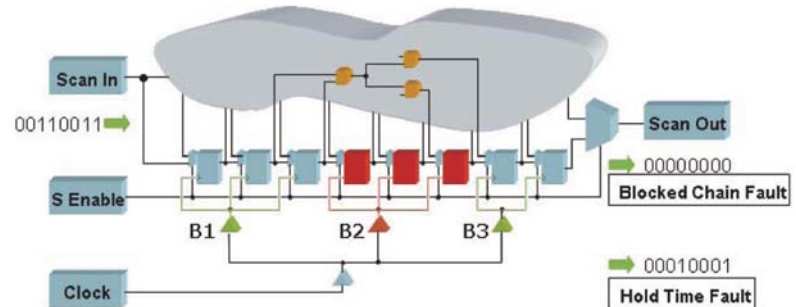


Inovys ChainAnalyzer™

Blocked Chain Analysis/Hold Time Analysis



Fast and efficient visualization and localization of blocked scan chains online and in real-time using proprietary algorithms.



ChainAnalyzer is the latest addition to the analysis and debug tools already available and works in conjunction with the Inovys FaultInsyte™ and Inovys YieldVision™ toolsets. ChainAnalyzer can isolate hundreds of blocked chain defects and now, for the first time, can also isolate Min/Max-Vdd or hold time defects as well.

Identify and Diagnose Device Design Problems Faster

The challenges to successfully introduce new nanometer scale semiconductor designs are now compounded. Not only are the technical challenges of increasing gate count, decreased external access and increasing defect and fault mechanisms an issue, engineering teams must also address the increasing challenges in the business environment. Tight margins and short product life cycles demand fast, efficient and predictable product release schedules. Defects in scan chains can generate immense amounts of structural test failure data, which can be very difficult to interpret and analyze. This powerful suite of software tools enables product, test and FA engineers to quickly identify, localize and visualize failures in scan chains at speeds suitable for a thorough, statistically valid understanding of the defects.

Accelerate Time to Production by Weeks

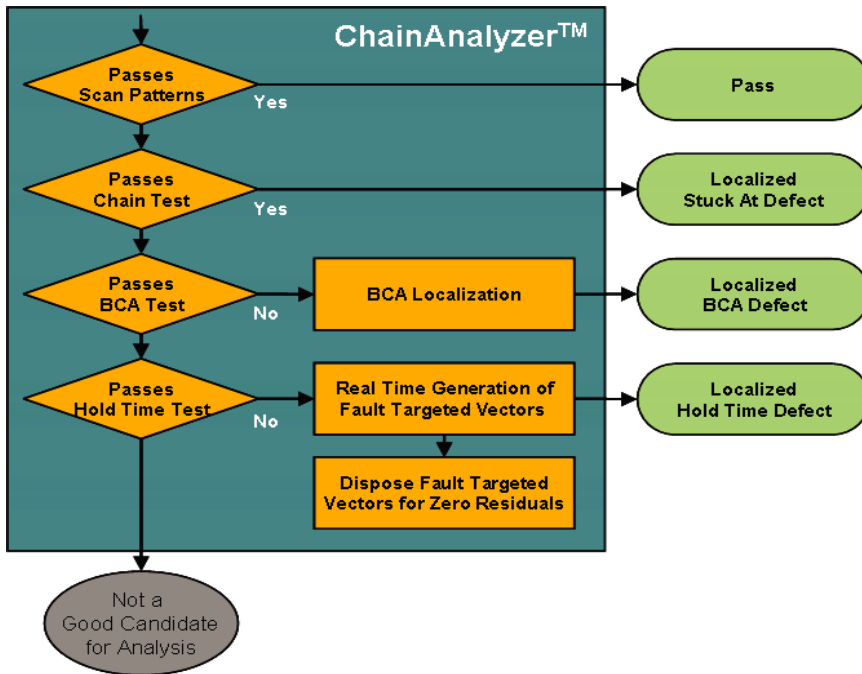
Narrow process windows and increasing leakage means that improvements in circuit speed now come mostly from the design organization rather than the fab. This can lead to issues with power rail droop and clock tree performance issues that trigger Min-Vdd problems. Heavy use of all of the available metal layers in scan chains can also lead to problems. The connections linking these chains together may not be functional paths and would therefore be routed after critical timing. Thus, many metal and via interconnects may be used to link two adjacent scan cells. This can lead to large numbers of blocked chains. ChainAnalyzer enables engineers to rapidly isolate these defects and address their causes. This removes a significant roadblock in completing the design debug process and accelerates their time to production.

Key Benefits:

- Identify hold time in scan chains (Min/Max Vdd problems)
- Identify blocked or broken scan chains
- Visualize multiple chain problems in a single view
- Localize the defect to a single bit in the scan chain
- Efficient diagnosis on the test platform

- Detect and monitor blocked chain defects
- Localize blocked chain defects faster than in takes to write data to disk
- Localize timing problems in scan chains due to weak clock buffers
- Localize delay defects due to long metal routs in scan chains
- Statistically valid analysis of BCA and hold-time data prior to re-spin
- Eliminate time consuming custom pattern debug process
- Accelerate time to production by weeks

Automated Analysis of Hard and Soft Defects in Scan Chains



SPECIFICATIONS

Import and View Structural Test Data

- Structural view: By scan-chain structure
- Hierarchal view: By design architecture
- Physical view: By physical layout

Track & Filter by Multiple Fail Variables

- Structural test: Scan chains, bits in chain, scan patterns, pattern set, etc.
- Manufacturing: Program rev, lot ID, wafer ID, facility, XY coordinate, etc.
- Pattern content: Execs, bursts, specs, test IDs, etc.

Powerful GUI for Visual Variables

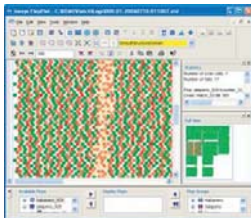
- Zoom to any level of detail within View
- Adjust color thresholds to filter failures by numerical intensity
- Intuitive displays show complete design data on any hierarchy or bit cell

Direct Links with Leading ATPG Tools, including:

- Mentor Graphics FastScan™
- Synopsys TetraMAX™
- Cadence Encounter™
- Magma Talus™

Visualize and Localize Scan Chain Failures in Real-Time— Slashing the Time for Problem Resolution from Days to Minutes

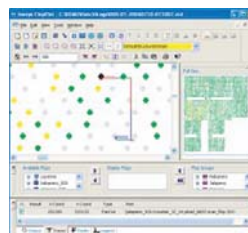
In nanometer designs, the occurrence of faults in the scan chain test circuitry is increasing disproportionately. ChainAnalyzer identifies faults in the scan chain in real-time and more importantly, using proprietary algorithms, provides the specific location of the fault. The traditional approach is to generate custom test patterns to debug these problems — a very manual and time consuming process. ChainAnalyzer can automatically locate stuck-at-faults and timing faults, which are the most common mechanisms breaking scan chains today. The faults are reported in easy to understand logical, structural and physical views. ChainAnalyzer can process hundreds of failures in minutes, ensuring that not only are you working on the right issues, but that you also understand the root cause of the fault. In less time than it takes to write the test failure data to disk, ChainAnalyzer can locate the cause of the problem, slashing the time for problem resolution from days to minutes.



Without chain analysis, scan failures span large physical areas



Scan View identifies the failing chain



ChainAnalyzer pinpoints the precise location of the fault