TestMAX Manager
Comprehensive RTL Integration Environment for Design-For-Test (DFT)

A complete, integrated RTL to ATE implementation and verification flow

Overview

Synopsys TestMAX Manager extends DFT automation to the RTL implementation phase to provide a comprehensive RTL integration flow while extending into the system and field-testing domain.

TestMAX Manager provides a Tcl based framework for the interoperability of the Synopsys TestMAX family of products, enabling flow automation and customization along with design introspection and editing capability. Figure 1 provides a graphical overview of the Synopsys TestMAX product family.
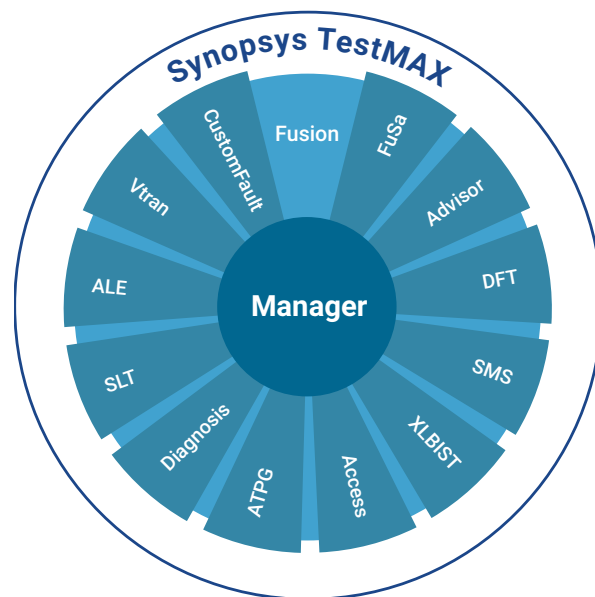

Figure 1: Synopsys TestMAX product family overview

Key Benefits

- Common interface for all DFT tools
- Full RTL flow integration support

Key Features

- Full RTL flow integration support
  - Test planning at RTL
  - RTL generation for memory test, XLBIST, codec, and OCC IP
  - Instantiates and connects DFT IP into the design RTL
  - RTL validation of connectivity and rule checks

- Comprehensive RTL editing
  - Hierarchical pattern porting
    - Supports all compression technologies: DFTMAX, DFTMAX Ultra, DFTMAX SEQ, TestMAX XLBIST
    - Merges multiple core patterns with full hierarchical support
    - Generates verification testbenches at all hierarchical levels

Full RTL flow integration support

TestMAX Manager provides a complete, integrated RTL-to-ATE implementation and verification flow. Figure 2 shows an overview of the primary flow steps and processes.

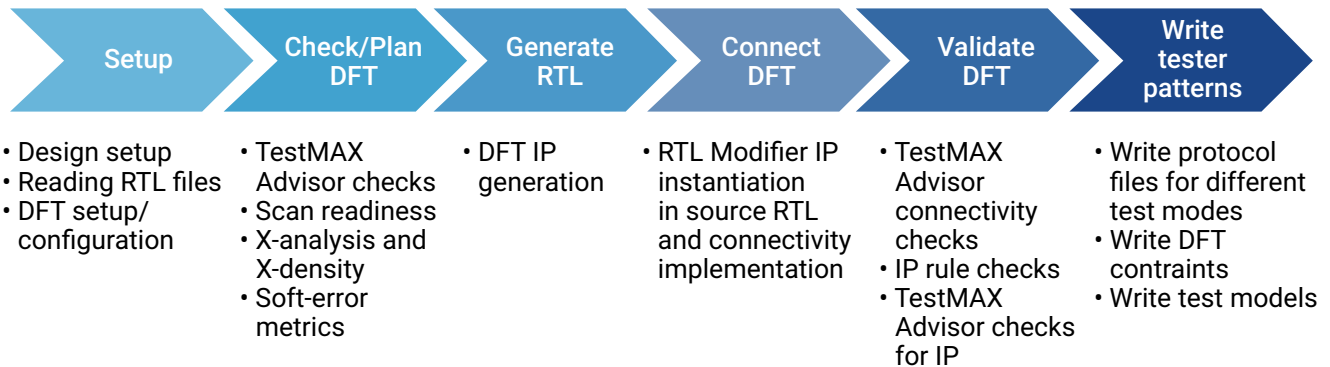| Setup	Check/Plan DFT	Generate RTL	Connect DFT	Validate DFT	Write tester patterns
• Design setup • Reading RTL files • DFT setup/configuration	• TestMAX Advisor checks • Scan readiness • X-analysis and X-density • Soft-error metrics	• DFT IP generation	• RTL Modifier IP instantiation in source RTL and connectivity implementation	• TestMAX Advisor connectivity checks • IP rule checks • TestMAX Advisor checks for IP	• Write protocol files for different test modes • Write DFT contraints • Write test models

Figure 2: TestMAX Manager flow

TestMAX Manager provides a defined framework to enable coordinated operation of DFT tasks with automatic collateral generation for design implementation. In conjunction with the Synopsys Fusion Design Platform, Synopsys TestMAX seamlessly integrates with the Synopsys RTL to GDSII flow. Synopsys Fusion technology achieves significant quality of results (QoR) through shared engines across tools within the platform.

TestMAX Manager via the Fusion Design Platform delivers significant benefits through physical awareness, reordering scan chains based on physical clustering, compressor placement optimization to reduce congestion as well as physical clustering of test points

Please refer to the product documentation of the individual Synopsys TestMAX products for further details on implementation and usage.

Design Formats

TestMAX Manager supports the following data formats:

- Design: VHDL, Verilog (RTL or netlist), SystemVerilog
- Constraints: SDC and SpyGlass SGDC, Tcl
- Power: UPF
- Assertion: OVL, SV
- Verification: SAIF, VCD, FSDB

For more information about Synopsys products, support services or training, visit us on the web at: www.synopsys.com, contact your local sales representative or call 650.584.5000.