GOLDENGATE™

RF/Microwave Simulation Tools

(Windows version)

A new generation of RF design solutions...within your EDA environment

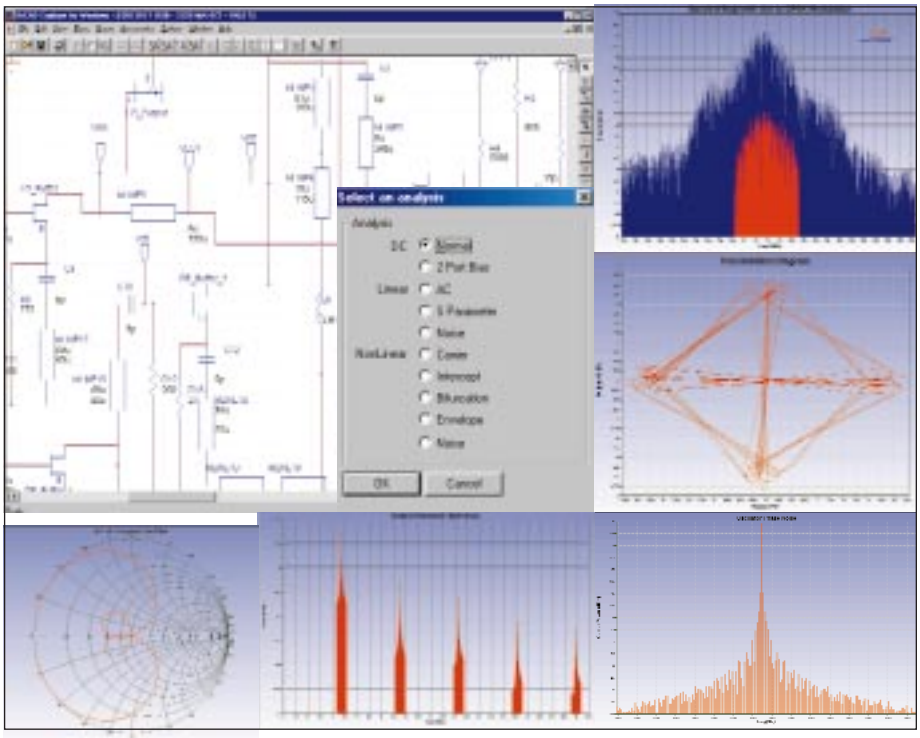
GoldenGate/ Sim Features

- Unified design environment
- Easy-to-use Windows interface
- Envelope transient for modulated signals
- Harmonic balance for non-linear RF
- Phase noise, linear, non-linear stability
- ACPR, NPR, PAE, IP3, AM/AM, AM/PM
- DC, S-parameter, and noise analysis
- Integrated with Orcad & PSpice

Xpedion GoldenGate includes advanced RF and microwave simulators- RF linear, RF non-linear harmonic balance with Krylov sub-space and envelope transient with non-linear phase noise. Seamlessly integrated into main stream EDA environments, GoldenGate significantly reduces design-cycles and design-time for wireless products.

Today's wireless design teams require accurate and fast RF, microwave and transient simulators to handle large and complex RF designs. There are stringent specifications for non-linearity, distortion, gain compression, harmonics, efficiency, phase noise and spurious mixing products. Circuits operate in highly non-linear and deep saturation regimes with digital modulated input signals. Also, RF designs are tightly integrated with low frequency analog, DSP and digital designs. This requires the RF design environment to be tightly integrated with main stream EDA tools, to reduce design iterations and design-cycle time.

Xpedion GoldenGate is designed to meet the needs of wireless designers working in both defense and commercial wireless communications. It offers a set of the most sophisticated RF, microwave and envelope transient simulators combined with a unified set of accurate model libraries. Simulators are optimized to handle today's 2G, 2.5G and evolving 3G, Bluetooth RF designs and complex modulation schemes. Users can perform multiple analyses on a single schematic, for example, DC, multi-tone RF, input-power sweep, phase noise, and various modulation signals.



