vHandi™ – Handheld Analog Line Tester

Portable Handheld FXO Simulator

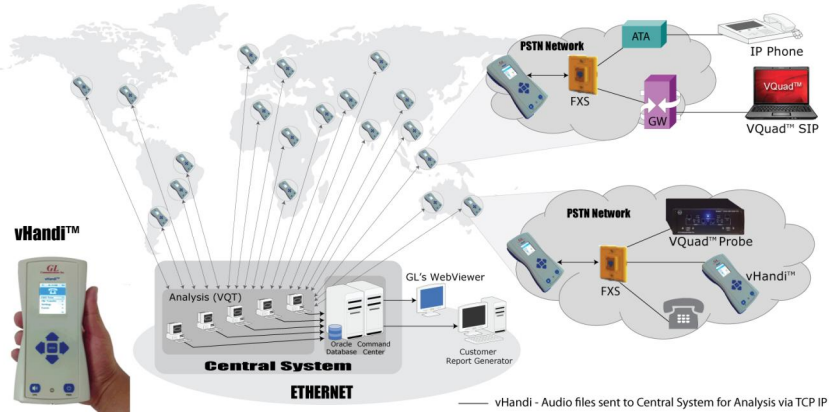
Internal SD Card for Storage

Call Events, Error Events, and Traffic Events Log

Transmit/Record Files, Send/ Receive Tones, DTMF Digits

Automate FXO Test Procedures with Scripts

Loop Current Drop Detection, Ring Detection, Energy, and Silence Detection



Overview

GL's vHandi™ is a compact **portable hand-held FXO simulator** (Foreign Exchange Office) that can **simulate an analog phone**. The vHandi™ call and voice tests can be completely automated or manually performed. The vHandi™ can work with GL's VQuad™, Voice Quality Test, and WebViewer™ applications to perform centralized voice quality measurements and analysis.

The vHandi™ comprises of –

- FXO RJ-11 port
- Ethernet RJ-45 port
- USB mini port

The FXO port on the vHandi™ connects to an FXS port performing call and traffic simulation. The vHandi™ supports any FXS port including PSTN, ATA or Gateway. The vHandi™ is powered as well as managed via the USB connection. With an internal SD card, vHandi™ can be used as a mass storage device when plugged into the USB port of the PC.

The Ethernet port is used for Management and for connecting vHandi™ to the Central System for voice analysis as well adding events to the Central Database.

For more details, refer to http://www.gl.com/hand-held-analog-line-tester-vhandi.html.

Main Features

- Supports manual and automated operations
- ON hook and OFF hook (loop closure) for place call and answer call
- Loop Current Drop detection (auto disconnect)
- Ring Detection for incoming calls
- Transmit and capture traffic (digits, tones, and voice)
- Energy Detection for path confirmation or auto script synchronization
- Manual/Auto transfer recorded files using Ethernet port
- Speaker provided to hear incoming/outgoing audio from 2-wire established call
- LED indication for the battery charge level for vHandi™
- Generates Call Events, Error Event, and Traffic Events – automatically sent to the Central System
- Automate IVR testing process and Quality of Service testing
- Send/Record Voice files to be used in Voice Quality Measurements per ITU-T standards (PESQ, POLQA) using GL Voice Quality Test (VQT) software
- vHandi™ works directly with GL's VQuad™ solution for sending/recording voice files over the network
- Full IVR test and analysis
- vHandi™ can be placed anywhere in the network waiting for an incoming call. When an incoming call is detected, vHandi™ will auto answer the call and perform a pre-defined IVR and/or Voice analysis tests prior to disconnecting the call and again waiting for the next incoming call.

GL Communications Inc.

818 West Diamond Avenue - Third Floor, Gaithersburg, MD 20878, U.S.A

(Web) http://www.gl.com/ - (V) +1-301-670-4784 (F) +1-301-670-9187 - (E-Mail) gl-info@gl.com

Events Supported by vHandi™

Call Events	Traffic Events
• Incoming Call • Call Established • Call Disconnected • Dial Tone Detected • Call Failed • FXO level Detection • Silence Detection • Loop Current Drop Detection	• Send / Record Voice • Send / Receive DTMF • Send / Receive Tone • Traffic Transfer/Receive Failed

vHandi™ Interface

Provides user-friendly navigation buttons and display options.

