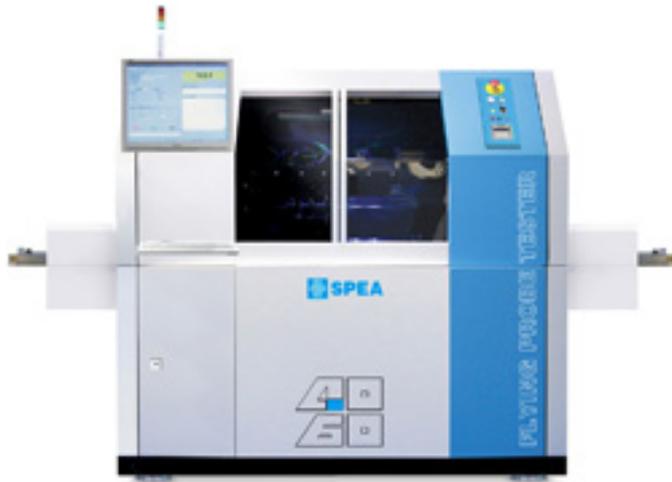


## **GOEPEL electronic and SPEA cooperate to integrate Boundary Scan into new Flying Prober Generation**



Within the scope of an OEM cooperation, GOEPEL electronic and SPEA developed a professional Boundary Scan option for the SPEA 4060 Flying Prober test system. This integration provides crucial benefits such as increased test and fault coverage as well as significant time savings in the automatic production process.

The interaction between Flying Prober and Boundary Scan is fully automatically controlled, with the integration of the top and bottom probes of the SPEA system in the test run. The Boundary Scan cells are connected with the 4060 Flying Prober's digital channels via the test points. During the test, the contacting probe works as additional, virtual Boundary Scan cell in the respective net, e.g. enabling the detection of a non-soldered pin that is connected only with a connector.

“This combination of Flying Prober and Boundary Scan fits ideally, in particular for assemblies with BGAs supporting Boundary Scan and a significant percentage of discrete components. The interaction of both systems leads to a considerably higher fault coverage, compared to separated utilisations”, explains Alexander Beck, GOEPEL electronic's integration expert. “Especially manufacturer of PCBs with highly limited test access are now able to achieve enormous technological and economic advantages by using such integrated production systems”.

Andrea Ganio, Executive Director of SPEA, adds, “The perfectly integrated combination of our flying probe capabilities with the GOEPEL electronic Boundary Scan measurement module meets the request for high-performance digital testing, demonstrating the great results that these complementary techniques give when

used together. The joint experience of two leading companies in flying probe and Boundary Scan testing has brought to a top-class technological solution, providing best test coverage, test time optimization and ease of use“.

The SPEA/GOEPEL integration is not just the addition of flying probes and boundary scan module: The system works in optimized way, benefiting of a single software interface. The automatic test program generation is able to combine in-circuit and boundary scan test, avoiding any redundancy in the test coverage so optimize the test time: All the tests that are already covered by the boundary scan, are no longer executed during in-circuit testing. Additionally, boundary scan test can be executed also on components that are not JTAG-type, by forcing the appropriate signals through the flying probes.

In order to save time, test developers can determine a maximum number of contacting, in which only faulty nets are repeated, after the first test run. Because of test step reductions, additional time savings with the Flying Prober is achieved. Nets, which are covered by Boundary Scan, can be excluded from the SPEA test run. The integrated fault report displays both errors detected by the Flying Prober or the Boundary Scan subsystem in the output window of the 4060 system.

In terms of system software, the integration is supported by both SPEA's Leonardo Software and GOEPEL electronic's SYSTEM CASCON™. GOEPEL electronic provides complete integration packages on various levels that differ in hardware performance and software options. Each integration package contains an SFX/ASL1149.-(x) controller for USB, LAN and cabled PCI Express, as well as an SFX-TAP4/FXT TAP Transceiver with differential signal transmission TIC02/SR modules (TIC: Tap Interface Card) to be installed into the shuttle.

The SCANFLEX® principle enables an optimised signal quality for test frequencies of up to 80 MHz under ideal conditions. That means that modern test technologies such as VarioTAP® or ChipVORX® can be efficiently utilised in the ATE system in the future.

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