Windows-based Xpedion GoldenGate, integrated with Orcad design environment, is a powerful simulator and display tool

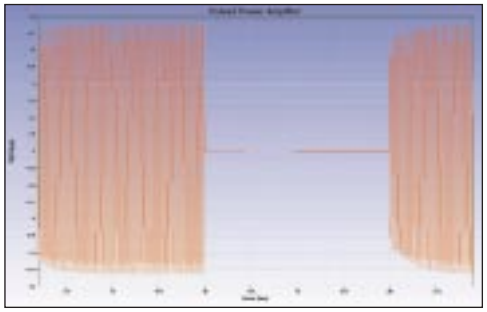
A new generation of RF design solutions...within your EDA environment

Design Explorer and Schematic Capture

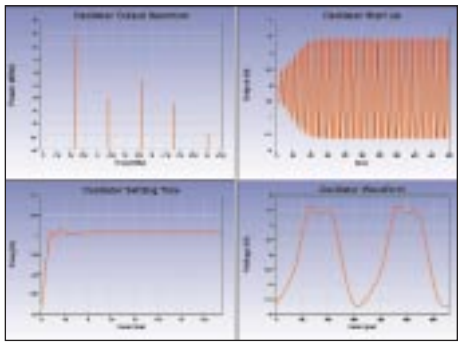
- Manage designs, schematics, simulation setup, results and charts efficiently
- Reuse existing design, analysis, result and chart templates using cut-and-paste facility
- Enter and maintain designs in easy-to-use, versatile, and industry standard Orcad schematic capture, using GoldenGate library
- Schematic debug capabilities by cross referencing nodes, nets, and elements
- Industry standard EDIF interface
- Netlist interface with several PCB and IC layout tools

Devices and Libraries

- Ideal, linear, non-linear, lumped elements, extensive models for BJT, GaAsFET, MOSFET, JFET, diode
- Extensive, and accurate models for microstrip, stripline, coupled, coplanar, suspended and finline structures
- Easy-to-use user-defined models for passive and active devices
- Large packaged parts library with on-the-fly parts performance browser



Pulsed RF amplifier output waveform



Oscillator Analysis: spectrum, output and startup waveform

Simulators / Analyses

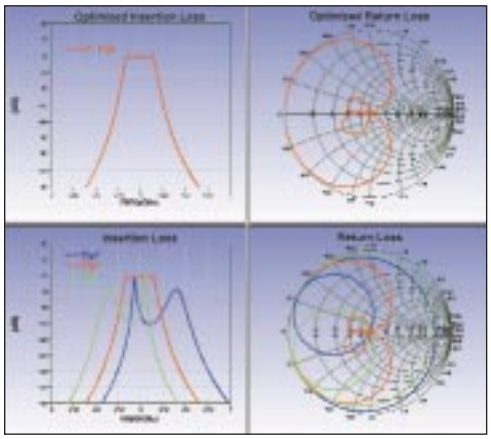
- Three independent tones, unlimited number of harmonics
- Oscillator, amplifier powerup transient analysis, I/V vs time waveforms
- VCO, free runing and locked oscillator, analog PLL, phase noise
- ACPR, NPR, Eye diagram, constellation chart, AM/AM, AM/PM
- IP3, IP5, IM3, PAE, power and noise spectrum, group delay
- S, Y, Z, noise parameters, VSWR, NF, NFmin, Sopt, MAG, MSG
- DC, linear and non-linear Nyquist stability, K factor, oscillator frequency
- DC I-V curves, load lines
- Tuning with graphical display
- Yield and Monte Carlo analysis
- Eight choices of optimizers
- Variable editor for equations, sweeps, and optimizations
- EM simulator interface using s-parameter files

Results Display

- Smith chart, Gain, Noise Figure circles
- Nyquist stability circles
- Load pull curves
- Fully customizable and scalable display
- Full marker functions
- Waveform calculator for extensive results post-processing

Other Related Products

- Import Spice models and mathematical sources and Spice circuit netlist
- GoldenGate is also available on Unix, integrated with Cadence Analog Artist
- GoldenGate/Neural Net Model Compiler generates C-models for RF, microwave linear and non-linear circuits
- GoldenGate interface with several system level simulators



Tune and optimize any circuit parameters

PC Configuration

- Windows NT 4.0, Windows 95 and 98
- Pentium I processor or faster

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Big Ideas for the Wireless World