VQT Drive Testing

(Wireless Voice, Video, Data Quality Testing goes Mobile)

VOICE

Phones w/ Bluetooth
(WiFi / 3G / 4G / VoLTE/Bluetooth)

DATA

(iOS, Android)
Smartphone/ Tablet devices w/ GL App

Voice Quality (using POLQA),
Call Failures, Call drops,
Delay / Level measurement,
RSSI (signal strength)

RSSI (signal strength)
TCP, UDP, HTTP, DNS,
Route, FTP, Email, SMS
Connection Information

VIDEO

*Control, Analysis,
Data Retrieval*

GL Central QoS System

RSSI (signal strength)
Video, Audio MOS Quality
Network Diagnostics
Connection, Phone Information

WebViewer™

(Windows, Linux, Android)
Smartphone/ Tablet /PC devices w/ Test Agents

Overview

GL's Wireless Drive-Test solution includes all the necessary functionalities within portable equipment for a true mobile test. The mobile device under test can be in your pocket, in your car, in a train, or virtually anywhere while tests are automatically executed in an automated fashion. The automated tests include Voice Quality, Video Quality and Data Quality. The WebViewer™, a web-based client application, accesses the centralized database for results.

The Wireless Drive-Test solution includes support for call control of variety of mobile device networks – from 2G to 4G LTE and beyond, including the capability of sending/recording voice, testing video conferencing, and testing a variety of data over the mobile devices, while analyzing their performance.

Hardware associated with the Drive-Testing solution is GL's Dual UTA HD which connects to mobile devices via Bluetooth, and GPS Receiver for plotting co-ordinates during the drive testing, just plug into the cigarette lighter (for power) and start the test.

A GPS option permits time synchronization between two geographically separated systems as well as location information for drive testing. All the test measurements and statistics results are sent to central database along with GPS co-ordinates. Using WebViewer™, these results are plotted on Google Maps and can be accessed from anywhere in the world.

For more details, please visit Drive Testing webpage.

Main Features

- Network independent Drive Testing solution (on any network)
- Data and Video testing can be performed on-the-go using mobile devices (phone or tablet) with GL App
- Voice, Video and Data testing can be run simultaneously (if the network allows)
- GLNetTest VQT mobile application available for Android devices supporting manual and automated voice quality testing operations
- Support for both NB and WB (VoLTE) testing
- Device independent voice solution (any phone which supports Bluetooth). GL Data solution runs on any Android or iOS device (or PC), while the GL Video solution runs on any Android/PC
- Connect directly to end devices - Smartphones, Softphone, Phone Handset, or ATAs
- Bluetooth® compatible for both Call Control as well as Audio Send/Record
- Any time a loss of connection (connection drop) detected is reported to the central system helping to trace defects in the network
- Indoor Tracking System (ITS) in VQuad™ developed to test the VQT in remote and unreachable GPS signal locations
- ITS information (location, timestamp) saved in the VQT database per VQuad™ Measurement
- Full-featured remote capability that permits loading configurations, starting/stopping tests, and retrieving test results
- Obtain network signal strength levels from wireless phone

Voice Drive Testing

Drive Testing (for Voice) means testing the mobile device, either using the native phone app or a VoIP app on the phone a call can be established with another mobile device or a static (landline) device.

VQuad™ connects to the mobile device via the Dual UTA HD using Bluetooth. A single VQuad™, on a PC, along with Dual UTA HD can operate up to 4 wireless mobile phones (via (Bluetooth®, Wi-fi, 3G, 4G, LTE, PTT) simultaneously. The Dual UTA HD includes an optional GPS receiver for providing location which can be used to plot the results on Google Maps using the WebViewer™.

GL's NetTest VQT app, supported on rooted Android devices, supports both manual and automated testing of Voice Quality within the network. The GL NetTest VQT app includes features to place and receive calls over the network along with Play and Record voice over the established call.

