The Viavi Solutions™ CapacityAdvisor product family provides advanced load generation for 3G and 4G networks, giving customers an unmatched ability to test equipment and services under realistic traffic loads in their labs. CapacityAdvisor enables LTE network performance and capacity testing where coverage, capacity, and performance are load-dependent. Testing under load with the CapacityAdvisor 9400 LTE system ensures optimal wireless network performance to give end users the best possible experience.

Key Applications

- Functional feature tests — quantify performance of LTE subsystems, measured at the Uu interface
- System performance tests — with mixed data applications measuring maximum data throughput, packet latency, and jitter, among other things, under dynamic RF environments
- Call model tests — to verify system performance under real-world traffic scenarios
- Stress testing under traffic load — to measure the impact on RF resources, scheduler performance, as well as the integrity of signaling under load
- Data application performance tests — to measure quality of service (QoS) and its impact on data throughput for mixed data traffic for new applications such as VoLTE
- VoLTE-specific performance tests — utilize the R-Factor MOS to characterize changes in VoLTE performance when other VoLTE users and Internet traffic are present
- Scheduler analysis — to measure scheduler performance and analyze resource allocation
- Mobile perspective — to provide logging and performance analysis
- Deterministic analysis — unlike mobile-based test beds, the capacity test provides repeatable and deterministic performance.

CapacityAdvisor 9400 for LTE helps bring new products and services to market faster, with better quality, and at a reduced cost.

Key Benefits

- Accelerated network life-cycle testing
- Faster time to revenue and reduced test-cycle time
- Repeatable and deterministic test behavior
- Find defects earlier in the development cycle
- Higher-quality products to market in less time
- Ultra-high terminal density in a server footprint
- Easy-to-define real-world traffic models
- Low-maintenance platform

Key Features

- 6000 simultaneous data sessions per baseband unit
- Eight 2x2 and 4x2 MIMO sectors per baseband unit
- Support for 5, 10, 15, and 20 MHz bandwidths
- Support for all major FDD and TDD bands
- LTE-Advanced carrier aggregation
- UE Category 6 transfer rates of 300 Mbps downlink/50 Mbps uplink
- Logging at multiple protocol layers
- Performance analysis tools
- Proven SDR platform
- Common user interface supporting concurrent LTE/UMTS load
- Virtual drive-test environment
Specifications

System Configuration
Up to 6000 UEs per baseband unit
OFDM 2x2 and 4x2 MIMO
1 to 8 MIMO sectors
5, 10, 15, and 20 MHz
Up to 150 Mbps downlink throughput at 20 MHz bandwidth
LTE-Advanced carrier aggregation (PCC + nCC aggregation)
Dynamic downlink SCC activation/deactivation
Handover using intuitive drive-test map
User-configurable mix of R8 and R10 UEs on each PCC
User-configurable RF bandwidth and band pairings for PCC and SCC
High-Capacity VoLTE Solution
900+ VoLTE UE per sector
Up to 8 DRB per UE across multiple APN

Traffic Model
Traffic Mix
Ping
UDP streaming
FTP file transfer
HTTP browsing
SMTP/POP3 e-mail
Custom application development available
VoLTE
SIP/RTP

STT Identities and Grouping
Create groups from USIM database
Coordinated or random behavior

Supports Multiple RAB/SRB Combinations
SDR Test Terminal (STT) Control
GUI-based test case definition
Create virtual propagation environment, virtual pilot strength/path loss within a drive test map, includes BLER and SINR degradation to trigger channel performance enhancers in the eNodeB such as TTI bundling
Control of STT mobility including support for handover
Test termination conditions and triggers
Time-based
Until statistic achieved
Until pass or fail condition achieved
Terminal ramping based on:
Number of terminals (control of single or multiple STTs in group)
Ramp up/down period
Statistical or time-based conditions under which ramping is considered complete

Air Interface/Protocols
R8 LTE Dec 09
R10 LTE Dec 12

Statistics Collection
Logging at PHY, MAC, RLC, PDCP, RRC, NAS, and application
Statistical analysis by STT group, by sector carrier, or eNodeB
Statistics (total counts, averaged) such as:
Session originations
Registrations
Access attempts
Network release
Terminal release
Soft handover
Call control
Data application
Connection reconfiguration

Management and Administration
GUI-based workbench (Windows 7)
Configure eNodeB connections
Configure system resources
Log and storage management
Import/export and group USIM records
Manage user accounts and software licenses
Backup/restore test cases and system configurations
Automation tool SDK

RF Bands

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<th>Band</th>
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<th>Downlink (DL) (MHz)</th>
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