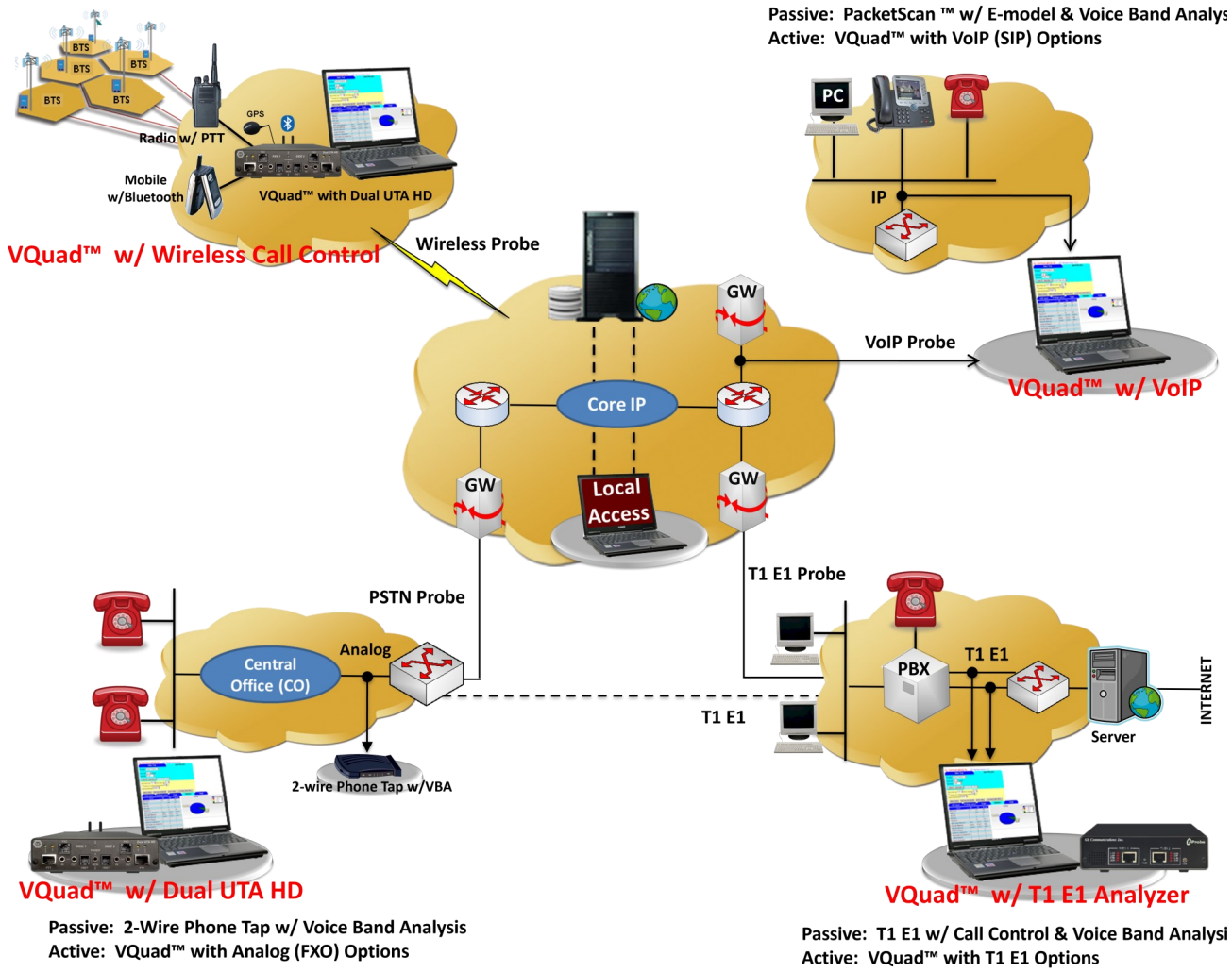
Active & Passive Quality of Service Testing



Overview

The GL Passive Quality of Service testing allows one to monitor voice anywhere within a network (using the desired VoIP/TDM/ Analog Network probe) and gather statistics and quality of service measurements. The various network probes utilize VQuad™ with Dual UTA HD to support Wireless, T1/E1, Analog, and VoIP networks.