The results of the fully automated solution includes Voice Quality (using POLQA), call failures, call drops, delay measurements (RTD and OWD), level measurements, and RSSI (signal strength of the phone). The voice quality testing supports both NB and WB (VoLTE) testing. The VQT MOS scores using POLQA algorithm as well as the Call Control information can also be plotted using Google maps.
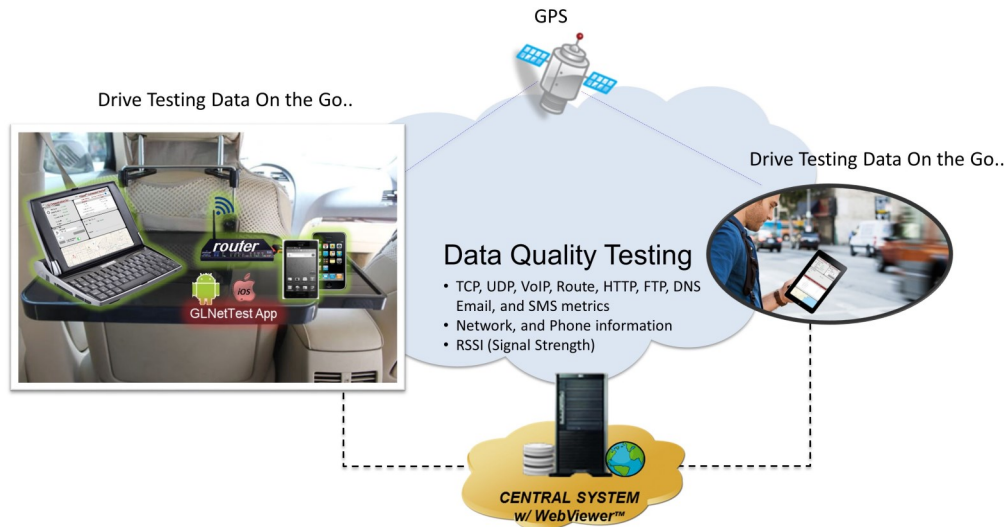
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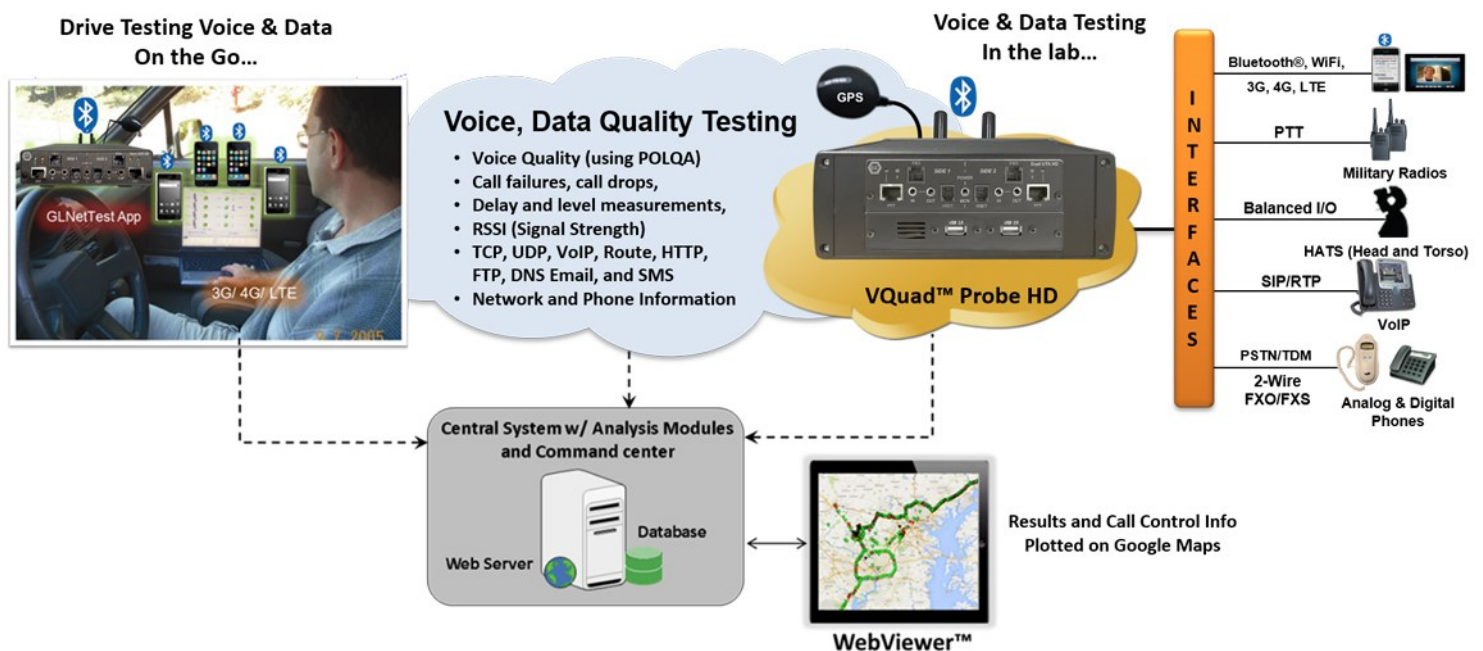
Data Drive Testing

Data testing require only the mobile device (phone or tablet). Using the GL app (supports Android and IOS) manual and automated data testing can be performed. The mobile device can be in your pocket, in your car, in a train, or virtually anywhere while automated Data Testing is performed. The mobile device will run the specified data test irrespective of whether the phone is on an active voice call or not. Automated Data Testing (NetTest) includes TCP, UDP, VoIP, Route, HTTP, FTP, DNS Email, and SMS.

