

Q&A Session for ICT Techniques and Benefits of Integrating Goepel Electronics'  
SCANFLEX Boundary Scan System with Teradyne's TestStation

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Q: Can the signal-leads from the TIC to the UUT influence the ICT-Test?

A: The TIC disconnects the UUT test bus signals from the SCANFLEX hardware with breaker relays when Boundary Scan is not running (this includes any parallel I/O signals and Ground leads wired between the UUT and the SCANFLEX hardware). Therefore, ICT tests are not influenced by the SCANFLEX hardware.

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Q: Is SCANFLEX integration into a test system supported by Teradyne as much as Scan Pathfinder technique, or more, or less?

A: The SCANFLEX hardware and CASCON software are products sold and supported by Goepel. The integration of the Goepel hardware and software utilizes special features of the Teradyne test systems and Teradyne fully supports the application of these features.

Teradyne's Scan Pathfinder product utilizes only Teradyne hardware and software to perform standard 1149.1 boundary scan tests, but Scan Pathfinder tests are not portable to other test equipment and they do not support extensions to 1149.1 like 1149.6.

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Q: How much (%age) do you save on the test fixture because of integrating JTAG and ICT?

A: Test fixture savings heavily depend on the test coverage achievable with JTAG/Boundary Scan and differs from one UUT to another. We'll be happy to work with you on a DFT Analysis for JTAG/Boundary Scan and on exploring savings that can be achieved for your specific UUT.

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Q: Will the Boundary scan failure message come out the Teradyne's real time data logger?

A: A utility can be written to parse the Goepel Boundary Scan results file and extract failure messages. These failure messages may be formatted and sent to the Teradyne data log file via test programming statements.

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Q: Can the Goepel SFX product be installed on Teradyne 2281A and 2287A analog only tester models ?

A: The 2287A and 2281A analog only testers utilize unique sized scanner cards and the SCANFLEX SFX hardware cannot be installed in these systems. However, it is still possible to integrate external Goepel hardware and the CASCON software on these systems.

Analog only TestStation systems equipped with 121A pin boards do support the Goepel SFX hardware and it is possible to add the boundary scan test capability to these analog only test system configurations.

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Q: Are BScan Results/Errors logged in the Teradyne Spectrum Tokenlog File ?

A: The Spectrum run-time software has control over what is written to the Tokenlog file. If the external program pages used to call CASCON tests fail, then information about the failing page is written to the Tokenlog file. This would not typically include very detailed failure information.

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Q: Is a summary report (ICT & BS) available? All fault coverage?

A: A joint test coverage report is not generated automatically. However, third party tools or Teradyne's D2B Strategist software could be used to generate an integrated test coverage report.

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Q: What is the availability for these integrations?

A: The Goepel SFX product is available now for TestStation LH/LX and GR228X test systems. It will be available for the TestStation SE/ Sprectrum 88xx test systems in the second quarter of 2007.

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Q: Does the integration of GOEPEL BScan tools impact my Teradyne warranty?

A: No. This has been jointly developed and has been validated and is certified by Teradyne.

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Q: What is the maximum TCK frequency that is supported by these Boundary Scan tools?

A: SCANFLEX supports a programmable TCK frequency of up to 80 MHz. It is unlikely, though; that the UUT scan chain supports such a high TCK frequency. The SCANFLEX controller performance can be scaled with software enable codes from 20 MHz TCKmax (A-Type controller), to 50 MHz TCKmax (B-Type controller), to 80 MHz TCKmax (C-Type controller). More details are available from GOEPEL Electronics at [www.goepelusa.com/scanflex.html](http://www.goepelusa.com/scanflex.html).

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Q: Do ICT operators have to learn a new software interface (for the GOEPEL software) for this integration?

A: No. The Operator does not see the GOEPEL software. The Boundary Scan tests and programming routines are executed in the background via DLL calls. Only the person developing the Boundary Scan tests is confronted with the GOEPEL software GUI.

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Q: Can I share ICT and Boundary Scan resources dynamically? I.e. can I drive and measure with Boundary Scan I/O's synchronized with ICT test channels?

A: The testers I/O channels are not controlled by the SCANFLEX software, but they can be preconditioned to a static state (to isolate components or improve testability) prior to the execution of the boundary scan tests. Dynamic control of non-boundary scan nets can be accomplished by using Goepel I/O signals that are available as part of the standard SFX hardware or as a hardware option.

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Q: The SCANFLEX card is in the TestStation card cage. Does that effect TestStation self tests ? Is it included in TestStation self tests ?

A: The SCANFLEX Transceiver card only draws power from the card cage backplane. Other than any power up tests included in the TestStation self tests, the SFX card is currently not included in the TestStation self tests. CASCON GALAXY verifies at initialization and at test start that the SFX Transceiver is properly recognized. Self test capability (controlled by CASCON GALAXY) is included in the single-ended TAP Transceiver versions (not in the differential TAP versions).

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Q: Are there special fixturing issues related to wiring up the SFX card ?

A: Standard fixture wiring rules apply - keep wires as short as possible. For single-ended TAP Transceivers, twisted pair (Signal/Ground) is highly recommended. For differential TAP Transceivers, the SFX TAP Transceiver connections are wired to a TAP Interface Card mounted inside the fixture and the single ended signals from that TIC card are wired to the nails probing the

respective test points (for these connections, twisted pair is highly recommended again). Also, dual-stage fixtures are recommended.

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Q: How are Goepel failures integrated with ICT failures ?

A: The Boundary Scan test result can be reported as PASS or FAIL and the specific diagnostic messages from the Boundary Scan test report file can be parsed and included in the ICT test report using a user script utility.