DATASHEET

VIRTUOSO ANALOG DESIGN ENVIRONMENT

The Cadence® Virtuoso® Analog Design Environment is the analog design and simulation environment for the Virtuoso custom design platform. It's the industry's standard environment for simulating and analyzing full-custom, analog, and RF IC designs, and it is the task-based tool within the Virtuoso Specification-driven Environment.

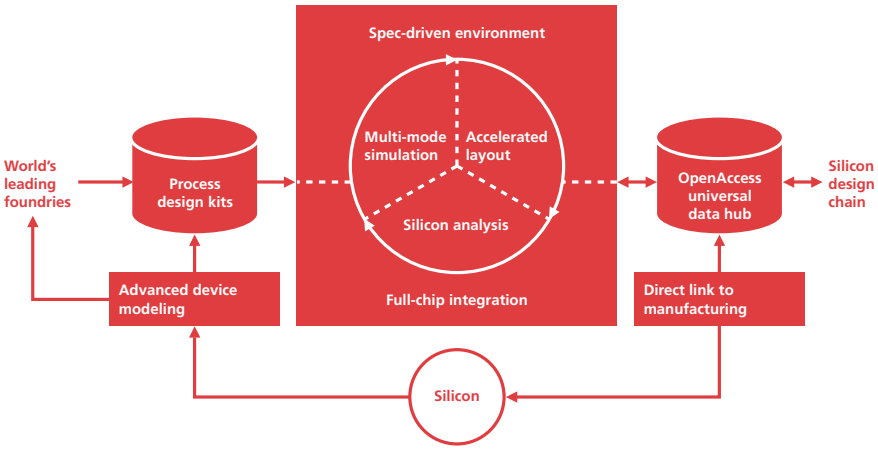

Figure 1: Virtuoso custom design platform

VIRTUOSO CUSTOM DESIGN PLATFORM

The Virtuoso custom design platform is a comprehensive system for fast, silicon-accurate design and is optimized to support "meet-in-the-middle" design methodologies such as advanced custom design. It includes the industry's only specification-driven environment, multi-mode simulation with common models and equations, vastly accelerated layout, advanced silicon analysis for 0.13µ and below, and a full-chip, mixed-signal integration environment. The Virtuoso platform is available on the Cadence CDBA database and the industry-standard OpenAccess database. With the Virtuoso platform, design teams can quickly design silicon that is right and on time.

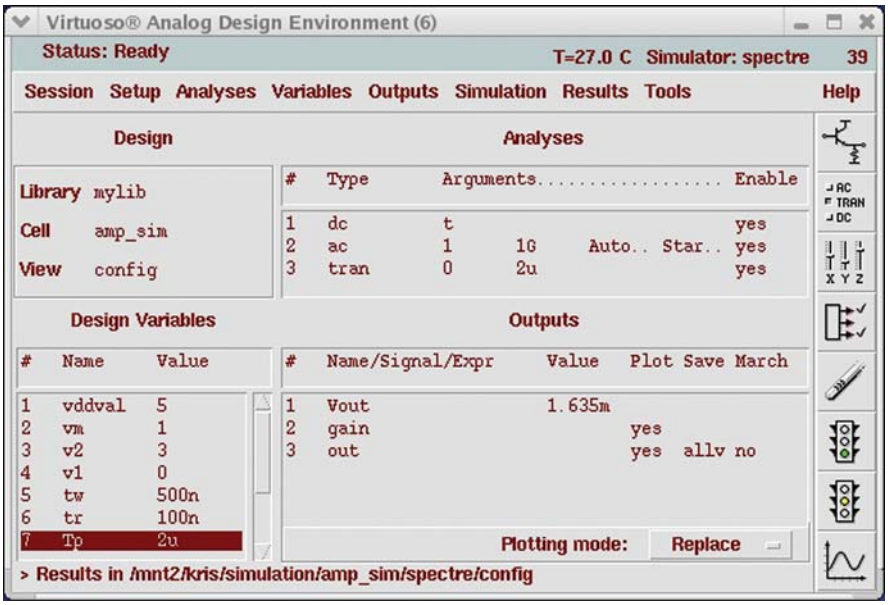

Figure 2: Virtuoso Analog Design Environment

VIRTUOSO ANALOG DESIGN ENVIRONMENT

The Virtuoso Analog Design Environment is the analog design and simulation environment for the Virtuoso custom design platform. It is the industry's standard task-based environment for simulating and analyzing full-custom, analog, and RF IC designs. The Virtuoso Analog Design Environment features a graphical user interface, integrated waveform display and analysis, distributed processing, and interfaces to popular third-party simulators (see *Figure 2*).

