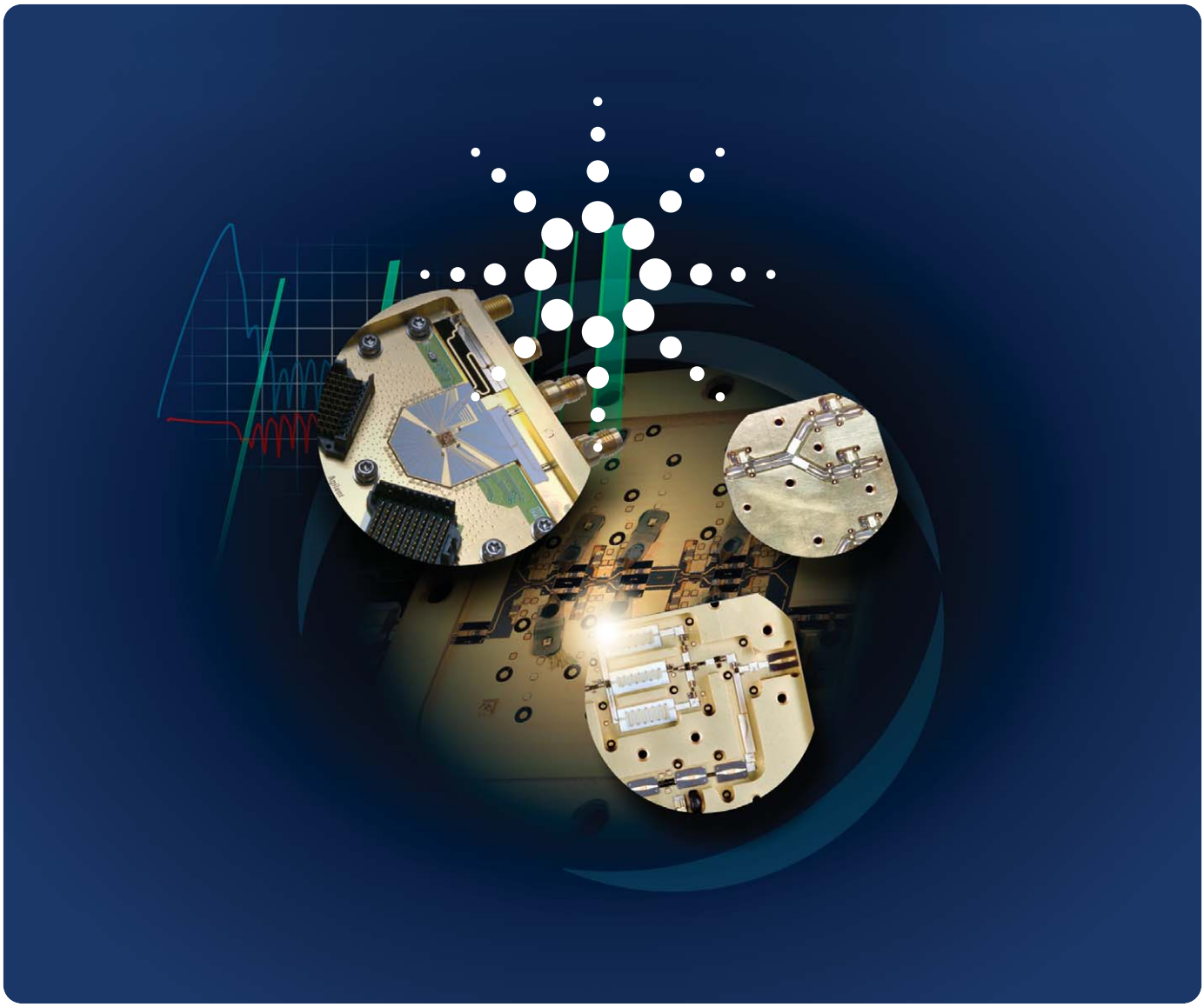
Agilent EEsof EDA

GENESYS

RF and Microwave Design Software

17 Reasons

You Need It on Your Desktop

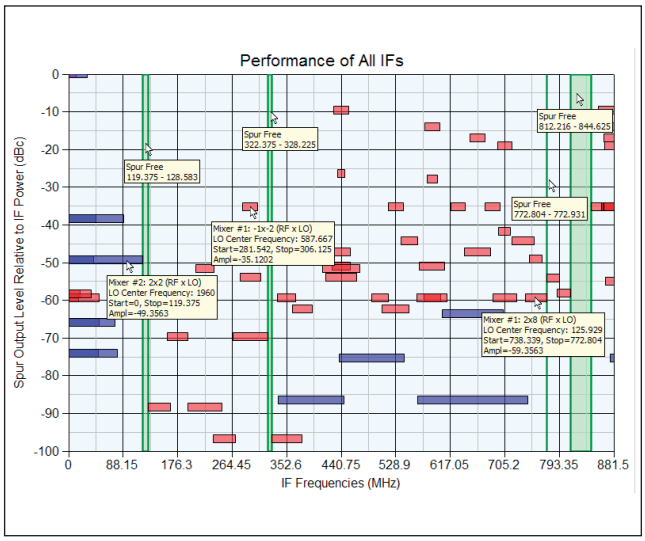


Agilent Technologies

Completely new capabilities:

The 20-year history of innovation continues

1 WhatIF

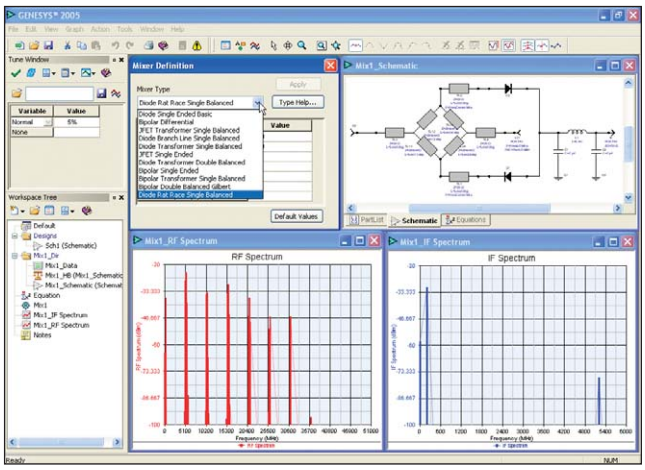


- Easy set-up, just specify
  - Mixer characteristics
  - RF frequencies & bandwidths
  - Desired IF Bandwidth
- Find all spur-free IF bands
- Cut weeks to hours

Picking the Intermediate Frequencies (IFs) for a radio system has been a lot more art than science. It has been an iterative, error-prone job. With WhatIF, this three to four week process of successive 'guesstimates' can be eliminated, and engineers can obtain an analytically correct, optimum solution in an afternoon.

Using a sophisticated synthesis technique, WhatIF analyzes all of the spurs within a given frequency range, based on the characteristics of the mixers to be used in the design, the RF frequencies and bandwidths of the radio system, and the desired IF bandwidth. The results are displayed in an easy-to-understand chart that shows "spur-free" regions that meet system requirements. For example, in the figure, the spur-free regions are clearly shown as the vertical green bars. Note that the extent and amplitude of each spurious region is displayed. The source of each spur can be identified by placing the mouse cursor over the bar.

2 MIXER



- 11 topologies
  - Diode Rat Race to
  - Double Balanced Gilbert
- Get insights into performance trade-offs
- Better designs, faster

MIXER designs and analyzes mixer configurations using a variety of topologies as starting points. The 11 topologies of the initial release range from simple passive configurations such as the "diode rat race mixer" to complex active models such as the "bipolar double balanced Gilbert mixer." For each configuration, supporting information provides insights into the theory of operation, applicable frequency range, and performance tradeoffs.

