations
- Memory bandwidth and 24/7 uptime are critical concerns for the customer
- Units must be highly expandable to support camera connectivity for increased throughput and accuracy
- The lifespan of the computer needs to be maximised while optimising reliability

The Solution

- Design of a custom, short depth 3U industrial computer large enough to incorporate all the customer's required technology while compact enough to fit in the overall solution
- Skylake X Intel technology delivers optimised processing power and performance for real-time component analysis at a cost-efficient price
- Computer architected to deliver 24/7 uptime and the necessary expansion for the customer to connect peripheral equipment
- Long-life industrial components including an 80% efficiency PSU enhances the reliability and lifespan of the computer



The Outcome

- The customer benefits from 20% more computing power at 20% of the cost when compared to its incumbent platform
- Loading of software and professional installation of expansion cards saved the customer time and assured peace of mind
- Free lifetime support further maximises the lifespan of the customer's application
- The customer has access to a highly custom computer that can be reordered off-the-shelf with rapid turn around



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