

DATASHEET

MunEDA WiCkeD™ Interface to:

Synopsys® HSPICE® Circuit Simulator

Synopsys® CustomSim™ FastSPICE Circuit Simulation Solution

Synopsys® Galaxy Custom Designer™ SE Schematic Editor

WiCkeD Tool Suite for Circuit Design & Sizing

WiCkeD is a comprehensive and powerful software tool suite from MunEDA for the sizing including analysis, modelling, optimization and verification of analog mixed-signal circuit designs and IP libraries.



WiCkeD supports the circuit designer with interactive manual, semi- and full-automatic tools to improve and optimize integrated circuits for functionality, performance, robustness, and yield.

Features

WiCkeD includes tools and methodologies for

- Topology Analysis & Constraint Management
- Specification-driven Performance Analysis & Optimization
- Response Surface Modelling
- Yield & Robustness Analysis, Diagnosis, and Optimization

WiCkeD can be operated either through a graphical user interface or a program-mable scripting interface (batch mode).

WiCkeD - improve circuit design performance and yield

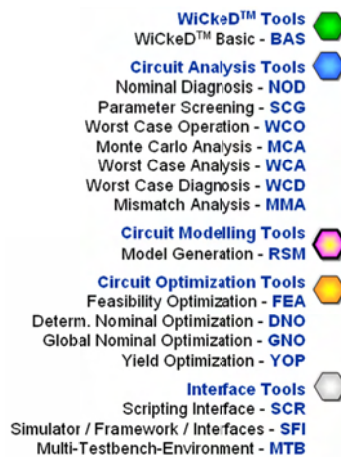
WiCkeD offers several tools for enhanced circuit analysis, modelling, optimization, and verification.



MunEDA WiCkeD Tools Overview

These tools enable customers to reduce the design times of their analog/mixed-signal circuits and IP libraries and to maximize robustness, reliability, and yield. Starting with a basic design history WiCkeD delivers a powerful compilation of basic features that enables the circuit

designer to do enhanced topology analysis, constraint setup and management.



Furthermore, it includes different analyses for circuit performance, parameter sensitivity and correlation within a well-documented project.

APPLICATIONS

- IC sizing - performance & yield analysis, modelling, and optimization
- IP porting & reuse
- IP & technology migration
- Fab migration & consolidation
- Supports transistor-level and system-level circuit design

CUSTOMER BENEFITS

- Reduce design time & effort and improve design quality significantly
- Detect design failures before tape-out and going to fab
- Avoid expensive re-spins & re-designs, reduce fab-runs
- Achieve high yield and profits

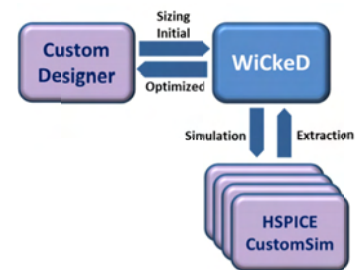
MunEDA in Synopsys Partner Programs



MunEDA is member of the Synopsys in-Sync™ Program, the HSPICE integrator program and Synopsys Custom Design Ecosystem.

WiCkeD Interfaces to Synopsys Custom Designer SE, HSPICE & CustomSim environments

WiCkeD is seamlessly integrated into and ideally complements the Synopsys Galaxy Custom Designer SE schematic editor. WiCkeD has a tight interface with Synopsys HSPICE & CustomSim simulation environments.

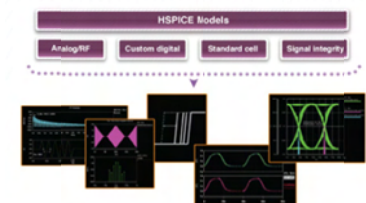


Designflow Synopsys Custom Designer, HSPICE, CustomSim with MunEDA WiCkeD

This enables circuit designers to access and utilize all WiCkeD tools intuitively from the familiar Synopsys-based design & simulation environment.

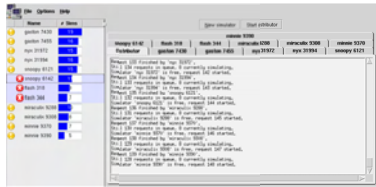
WiCkeD Interface to Synopsys HSPICE & CustomSim Simulation Environments

WiCkeD fully supports Synopsys HSPICE & CustomSim circuit simulation solutions within Synopsys Custom Designer but also from netlist stand-alone as well as third-party design environments. Synopsys Custom WaveView™ can be launched from within WiCkeD during circuit sizing.