3 DataSets

- Provides persistent storage of simulation data for simulators
- Easy comparison of data from multiple simulation runs
- Data can be post-processed and graphed
- Monte Carlo failures can be isolated

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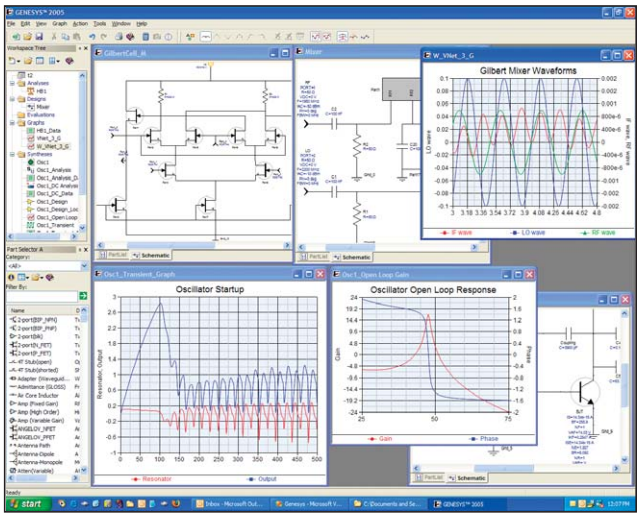
4 CAYENNE It's a SPICE, and It's HOT!!



- Compatible with nonlinear, Verilog-A, and system elements
- Optimization, Monte Carlo, tuning, and yield optimization
- Direct use of S-Parameter data
- Spice model import
- Hybrid frequency/time mode creates models which are exactly correct at a specific high frequency but which are relaxed at other frequencies—for faster simulations
- True hierarchy and parameterized subcircuits
- Transparent EM co-simulation, including lumped elements inside the electromagnetic circuit
- Integration with GENESYS saves you time

CAYENNE is a time domain and transient analysis simulator. While it is based on proven circuit analysis techniques found in SPICE, CAYENNE adds a number of innovative new capabilities.

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More improvements

5 Linear Analysis

- Updated engine handles ideal components
- Improved accuracy for many models, including transformers

6 Expanded Equations

- More control options, like while loops and if-then-else
- Can manipulate workspace objects
- View variables “live” while writing equations

7 Improved Sources

- Consistent source model in all tools
- Balanced sources

8 Bundled Designs

- Layout, schematic, netlist, partlist, equations, notes, parameters and scripts all bundled into a single object

Improved design and analysis

9 Simplified Library Use

- Libraries are now objects
- All libraries are made and invoked in the same way
- Libraries are global and are available in all workspaces

10 New Analysis Paradigm

- Create an analysis
- Associate the analysis with a design
- Assign a dataset for output

11 New Graph Paradigm

- Associate a graph with a dataset

12 New Models

- New LDMOS models
- New Taconic substrate models

13 Balanced Filter Synthesis

- Automatic synthesis of balanced LC filters

14 Full User Model Support

- System analysis supports SPECTRASYS for all subcircuits
- Create user models from existing SPECTRASYS models

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SPECTRASYS improvements

15 Improved Phase Noise Support

- Phase noise specified in sources
- Phase noise is a unique spectrum type
  - Enables phase noise channel power measurement
  - Enables carrier to noise and distortion measurement
- Phase noise amplitude scaling follows physical multiplier and mixer behavior

16 Flexible New Measurements

- Path voltage measurements
- Create new measurements from existing ones
- Path Intermod measurement support up to 20 orders
- 27 new pre-defined measurements

17 Improved Models

- New splitter for 6- to 12-way splits
- New double balanced mixer model
- 180° hybrid coupler model
- Support for SSB to AM/FM decomposition in multipliers and dividers

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For more information about
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For more assistance with your test and measurement needs visit:
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