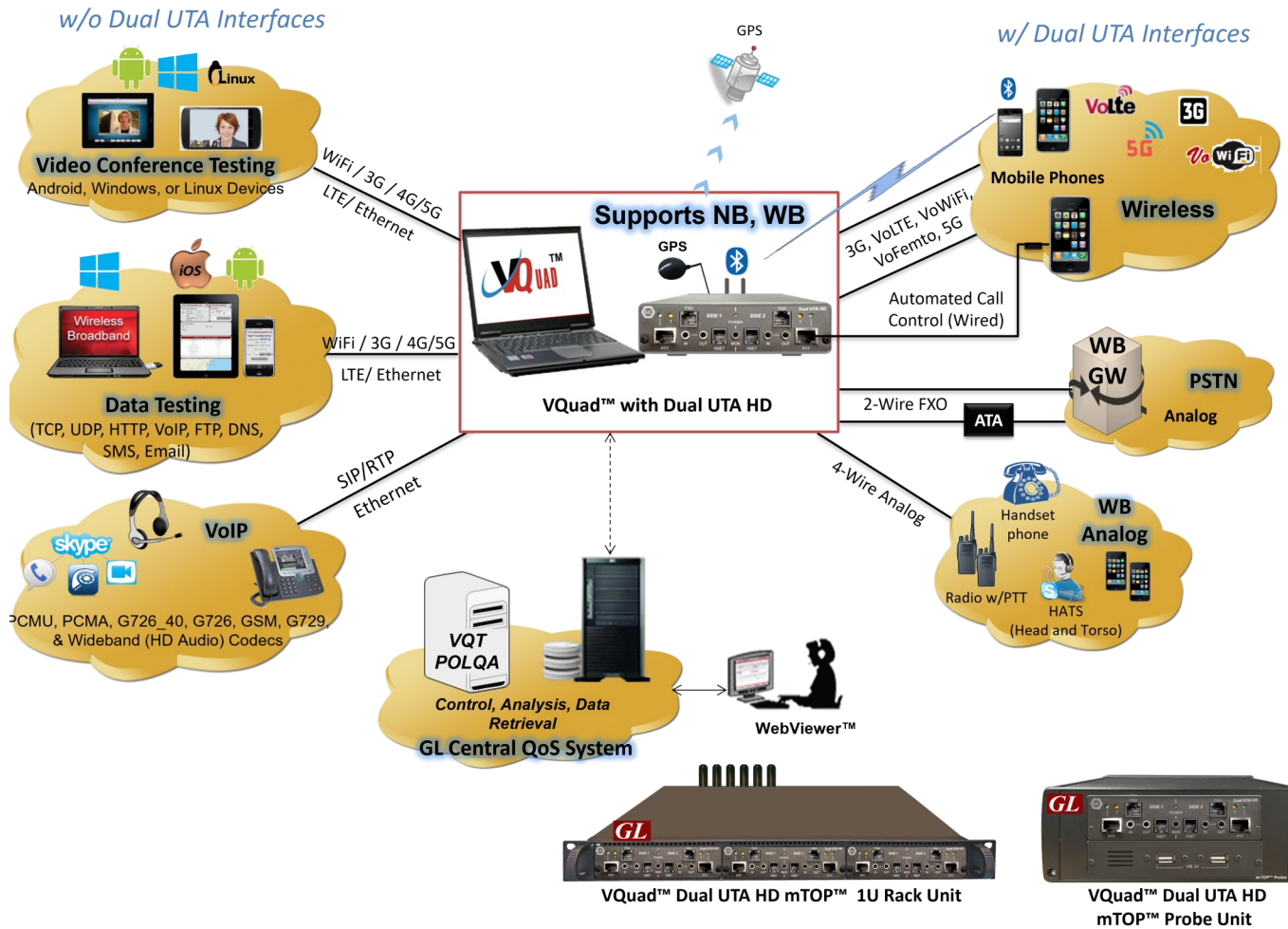


Dual UTA HD (High Density)



Overview

GL offers next generation Dual UTA HD hardware unit, which supports all the interfaces and telephony devices as that of Dual UTA unit in a smaller (compact) design, with most of the interfaces on front of the board. The Dual UTA HD is more compact than the previous Dual UTA and includes HD (WB) audio on all interfaces.

Additionally, the Dual UTA HD (v.2) includes support for testing HD voice using Bluetooth® Wideband, and FXO Wideband along with hardware loopback controlled through the VQuad™ software (including self-test mechanisms). Dual UTA HD hardware also includes a new optimal PTT interface, Self-Test LED, GPS connect LED, enhanced flexibility added to the VQuad™ Script, and full IPV6 support.