The VQuad™ provides the one box active QoS solution for sending/recording voice over a variety of network interfaces in an automated and synchronized manner. Using the GL VQT, analysis of the recorded voice files can automatically be executed from the VQuad™ in an intrusive manner. The VQT utilizes the ITU algorithms PESQ, and POLQA (NB, WB, SWB). In addition to sending/ recording voice, the VQuad™ also supports automated call control for establishing calls and verifying the call is up prior to sending/ recording voice.

For more details, visit Active & Passive Voice Quality Testing webpage.

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Main Features

Passive QoS Analysis

- Call Quality Of Service (QOS) for all calls with E-Model based (G.107) Mean Opinion Score (MOS) and R-factor with individual and summary statistics presented in graphical and tabular formats
- MOS score for VoIP Networks using E-Model
- Near Real-time QoS Measurements of All Networks
- Line Echo Measurements
- Automated operation
- Results can be exported to file

Active QoS Analysis

- MOS score using ITU Standard Algorithms PESQ, POLQA (NB, WB, SWB)
- Additional Metrics include Jitter, Clipping, Levels, Latency
- Automated operation
- Results saved to database with full featured Query functionality
- Graphical and Tabular results can be exported to file

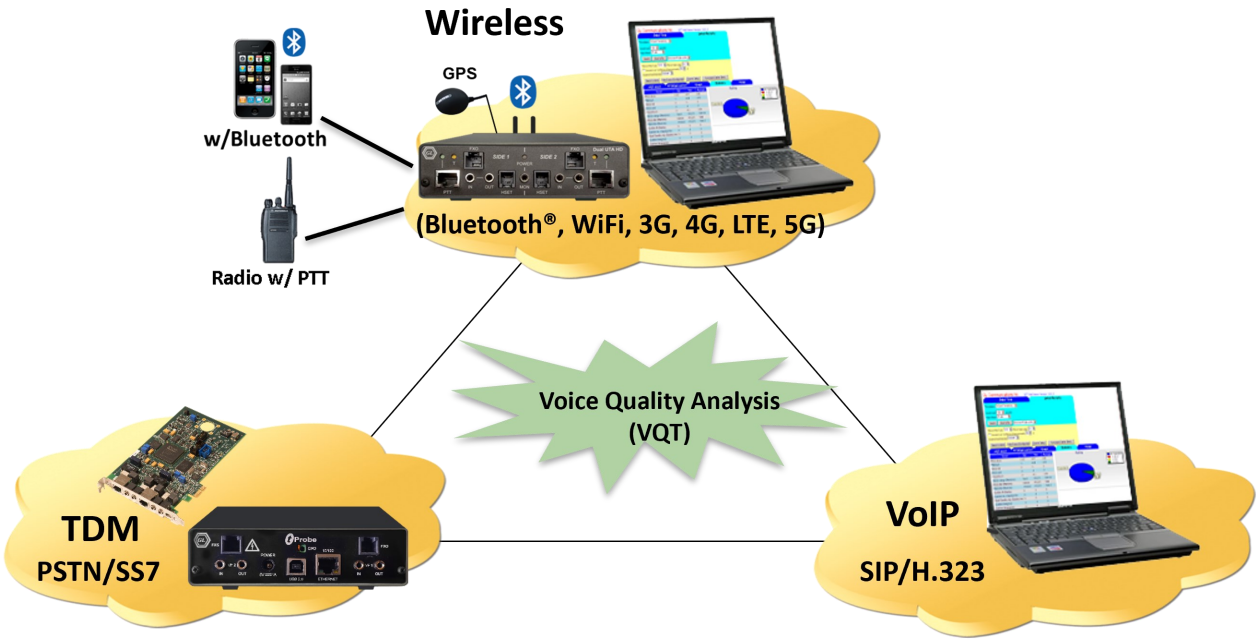
Testing VoIP, Wireless, TDM, & Analog Networks