All results along with GPS coordinates of when the test starts/ends are plotted in Google Maps which can be accessed using WebViewer™. The results include RSSI (Signal Strength), Network, and Phone information.

While the phone is connected to the Central System, all Connection Drops (loss of connection) are reported to the central database and can be plotted within Google Maps. This helps to find problematic areas within the network.


Video Drive Testing

Video testing requires only the mobile device (phone or tablet). Using the GL app (supports Android and Windows/Linux) manual and automated video testing can be performed.

Video Conference testing supports testing between any two devices (agents) including Android mobile devices, Windows and Linux PCs. Each test allows configuration of the test such as video rates and bandwidth. Using the GL app or the VQuad™ software, both manual and automated video conference testing can be performed between any two agents. The A/V QoS results are provided along with several analytic metrics.

Tests can be fully automated with results along with GPS co-ordinates sent to the central system. The results are plotted on Google Maps using the WebViewer™.

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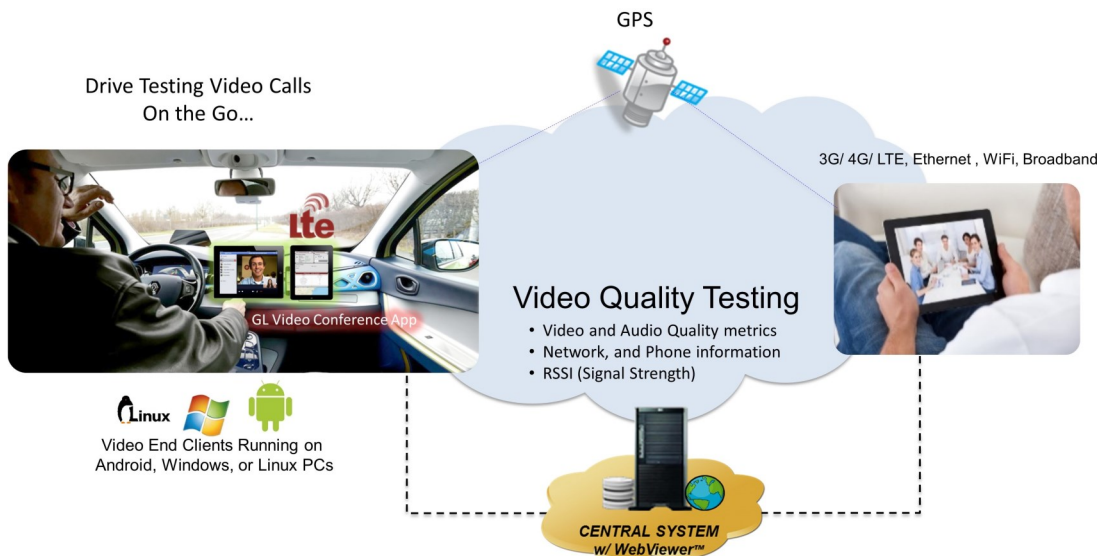
Configuration

A single VQuad™ with a Dual UTA HD connected to a laptop PC can operate up to 2 wireless mobile phones (via data cable or Bluetooth®) simultaneously. Call Control of the wireless phones, sending/recording voice through the wireless phone (via data cable or Bluetooth®), performing signal strength test, round-trip delay, and one way delay measurements can all be controlled through the VQuad™ application.

Wireless Call Control

As an option to the GL VQuad™ software, the ability to automatically control the wireless phone (via data cable or Bluetooth®) for placing calls, answering calls, disconnecting calls, and obtaining relevant information such as network signal strength is available using the VQuad™ Call Control option.

