i3070 Inline ICT Improves Functional Test Yield of SSDs

Customer reports first pass yield results of more than 95% with less than 0.5% false failures

Customer industry: SSD Manufacturing

Case Study

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Business need

In recent years, demand for Solid State Drives (SSDs) has been gaining traction. SSD manufacturers are facing pressure to produce at a higher volume and at faster output rates. This has prompted our customer to re-evaluate their existing manufacturing test process.

The high volume PCBA manufacturing test process in the customer's production environment are faced with some significant challenges. In their traditional board test process, the functional testers were used to determine whether the product is a good or bad product. However, due to the testers' inability to quickly and accurately identify the root cause of PCBA failure, this has led to a longer lead time for PCBA repairing and a significantly low output yield.

Considering the ever-increasing demands for faster throughput and higher volumes, the customer is clear that they need a better solution to be competitive and achieve world-class SSD electronics manufacturer status. Most critically, they need a solution to reduce their bone pile and increase the first pass yield of the functional test station.

Solution

To help the customer address their challenges and production needs, Keysight Technologies worked closely with them to understand their manufacturing test requirements. Armed with this insight, Keysight further collaborated with the fixture partner to deliver a **i3070 Series 5 Inline ICT** solution that fulfills the required conditions.

The customer purchased 2 units of inline ICT systems for the initial production. Upon installation of the systems on-site, they found that the inline ICT systems could automate daily board test operations flawlessly without compromising product quality. Within 6 months from its initial installation, subsequent follow-up orders from the customer ensued, due to the positive and promising results of the inline ICT testers. To date, a total of 13 inline ICT systems was purchased, and reportedly more than 2 million panels have been tested.

The commitment to customer's success was rewarded with smooth deployment of the new inline solution, despite some initial challenges in product finalization as the system was then still in the development phase.

Benefits

The customer reported a satisfactory performance of the inline ICT handler, which maintained a zero-damage record within the period of use. The tester also showed **first pass yield results of more than 95% with less than 0.5% false failures**. These failures were not due to fixture issues, but various tests that needed tweaking. Functional first pass yields have also improved, leading to reduced repairs from the front to back end.
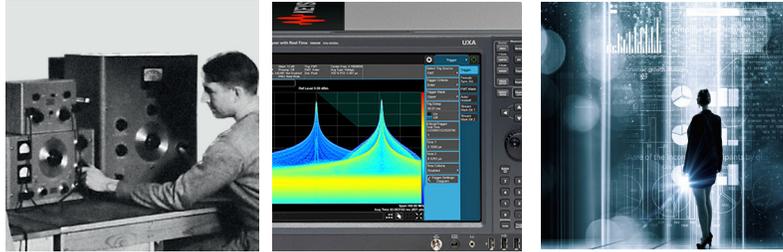
Summary

The Keysight i3070 Series 5 Inline ICT has successfully proven itself as a good board test solution for the SSD electronics industry, producing stable and high-yield results for PCBA tests. This case study records the customer's satisfaction with the inline system in the following areas:

- Increase first functional test (FCT) yield
- Eliminate long hours of repair time
- Reduce unplanned incidents created due to human mishandling of sensitive printed circuit board assemblies (PCBA) on their production lines

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