Spirent **Umetrix® Voice LM**

Powered by Link Master Logging™

5G Solution for Voice Experience Evaluation with RF & IP Logging

Highlights:

- Evaluate the user experience of voice services in a live 5G network using actual consumer mobile devices.

- Correlate RF and signaling information with voice and call QoE metrics for up to 12 devices simultaneously.

- Assess the launch readiness of voice and data services for 5G, VoLTE, VoWi-Fi, OTT and more.

- Execute Umetrix Data test campaigns with logging to collect layer 1 and layer 3 data to determine possible sources of application throughput bottlenecks.

Umetrix Voice LM enables users to better understand and triage the root cause of problems that impact the user experience of voice due to 5G mobile services.

Key Metrics

Speech Quality MOS (POLQA)

Call Completion Success Rate

Audio Delay

Use Cases

1. **Reduce the mean time to identify and resolve QoE issues.**
   The powerful combination of Umetrix QoE measurements alongside RF and IP signaling enables efficient debugging of network or device related problems, leading to a shorter time to problem resolution.

2. **Pre-testing for carrier device acceptance programs with QoE and logging.**
   Umetrix Voice LM enables device manufacturers to pre-test new device models prior to submission to carrier acceptance programs. By addressing QoE issues proactively with additional RF and IP KPIs, technical acceptance can proceed without delay.

3. **Launch readiness assessment for voice services (VoWi-Fi, VoLTE, OTT, etc.).**
   Compare the user experience of new voice services to legacy or competitive services prior to launch. Set launch criteria and evaluate trial, soft launch and commercial networks to determine readiness.

Maximize KPIs, Reduce Churn

It is critical in today's competitive environment to meet key performance indicators (KPIs) to minimize dropped and blocked calls and maximize data throughput. Umetrix Voice LM collects the underlying RF, IP, and signaling data to determine your KPIs and allow you to analyze and easily identify where you can
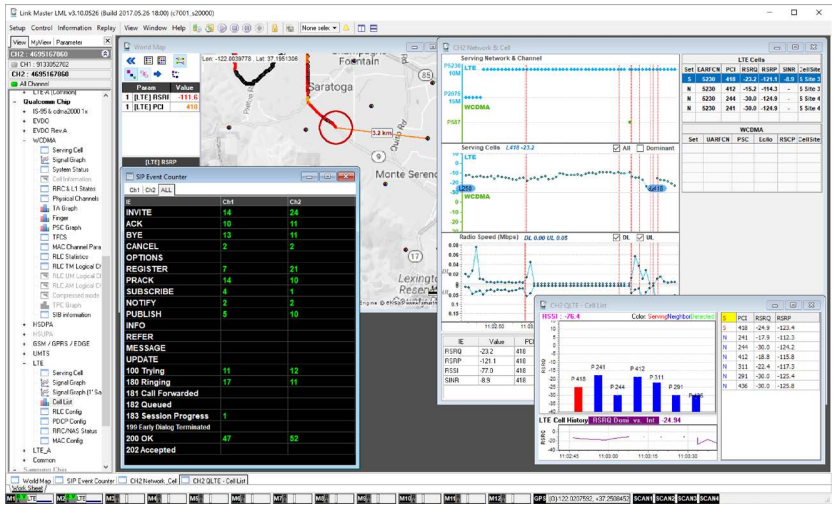boost your network and device performance.

Umetrix Voice LM

Umetrix Voice LM enables complete collection of all the 5G parameters characterizing wireless device performance. Setting up a test configuration is quick and easy via the intuitive graphical user interface.

Key Features

- Connect up to 12 UEs plus a scanning receiver
- Supports any network type: LTE-A, LTE, CDMA / EVDO, WCDMA / HSPA+ / GSM / EDGE
- VoLTE testing
- Collect layer 1 and layer 3 data
- Real-time mapping with trace lines to the serving cell sector
- Simple multi-floor in-building network characterization
- Full playback capability and one-click synchronization
- Collect LTE-A data on the primary and secondary bands
- Includes MIMO Testing

Ease of Use

- Set up fast and get going
- Voice and data configurations
- Integration with Umetrix Data

Get All the Data You Need

- Integrated mapping with trace line
- Full replay

View synchronized map, charts, logs and messages

Provides real-time views of key parameters

Example overview of carrier aggregation status
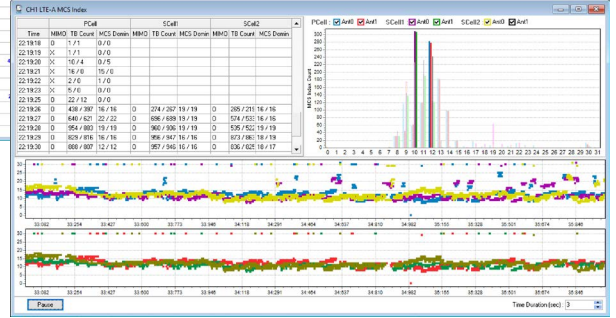
Identification of modulation and coding scheme usage