BENEFITS

- Reduces learning curve with intuitive, easy-to-use environment
- Provides maximum flexibility with a simulator-independent environment
- Maximizes efficiency by providing a script-driven mode
- Accelerates debug process with a variety of built-in analog analysis tools
- Ensures first pass success via powerful parasitic simulation capabilities
- Enables the user to detect circuit problems quickly through a clear visualization cockpit

FEATURES

EASY-TO-USE INTERACTIVE SIMULATION ENVIRONMENT

The Virtuoso Analog Design Environment has everything you need to set up, run, and analyze simulation results. The environment includes a variety of tools for displaying and analyzing results obtained from Virtuoso Spectre® Circuit Simulator, Virtuoso UltraSim Full-chip Simulator, or any other integrated simulator. This powerful post-processing capability gives designers the flexibility to visualize and understand the many interdependencies of an analog, RF, or mixed-signal design, allowing them to quickly and easily pinpoint critical design parameters and their effects on circuit performance. The environment is flexible enough to allow switching between different simulators without requiring the user to reset information such as parameter definitions and output measurements. The tool has an extensive built-in scripting language (OCEAN) based on the Cadence SKILL programming language, which can accelerate simulation tasks with a batch-oriented methodology. The Virtuoso Analog Design Environment has the unique capability of interfacing with other commercially-available and in-house simulators through the OASIS integrator's kit.

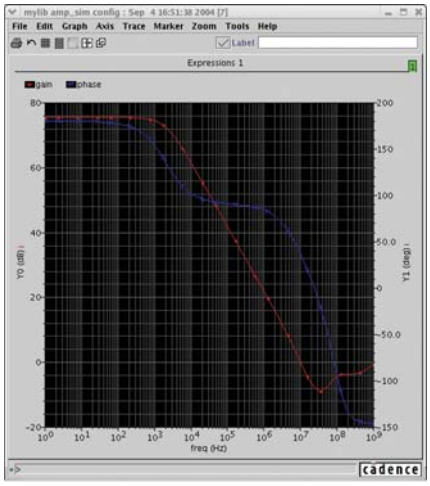

Figure 3: Waveform window

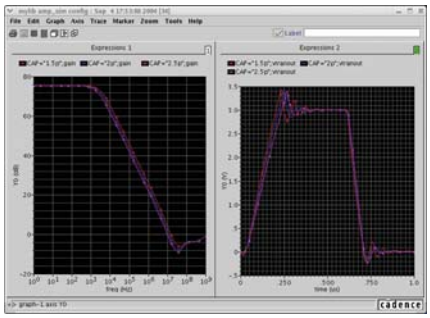

Figure 4: Waveform window showing subwindows

BUILT-IN WAVEFORM DISPLAY AND SIGNAL ANALYSIS CAPABILITIES

The WaveScan waveform display tool, which includes an extensive waveform calculator, provides a comprehensive post-simulation analysis environment. The waveform tool can handle all types of analog and mixed-signal data, including advanced displays such as noise, corner, statistical, and RF plots. It provides the user complete control over display attributes, including those for the axes, signal colors, and labels. It also provides the user with options to plot to portable formats, such as PNG, TIFF, and BMP, enabling the creation of professional plots for design reports. Waveform markers and a built-in waveform calculator allow accurate measurements of signals in a variety of different modes, including transient, AC, and RF. The calculator's algebraic expressions can be composed of any combination of design data, including voltages, currents, parameters, and operating points (see *Figures 3* and *4*).

INTEGRAL PART OF THE VIRTUOSO CUSTOM DESIGN PLATFORM

The Virtuoso Analog Design Environment is an integral part of the Virtuoso custom design platform. It bridges the gap between schematic design and physical layout by providing the unique ability to simulate designs with extracted parasitics and easily compare the pre-layout and post-layout. The design environment supports analog system to IC design methods by allowing complete access to behavioral HDLs. It also supports transistor-level design methods by allowing complete annotation of schematics with node voltages and device information.

