

Ansoft Designer

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Date: 08.01.2007

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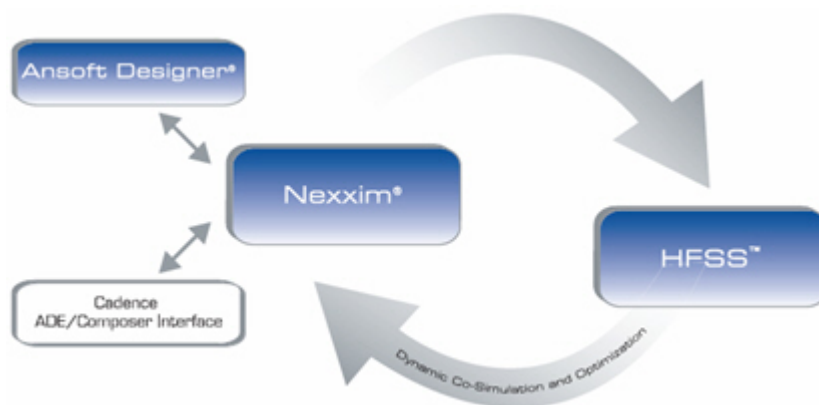
Click on the Topics to reach the pages.

1. Product overview for full version :

Ansoft Designer integrates **best-in-class** simulation technologies, **Nexxim** circuit simulator and **HFSS 3D** electromagnetic field simulator, using Solver on Demand. This dynamic, parameterized co-simulation capability allows engineers to auto-interactively achieve optimal designs. Integration is achieved not through a rigid top-down hierarchy which limit designers, but through powerful handshaking mechanisms that empower individual designers to apply their creativity and skill to develop high-performance and cost-effective solutions.

For high-performance RF/mW design, Ansoft Designer combines system-level behavioural base-band and RF blocks with transistor level detail for analog circuits and 3D full-wave electromagnetic detail at the component level to provide accurate board-level simulations of EVM, BER, ACPR, IP3, and PAE.

For high-performance analog/RFIC verification, Ansoft Designer complements existing IC design capture and advanced package layout tools with its built-in planar electromagnetic solvers and dynamic, parameterized co-simulation with HFSS and Nexxim. Engineers can create accurate models of on-chip passives and board/package interconnects, combine them with detailed analog circuits and simulate the true interactions between active non-linear devices and passive parasitics at high frequencies.



2. Ansoft Designer v3.5 features :

Design Management

- Design management front-end to best-in-class simulation technologies, namely Nexxim circuit simulation and HFSS, Q3D Extractor and SIwave for parametric electromagnetic co-simulation
- Full schematic and layout editor with parameterized scripting (JavaScript® and Visual Basic®) and netlist callback
- Design Validation with scripted Design Rule Checking
- Solver on Demand provides circuit/system/EM co-simulation includes HFSS, Q3D Extractor and SIwave with auto-generation of ports
- Integrated post-processing of results including Smith Chart impedances, spectral plots, eye diagrams and 3D swept parameter plots
- System simulator supports baseband/RF behavioral modeling for defining system architecture, link budgets, circuit specification
- Design optimization, tuning and swept-parameter analysis
- Statistical, Sensitivity and yield analyses
- Design utilities include smith tool matching, transmission line calculator linked to EM simulation
- Standard component library includes behavioral and electrical models and customized vendor design kits
- Ansoft proprietary netlist encryption to protect IP
- Component and model library development/ management UI including P-cell editor
- Spice macro-cell netlist import wizard
- DXF/GDSII import and export

