SPIRENT 8100 MOBILE DEVICE TEST SYSTEM

LTE Data Throughput

Delivers an automated solution for repeatable data throughput performance and latency testing of LTE devices.

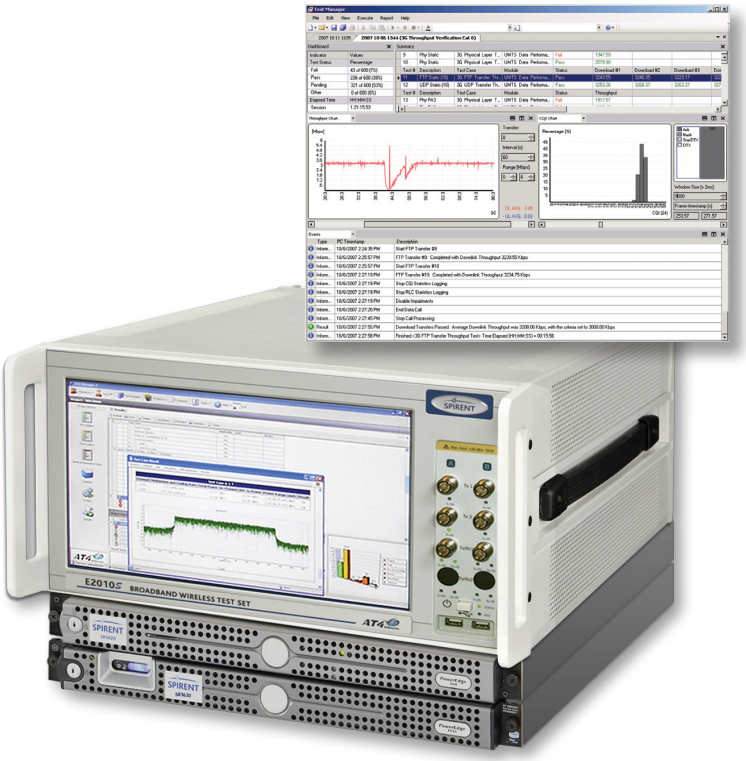
APPLICATIONS

Manufacturers:

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

Operators:

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



LTE is the result of a massive global development effort, driven by the ever-increasing data requirements of mobile applications and services. However, real-world LTE data performance must deliver on its promise in order to drive ARPU and help ensure the success of network operators and device manufacturers.

The 8100 LTE Data Throughput solution automates data throughput performance testing of LTE devices. It uses a powerful, flexible Spirent E2010S Network Emulator with sophisticated Evolved Packet Core (EPC) emulation. This integrates with an 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 Data Throughput 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 data 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 RF Minimum Performance, Multi-Mode System Selection, Inter-RAT, LBS and more

KEY FEATURES

- Automated data throughput and latency performance testing of LTE devices under real-world conditions
- Protects existing investment in Spirent CDMA and UMTS solutions with a cost-effective upgrade path
- Sophisticated EPC emulation enables maximum throughput rates, adversarial scenarios and seamless interworking
- Integrated MIMO support with dynamic channel models tests real-world LTE receiver performance
- Key counters and message logs throughout the protocol stack aid in troubleshooting when issues occur
- Data 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

PROVIDES VARIABLE, CONTROLLABLE REAL WORLD TEST CONDITIONS

LTE is a data-centric technology, using shared resources to service multiple users. It is therefore very important to ensure that an LTE device can make optimal use of the data channel assigned to it. Real-world LTE data performance also depends on the successful implementation of techniques such as MIMO.

Quantifying LTE real-world data throughput rates on live networks can be extremely challenging given their highly-variable nature. Operating parameters such as traffic variation and the number of connected users can change at any time, impacting the collection of consistent field test data.

The LTE Data Throughput solution provides a fully-controllable environment. Its highly-capable components include an E2010S Network Emulator with sophisticated Evolved Packet Core (EPC) emulation, enabling maximum throughput rates, adversarial scenarios and seamless interworking.

An integrated SR5500 Wireless Channel Emulator enables the addition of fading and interference, for real-world performance analysis of MIMO implementations, on which actual LTE data performance is highly dependent.

The Wireless Channel Emulator generates realistic, fully-controllable fading and interference conditions. These include pre-programmed 3GPP-recommended models and dynamic channel models that go well beyond basic conformance requirements, to fully test the impact of MIMO on data throughput.

ANSWERS KEY PERFORMANCE QUESTIONS

- How good is a device's control plane and user plane latency performance?
- How is a device's data throughput performance impacted by:
  - Data protocol
  - Data transfer direction
  - Data transfer duration
  - Downlink power, including sweep tests
  - RF scenarios, such as fading or interferers
  - Multi-antenna configurations: Receive Diversity, MIMO
  - LTE scheduler configuration?

ORDERING INFORMATION

LTE Data Throughput testing is supported on the B200, B300, B400 and B600 configurations of the Spirent 8100 Mobile Device Test System.

Part Number	Description
TP-DATA-LTE-TP1	**LTE Data Throughput Test Pack**

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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