Dual UTA HD contains Side 1 and Side 2, which are completely independent of each other so interfacing with endpoints of a single network or interfacing with two completely separate networks are plausible scenarios.

The Dual UTA HD includes interfaces for 2-Wire analog FXO, 4-Wire analog (Tx/Rx), Push-to-Talk for mobile radios, and Bluetooth for connecting to any mobile phone. The VQuad™ can also be configured as a VoIP SIP User Agent or connect to T1 or E1 trunks supporting both CAS and PRI ISDN protocols.

For more information, refer to [HD Audio and Versatile Testing Capabilities - Dual UTA UD](#) webpage.



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Main Features

- Smaller (Compact) Hardware Design with PTT, FXO, GPS, In/Out Interfaces
- Interfaces to Mobile Phones, Smartphones, and Bluetooth® (Narrowband and Wideband)
- Loopback Functionality with Cross-Loopback Support
- Interfaces to any Telephone Subscriber Instruments
- Supports WB FXO (HD Voice)
- Supports 2-Wire and 4-Wire Direct Loopback with or without Delay
- Supports 4-Wire Outward Loopback for Codec Self-Test
- Voice, Data, Video Testing, Fax Events, Round Trip Delay (RTD) and One-Way Delay (OWD) Measurements
- Echo Identification and Analysis

Hardware 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 and supports Bluetooth Wideband (WB) with 16000 sampling rate (requires newer generation DUAL UTA HD hardware and firmware)
 - Audio Headset Jack - 2.5mm (typical) for mobile phones, 3.5mm terminations for Smartphones (iPhone, Android, Blackberry)
- 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)

24-Port WB FXO Test Solution (using 2U HD VQuad™ System)

Features

- **Space Considerations:** 2U multi-VQuad™ system with total 12 Dual UTA HD units
- **Ports:** 24 Analog FXO ports accessed via 50 Pin Amphenol connector
- **FXO Audio:** NB and WB (HD) Audio Supported
- **Operation:** Fully Independent FXO Ports with full control between VQuad™ systems
- **Bulk Call:** Fully Supported via VQuad™ Scripting
- **Remote Control:** Fully Supported via CLI, API or WebViewer™
- **Traffic:** Voice, Digits, Tones, Fax
- **Voice Quality:** POLQA (including NB, WB, SWB), and PESQ

VQuad™ HD 24-Port (WB FXO)
(Supports NB, WB)

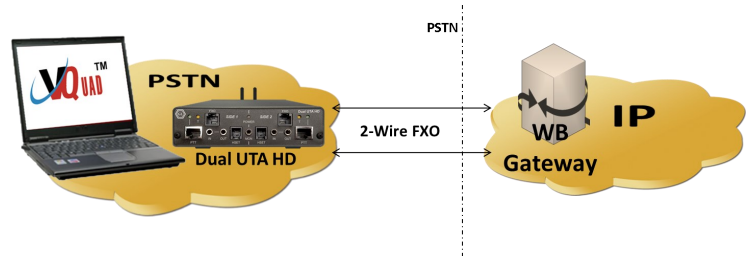


- 1 VQuad™ System w/24 FXO HD Ports
- 2 VQT Central System
(WebViewer w/Oracle DB, PESQ, POLQA)

HD WB Voice Testing

2-Wire WB Analog FXO

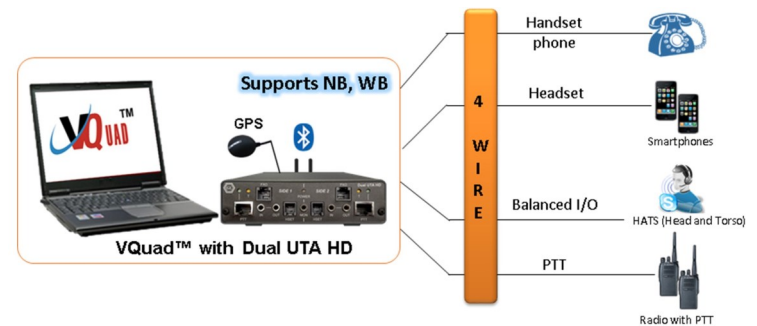
- 2-Wire Analog (FXO) supporting next generation gateways
- Wide Band (WB) and Narrow Band (NB) support
- Supports Call Progress tones, Loopcurrent drop and Call ID
- Outward and Port-to-Port Loopback of 2-Wire and 4-Wire interfaces with or without Delay
- Supports Flash hook and all supplementary services
- Global support – can connect to any 2-Wire interface anywhere
- Connect to any PSTN, ATA, Gateway



For more details, please visit [Automated Analog Voice Quality Testing](#) webpage.

