HILEVEL Technology, Inc.

Q'nApps #P3

Q: Can I use my HiLevel system for Production Test?

The HILEVEL Production Floor
Test & Sensibility

The ETS series testers were designed for engineering and failure analysis. Our customers brought the system onto the production floor, primarily in the realm of low-volume production testing. In such an environment, device handling is often strictly a manual process. Yet, automatic IC handlers and wafer probers are employed extensively in conjunction with ETS testers, and the HiLevel emphasis was increasingly directed toward improving on the number of devices tested per minute - throughput - while maintaining test accuracy.

HiLevel entered the realm of high-volume testing with the introduction of the ETS570 that features multiple PMUôs per system -- up to 16 PMUôs for a 512 pin system. This meant a magnitude improvement of test throughput, which is what high volume testing is all about. While a single PMU will generally suffice for manual testing, multiple PMUôs are indispensable when large ICôs are tested with automatic handlers or probers. A magnitude improvement in test times is achieved without any reduction in test accuracy. Like the single PMU, our multiple PMUs employ mechanical relays, high-precision resistors (with 0.05% tolerance), instrumentation amplifiers, and high-resolution DACôs.

In order to maintain yield, our throughput improvement techniques avoid ótricksô such as gang-leakage testing which could compromise the integrity of the test results.

The tester is also utilized in production process control. For instance, by measuring the resistance between specified pins, the system can determine the integrity of, say, metal layers within the IC. System size and the accuracy of its PMU make it ideal for this use.

With so many and varied applications pertaining to the production floor, a variety of QônApps have been developed with production in mind:

Q'nApp #P12: Manual Test Applications
Q'nApp #P14: High-Volume Production Testing
Q'nApp #P18: Interfacing to Probers
Q'nApp #P37: MultiSite
Q'nApp #P46: TDR Check
Q'nApp #P48: Custom AutoTest Logfile
Q'nApp #P51: Fast Continuity
Q'nApp #P56: Timeout
Q'nApp #P57: AutoTest Timestamp

Perhaps the greatest advantage of using a HiLevel tester for production test is its superior capability of determining the cause of failure. Hence, our roots in the failure analysis lab produce another kind of throughput: time to market. Without a reliable product in the market place, other throughput parameters matter little.

All in all, your HiLevel system is a rational solution to escalating test cost. High throughput, accurate testing, sensible cost, fast time to market.

It all sums up to Test & Sensibility.