

# LTE-Advanced Xpert

Multi-layer Analysis for LTE-Advanced Access Networks



- Gain full visibility into your LTE-Uu network in continuous real-time
- Capture traffic between eNodeB and user equipment
- Perform independent root cause analysis of service issues
- Scalable solution for LTE-Advanced: up to 5 Component Carriers and 8x8 MIMO
- Improve your customer experience, acceptance test procedures and preventive care

## Complete Real-Time Analysis of LTE-Advanced

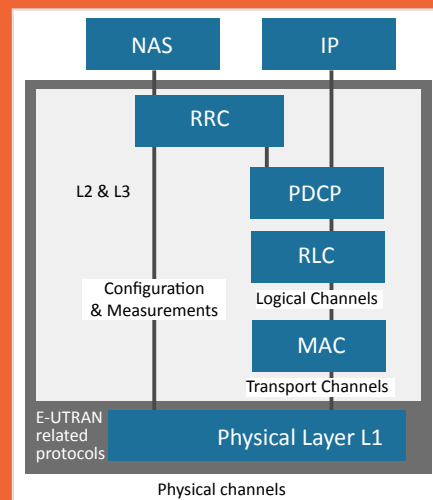
What do you really know about your Radio Access Network (RAN) and the interaction between the user equipment (UEs) and the serving cells (eNodeB)?

The LTE-Advanced Xpert multi-layer analyzer is a unique, real-time continuous protocol analyzer for LTE and LTE-Advanced networks. Installed between a base station and its served mobile devices, the LTE-Advanced Xpert captures the uplink and downlink transmission and performs deciphering and analysis of data and control channels in real time.

Built for mobile service providers, equipment manufacturers and system integrators, The product provides fast troubleshooting tools and complete view into the elements and traffic of the radio access network.

## Solving the Mobile Blind Spot

Most customer service issues are related to the interaction between mobile devices and their serving cells. The growing complexity of the LTE standard along with increased competition and the need to provide high levels of service require service providers and equipment manufacturers to strengthen their ability to perform deep analysis of the access network traffic.



Through complete analysis of the LTE-Uu (E-UTRAN) protocols in real time, the LTE-Advanced Xpert provides deep insight into that space. It enables technical engineering teams to speed-up live network troubleshooting, accelerate pre-testing of mobile devices and new software releases of radio equipment, as well as explore interoperability and standard compliance of LTE equipment.

## Advanced Tools for LTE-Advanced Deployments

Testing equipment can make the difference in meeting and exceeding high levels of service in LTE deployments. The LTE-Advanced Xpert is a scalable solution, built to support the major elements of the evolving LTE standards for many years to come. You can buy the solution to fit your current deployment, and later on upgrade it as needed to support Carrier Aggregation of up to five carriers, 8x8 MIMO architecture, decryption module and the ability to serve every standard combination of operating frequency bands.

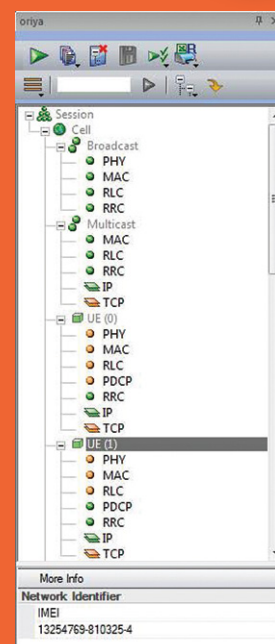


## Network Topology Tree

By using multi-layer probing capability the LTE-Advanced Xpert lays out a comprehensive picture of the access network elements, their alert status and the traffic running through them.

The topology view includes identified user equipment devices (UEs), broadcast/multicast channels and their serving cells. Viewing the topology tree already provides indications on network issues highlighted by color coding next to the tree's elements.