- Traffic Generation / Reception for QoS
  - PCM voice files, DTMF/MF digits, tones, fax, modem traffic
  - Manual or Automatic (Bulk Calling) Mode
  - Products Applicable – VQuad™, PacketScan™, T1 E1 Analyzer, and MAPS™
- Probes for Active QoS
  - Products Applicable – VQT, VQuad™ with VoIP / Wireless / TDM / Analog options
- Probes for Passive QoS
  - Products Applicable – PacketScan™, Voice Band Analysis (VBA), T1 or E1 Call Capture Analysis, 2-Wire phone tap

Active QoS Analysis

VQuad™ with Dual UTA HD, VQT

GL's VQuad™ system provides all necessary capability for automatic measurement of Voice Quality and QoS for any desired network including VoIP, Wireless, TDM, and Analog. The VQuad™ with Dual UTA HD system acts as a single box solution & provides multiple interfaces for connecting to the network.



Available VQuad™ with Dual UTA HD Interfaces:

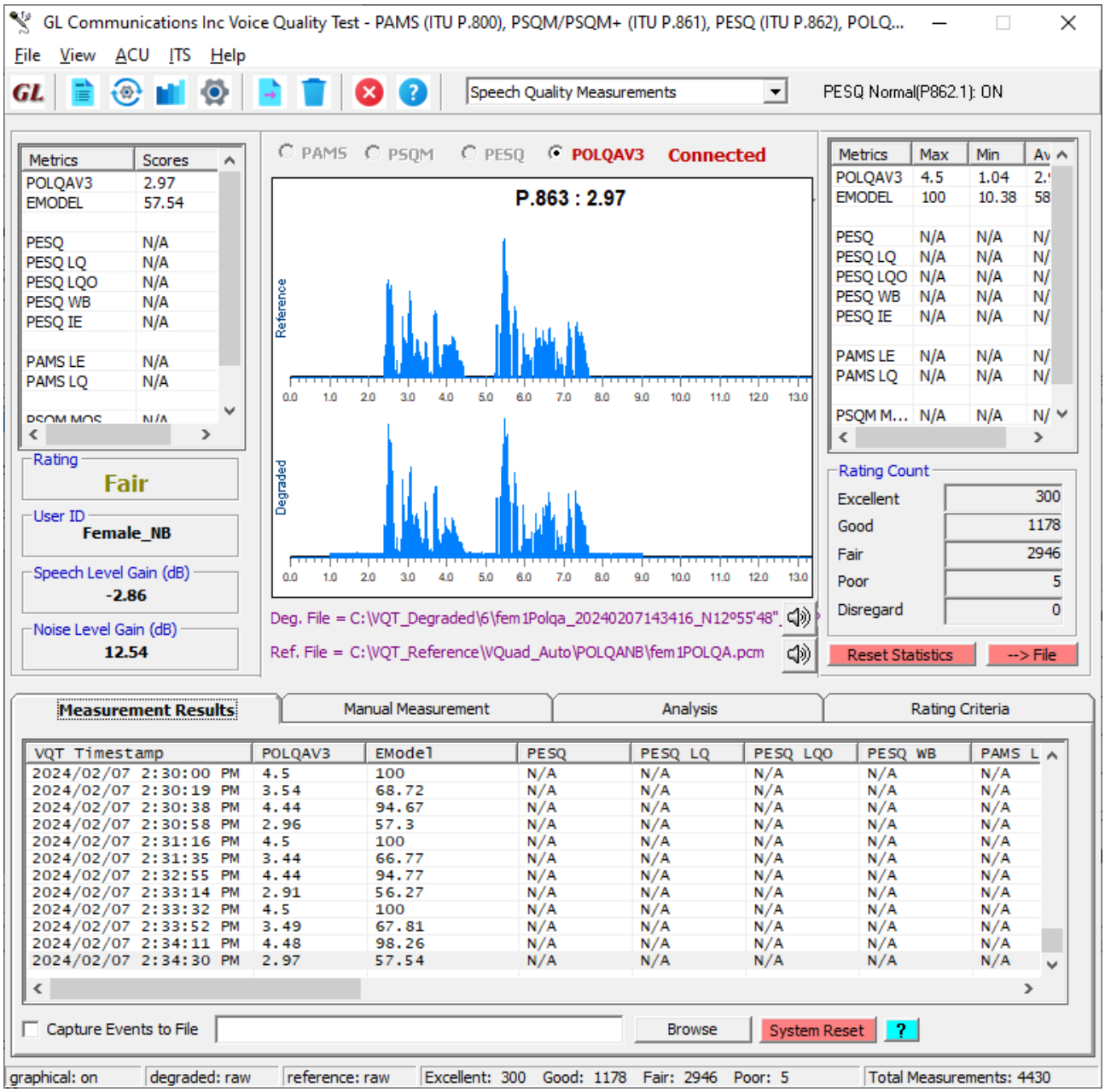
- Mobile Phones
- Bluetooth® – Works with all Bluetooth® phones for both call control and send/record audio functions. Bluetooth® also performs RSSI, Battery level functions, Network verification. Supports Bluetooth Narrow Band (NB) with Frequency Range 204Hz to 3404Hz, Wideband (WB) with Frequency Range: 204Hz to 7200Hz.
- Mobile audio interface for Smartphones (iPhone, Android) – includes Audio Headset Jack - 2.5mm (typical) for mobile phones, 3.5mm terminations for Smartphones (iPhone, Android)
- Mobile Radios with Push-to-Talk functionality: Provides radio keying and sends/records audio
- RJ-11 POTS lines: Detect dial tone, go off hook, CallerID detection, send digits (two stage dialing), answer calls, detect a variety of Special
- Information Tones (SIT), and much more as well as send/record audio for Voice Quality measurement.
- Handset Phones (POTS, Digital, VoIP): Replaces handset of any telephone (POTS, Digital, VoIP) that contains a coiled cord and handset
- 2-wire Analog (WB, NB - FXO) supporting next generation gateways
- Dual UTA HD 4-wire analog interfaces supporting Tx/Rx Headset including HATS, Mobile Phone Headset, and any Handset Phone (RJ22 connection)