System Overview
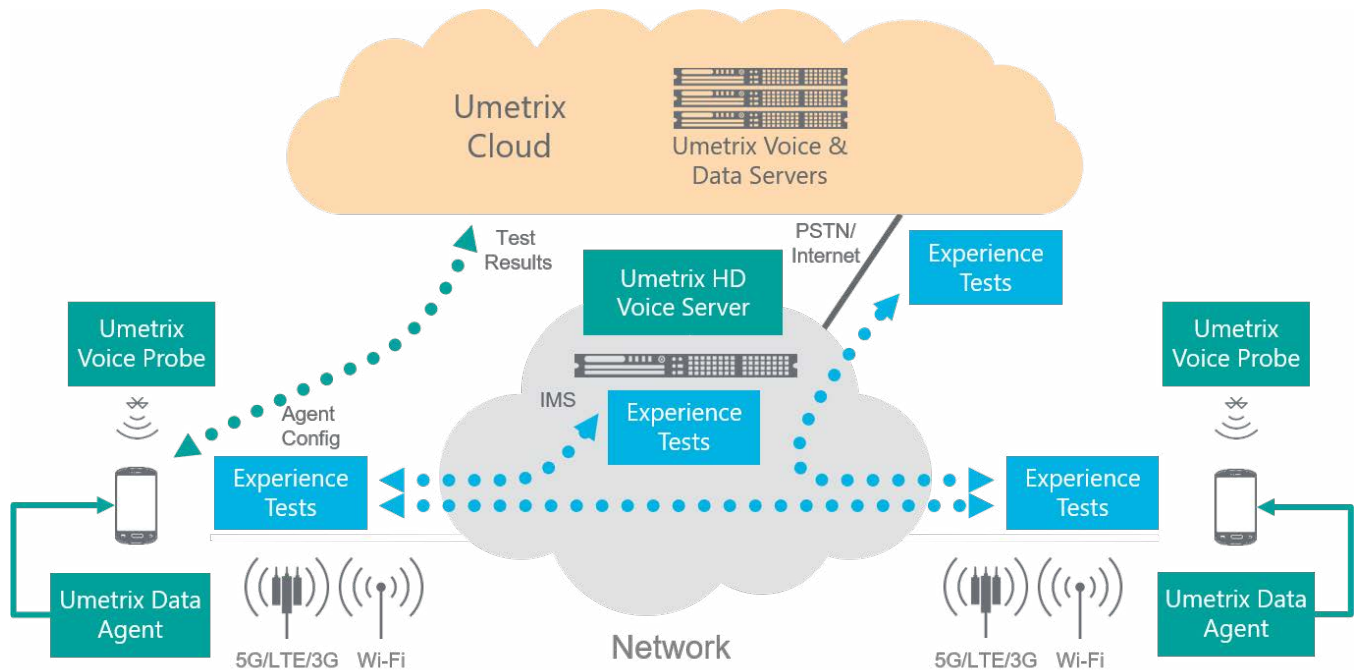
Umetrix Voice LM. The Umetrix Voice LM solution consists of small portable hardware units (probes) and PC-based control software. The control software can support up to twelve mobile devices simultaneously using a Bluetooth interface to initiate and terminate calls. The probes perform voice experience tests over a Bluetooth audio link or via the mobile device's audio jack. The solution performs three types of tests: mobile-to-mobile (between two devices on the same or different instruments), mobile-to-PSTN or mobile-to-IMS. Umetrix Voice LM evaluates the voice experience of end-to-end connections by performing speech quality tests (POLQA), call initiation and retention tests and audio delay tests.

Umetrix HD Voice Server. The HD Voice Server enables mobile-to-IMS tests using narrowband or wideband / HD codecs. The server is deployed within a carrier's core network and interfaces directly to the IMS, acting as a virtual SIP/IP device and experience testing end-point. The HD Voice Server helps isolate issues by enabling independent analysis of the uplink and downlink for a specific mobile-to-IMS connection. This helps isolate issues better than mobile-to-mobile tests where the end-to-end connection includes the uplink and downlink of both mobile devices under test.

Umetrix Cloud. The Umetrix Cloud is a worldwide set of Spirent-hosted cloud endpoints for voice and data test services. The **Umetrix Voice Server** enables mobile-to-PSTN tests using narrowband codecs. With the Voice Server, customers can get uplink MOS delivered to their Umetrix Probe in real-time while conducting field testing. The server is hosted in the Umetrix Cloud and connects to the PSTN via a T1 or E1 interface. The Voice Server acts as virtual landline phone and voice probe for performing end-to-end voice experience evaluation. The Voice Server helps isolate issues by enabling independent analysis of uplink and downlink voice service metrics. In addition, the Voice Server enables evaluation of narrowband codecs and PSTN connectivity for the network, service or device under test. The Umetrix Cloud also contains **Umetrix Data Media Servers**, which act as an endpoint for all data experience tests, hosting various types of media and services required to perform HTTP, FTP and UDP file transfers and ping tests.
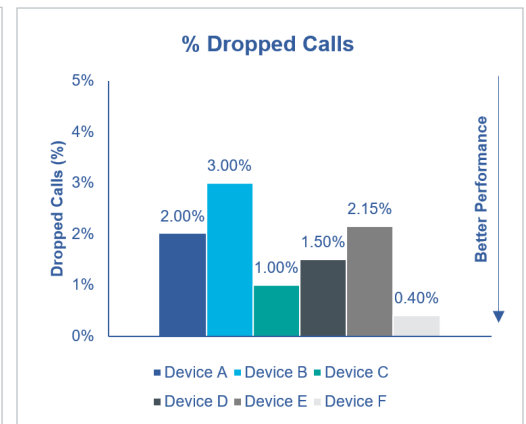
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Example Reports

