ScanWorks BSI Card Tests

KEYSIGHT
TECHNOLOGIES

Overview

The ScanWorks BSI Card tests are numbered in the range 11000 to 11099. These tests check:

- PCI-400 Controller Card in the system controller
- BSI (Boundary-Scan Interface) Card
- Cable between them

Modified Pin Verification Fixture

The functionality tests (11013, 11014) require a modified Pin Verification Fixture (PVF). The PVF must have a Performance Port Extender and a 100-pin loop-back block in the appropriate location. The BSI Card can be installed in any of the eight ports, so verify that the 100-pin loop-back block on the PVF mates with the BSI Card. If you need to upgrade a PVF, a complete upgrade kit is available.

Repair Strategy

If defects are found on the BSI Card, replace the card. The diagnostics do not isolate defective relays.

BSI Card Tests

- Test 11000
- Test 11001
- Test 11012
- Test 11013
- Test 11014
- Test 11015
- Test 11016

Test 11000

PCI-400 Controller Card Self-Tests

This test runs the PCI-400 Card's self-tests. It always runs, whether the ScanWorks hardware is present or not.

The test fails only if the PCI-400 Card's self-test fails. It does not matter whether any device is cabled to the PCI-400 Card.

Test 11001

Configuration Test

This test reads the "official" configuration (`config` file) and the "actual" configuration (hardware present). While the only BSI configuration supported is a single BSI Card connected to channel A of the PCI-400 Card, several conditions will yield a passing test.

Table 9-1   Pass/Fail Conditions

bsi 1 in config file	Connected to:		Test Pass/Fail
	PCI Ch A	**PCI Ch B**	
No	Nothing	Nothing	PASS
No	BSI Card	Nothing	FAIL
No	Pod	Nothing	PASS
No	Nothing	BSI Card	FAIL
No	BSI Card	BSI Card	FAIL
No	Pod	BSI Card	FAIL
No	Nothing	Pod	PASS
No	BSI Card	Pod	FAIL

Table 9-1   Pass/Fail Conditions (continued)

bsi 1 in config file	Connected to:		Test Pass/Fail
	PCI Ch A	PCI Ch B	
No	Pod	Pod	PASS
Yes	Nothing	Nothing	FAIL
Supported Configuration			
Yes	BSI Card	Nothing	PASS
Yes	Pod	Nothing	FAIL
Yes	Nothing	BSI Card	FAIL
Yes	BSI Card	BSI Card	FAIL
Yes	Pod	BSI Card	FAIL
Yes	Nothing	Pod	FAIL
Yes	BSI Card	Pod	PASS
Yes	Pod	Pod	FAIL

Test 11012

BSI-1 Self-Tests

Requires: Passing test 11000

This test runs the BSI Card's self-tests. It also verifies the communication path (cable) between the PCI–400 Card and the BSI Card.

The test fails only if a BSI Card is connected to channel A and the BSI self-test fails.

Test 11013

BSI-1 D/R Functionality (with fixture)

Requires:
- Modified PVF (see Modified Pin Verification Fixture)
- Passing tests: 1001 (after 502, before 504), 11012

This test tests the functionality of the drivers, receivers and terminations, and verifies that the relays can be closed (are not open).

This test will run only if:
- Test 11012 passes and
- The PVF is sensed on the side of the testhead in which the BSI Card is installed (based on the `config` file)

Test 11014

BSI-1 No Shorts Between Pins (with fixture)

Requires:
- Modified PVF (see Modified Pin Verification Fixture)
- Passing tests: 1001 (after 502, before 504), 11012

This test verifies that there are no shorts between pins on the 100-pin block on the BSI Card.

This test will run only if:
- Test 11012 passes and
- The PVF is sensed on the side of the testhead in which the BSI Card is installed (based on the `config` file)

Test 11015

BSI-1 D/R Functionality (without fixture)

Requires: Passing test 11012 (after 504)

This test tests the functionality of the drivers, receivers and terminations on the DIO and THIO signals.

Test 11016

BSI-1 No Shorts Between D/Rs (without fixture)

Requires: Passing test 11012 (after 504)

This test verifies that there are no shorts between drivers and receivers. It tests for shorts that cannot be detected with Test 11014.