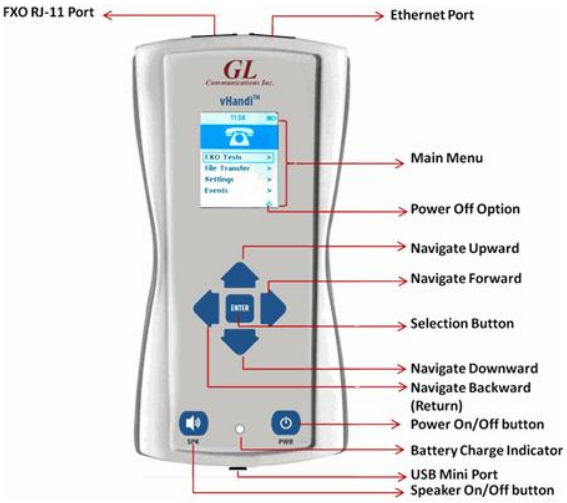


Figure: vHandi™ Interface

File Transfer

The Ethernet port is a vHandi™ Management Port and it is used to connect vHandi™ to the LAN, or directly to the PC for file transfers. Transfers recorded voice files automatically from the vHandi™ to the PC through vHandi™ Listener software. vHandi™ can be connected to the LAN, or directly to the PC for file transfers.

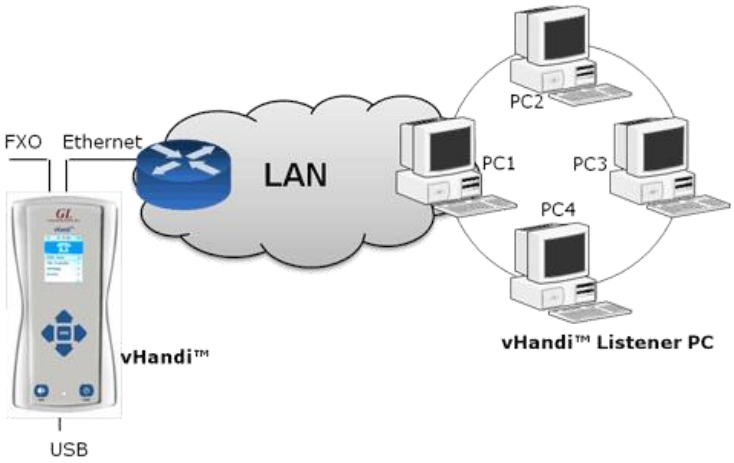


Figure: vHandi™ File Transfer

vHandi™ Tests Setups

Scenario 1: Place Call to DUT and perform Voice Quality Analysis

The vHandi™ can be automated to place bulk calls to different external numbers, during the testing period. The call flow shown below depicts a call from vHandi™ FXO port to the DUT through the wall jack FXS, and local PBX. Note that the far-end can also be a vHandi™ equipment answering the call in place of DUT. With the vHandi™ place call script, one can perform all operations such as place call, send DTMF digits, send or record voice, and then automatically transfer recorded voice to central location for analysis. The performed events include Off hook/On hook, check dial tone, transmit DTMF digits, monitor ring signal, and transmit or receive voice files.

vHandi™ also provides the ability to send DTMF on a established call for two-stage dialing or traversing through an IVR.

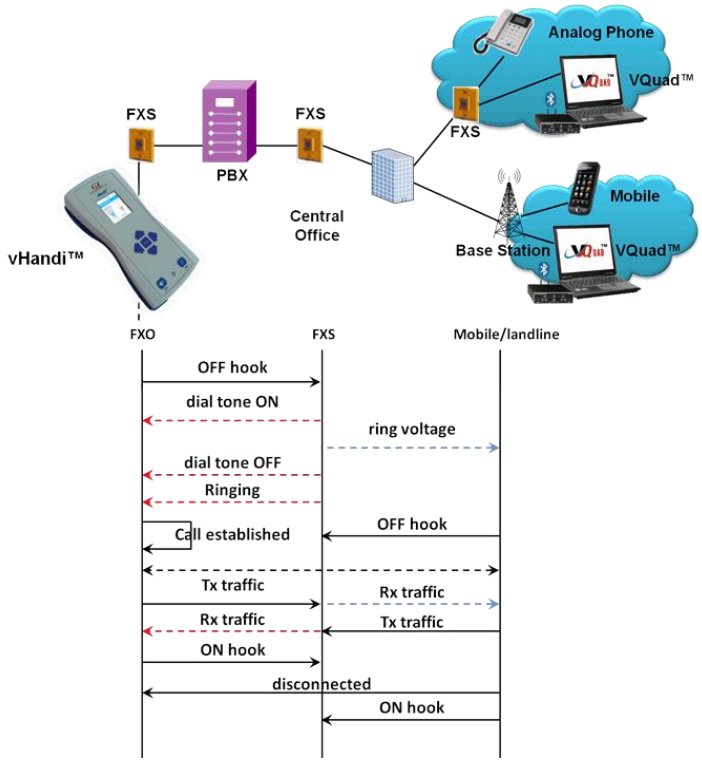


Figure: Place Call to DUT and Perform VQT Analysis

GL Communications Inc.