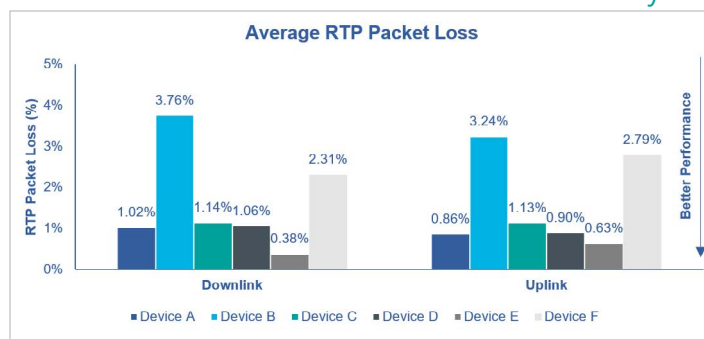### Average MOS by Device Model
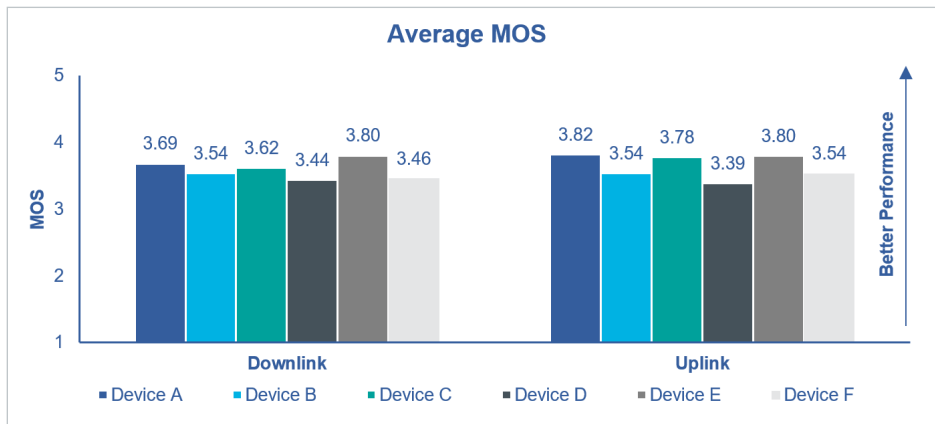
Compute Mean Opion Scores (MOS) for voice quality on both the uplink and downlink for multiple devices.

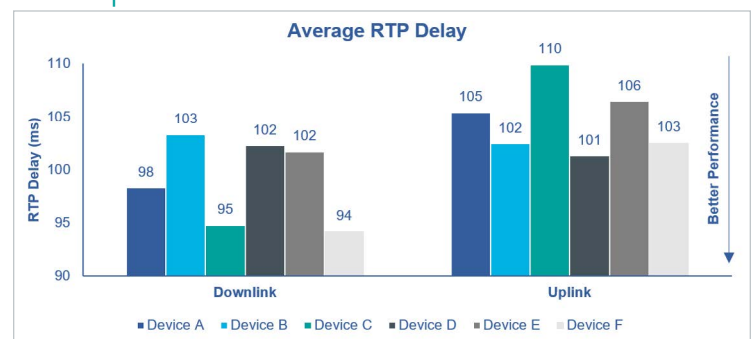### % Dropped Calls by Device Model

Determine which devices are losing connectivity too often.

RTP Analysis on Multiple KPIs

Use integrated RF & IP logging for detailed analysis of root cause mapped to observed and measured QoE issues.

PC and Hardware Requirements	
CPU	i7 for MOS reporting
RAM	16GB or higher
OS	Windows 10 or higher
Display	1024 x 768 resolution
USB ports	For GPS, UEs, receivers and USB license key, if used
Disk Space	30GB available, for log file storage
UE Chipsets	Qualcomm, Samsung, GCT, LG, Intel—must match tool configuration; additional support added regularly
Scanning Receivers	V-Comms; PCTel™ SeeGull LX and EX scanning receivers (single or multi-band technology support); Viavi or JDSU W1314A/B scanning receivers

Contact Us

For more information, call your Spirent sales representative or visit us on the web at www.spirent.com/ContactSpirent.

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