

## OVERVIEW

AWR's Visual System Simulator™ (VSS) is a complete and comprehensive software suite for the design of today's complex communications systems. VSS technology provides engineers with the ability to design the right system architecture as well as formulate suitable specifications for each of the underlying components in communications designs.

And now with AWR Connected™ for Rohde & Schwarz, a combined solution exists that integrates design and test domains for the Long Term Evolution (LTE) standard and incorporates:

- ◀ AWR's Visual System Simulator communications software environment
- ◀ R&S®WinIQSIM2™ simulation software
- ◀ Rohde & Schwarz LTE specific test & measurement (T&M) instruments
- ◀ AWR's TestWave™ software for the physical communication link

## ADVANTAGES AT-A-GLANCE

- ◀ Verify hardware performance relative to system-level specifications
- ◀ Simulate various filter structures after amplification to minimize ACPR
- ◀ Simulate impairments of RF link prior to amplification
- ◀ Evaluate re-use of hardware
- ◀ Debug through simulating or analyzing portions of broken hardware
- ◀ Drive PCB board/or module with same signal
- ◀ Support for 3GPP LTE (contact us for most recent specification)

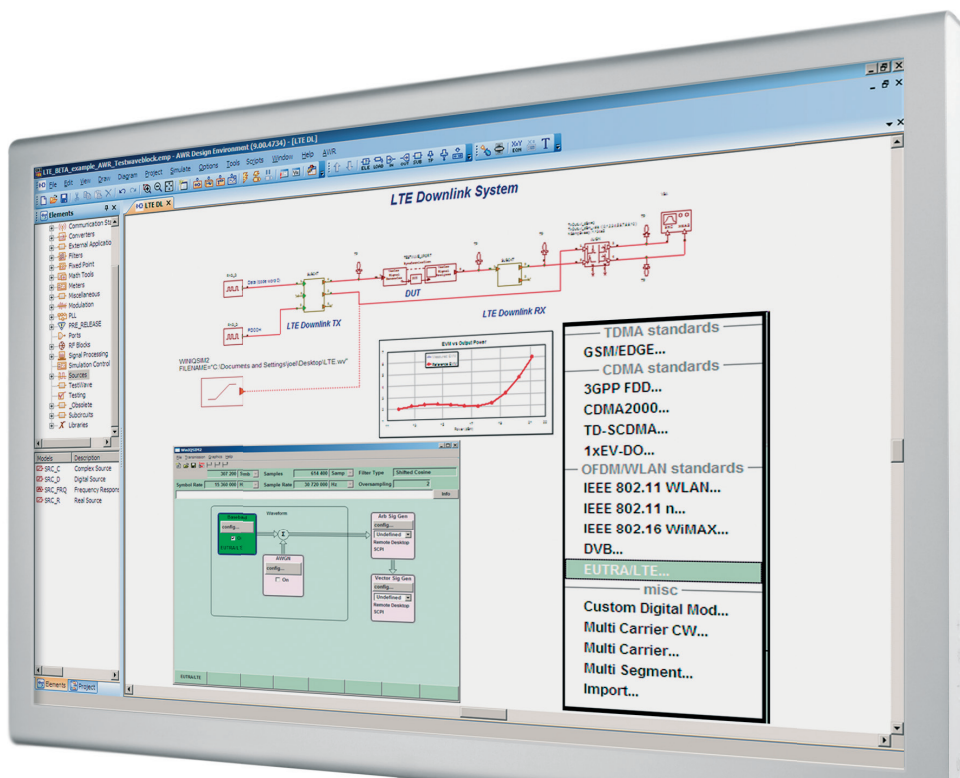


Connecting System Simulations to T&M Instrumentation

**LTE Solutions Guide** featuring Rohde & Schwarz T&M Instruments and R&S®WinIQSIM2™



*R&S®WinIQSIM2™ is fully integrated within Visual System Simulator. R&S®WinIQSIM2™ generates complex digitally modulated and standard-conform signals that can be used in VSS system diagrams as signal sources for the simulations.*



## HOW IT WORKS

### AWR Design Environment™

The VSS LTE signal sources are built as hierarchal structures and are bit accurate according to specifications. The base-band engineer can “drill down” into the source to see and even customize the structure of the signal. RF engineers, not needing to see the finer details, can easily set typical parameters such as signal power, modulation, and number of antenna elements (MIMO application), and work at a higher level of abstraction.

The VSS LTE test bench, is designed explicitly for RF design engineers who need to accurately and effortlessly perform such measurements as CCDF, ACPR, and EVM with hardware-in-loop. Additionally spectrum, IQ plots, and even BER are easily accessible too.

AWR's TestWave software integrates Rohde & Schwarz T&M hardware into VSS via GPIB, or LAN and is automatically handled by one bi-directional VSS TestWave block. Through an easy-to-understand, configurable parameter page, the desired equipment is selected through its corresponding GPIB or LAN address and controlled via GPIB string commands.

### R&S®WinIQSIM2™

The R&S®WinIQSIM2™ simulation software, integrated into VSS software, generates complex, digitally modulated signals for all modern digital standards including 3GPP LTE, 3GPP FDD/HSPA/HSPA+, and WiMAX. VSS processes the

standard-compliant signals generated by R&S®WinIQSIM2™ and utilizes them as stimuli for simulation. For cross-domain simulations, hardware components are easily integrated into a simulation – just transfer data from VSS to your Rohde & Schwarz vector signal generator to create “real-world” output signals.

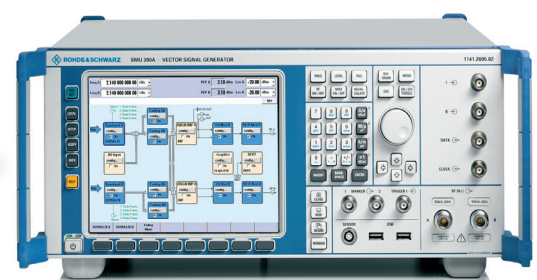
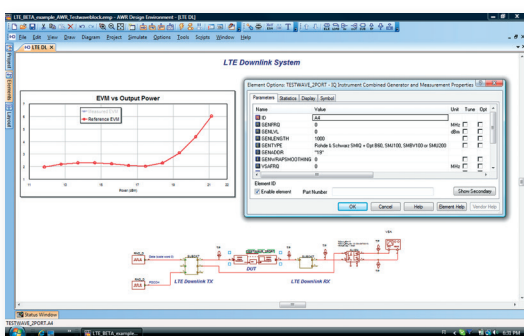
### Rohde & Schwarz T&M Instruments

Rohde & Schwarz T&M instruments are designed to meet all requirements encountered in the research, development and production of modern communication systems.

When it comes to LTE, AWR Connected for Rohde & Schwarz makes it easy. Using the signal generation configuration, an LTE modulated signal is created in VSS and then transferred to the R&S®SMU200A for the device or module under test. Using the signal collection configuration, measurement data is collected using the R&S®FSQ signal analyzer and/or the R&S®FSU spectrum analyzer, and is brought back into the VSS environment. Once the data is shared, comparisons, trade-offs, and optimizations can be made to the signal or system operation.

## ABOUT ROHDE & SCHWARZ

Rohde & Schwarz offers a complete product portfolio for LTE, from highly accurate R&D and production testing to conformance tests. The latest LTE enhancements can be added to Rohde & Schwarz products with an easy software update.



AWR Connected for Rohde & Schwarz