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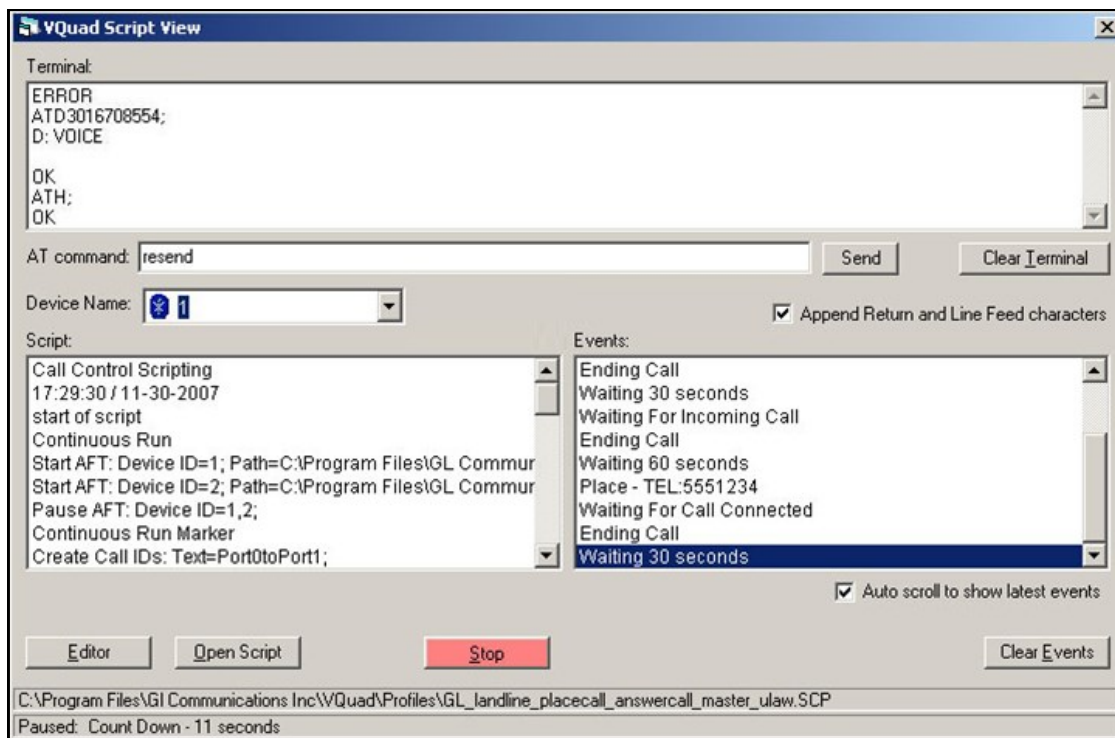
Results and GPS Mapping

As shown in the screenshot below, Google Map option within WebViewer™ plots various Results, VQuad™ Nodes, and Mobile Devices based on the GPS co-ordinates available. Results include VQT POLQA, Data Tests, Video Tests, Call Connect Events, Echo and Delay Measurements. GPS position of Mobile Devices along with the Device PhoneID, Device Name and the location are plotted. Plotting can be done real-time while drive testing and testing at fixed locations world-wide.
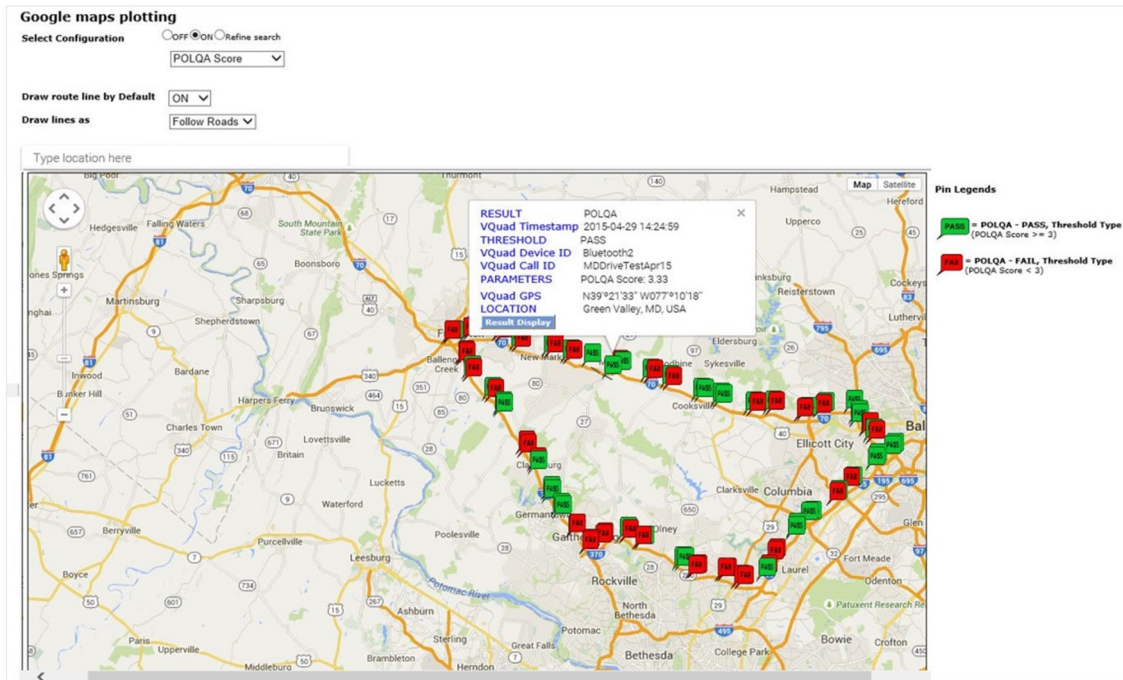