SPECIFICATIONS

INTERACTIVE SIMULATION ENVIRONMENT

- Easy to learn and enter data
- Reusable simulation setups
- Clear displays of simulation information
- Cross-probing support for both schematics and layouts
- Design variable support
- Auto-plotting and printing of simulation data
- Batch scripting
- Schematic annotation of node voltages and device information

WAVEFORM DISPLAY

- Supports multiple Y-axes, strip plots, and Smith Charts
- Built-in waveform calculator (see *Figure 5*)
- Independent subwindow displays
- Horizontal and vertical measurement markers
- Independent pan and zoom capability
- User-defined labels and titles
- Color and line style controls
- Signal browser

DISTRIBUTED PROCESSING

- Distribution of multiple simulations
- Efficient use of existing computer farms
- Built-in basic load balancing or interface to other LSF load-balancing tools
- Job monitoring and controlling functions
- Graphical user interfaces for set up and viewing status

THIRD-PARTY SUPPORT

- Interfaces to commercial circuit simulators are available, including HSPICE, Eldo, SmartSPICE, and ADS
- Software is also available to integrate proprietary circuit simulators

DESIGN INPUTS

- OpenAccess data objects
- Cadence CDBA data objects
- Circuit design language (CDL)
- SPICE

DESIGN OUTPUTS

- SPICE
- PSF waveform format
- SST2 waveform format
- Cadence SKILL

PLATFORM/OS

- Sun/Solaris
- HP-UX
- IBM AIX
- Linux

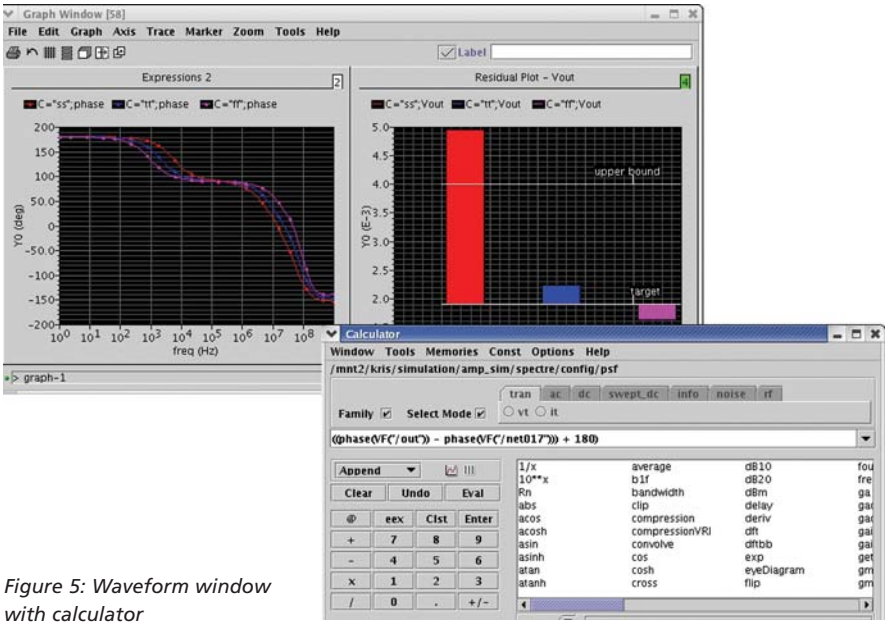

Figure 5: Waveform window with calculator

CADENCE SERVICES AND SUPPORT

- Customer-focused solutions that increase ROI, reduce risk, and achieve your design goals faster
  - – Collaborative approach and design infrastructure — virtual teaming
  - – Proven methodology and flow tuned to your design environment
  - – Design and EDA implementation expertise
- Product and flow training to fit your needs and preferred learning style
  - – More than 80 instructor-led courses — certified instructors, real-world experience
  - – More than 25 Internet Learning Series (iLS) online courses
- Cadence customer support that keeps your design team productive
  - – Cadence applications engineers provide technical assistance
  - – SourceLink® online support gives you access to software updates, technical documentation, and more — 24 hours a day, 7 days a week

FOR MORE INFORMATION

Email us at info@cadence.com, or log on to www.cadence.com

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