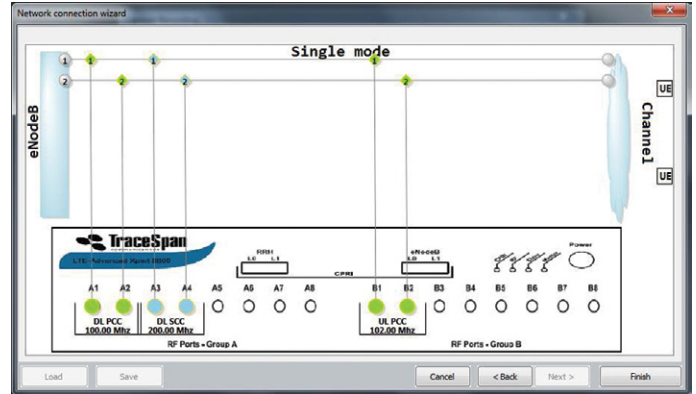
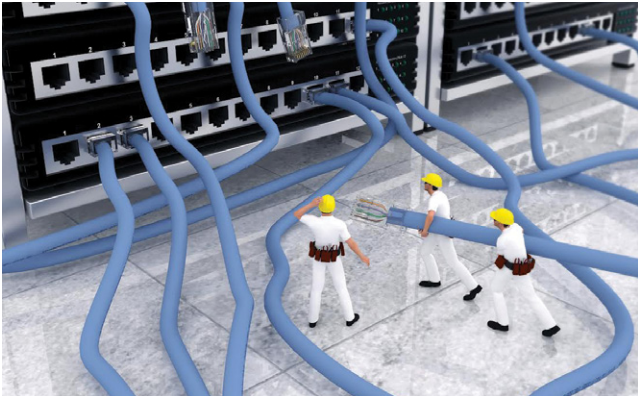
Each tested UE is identified by its measurement number and a standard network identifier. Its related traffic is divided into the LTE protocol layers and the upper layers.



## Flexible Configuration and Easy Setup

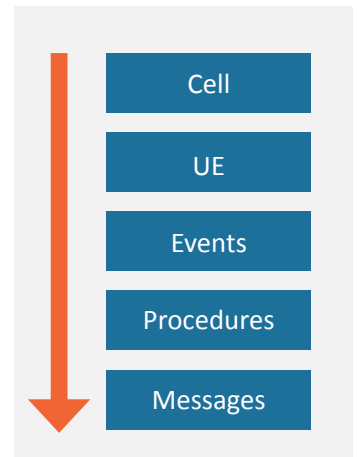
The LTE-Advanced Xpert has the flexibility to connect in several different modes to the LTE access network. In the wireless mode the data is captured over-the-air by a set of device antennas and filters, supporting all standard LTE-Advanced frequency bands. In the wired RF mode the analyzer is connected directly to the eNodeB antennas. A third option is the wired CPRI connection between the base station and its remote radio head (RRH).

Initial setup and connection is made easy by using a step-by-step configuration wizard.



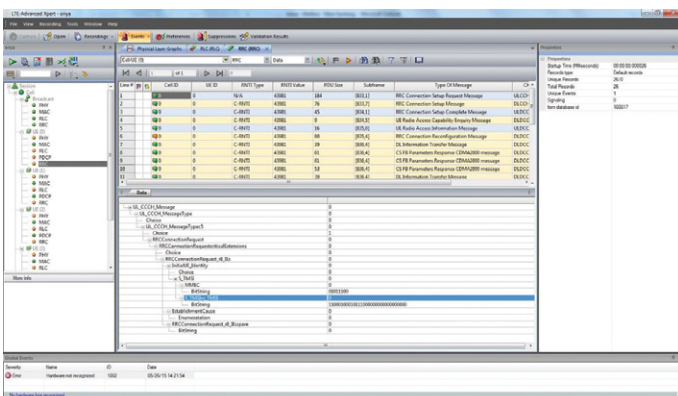
## Top-Down Root Cause Analysis

Identifying and solving service issues, including intermittent problems and escalated customer complaints can be a daunting task without the proper tools. The LTE-Advanced analyzer implements a top-down approach for network troubleshooting by providing a logical exploration method that drills down to the available information. It starts from the cell and the served UEs, continues with relevant events of interest and the procedures flows that triggered these events, and completes with the underlying structured messages flow. This method of analysis enables mapping of issues between the cell and its served UEs without needing a very deep understanding of the LTE protocol.

