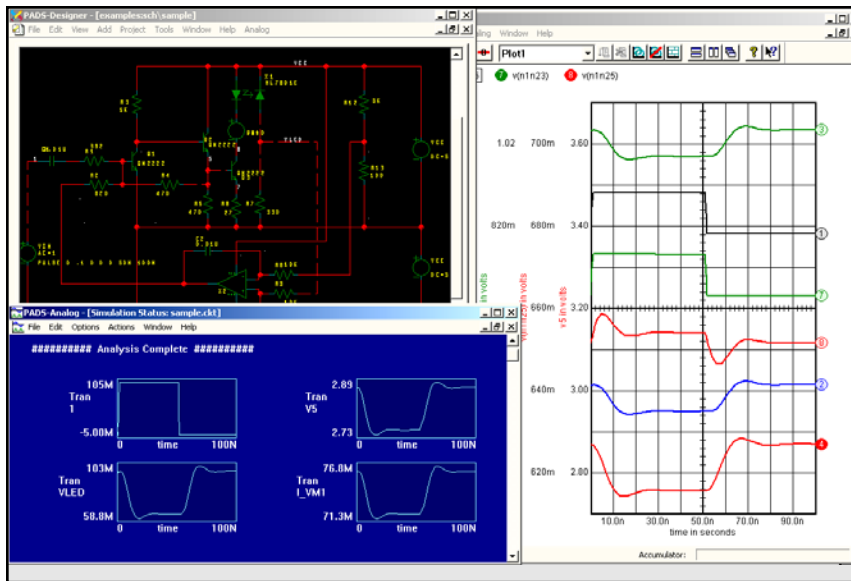


Dx Analog

Analog and Mixed Signal Simulation

System Design

D A T A S H E E T



DxAnalog provides a robust environment for mixed analog/digital simulation that is integrated with DxDesigner for a smooth design flow.

Overview

DxAnalog™ integrates analog and mixed-signal circuit simulation with DxDesigner™ for a smooth flow from design definition through set-up, simulation and analysis, and back-annotation to the schematic. Robust features support ease-of-use and advanced analyses to get your designs completed and into production quickly.

DxAnalog is suitable for simulation of switch-mode power supplies, mixed-signal ICs, RF (radio-frequency) communication systems, interconnects, signal-processing circuitry, power amplifiers, and control systems in mixed-engineering disciplines such as electrical, mechanical, and physical.

Maximizing Design Reliability

Powerful debugging tools help improve the reliability of your designs, thus curtailing production fallout and design re-spins. Once your simulation is complete, a set of powerful waveform analysis tools help analyze the data in ways that best suit your design needs.

DxAnalog is interactive, so you can work through multiple what-if scenarios quickly. For example, real-time marching waveforms enable you to view simple sweeps (where one component varies in a simple manner) or do full sweeps with complex variations in component values.

Major product benefits:

- Provides builtpin digital and mixed A/D simulation with enhanced SPICE 3 and XSPICE engines
- Integrates with DxDesigner for easy transition from definition to analysis, and back
- Advanced analyses ensure design reliability and manufacturability
- Performs a gamut of waveform operations with calculator functions
- Quickly displays complex functions
- Compares results and design changes from multiple simulations runs
- Sweeps component values and electrical parameters
- Provides model libraries for more than 14,000 components and 446 model types including many advanced model types
- Supports power supply and other magnetic based design
- Co-simulates with Fusion/ViewSim logic simulator

A unique “hold & view” feature allows you to pause the simulation, alter component values, then resume the run. The waveform window displays detailed waveform plots such as nested component sweeps, statistical family of curves, histogram, cumulative density plot, and FFT spectral display. The circuit optimization capability computes component values based on your specified design criteria.

Advanced Analysis

Other analyses for investigating complex designs include Laplace (s-domain) functions, distributed transmission lines with frequency dependent loss, and the Monte Carlo statistical verification technique.

Root Summed Square analysis enables you to analyze adverse parametric variation effectively. Further, a single-fault diagnosis shows pass/fail criteria based on “open or short” conditions applied to a component.

Scripting

The powerful scripting language in DxAnalog enables you to make the most of your simulations. For example, you can post-process simulation results automatically for results that correspond to real-world test measurements. You can set special breakpoints, obtain user-defined extracts from the simulator, and perform your own analyses. Scripts can be saved and recalled for additional program development.

In addition, DxAnalog includes dozens of scripts for special waveform calculations such as EMI standard, Nyquist plot, Hanning taper, wavelet transformation, forward and reverse FFT, and phase rotation. Advanced scripts can be used for setting design optimization objectives, or imposing advanced statistical criteria on a Monte Carlo simulation.

Extensive Modeling

We know how important models are to your ability to start simulating quickly and to get accurate results. DxAnalog offers the widest variety of model types available. If the desired model is not in our library of more than 14,000 parts, you can easily create a new model using “SpiceMod,” which accepts manufacturers’ datasheet information choosing from 446 model types.

Extensive libraries for RF devices, power devices, complex operational amplifiers, mathematical functions, non-linear magnetic devices, PWMs, BSIM, crystals, MESFETs and much more are included.

For macro-modeling of circuits and systems, a variety of programmable behavioral models allows you to characterize circuit architectures before committing to more detailed abstraction.

Digital and Mixed-Signal Simulation

Many analog designs contain or interface with digital circuitry. DxAnalog supports native mixed-signal simulation for designs dominated by analog circuitry or that possess small- and medium- scale integration (SSI and MSI) digital devices. The simulator delivers a built-in 12-state digital engine, including timing models for accurate digital signal analysis.

For larger-scale mixed-signal design flows, Fusion™ can be used for co-simulation between DxAnalog and Mentor Graphics’ ViewSim® (28-state gate-level) simulator. ViewSim provides more than 18,000 TTL type libraries.

Complete Design Solution

DxAnalog is part of the complete PADS board-level design flow. Partnering companies provide a convenient solution to import microwave layout shapes into PADS Layout.

DxAnalog provides netlist exportation from DxDesigner to many SPICE offerings such as PSpice, TSPICE and HSPICE. It also accepts many Pspice models and supports C model importation.

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