Synopsys HSPICE Circuit Simulation

WiCkeD is fully compatible with HSPICE & CustomSim Design-for-Yield Process and Interconnect Variation Analysis, supporting the Variation Block and many other features of HSPICE & CustomSim.



WiCkeD simulation environment interface to Synopsys HSPICE & CustomSim simulation environment



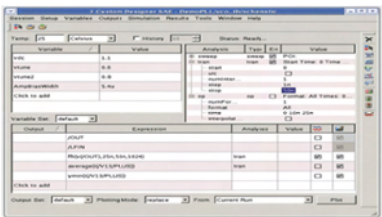
WiCkeD Constraint Editor: Management of Constraints, Parameters, Performances, Specifications

Industry-proven design & sizing environment

A user of WiCkeD typically performs only 5 steps to size a circuit starting from Synopsys Custom Designer:

- STEP 1 -- Select DUT in Custom Designer SE schematic editor
- STEP 2 – Define outputs in Custom Designer and start WiCkeD from Custom Designer Tools menu
- STEP 3 – Set parameters, performances (outputs) and constraints in WiCkeD Constraint Editor
- STEP 4 – Size (analyze, model, and optimize) your circuit with WiCkeD and verify the results with HSPICE & CustomSim within WiCkeD
- STEP 5 – Automatically back-annotate results from WiCkeD to netlist or schematic and continue with Synopsys layout tools

WiCkeD can be started directly from the Synopsys Custom Designer Tools menu with fully automated annotation and back-annotation of the design data from and to schematic & netlist.



Start WiCkeD directly from Custom Designer SE

WiCkeD directly retrieves the design and hierarchy data from the Synopsys Custom Designer SE schematic editor or netlist followed by a fully automatic parameterization of schematic and netlist design parameters as well as constraint setup and editing. Specifications for circuit analysis and optimization can be easily entered in the WiCkeD Constraint Editor. Parameterized devices and hierarchies can be highlighted from WiCkeD Constraint Editor directly in the Custom Designer SE schematic editor.

The technology setup (nominal, corner, mismatch, global statistics) will be done automatically from the pdk using a technology based configuration file.



MunEDA WiCkeD Design & Sizing History & Tools

Based on this the advanced WiCkeD tools for circuit analysis, optimization, modelling, and verification can be used by the designer within a well-documented design & sizing history to check and improve the circuit functionality, performance, and yield in the desired operating environment.

SPECIFICATIONS - Synopsys-based WiCkeD Designflow

WiCkeD Inputs/Outputs

- Synopsys HSPICE netlist format
- Technology Data – PDK process design kit
- Optimized netlist/schematic
- Generated behavioural models for system-level optimization

Platform Support & Features

- Linux, SUN Solaris®
- Documented API (Tcl/Tk, Python)
- Export/Import Interfaces (Matlab, R, SPlus, VerilogA, VHDL-AMS)

Third Party Support

WiCkeD is integrated in and supports the main commercial circuit design environments and simulators including Synopsys®, Cadence®, Mentor Graphics®, and others.

SUPPORT & SERVICES

Synopsys

For support of mentioned Synopsys products please contact Synopsys with www.synopsys.com.

MunEDA

Get support directly from MunEDA GmbH & MunEDA Inc. or from MunEDA certified worldwide distribution & support partners.

SELECTED FEATURES

Integration Synopsys Galaxy Custom Designer, HSPICE, CustomSim & MunEDA WiCkeD

	Custom Designer, HSPICE, CustomSim	WiCkeD
Unified platform cell-based & custom content	X	
Parasitic resimulation	X	X
Supports Synopsys' CustomSim™, HSPICE®, and Custom WaveView™	X	X
Supports Synopsys' Hercules™, IC Validator LVS and StarRC™	X	
On-canvas editing	X	
Dynamic net highlighting	X	
Device Palette assistant	X	
Transaction History	X	
Smart Connect wiring technology	X	
"edit-in-place" capability	X	
Open Application Programming Interface (API)	X	
Si2's OpenAccess database	X	
Cross-probing and back-annotation between the simulation environment	X	
Regression Scripting Interface	X	X
Parametric Corner Analysis	X	X
Multitestbench Environment		X
Constraint Editor		X
Nominal Diagnosis		X
Screening		X
Worst Case Operation		X
Monte Carlo Analysis	X	X enhanced
Worst Case Analysis		X
Worst Case Diagnosis		X
Mismatch Analysis		X
Feasibility Optimization		X
Deterministic Nominal Optimization		X
Global Nominal Optimization		X
Yield Optimization		X
Behavioral Model Generation		X

For information and support please select www.muneda.com and info@muneda.com.