



Agilent EEs of EDA and Xilinx, Inc.

“LTE Layer 1 Verification using SystemVue”

Case Study for XILINX®

Leading FPGA provider to the wireless communications infrastructure market uses Agilent SystemVue for versatile test vector generation, bringing measurement-grade verification to the inside of the baseband design process

CUSTOMER: Xilinx
San Jose, CA and Edinburgh, Scotland

CHALLENGE:
To verify 3GPP LTE hardware blocks using precisely configured test vectors from a credible, timely algorithmic reference

SOLUTION: Agilent SystemVue and Agilent test equipment, such as the N5106A PXB

RESULTS:

- Met tight deadline
- Saved valuable R&D time from creating IP, test vectors, scripting
- Produced production quality reference IP for Xilinx Customers

“We used Agilent’s SystemVue LTE baseband verification library to validate Xilinx’s LTE reference IP against the latest version of the LTE standard. When combined with Agilent’s N5106A, SystemVue not only saved us weeks of validation time, but also it gave us confidence that our LTE Layer 1 reference design was “production ready” for our customers. SystemVue clearly added value to our traditional Layer 1 design and verification process. As a result, we will be using SystemVue more in the future.”

Bill Wilkie
Wireless and Signal Processing Director
(Europe), Xilinx

The Company

Xilinx is the worldwide leader in complete programmable logic solutions and leading FPGA provider to the wireless infrastructure communications market with the signal processing and interfacing capabilities required to support today’s high bandwidth systems in the most cost and power-effective manner.

The Challenge

The Xilinx wireless engineering team needed to develop production quality LTE uplink (UL) LogiCORE IP that could be implemented directly by Xilinx eNodeB customers. All LTE algorithms and hardware IP cores must be verified against published standards, but existing test-vector creation methods either lacked the fine parameterization and flexibility needed to test individual LTE PHY algorithms and blocks, or they lagged behind updates to the standard.

The Solution and Result

Agilent SystemVue and the W1910 LTE baseband verification library were used to create highly-specific LTE test vectors. These were downloaded to the Agilent N5106A PXB baseband generator and channel emulator, which added fading and control to the real-time test environment, along with a hardware digital interface to support the Xilinx Virtex-6 FPGAs. Using this solution, Xilinx was able to validate its LTE uplink implementation quickly and with less effort, being confident with Agilent’s wireless and measurement expertise that is built into the SystemVue LTE solution.

The key features of SystemVue that enabled this include:

- Direct links to the Agilent N5106A and E89601A VSA software
- W1910 LTE PHY reference library that interoperates with measurement equipment
- Simple polymorphic modeling interface

For more information about Xilinx, visit www.xilinx.com

For more information about Agilent Technologies’ SystemVue, visit <http://www.agilent.com/find/eesof-systemvue>

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