818 West Diamond Avenue - Third Floor, Gaithersburg, MD 20878, U.S.A

(Web) http://www.gl.com/ - (V) +1-301-670-4784 (F) +1-301-670-9187 - (E-Mail) gl-info@gl.com

Scenario 2: Answer Call from DUT and perform Voice Quality Analysis

The vHandi™ can be setup to simply wait for any incoming call from a far-end DUT or vHandi™ itself. The vHandi™ answers the call, performs call confirmation, path confirmation, VQT, and/or IVR testing. It can also auto-disconnect itself and then wait for next incoming call.

The call flow shown below depicts vHandi™ receiving call from DUT. The performed events include Wait for Incoming Call. Detect Ring, Go off hook (answer Call), Send or Record voice, Send Degraded file to Central System for VQT analysis, and Disconnect (onhook)

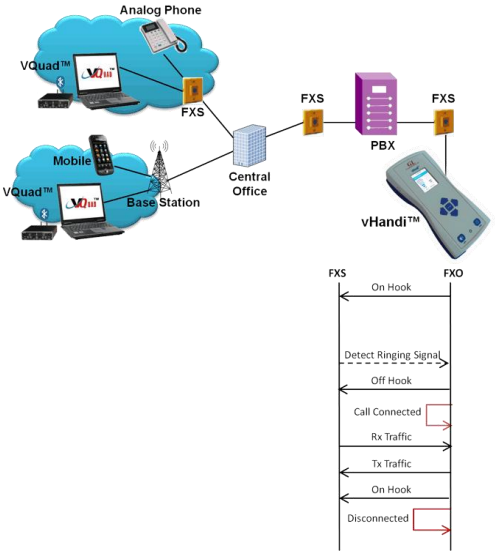


Figure: Answer Call from DUT and Perform VQT Analysis

Scenario 3: Centralized Analog Voice Quality Testing using vHandi™ with VQuad™ - VQT applications

The vHandi™ can work with GL's VQuad™, Voice Quality Test, and WebViewer™ applications to perform centralized voice quality analysis as depicted in the image below.

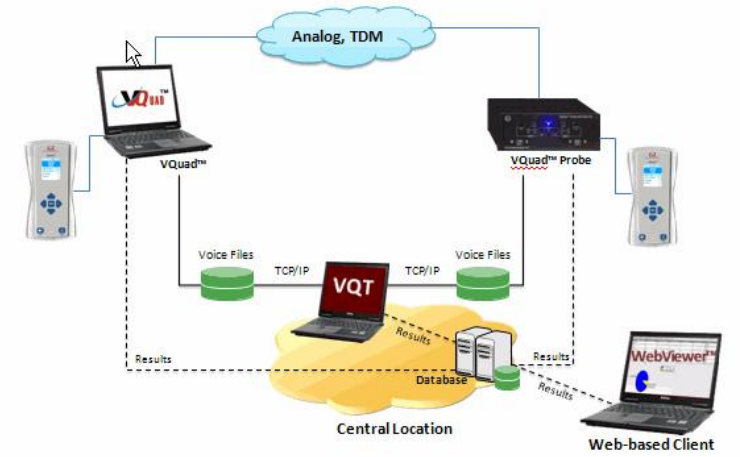


Figure: Centralized Analog Voice Quality Testing

Hardware Specifications

Feature	Description
Power Requirements	(1) USB Mini Jack for charging to a PC USB Battery life 4 hours under full operation, 8 hours with maximum conservation (idle states)
Ethernet	(1) RJ-45 Jack Supports 10/100 Ethernet
FXO	(1) RJ-11 Connector 2 Wire Call/Answer 2 Wire International Impedance Control US (typical 600 Ohms)
Battery	3.7V 1.75Ah Lithium-Ion Rechargeable Battery
SD Card	Micro SD 2 GB
Temperature	**Operation**: 0˚C – 50˚C 32 F – 120 F **Storage**: –20˚C to + 70˚C –4 F to + 158˚ F
Physical Dimensions:	**Length**: 154.9 cm **Width**: 77.9 cm **Height**: 33.5 cm

Buyers Guide

VQT290 – vHandi™

Related Software

VQT010 – VQuad™ Software (Stand Alone)

VQT241 – Dual Universal Telephony Adapter (UTA)

VQT018 – VQuad™ Lite with Dual UTA FXO and Bluetooth® devices

VQT270 – VQuad™ Probe with Dual UTA

VQT040 – VQT Webviewer™

EMU037 – Echo Measurement Utility (EMU) Software

VQT002 – Voice Quality Testing (PESQ only)

VQT004 – Voice Quality Testing (PAMS, PSQM, PESQ)

GL Communications Inc.

818 West Diamond Avenue - Third Floor, Gaithersburg, MD 20878, U.S.A

(Web) http://www.gl.com/ - (V) +1-301-670-4784 (F) +1-301-670-9187 - (E-Mail) gl-info@gl.com