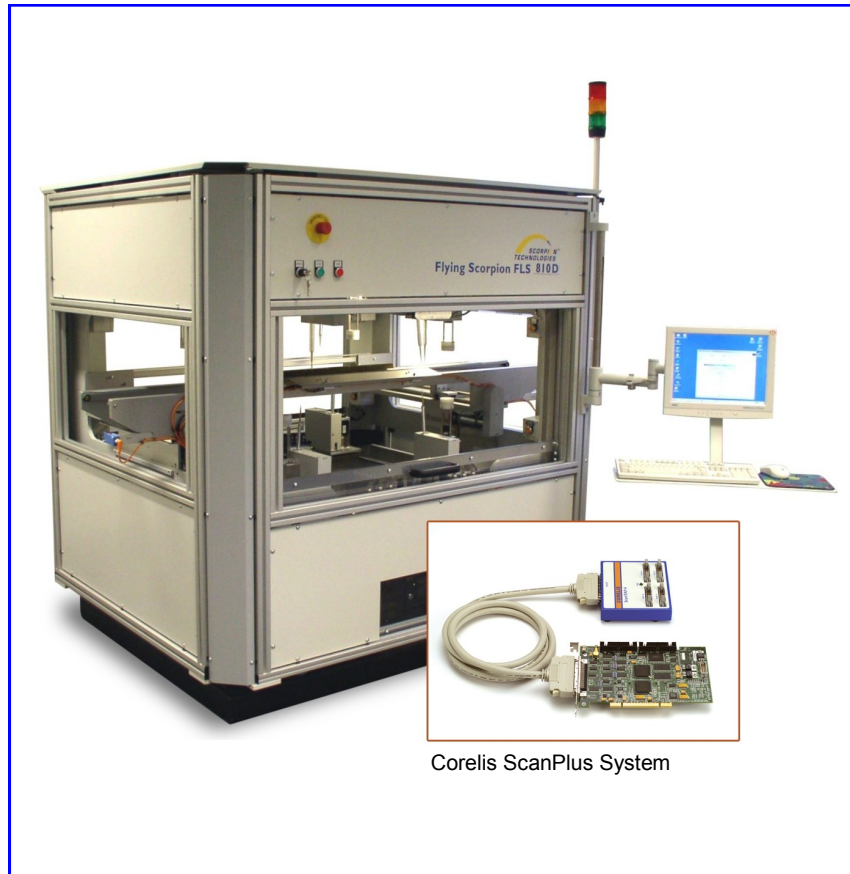


Boundary-Scan Upgrade for Scorpion Technologies FlyingScorpion

- ❑ Increases test coverage of inaccessible nets and pins such as BGAs
- ❑ Reduces overall test time
- ❑ Complies with IEEE Std 1149.1 and BSDL industry standards
- ❑ Fault detection and isolation to the net and pin levels
- ❑ High-performance In-System Programming (ISP) of CPLDs, FPGAs, and Flash
- ❑ Automatic generation of test patterns for Infrastructure, Interconnect, Clusters, Memories, FIFOs, and Resistors, using proven, mature boundary-scan test algorithms
- ❑ High-level debugger including waveform representation of applied, expected, and actual test data including go from breakpoints, looping, and single-step
- ❑ Supports more than 60 industry standard CAD and netlist formats
- ❑ High-performance boundary-scan controllers
- ❑ Built-in test sequencer for automatic execution of independent tests with user specified order
- ❑ Summary and Comprehensive reports of board test coverage
- ❑ Provides a test-statistics and results-report for each test run



Corelis ScanPlus System

Overview

With the rapidly increasing complexity of printed circuit board assemblies and the drive for reduced time to market, Flying Probes such as the one manufactured by Scorpion Technologies are quickly becoming the test solution of choice.

The low cost and short test program development time are two major reasons for making the Flying Probe an ideal tool for prototypes, new product introductions, and low volume (high analog/digital mix signal) production applications where the cost of complex test fixtures cannot be justified.

The Flying Probe does not require test fixtures thus reducing cost and increasing flexibility to incorporate design changes.

Boundary-scan operates as the perfect companion to the Flying Probe. Boundary-scan is capable of increasing the fault coverage by testing, for example, opens on BGA connections that are connected to inaccessible nets internal to the circuit board. These 'buried' nets do not appear on the top or bottom of the circuit board, nor are they connected to any vias, where they could be accessed by the moving probes. Without boundary-scan integrated with the moving probe system, open solder connections to the BGAs, with such 'buried' nets, cannot be detected.

Integrating the Corelis ScanPlus boundary-scan tools with the Scorpion Technologies FlyingScorpion

into a single instrument forms a powerful and cost effective solution that virtually eliminates each of the obstacles that are presented to the individual test technologies. By utilizing the benefits of both boundary-scan and the Flying Probe, complete test procedures can be created in a minimal time frame that provide outstanding test coverage of the entire printed circuit board assembly.