System/Planar EM Simulation and Design Verification

- 3D planar EM (method of Moments) provides dynamic parametric co-simulation for direct S-, Y- and Z - parameter and Full-wave SPICE extraction, near- and far- field radiation analyses
 - Single value decomposition technology solves larger (greater number of unknowns) geometries
 - Supports open and closed formulations
 - Self-adaptive triangular meshing provides more accurate simulation results for curved surfaces such as radial bends
 - Thick metal solver and arbitrary metal orientation provides more accurate simulation of side wall coupling and via to via coupling
 - Advanced excitation port capability (arbitrary feed angle, internal and gap ports) provides
 - Infinite array analysis and frequency selective surfaces for phased array antenna applications
 - Queued simulations for parameterized circuits and planar EM
 - Distributed analysis option for parametric sweeps
- System simulation (time-, frequency-, and mixed-domains) and system test benches apply baseband waveforms to simulate communication metrics such as ACPR, EVM, BER, and eye diagrams.
 - Extensive RF and DSP component libraries including communication standards such as IEEE802.11 a&b, GSM, EDGE, UWB, etc.
 - Compiled and interpretive C and C++ user-defined model co-simulation
 - MATLAB® co-simulation
 - WinIQSIM links for WCDMA, TD-SCDMA, CDMA2000®, etc., bit and frame accurate waveforms

3. Product Overview for Student version :

Ansoft Designer® SV provides students and early-career professionals with an easy-to-use tool for applying basic circuit theories and techniques while developing their high-frequency engineering skills.

As a functional subset of Ansoft Designer, the commercially distributed design-management environment and circuit simulator for radio frequency (RF) and microwave hardware development, Ansoft Designer SV exposes engineers to the same design environment widely used in the high-performance electronic design industry.

Ansoft Designer SV contains a complete high-frequency linear circuit simulator, schematic and layout design entry, planar electromagnetic solver, design utilities, and post-processing, all integrated in a common environment. Users are able to create and simulate hierarchical circuit designs for RF and microwave applications, such as filters, small-signal amplifiers, matching networks, power splitters and combiners, couplers, and more. All Ansoft Designer SV projects are upward compatible to work with the commercial version of Ansoft Designer.

Successful high-frequency electronic design is tightly related to physical design and component parasitic behavior. With the addition of a subset of the planar EM capability available in the commercial version of Ansoft Designer, this student version provides a sample of Ansoft's industry-leading electromagnetic solver technology. The planar EM solver lets users generate S-, Y-, and Z-parameters for 2D structures with unlimited stack-up layers (Ansoft Designer SV restricted to under 300 triangles/unknowns).

Ansoft Designer SV allows the simulation of S-, Y-, and Z-parameters, group delay, noise figure, and stability circles of RF and microwave circuits. Utilities include real-time tuning, filter and TRL synthesis, and Smith Tool matching. Post-processing includes rectangular plots, Smith Charts, polar plots, and data tables. Additionally, Ansoft Designer SV comes with a set of real-world examples.

The Student version is for free on www.ansoft.com available.



4. Ansoft Designer SV v2.2 features :

Analysis

- Linear Circuit Simulation: including S, Y and Z parameters and VSWR, insertion/return loss, gain, stability, noise figure and group delay
- Filter Synthesis
- Transmission Line Synthesis
- Planar Electromagnetics: including Near and Far Field Radiation

Features

- Easy-to-use Graphical User Interface (GUI)
- Fully integrated schematic and layout editors
- Component library developer and manager
- Vendor component models
- 3D post-processing and results viewer
- S-parameter import
- Smith tool

