

The most important thing we build is trust



“E500 Real Data Applications provides the industry’s most comprehensive test suite with over 3,000 unique metrics”

Introduction

Comprehensive Test Capability

E500 Real Data Applications provides the industry’s most comprehensive test suite with over 3,000 unique metrics; ranging from application performance to simple port enabled testing with throughput and latency metrics. User defined thresholds can be set on any of these metrics to easily pinpoint and isolate problems.

Real Application Performance Testing

Emulate unique application traffic per UE. Assess quality on multiple applications including delay sensitive applications such as voice and video. Determine quality on an end to end basis across the full LTE / WCDMA delivery path. Emulate application servers or connect to real 3rd party application servers.

Application Prioritization and Optimization

Ensure that all emulated applications are classified correctly, with minimum errors in terms of handling. Test that applications are not misclassified e.g. SIP enabled RTSP versus SIP RTP.

Applications

Real LTE / WCDMA data bearer services such as VoLTE calls, FTP data, web browsing and video broadcasts can be verified by using sophisticated application data generation features of the E500. This enables end-user quality of experience measurements to be made based upon real data application traffic.

Performance Measurements

Measure quality of experience for each and every UE on each and each and every emulated application traffic.

VoLTE Performance Testing

Emulate on a per UE basis voice calls using adaptive multirate (AMR) multi-media codecs, test using both narrow and wide band codec types. Using real voice samples performance test LTE network configurations. E500 Real Data Applications supports VoLTE AKA (Authentication and Key Agreement) to establish secure VoLTE calls. Determine performance limitations when using unsecure and secure VoLTE (AKA/IPsec).

Typical Performance Metrics per Application Type

Packets per second, Dropped/Out of Sequence Packets, Retransmitted Packets, Jitter, Latency, TCP Connection Rate, Application Throughput, Unique Application timings, Video/ Audio quality score.

