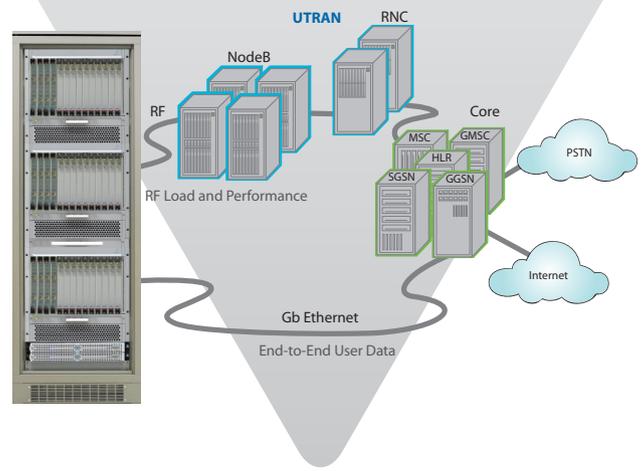# VIAVI

DMTS-9000 UMTS/HSPA Capacity Test Solutions

Measuring user experience with real-world traffic generation

The Viavi Solutions DMTS Capacity Test 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. For equipment manufacturers and wireless network operators seeking to establish the true performance and capacity of their UMTS infrastructure in a controlled environment, the UMTS/HSPA Capacity Test creates a "city in a lab," providing deterministic, predictable, and repeatable loads. Testing under load with the capacity test systems ensures optimal wireless network performance, ultimately resulting in the best possible end-user experience.

The solution includes:

- **Functional feature tests** — to verify RF performance of UMTS/HSPA subsystems

- **System performance tests** — with mixed voice and data applications to measure 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 as well as the integrity of signaling under load.

- **Data application performance tests** — to measure quality of service (QoS) and its impact on voice and data throughput for mixed data traffic

- **Mobile perspective** — to provide logging and performance analysis

- **Deterministic analysis** — unlike test beds, the capacity test system provides repeatable and deterministic performance.

The Viavi DMTS Capacity Test system provides increased test coverage and capacity for UMTS wireless network operators and network equipment vendors.

Key Benefits

- Up to 1000 software-defined radio test terminals per rack

- High-traffic load of mixed voice and data services

- Easily defined call models for services and mobile behavior

- Highly scalable, upgradeable, reconfigurable, and programmable

- Easily defined test cases via workbench GUI for advanced protocol testing

- Network troubleshooting, fault diagnosis, and data analysis

- Realistic call model simulation

Applications

- Mixed voice and data traffic

- UMTS radio channel emulation

- Network performance measurements

- Data service rollout planning

- Predicting end-user experience

- Background load and terminal verification

- Easily define real-world traffic models

Data Sheet

Specifications

System Configuration

Up to 1,000 SDR test terminals (STTs) in a rack	
Up to 1,000 calls per hour per STT	
RF connections	1 to 64 sectors (3 carriers per sector) 1 to 80 sector-carriers (for simultaneous tests)
Logging storage capacity	450 GB
Multi-user support	
34U (w x d) 19-in x 36-in cabinet (interconnect multiple cabinets to achieve maximum capacity)	

Traffic Model

Mix of circuit- and packet-switched data	
Voice	Configurable call duration, inter-call delay Voice activity factor, speech burst time Internal/external number dialing
Data application simulator (optional upgrade)	Data traffic options: Ping UDP streaming FTP file transfer HTTP browsing SMTP/POP3 e-mail
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	
Control of STT mobility including support for soft/softer/hard 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 period
Statistical or time-based conditions under which ramping is considered complete	

Air Interface Protocols

UMTS R99 voice and data
UMTS HSPA

Statistics Collection

Logging at NAS, RRC	
Statistical analysis by STT or group, by sector carrier	
Statistics (total counts, averaged) such as:	Calls in progress Dropped calls Access attempts Erlangs Soft handover Call control Data application Voice and data application-level stats

Management and Administration

GUI-based workbench (Windows XP)
Configure base station 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 configuration

RF Bands

Band	Uplink (UL) (MHz)	Downlink (DL) (MHz)
1	1920 to 1980	2110 to 2170
2	1850 to 1910	1930 to 1990
3	1710 to 1785	1805 to 1880
4	1710 to 1755	2110 to 2155
7	2500 to 2570	2620 to 2690
9	1749 to 1784	1844.9 to 1879
10	1710 to 1770	2110 to 2170
11	1427 to 1447	1475.9 to 1495

VIAVI

Contact Us **+1 844 GO VIAVI**
(+1 844 468 4284)

To reach the Viavi office nearest you,
visit viavisolutions.com/contacts.

viavisolutions.com