

# PrimeWave Design Environment

## Unified Workflow Driven Environment for Simulation and Reliability Analysis

## Overview

Synopsys PrimeWave Design Environment is a comprehensive and flexible environment for simulation and reliability analysis of analog, RF, mixed-signal design, custom-digital and memory designs within the Synopsys Custom Design Family. It delivers a seamless simulation experience around all the engines of Synopsys PrimeSim with comprehensive analysis, improved productivity, and ease of use. PrimeWave Design Environment also offers a powerful Tcl-based scripting capability enabling easy regressions across thousands of corners. It offers a unified workflow driven analysis for all Synopsys PrimeSim Reliability Analysis applications. It provides a consistent and rich verification experience across applications. Synopsys PrimeWave Design Environment offers guided analysis setup, intuitive visualization, debug, and root-causing capabilities enabling a reliability aware design methodology.

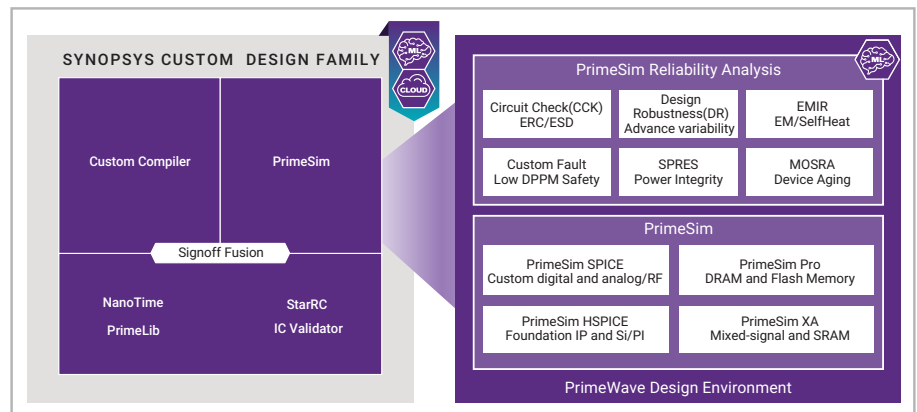


Figure 1: PrimeWave Design Environment

## Key Benefits

- Unified workflow across all PrimeSim engines for all types of simulation and reliability analysis
- Tightly integrated with Custom Compiler™ for analog, RF, and mixed-signal analysis or available in a command-line mode for custom-digital and memory flows
- High-capacity waveform viewing capable of handling large waveform files in a multitude of file formats.
- Efficient post-processing with more than a hundred built-in functions and support for HSPICE measure statements
- Open environment for integration and customization
- Flexible Tcl-based scripting capability for programming complex testbenches for regression and post-processing

## Comprehensive Environment for Analog/RF and Mixed Signal Simulation

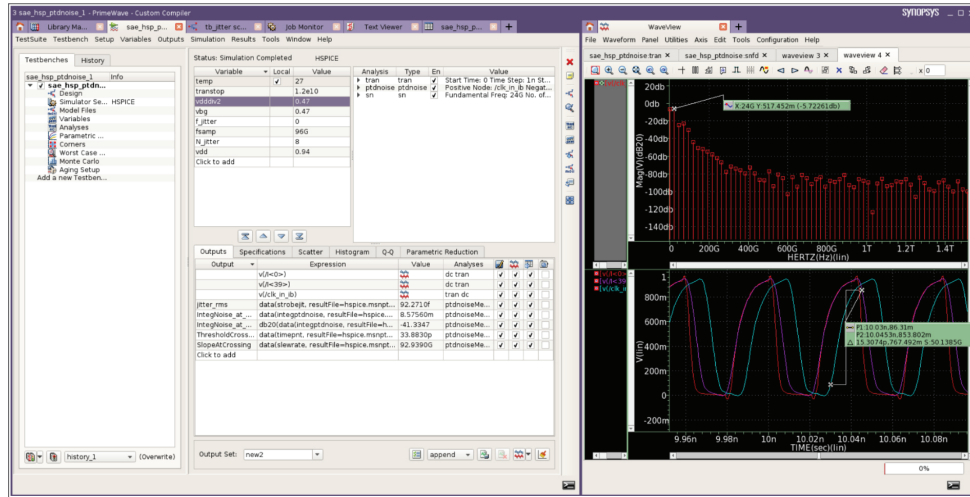


Figure 2: PrimeWave provides a comprehensive environment for analog, RF and mixed-signal simulation

The PrimeWave Design Environment is a comprehensive environment for all Synopsys simulation engines and analysis capabilities. It provides an easy-to-use simulation setup cockpit, support for grid-based job distribution and monitoring of simulation jobs, and a powerful graphical waveform viewer. Whether designing analog, mixed-signal, or RF designs on mature or advanced nodes, the PrimeWave Design Environment is a unified solution for all applications.