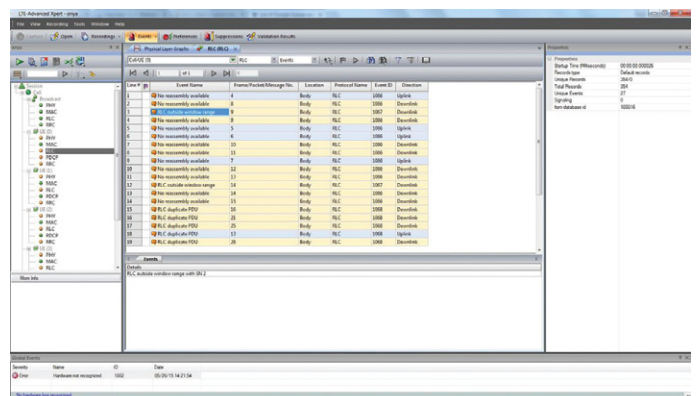


## Powerful User-Friendly Tool

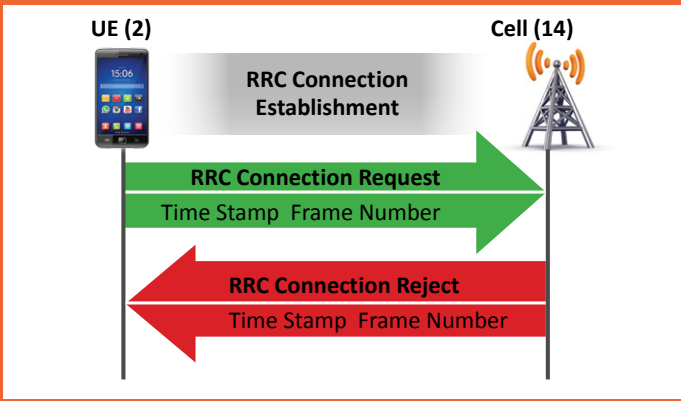
LTE-Advanced Xpert features a rich array of intuitive displays, graphs and tables for testing and troubleshooting of the LTE-Uu components. The displayed information includes network topology, list of protocol events, parsed messages of downlink and uplink data, resource blocks scheduling maps, procedures view of and a variety of physical analysis graphs.



**Information View**  
Network elements, protocol layers, parsed messages

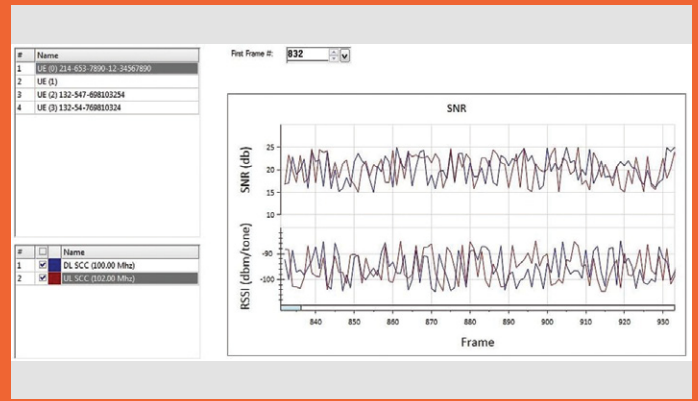


**Events View**  
Status and protocol alerts for Cells and UEs



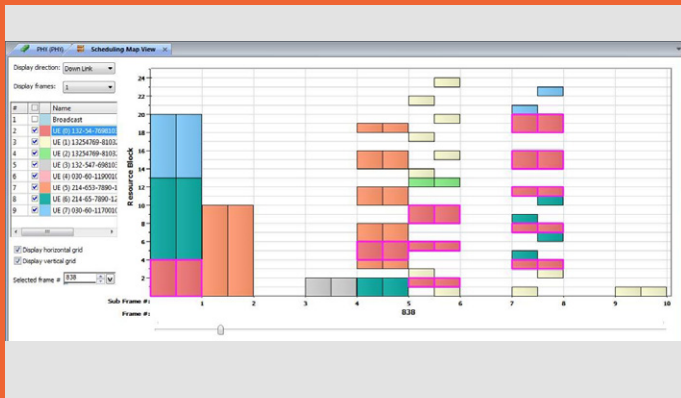
**Procedures View**

Standard sequence of messages between UE and Cell



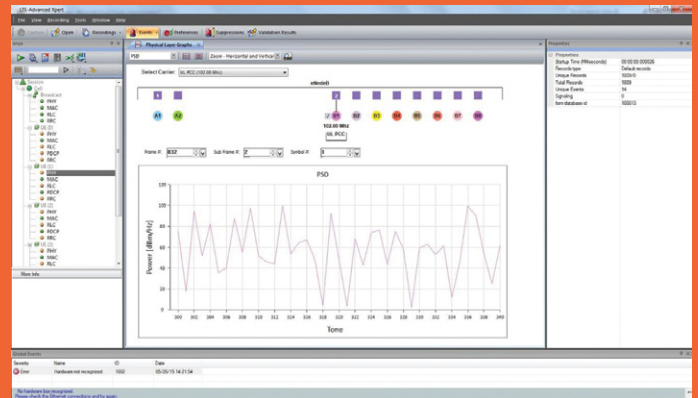
**Signal-To-Noise (SNR)**

Downlink and Uplink measured conditions



**Scheduling Maps**

Resource Block allocations for active UEs



**Power Spectral Density**

Measurement per carrier up to symbol resolution

**Specifications**

Supporting certain elements defined in standards	3GPP Releases 8 and 9 – LTE Specifications 3GPP Releases 10, 11, 12 – LTE-Advanced Specifications CPRI
EMC Standards	FCC 47CFR Part 15, Subpart B, Class A EN 61326-1, Class A
Safety Standards	IEC 61010-1, EN 61010-1

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