Voice Quality Testing (VQT)

The VQT software can work either independently, or in conjunction with VQuad™ - Dual UTA HD, or in conjunction with VQuad™ Probe HD.

VQT performs PESQ LQ/LQO/WB, and POLQA (NB, WB, SWB) simultaneously, using two voice files (Reference File and Degraded File) and provides the algorithm results in both a graphical and tabular format. Additional analytical results are displayed as part of the assessment such as MOS, E-Model, Signal Level, SNR, jitter, clipping, noise level, and delay (end to end as well as per speech utterance).

All results are saved to file and database for post processing viewing along with sophisticated searching on the results within the VQT application and using the WebViewer™ (remote and local access).

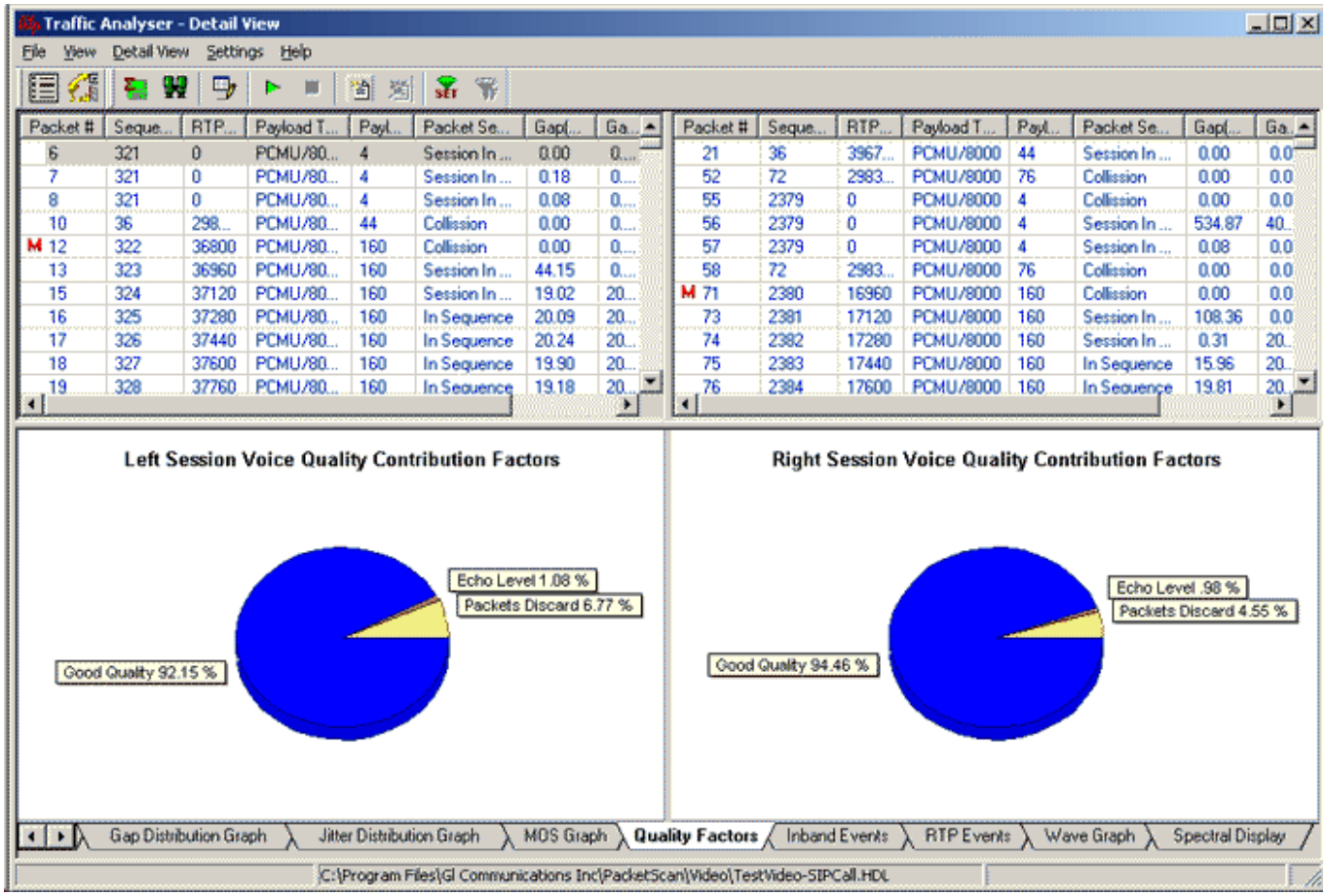


VQT Timestamp	POLQAV3	EModel	PESQ	PESQ LQ	PESQ LQO	PESQ WB	PAMS L
2024/02/07 2:30:00 PM	4.5	100	N/A	N/A	N/A	N/A	N/A
2024/02/07 2:30:19 PM	3.54	68.72	N/A	N/A	N/A	N/A	N/A
2024/02/07 2:30:38 PM	4.44	94.67	N/A	N/A	N/A	N/A	N/A
2024/02/07 2:30:58 PM	2.96	57.3	N/A	N/A	N/A	N/A	N/A
2024/02/07 2:31:16 PM	4.5	100	N/A	N/A	N/A	N/A	N/A
2024/02/07 2:31:35 PM	3.44	66.77	N/A	N/A	N/A	N/A	N/A
2024/02/07 2:32:55 PM	4.44	94.77	N/A	N/A	N/A	N/A	N/A
2024/02/07 2:33:14 PM	2.91	56.27	N/A	N/A	N/A	N/A	N/A
2024/02/07 2:33:32 PM	4.5	100	N/A	N/A	N/A	N/A	N/A
2024/02/07 2:33:52 PM	3.49	67.81	N/A	N/A	N/A	N/A	N/A
2024/02/07 2:34:11 PM	4.48	98.26	N/A	N/A	N/A	N/A	N/A
2024/02/07 2:34:30 PM	2.97	57.54	N/A	N/A	N/A	N/A	N/A

