Industry’s First LTE-Advanced Signal Generation, Analysis Solutions

Agilent Technologies Inc. has extended its leadership in LTE test with the introduction of dedicated LTE-Advanced signal generation and signal analysis solutions. Both solutions will be showcased at the upcoming Mobile World Congress in Barcelona, Feb. 14-17 (Hall 1, Stand A46).

LTE-Advanced is an evolution of LTE. It is initially being specified as part of Release 10 of the 3GPP specification. A number of new technologies are being introduced into LTE-Advanced to enable peak data rates of up to 1 Gbps in the downlink and 500 Mbps in the uplink. To achieve such a high peak data rate, LTE-Advanced supports a maximum bandwidth of 100 MHz via aggregating up to five component carriers, each up to 20 MHz wide.

Agilent’s new Signal Studio and 89600B Vector Signal Analysis software for LTE-Advanced support the generation and analysis of FDD and TDD signals compliant with the 3GPP Release 10 standard. Using these solutions, design engineers can start testing physical layer implementations of LTE-Advanced devices with greater insight and confidence, while gaining deeper insight into the root causes of design problems.

Key features of the new Signal Studio and 89600B VSA software include:

* FDD and TDD per 3GPP Release 10 for both uplink and downlink signal configurations;

* carrier aggregation for both contiguous and non-contiguous component carrier configurations for up to 100 MHz I/Q bandwidth using Agilent?s MXG vector signal generators and up to 140 MHz analysis bandwidth with the Agilent PXA signal analyzer;

* independent setup parameters for each component carrier, including any LTE-Advanced specified bandwidth or modulation type;

* simultaneous analysis of up to five component carriers, a feature unique to the 89600B, and troubleshooting of each component carrier using a rich selection of measurements, including EVM, CCDF and more; and

* enhanced uplink-clustered SC-FDMA and simultaneous control and data channel (PUCCH and PUSCH) support.

One of the design and test challenges of carrier aggregation is the fact that non-contiguous allocations require multiple transmit and receive chains in user equipment and eNBs. For single-band non-contiguous allocations, the PXA’s 140

MHz analysis bandwidth, combined with the simultaneous analysis of multiple component carriers available in the 89600B, offers engineers greater insight by giving them the ability to test the multiple transmit or receive chains simultaneously.

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