

2007 Visual System Simulator RFA™

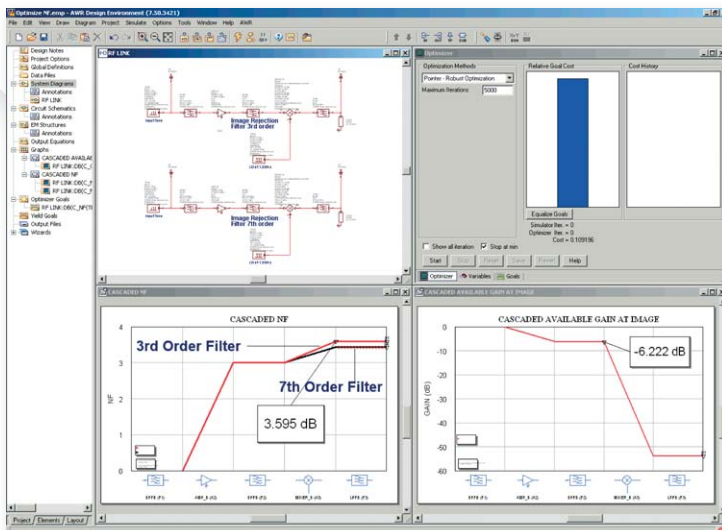
An RF Architectural Tool for communication design

Key Features and Benefits

- ◌ RF Budget Analysis™ enables cascaded analysis:
 - ◌ Noise figure
 - ◌ Input/output IP3
 - ◌ Gain, etc.
- ◌ RF Inspector™ helps identify the root cause of an intermodulation products and spurs of an RF link
- ◌ Accounts for VSWR effects and reverse isolation
- ◌ Includes modulated sources
- ◌ Supports several non-linear amplifier models
- ◌ Accounts for LO to input feedthrough of mixer
- ◌ Enables optimization and yield analysis



- ◌ Links to leading test and measurement equipment via optional AWR TestWave™ module
- ◌ Seamless integration with AWR Microwave Office® and Analog Office® design suites



An RF Budget Analysis project can be used to optimize the NF of the amplifier in the link with the 3rd order image noise rejection filter in order to maintain the same cascaded NF as if using the 7th order filter.

Overview

RFA is an advanced system-level planning and specification tool for RF communication system engineers who need to quickly create and verify the initial specifications of a radio design. The product helps find potential pitfalls early in the design process, at the system-level design phase, thus saving significant design cycle time and speeding products to market. RFA has been developed with the same overriding goal as all AWR software products—to provide engineers with the ability to explore design options and gain further insight into their designs so that they can produce quality products efficiently.

The RFA tool delivers several new technologies that enable communications designers to streamline their product development process. One key component of RFA is the RF Budget Analysis feature that provides the ability to make traditional RF cascaded measurements such as gain, noise figure, and third-order intercept, inclusive of image noise, along a communication link.

The RF Inspector technology, another component of RFA, is a new frequency-domain simulation tool that helps determine the root cause or heritage of any intermodulation product of an RF link and includes the effects of conversions, harmonics, and intermodulation. In addition, effects of thermal noise, and phase noise are accounted for. This enables users to isolate the sources of unwanted interferers and to better architect their RF systems.

The RF Inspector interface provides a clean and efficient means of determining the individual contributions to a particular tone. Flags of different colors are used to easily allow the user to identify the desired signal, intermodulation products and distortion products.

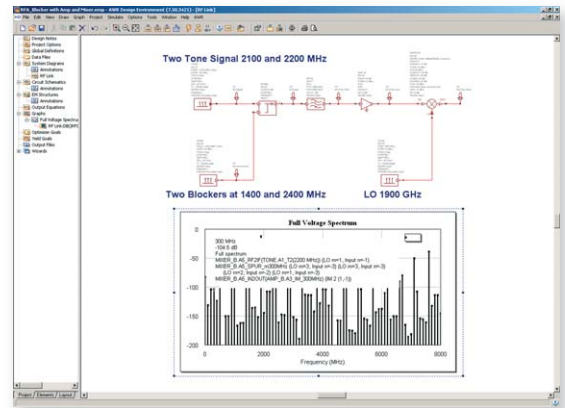
Engineers can take their designs one step further by using the complete VSS product to perform EVM, ACPR or BER analysis. Traditional RF/analog system analysis commonly requires several tools to achieve a complete analysis of end-to-end performance.

VSS 2007 Overview

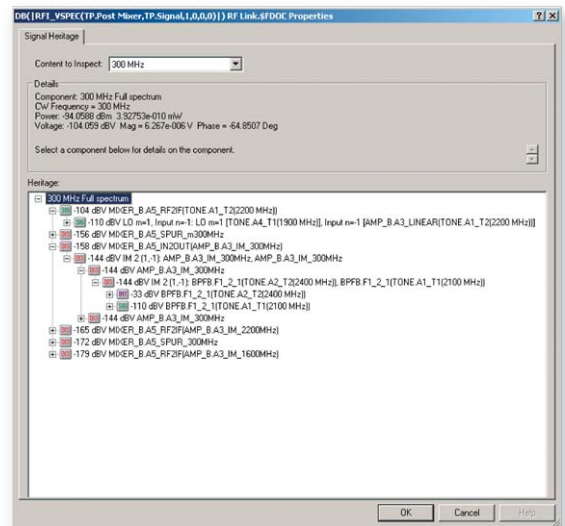
AWR's Visual System Simulator™ product is a comprehensive software suite for the design of complete, end-to-end communications systems. The software helps designers reduce time-to-market by eliminating iterations and rework, and cuts system costs by ensuring that components are not over-specified and thus unnecessarily expensive.

Core VSS functions have been expanded with new measurements, additional models, and improved existing models. VSS 2007 offers, for the RF integrated circuit (IC) design community, RF models in the voltage domain. In addition, VSS 2007 addresses the needs of the baseband system designer by enabling bit accurate simulations and providing new signal models for the most current communications standards.

AWR's optional TestWave module integrates VSS seamlessly with instruments from leading test equipment vendors, providing a means for virtual hardware prototyping.



The user can either monitor the full spectrum, the spectrum of just the signal, the phase noise of the RF link or just the effects of the thermal noise.



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