Upward compatibility with Ansoft Designer

5. AD v3.5 vs. AD SV v2.2 :

	Ansoft Designer SV	Ansoft Designer
Desktop		
Fully integrated schematic and layout editors with dynamic project and solution management	•	•
Component library developer and manager	•	•
Advanced results graphing and post-processing	•	•
Powerful 3D viewer	•	•
Full system, circuit and planar EM co-simulation	---	•
Full-swept parameter analysis (all solvers)	---	•
Integrated layout/drawing editor	•	•
Scripted and parameterized footprint editor	---	•
Circuit Simulation		
Harmonic balance	---	•
Nonlinear noise analysis	---	•
Digital modulation analysis (FastACPR)	---	•
Load and source-pull analysis	---	•
Linear frequency-domain simulation including: S,Y, Z parameters, VSWR, insertion/return loss, gain, stability, noise figure, and group delay	•	•
Design synthesis (filter, Smith tool, transmission lines)	---	•
Nonlinear model support including vendor component libraries	---	•
Planar EM		
Fast and discrete frequency sweep (S,Y, Z parameters)	•	•
Near- and far-field radiation analyses	•	•
Static and animated surface current plotting	•	•
Single value decomposition (SVD FastSolve) for solving larger number of unknowns	---	•
Open and closed formulations	•	•
Thick-metal solver	---	•
Self-adaptive triangular meshing	•	•
Advanced port capability including arbitrary feed angle, internal, and gap ports	•	•
Infinite array analysis	---	•
System Simulation		
Time, frequency, and mixed-mode analyses	---	•
Extensive RF and DSP component libraries	---	•
Compiled and interpretive C ++ user-defined model co-simulation	---	•
MATLAB® co-simulation	---	•
Communication standard libraries, including UWB, 802.11a/b/g, GSM,EDGE, etc.	---	•
WinQsim™ links for WCDMA, TD-SCDMA, CDMA2000 accurate waveforms	---	•
Layout and Manufacturing		
Integrated layout/drawing editor	•	•
Material and stack-up manager	•	•
Unlimited layers	•	•
DXF/GDSII import and export	---	•
Scripted and parameterized footprint (P-cells)	---	•
JavaScript® and Visual Basic® scripting	---	•

6. Customer solutions :

They're at the forefront of today's technological innovation. From the world's fastest microprocessors to the most advanced communication systems, they invent the super-intelligent electronic products that are changing how we communicate, travel, work, and play. They're Ansoft's customers. And now you can read about how they're using Ansoft technology to simplify our lives and to empower us in so many ways.



INTEL

Hillsboro, Oregon
Chips, Computer Products, Networking, Communications

Solutions:

- [HFSS for packages](#)
- [Ansoft Designer, HFSS, Nexxim for interconnects](#)



PANASONIC ELECTRONIC DEVICES

Osaka, Japan
Electronic Components and Devices

Solutions:

- [HFSS, Ansoft Designer, Nexxim for specialized filters](#)



TAIYO YUDEN

Tokyo, Japan
Materials and Electronics Technology

Solutions:

- [HFSS for ultra-wideband antennas and filters](#)
- [HFSS, Ansoft Designer, Nexxim for MMICs](#)



UMC CORPORATION

Sunnyvale, CA
Semiconductors

Solutions:

- [Ansoft Designer, HFSS, and Nexxim for on-chip spiral inductors](#)



UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

Radiation Oncology Department
San Francisco, California
Public Health Sciences

Solutions:

- [HFSS and Ansoft Designer for cancer treatment](#)



WINCHESTER ELECTRONICS

Wallingford, CT
Interconnect Technologies

Solutions:

- [HFSS and Ansoft Designer for channel modeling and simulation](#)



XILINX

San Jose, CA
Programmable Logic Solutions

Solutions:

- [DesignerSI, HFSS, and Nexxim for 10Gbps interconnects](#)
- [HFSS and Ansoft Designer for high-speed PCBs](#)

7. System and hardware requirements :

Full version:

Windows

- Processor (32-bit): All fully compatible 686 (or later) instruction set processors, 500 MHz
- Hard Drive Space: 400 MB minimum, 5 GB recommended
- RAM: 512 MB
- Supported Operating Systems: Windows 2000 Professional, Windows XP Professional, Windows Server 2003

Linux

- Processor (32-bit): All fully compatible 686 (or later) instruction set processors, 500 MHz
- Hard Drive Space: 550 MB minimum, 5 GB recommended
- RAM: 1024 MB

Supported Operating Systems: Red Hat Enterprise Linux v3

Student version:

- Windows® 2000 and XP
- Minimum RAM: 64 MB
- Recommended virtual memory: at least 128 MB start automatically if Autoplay is enabled on your computer) or double-click autorun.exe on the CD.
- Graphics
Graphics card should provide hardware acceleration specifically for the OpenGL API. A randomly selected 3D hardware accelerated card might support Microsoft Direct3D or some other 3D API. This may not be adequate.

These requirements are approximate and do not account for other programs running simultaneously.

8. European Offices and Support :

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9. Trainings:

For Germany:

Trainings on AD Full version take place in Munich. 500Euro/per day per person or on agreement with customer.