For mixed-signal applications, the PrimeWave Design Environment offers support for both analog and digital waveforms.

For RF designs such as VCOs, LNAs, and Mixers, the PrimeWave Design Environment offers built-in phase-noise, jitter, intermodulation distortion, and gain compression measurement functions.

For signal integrity, the PrimeWave Design Environment supports built-in measurements for statistical eye simulations as well as specific applications such as PAM4 and DDR. With the sequential testbench feature, the PrimeWave Design Environment allows dependencies to be created between testbenches and measurements, allowing measurements from one testbench to be used in another for a specification-driven flow. The powerful parameterization capability allows any design variable or view to be transformed into a variable that the design environment can iterate through, to allow exhaustive characterization of any design.

## Unified Workflow Driven Environment For Reliability Analysis

For reliability, the PrimeWave Design Environment offers a unified workflow driven setup with several features for out-of-box and customizable workflows, advanced debug, and visualizations, distributing and monitoring compute intensive jobs.

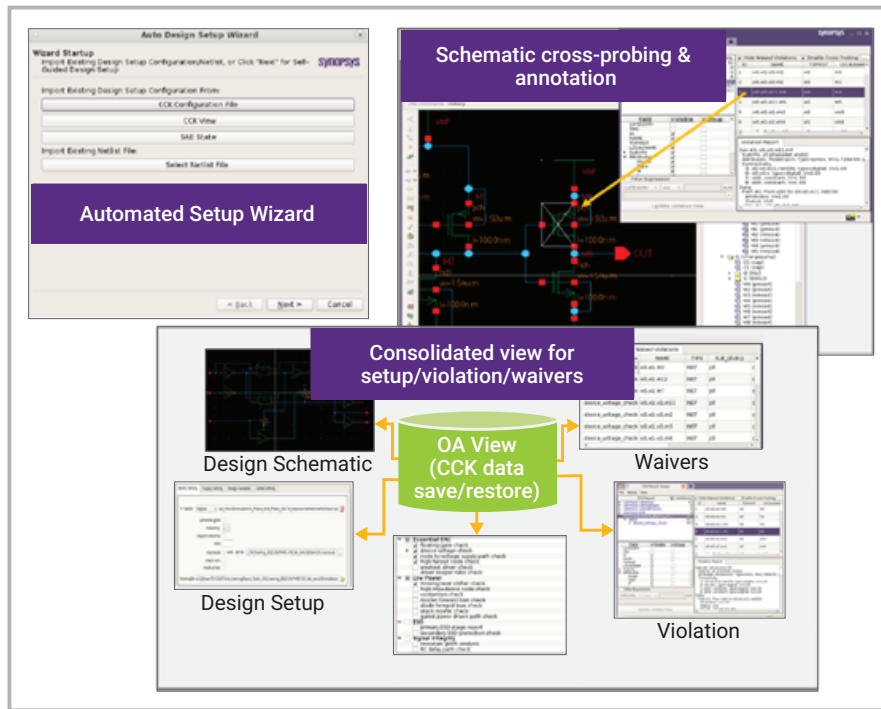


Figure 3: PrimeWave Design Environment offers a unified workflow driven setup with several features for customizable workflows

Some key highlights include.

- Guided wizard driven setup for new users and expert mode for advanced users.
- Load, visualize and cross-probe and annotate violations in the schematic and layout open access database.
- Consolidated open access view saving setup, annotations, and violations.
- Advanced debugging features to quickly root-cause and isolate reliability bottlenecks.

## Flexible and Programmable Environment

A modern design environment requires a robust mechanism for running batch-mode simulations, reliability analysis and regressions. The PrimeWave Design Environment is open and extensible and can be controlled in either GUI or Batch mode with scripting. The GUI is also extensible, allowing CAD teams to craft custom measurements and create bind key settings and release them across their organizations. The PrimeWave Design Environment allows any simulation setup to easily be saved as a Tcl script, allowing all the capabilities in interactive mode to be also used in batch-mode. Users can also define pre-and post-run procedures for performing calibrations and other processing of simulation data. The environment also provides flexibility to users to customize their own checks for reliability applications. It includes a rich set of open APIs that make it easy to customize the user experience.

## Foundry-certified, ISO26262 Compliant and Cloud Ready

- The PrimeWave Design Environment supports all PrimeSim simulators for Analog, RF and Mixed Signal simulations and offers applications for full life cycle reliability verification.
- PrimeSim and PrimeSim Reliability Analysis technologies are part of the ISO 26262 TCL1 certified Synopsys Custom Design tool chain and thus can be reliably used for ASIL-D applications.
- PrimeSim simulation engines and PrimeSim Reliability Analysis technologies are also cloud ready with enablement and optimization for leading public cloud platforms.

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