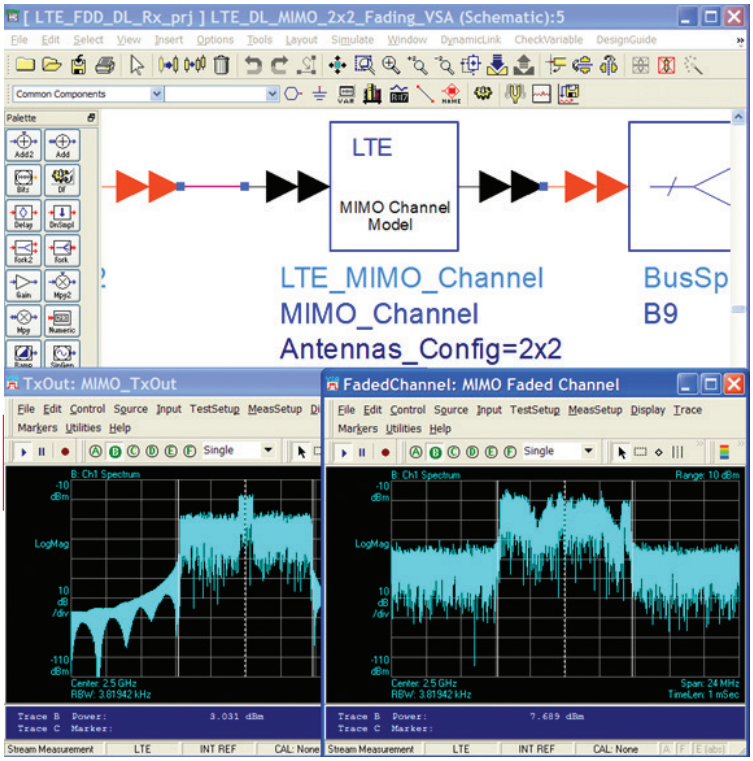
Keysight EEsof EDA

W2361EP/ET Ptolemy and VTB Engine

Use Keysight Ptolemy to verify complete RF physical layer design against fully industry-compliant wireless standards



The W2361EP/ET Ptolemy and VTB Engine provides communication system simulation comprising of Digital Signal Processing (DSP), RF-mixed signal and baseband system design capabilities to the Advanced Design System (ADS), the flagship product from Keysight EEsof EDA, the technology and innovation leader in high-frequency mixed-signal electronic design automation (EDA). It is the only design simulation platform that enables the co-design of IC, package and board in high-frequency and high-speed applications. It seamlessly integrates system, circuit, and full 3D electromagnetic simulation with Keysight's test instrumentation, resulting in repeatable, first-pass electronic design success.

Keysight Ptolemy is uniquely designed to enable the thorough simulation of modern communications systems, such as wireless and wireline transceivers and spread-spectrum radars, which include DSP, RF, and baseband mixed-signal components. It co-simulates with RF (W2301 Circuit Envelope), analog (W2302 Transient Convolution Simulator) and digital HDL (Cadence NC-Sim and Mentor Modelsim) simulators to enable comprehensive RF mixed signal system design and optimization with both the behavioral and transistor-level blocks.

KEYSIGHT TECHNOLOGIES

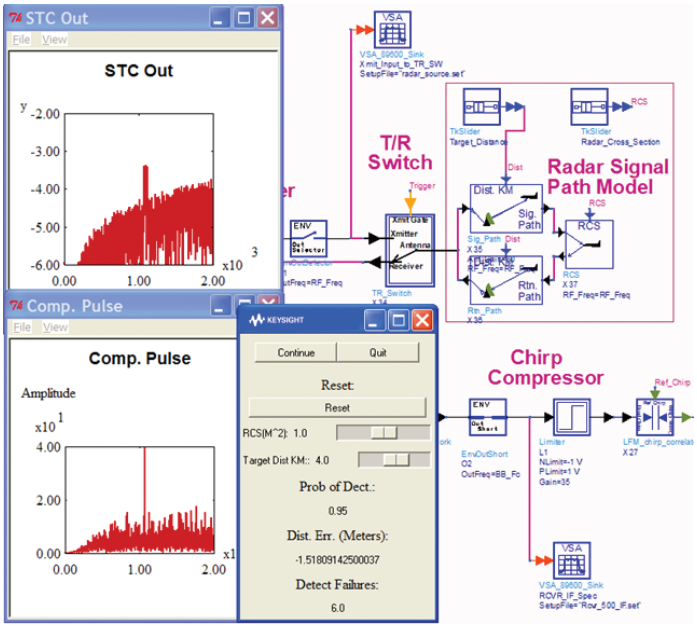
Unlocking Measurement Insights

Keysight Ptolemy provides the system simulation foundation for wireless standards verification with the latest Keysight wireless libraries such as LTE, WiMAX, and VWAN. In addition, it also enables connected solutions with the full range of Keysight signal sources and analyzers to generate real signals or use measured signals in simulations to perform progressive system integration with real hardware as it becomes available. This avoids the delays and costly surprises that can come from traditional system integration, where all hardware must be completed before it can be verified together.

The Keysight Ptolemy and VTB Engine capabilities include:

- Dataflow and time-domain simulation of mixed-signal DSP, RF, and analog communication systems.
- Extensive DSP, RF, communications, baseband analog model libraries, and user-defined C++ models to design a reference system quickly, providing accurate specifications and a verification environment for DSP, RF, and baseband block designers.
- Co-simulation with RF (W2301 Circuit Envelope) and analog (W2302 Transient Convolution) circuit simulators to enable transistor level blocks such as amplifiers, mixers, and oscillators, to be designed, optimized, and verified against system level specifications.
- Co-simulation with Circuit Envelope allows accurate non-linear X-parameter behavioral models from measurement or simulation to be used in system simulation.
- Co-simulation with HDL digital simulators (Cadence NC-SIM, Verilog XL, and Mentor Modelsim) enables HDL development and verification against system specifications for error-free ASIC/FPGA implementation.
- Co-simulation with MATLAB enables MATLAB scripts IP reuse for sophisticated DSP algorithm development.
- Fixed point implementation analysis and optimization enables fixed point math, bit-width and quantization effects to be accounted for and optimized to the original ideal floating point design with 13 powerful optimizers.
- Connected Solutions with Keysight instruments allows progressive system integration between virtual and available real hardware by synthesizing and using real signals for one pass final system implementation success.
- Provides the simulation foundation for wireless standards verification with Keysight's Wireless Libraries for the latest 3G, 4G cellular, and data networking standards such as LTE, WiMAX, and VWAN.

Unlike other system-level simulators, which can only use system behavioral models and simulate only the envelope of the RF carriers without taking into account impedance mismatches, Keysight Ptolemy has none of these restrictions. Through its true circuit-system-DSP co-simulation capabilities, it allows any combination of circuit, system, DSP and measured non-linear X-parameter blocks to be accurately simulated with true modulated RF signals and accounts for signal reflections and frequency mixing throughout the system.



Ptolemy is used to co-verify behavioral and circuit level RF and baseband components in this pulse-compression radar system.

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