Passive QoS Analysis

PacketScan™ E-Model MOS

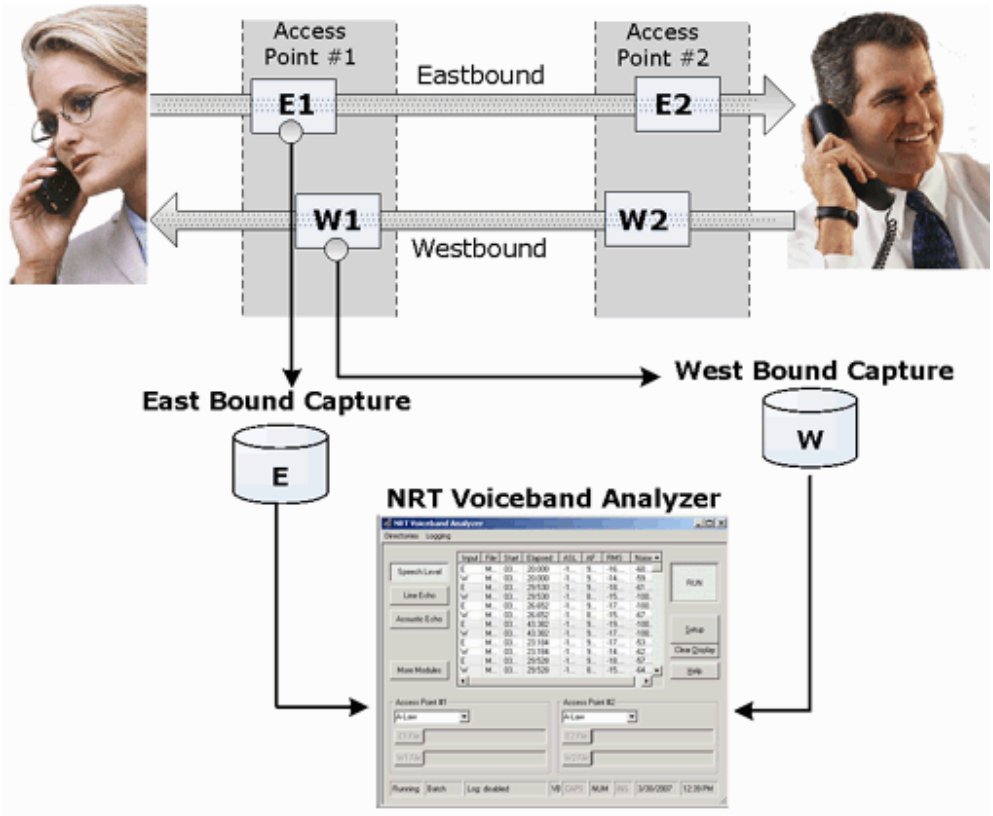
Provides in-depth real-time & post-process data investigation. Vital aspects necessary for close analysis are included in tabular & graphical formats. Traffic summary & detailed views information includes host of graphs such as Gap, Jitter MOS, Quality, Wave and Spectral Display, Delay, Packet-loss, & so on. Users can set E-Model based MOS and R-Factor parameters, VQMon settings, & Dynamic Payload Mapping.



Voice Band Analyzer (VBA)

The Near Real-time VBA is an analysis tool for monitoring the quality of voice traffic over VoIP, Wireless, TDM, & Analog networks. VBA instantly detects voice file captures and along with analysis modules, monitors speech levels, noise levels, and line echo.

The VBA application also operates on pre-captured files, making it near-real time. This package has been designed to work with other GL Communications Inc. tools such as PacketScan™, T1/E1 Call Capture Analyzer, and many other recording tools.



Buyer's Guide

Item No	Product Description
VQT010	VQuad™ Base Software
VQT013	SIP (VoIP) Call Control
VQT015	T1 E1 Call Control

Item No	Related Software
PKV100	PacketScan™ (Online and Offline)
VBA032	Voice-band Analyzer
VQT002	Voice Quality Testing (PESQ only)
VQT006	Voice Quality Testing (POLQA)
VQT251	Dual UTA HD Next generation Dual UTA with FXO Wideband support
VQT252	Dual UTA HD – Bluetooth Option

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