Broken Chain Analyzer™

Automatically Finds the Defective Scan Cell in Scan Chains

Broken Chain Analyzer™ Highlights:

- Automatically pinpoints the defective scan cell location in broken scan chains
- Automatically performs diagnosis of captured fail results from scan chain ATPG tests
- Detects hard (stuck-at) issues in scan chains
- Utilizes industry Standard Interface Test Language (STIL) used in the ATPG test
- Use **Defect Isolator™** to quickly identify the physical location of defective scan cells pinpointed by **Broken Chain Analyzer™**

Defective scan cell analysis summary

Key Benefits:

- Patented algorithms automatically diagnose captured test failures to isolate defective scan cells in seconds
- No physical probing or laser detection techniques needed
- Combined with **Teseda Defect Isolator™** to locate defective scan cell nets and pins in minutes versus weeks or months
- Intuitive graphical user interface provides rapid visual understanding of results

Resolve Scan Chain Issues Instantly

As line geometries continue to shrink, the emergence of scan chain-based failures is becoming a significant part of the debug and failure analysis effort. At line widths of 65nm and below, scan chain related issues amount to greater than 30% of overall scan failures. Tedious methods of probing scan chains using laser detection, scan cell by scan cell, have proven expensive, setup-intensive and time consuming. When analyzing captured scan test results, automated algorithms are applied for scan chain diagnosis, simplifying the process dramatically – obtaining results in seconds.

Automated Diagnosis of Failing Scan Cells

Teseda Broken Chain Analyzer™ fully exploits the power of your existing scan-based tests to automatically analyze captured tester fail logs and detect common causes of scan chain failures down to the failing scan cell index location. The user simply inputs the same ATPG patterns (in STIL format) used to capture the resulting fail log. Fail logs are imported into **Broken Chain Analyzer™**, along with the test pattern for automated failure diagnosis. Diagnosis is performed using the interactive GUI. Diagnosed chain bit fails can then be easily analyzed by **Teseda Defect Isolator™** to identify the physical location of the individual net that is causing the failure in the scan chain.

Identify Logical Instance Name of Mismatching Scan Cells

Graphical View of Chain Test Results

Broken Chain Analyzer™

- Compatible with ATPG pattern files generated by all EDA vendors
- Supports EDA-based failure log formats
- Stuck-At-Detection: Stuck-At-Zero, Stuck-At-One
- Intuitive graphical user interface
- Chain failures are automatically identified to the bit location in the scan chain
- Provides scan cell index and instance name to identify the physical location using **Teseda Defect Isolator™**

Broken Chain Analyzer™ determines the defective scan cell in the scan chain

Defective scan cell identified with failure classification (e.g., StuckLow)

Logical to Physical Correlation

Apply Teseda Defect Isolator™ to physically locate the defective scan cell and isolate root cause

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