SPIRENT 8100 MOBILE DEVICE TEST SYSTEM

LTE RF Performance

Delivers an automated solution for testing RF performance under the real-world conditions necessary to ensure success of early LTE deployments.

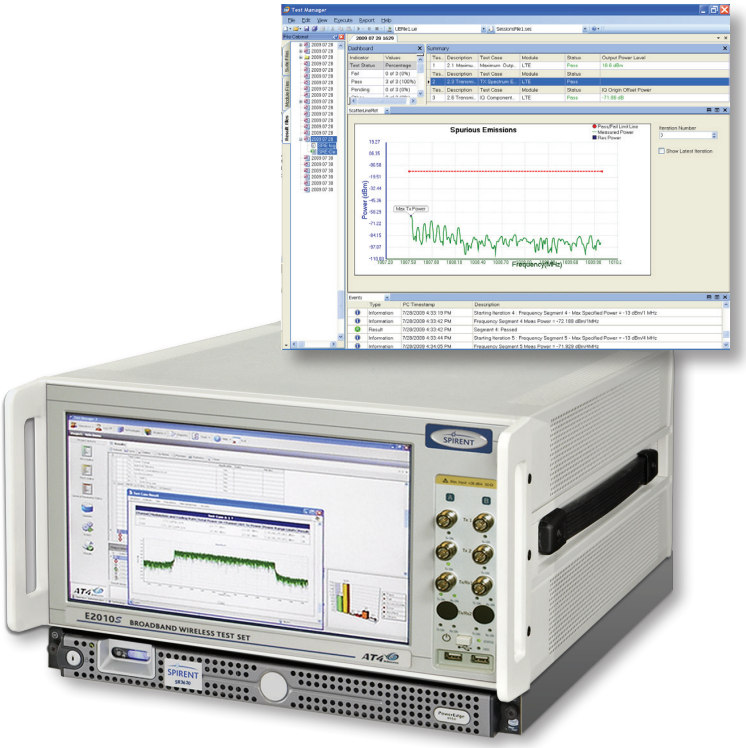
APPLICATIONS

Manufacturers:

- Research & Development
- Design verification
- Performance analysis
- Benchmarking
- Regression test

Operators:

- Pre-launch evaluation
- Acceptance test
- Software regression test
- End user and network KPI analysis



Some of the world's first commercial LTE services will be deployed in the 700 MHz band. Along with RF propagation advantages, this band also brings its own specific RF challenges, including a range of interference issues. It is also difficult to effectively implement Multiple Input Multiple Output (MIMO) in mobile device form factors at these frequencies. For an LTE deployment to meet its technical and business objectives, devices will need to meet these challenges prior to commercial launch.

Spirent's LTE RF Performance solution tests the RF performance of LTE devices, with a focus on these real-world deployment challenges. It uses a powerful, flexible Spirent E2010S Network Emulator and SR5500 Wireless Channel Emulator that supports Multiple Input Multiple Output (MIMO) implementations to accurately reproduce real-world network conditions, yielding consistent and repeatable test results.

As a key component of Spirent's 8100 Mobile Device Test System, the LTE RF Performance solution offers an open, scalable multi-purpose test system that is expandable beyond initial testing needs. Options include LTE pre-conformance and validated conformance test cases.

An upgrade path for Spirent's industry-leading automated performance test systems for CDMA2000/EV-DO and UMTS devices enables existing users to maximize the value of their current investments.

BENEFITS

- *Reduce time to market* – run more tests on a single, automated platform
- *Reduce device returns and customer churn through improved device quality* – identify RF performance issues under repeatable real-world conditions
- *Address the entire lifecycle of testing needs with a single solution* – R&D, DVT, Benchmarking/Evaluation, Operator Acceptance, Applications, Regression
- *Purchase only the capability you need, when you need it* – offered with turnkey and user-customizable test cases and scenarios; upgradeable to Data Throughput, Multi-Mode System Selection, Inter-RAT, LBS and more

KEY FEATURES

- Automated RF performance testing of LTE devices under real-world conditions, beyond the basic requirements of conformance test
- Protects existing investment in Spirent CDMA and UMTS solutions with a cost-effective upgrade path
- Addresses specific deployment scenarios, including US 700 MHz band issues such as spectrum emission limits and interferers
- Integrated MIMO support with dynamic channel models tests real-world MIMO implementation and LTE receiver performance
- RF Performance test packs include a wide range of test cases for network operator acceptance and device manufacturers
- Powerful device automation and monitoring during testing
- Configurable parameters enable rapid generation of custom test cases

ADDRESSES CRITICAL LTE RF DEPLOYMENT CHALLENGES

Some major early LTE commercial deployments will be in the 700 MHz band. Although this band has RF propagation advantages, it also brings challenges. These include interference issues with services such as digital TV, MediaFLO, public safety and GPS, as well as a narrower gap between downlink and uplink than in most higher-frequency cellular bands.

Addressing these issues places tighter requirements on device transmitter and receiver performance. MIMO is critical to effective, efficient LTE implementation, but is difficult to implement in small devices for operation at 700 MHz. Spirent's LTE RF Performance solution includes tests from the 3GPP TS 36.521-1 LTE UE radio conformance test specification, focusing on the transmitter, receiver and performance test cases that are most directly relevant to real-world deployments.

With its sophisticated Spirent E2010S Network Emulator, the solution also goes well beyond the basic conformance requirements to address specific deployment scenarios. These include network-initiated UE spectrum emission limits, as well as performance in the presence of specific interferers.

To effectively evaluate performance of a MIMO LTE implementation, dynamic fading channels are needed to fully test an LTE receiver's ability to track and adapt to a time-varying radio channel. Spirent's SR5500 Wireless Channel Emulator provides fading emulation with control over spatial channel characteristics (e.g. complex correlation) to effectively model different environments and antenna orientations.

ANSWERS KEY PERFORMANCE QUESTIONS

- How well does my LTE device's transmitter perform?
- How well does my LTE device's receiver perform?
- How well does my LTE device perform under real-world conditions in other areas critical to successful deployment:
  - MIMO performance
  - Demodulation of key channels (PDSCH/PCFICH/PDCCH)
  - 700 MHz band issues: spectrum emission masks and interferers?

ORDERING INFORMATION

LTE RF Performance testing is supported on the B100, B300 and B600 configurations of the Spirent 8100 Mobile Device Test System.

Part Number	Description
8100-RF-LTE-TP1-01	**LTE RF Performance Test Pack Bundle (Includes LTE RF Performance Test Pack and RF Performance Test Option)**

Please contact your regional Spirent sales representative for detailed ordering information.

SPIRENT GLOBAL SERVICES

Spirent Global Services provides a variety of professional services, support services and education services — all focused on helping customers meet their complex testing and service assurance requirements. For more information, visit the Global Services website at www.spirent.com/gs or contact your Spirent sales representative.

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