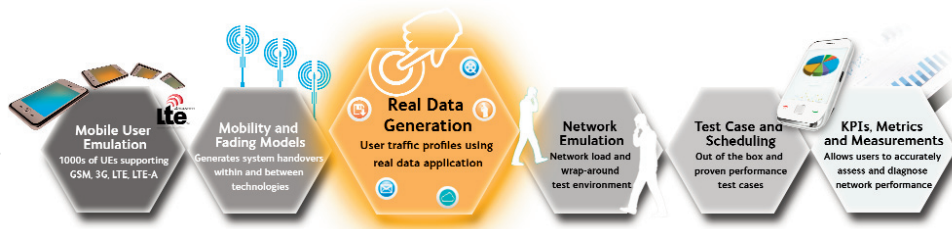
Default Applications

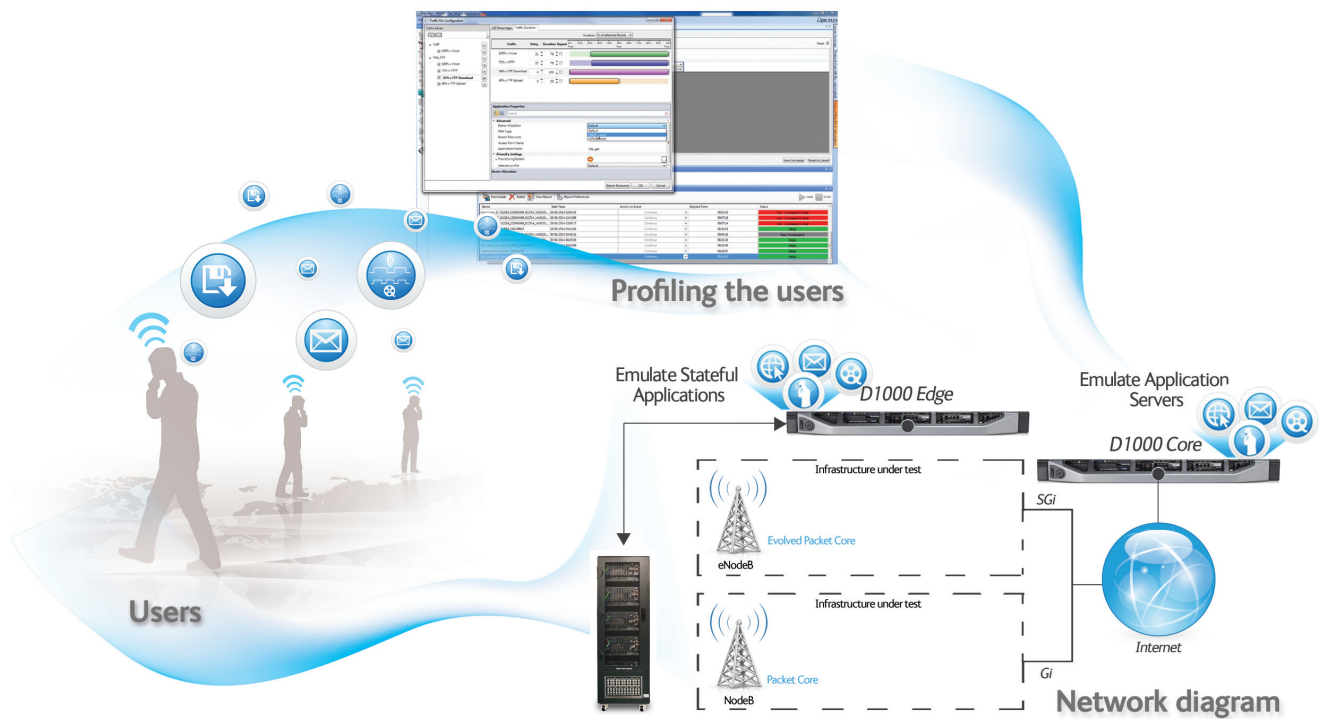
- Web (HTTP and HTTPS)
- File Transfer (FTP)
- ICMP (PING)
- Email (SMTP and POP3)
- Name Server resolution (DNS)

Default Features

- Multi-user support (up to 6 users)
- Graphical and Command Line Interface
- IPv4 and IPv6 addressing
- Real-time isolation of problematic applications and UEs

TM500 Family - the most realistic environment for network performance validation





Modeling real world user data application use scenarios

OPTIONAL APPLICATIONS

Voice Services



Cobham VoLTE option allows emulation of VoLTE UEs with different audio codecs to ensure that the coveted QoE improvements are achieved, VoLTE traffic is prioritized appropriately through the entire network and performance can be optimized.

Video Services



Cobham Video service option allows emulation of UEs connecting to VoD or VS servers as well as emulation of these servers to see the impact on the network performance or to see the network impact on the Video service performance.

Media and Voice Passive Analysis



Cobham's Passive Analysis option allows quantifying how network layer imperfections affect this quality of experience (QoE) factor. Cobham's passive analysis package uses proprietary algorithm to calculate Mean Opinion Score (MOS) and supports both audio and video quality analysis.

Thresholding



Saves time by identifying what, where and when it has been outside of acceptable performance. Different UE groups (for example VIP customers and data only subscriptions) can have individual criteria for violation and clearance duration.

TWAMP - Two Way Active Measurement Protocol



Allows measuring round trip IP performance among any two devices in a network and provides full visibility into network performance.

TeraFlow



Cobham TeraFlow Option creates TCP and/or UDP protocol traffic. This allows easily create "background" traffic while validating that other applications maintain acceptable level of performance.

SMS over IMS



Cobham SMS option allows emulation UEs to connect to IMS SMS servers and ensure that the coveted integration of SMS services function properly and transmission and reception of SMS messaging works properly through the entire network.

SPECIFICATION

- Up to 24 000 concurrent applications
- Up to 48 000 provisioned applications
- Up to 1 000 000 pps
- Up to 1.8 Gbps application traffic processing

WEIGHT AND DIMENSIONS (NOMINAL)

- Dimensions (per unit)
- 42.4 x 434 x 683 mm

POWER REQUIREMENTS

- AC input voltage range 90-264 VAC
- Power Consumption 1100 watts

INTERFACES

- 2 x Management (100/1000 Base-T)
- 2 x Test - GbE1 & GbE2 (1000 Base-T)

ORDERING INFORMATION

D1000 Edge + Core	TK794-C
Real Data Applications	
Voice services	TK784-C
Video services	TK786-C
Media and Voice Passive Analysis	TK787-C
Thresholding	TK788-C
TWAMP	TK789-C
TeraFlow	TK792-C
SMS over IMS	TK767-C