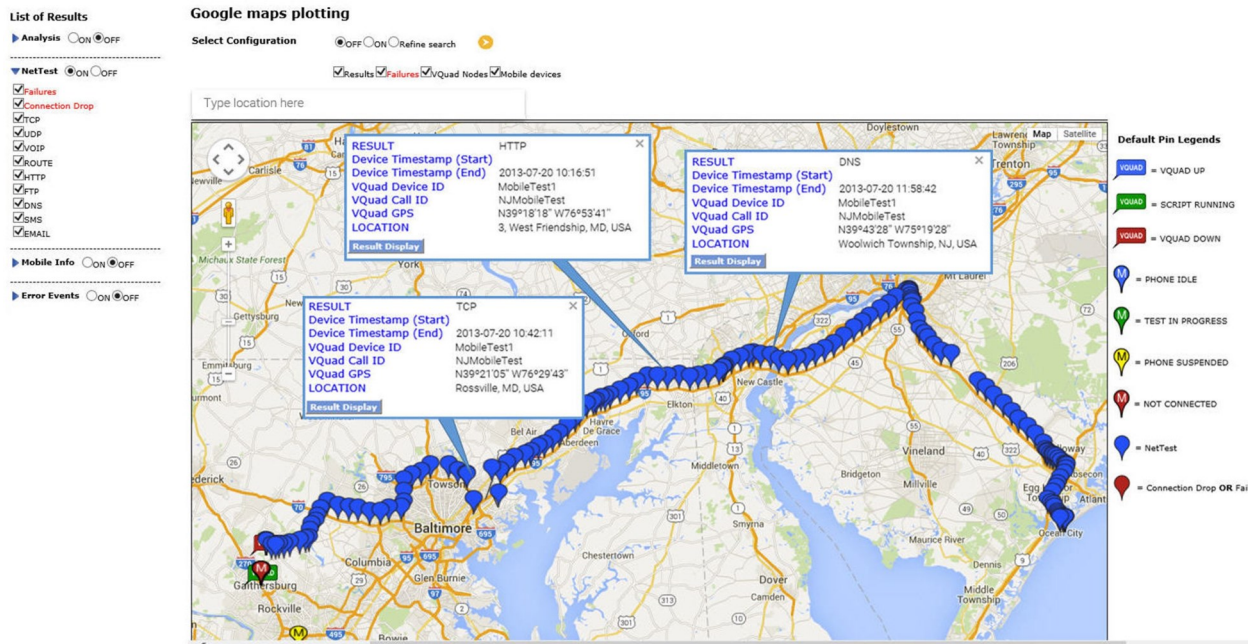**Figure: Voice Drive Test Results plotted on Google Map within Webviewer™**

Figure: Data Drive Test Results plotted on Google Map within Webviewer™

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Buyer's Guide

Item No	Product Description
VQT010	VQuad™ Base Software
VQT002	Voice Quality Testing (PESQ only)
VQT006	Voice Quality Testing (POLQA)
EMU037	Echo Measurement Utility (EMU) Software

Item No	Related Hardware
VQT280	VQuad™ Probe HD (with Dual UTA HD)
VQT251	Dual UTA HD with Wideband options
VQT252	Dual UTA HD with Bluetooth Option
VQT442 (cable)	Mobile Audio Interface for Smartphones
VQT443 (cable)	3-wire Headset Interface Adaptor for Smartphones

Item No	Related Software
VQT013	SIP (VoIP) Call Control
VQT040	Webviewer™
VQT600	VQuad™ NetTest Data Server Solution
VQT601	Mobile Device Controller Software

For more details, please visit Drive Testing webpage.

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