General Description

The integration of the Corelis ScanPlus boundary-scan tools with the Scorpion Technologies FlyingScorpion is performed via the Scorpion Integrator Interface. By simply including the proper icon into a test plan, a complete boundary-scan test or Flash Programming step can be incorporated into any given Flying Probe test program.

When faults are detected by the boundary-scan portion of the test, the output of the ScanPlus Advanced Diagnostic is displayed from within the interface, clearly specifying the cause of the fault down to the net and pin level. The Scorpion Integrator user interface, with included boundary-scan test steps, is shown in Figure 1. Figure 1 also shows the test results display following a successful production test, using the Corelis boundary-scan tests routed to the top and bottom of the board under test by the moving probes - all under the control of the test program running on the FlyingScorpion.

Figure 2 shows a bridging fault detected with the Corelis ScanPlus Runner. The fault was detected during the interconnect test and the Corelis pin level diagnostics are shown in the window.

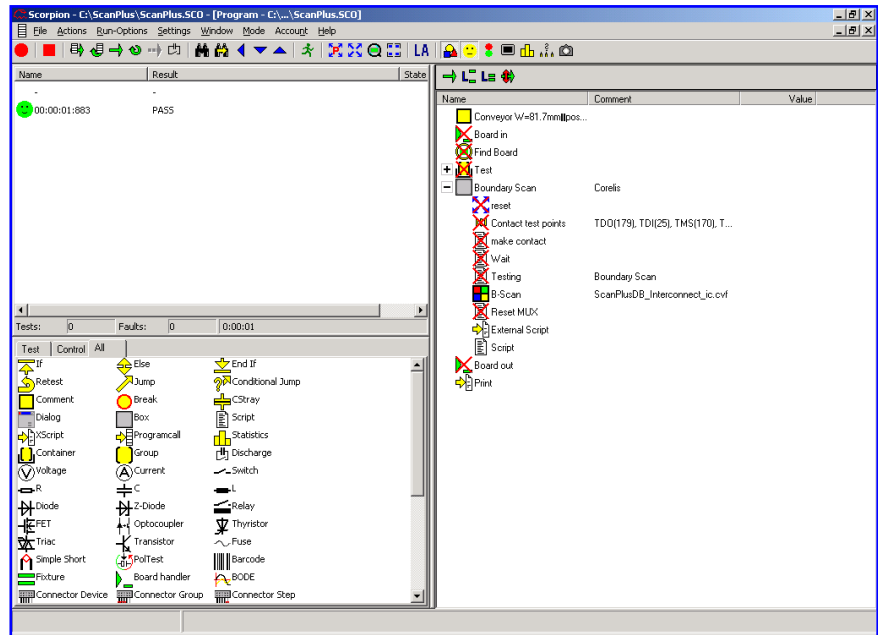


Figure 1. Successful production test using boundary-scan

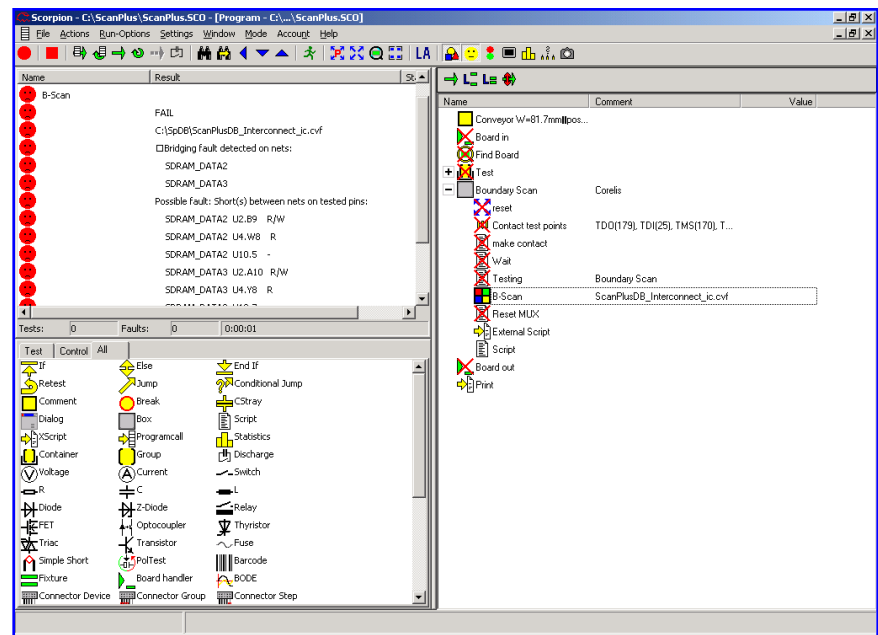


Figure 2. Bridging faults diagnostics

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