4-Wire WB Analog

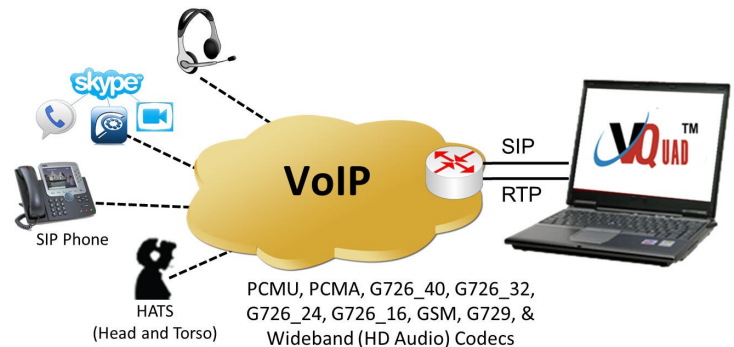
- Balanced – replaces headset (mic/speaker) anywhere
- RJ22 – replaces the phone Handset on any phone at the Curly Cord
- PTT (Push-to-Talk) – connect to any mobile radio (DoD, Emergency Services, Government) and supports voice and keying the radio
- Mobile – connect to any mobile phone, the phone will recognize the Dual UTA HD as a headset



For more details, please visit [Automated Analog Voice Quality Testing](#) webpage.

WB Audio in VoIP Network

- VQuad™ can be configured to support up to 12 VoIP SIP User Agents
- Testing Analog Telephone Adapters (ATAs)
- Supports outband DTMF/MF digits for RFC4733 and RFC2833
- Impair outgoing traffic using a noise file or user-defined white noise
- Supports almost all standard Voice Codecs (PCMU, PCMA, G726_40, G726_32, G726_24, G726_16, GSM, G729, and Wideband HD audio codecs)



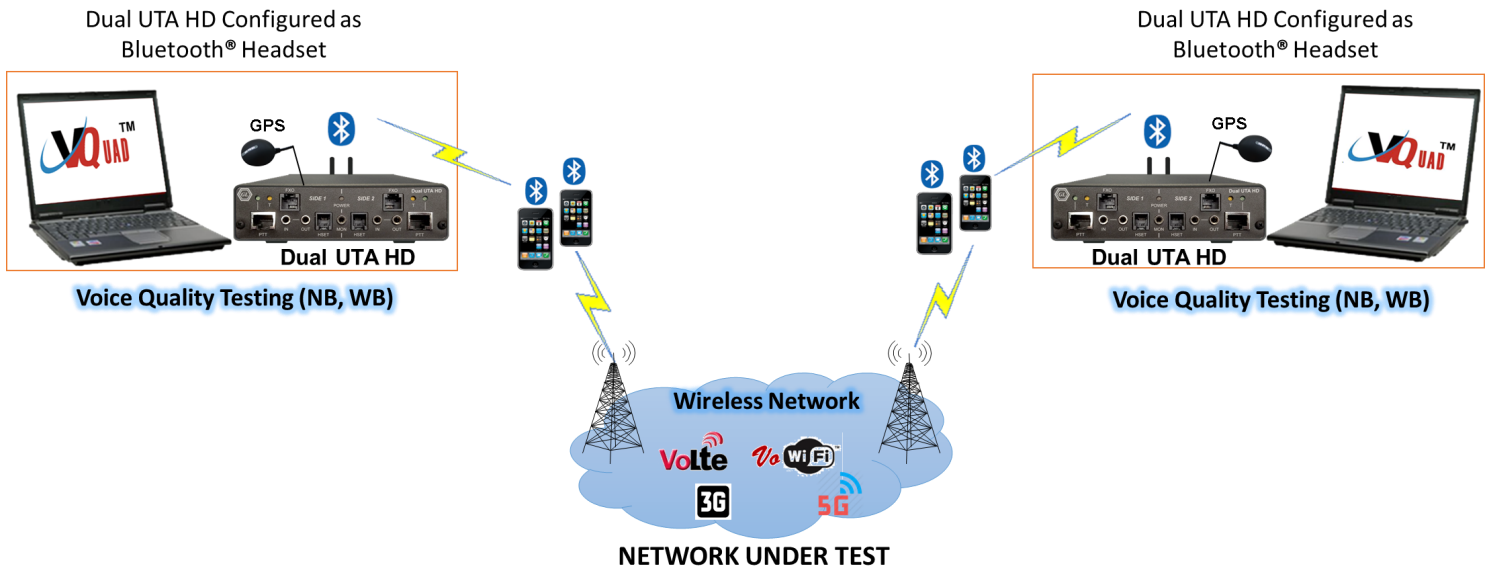
For more details, please visit [Voice Codecs](#) webpage.

HD WB Voice Testing (Contd.)

WB Audio in Wireless Network

With the Dual UTA HD Bluetooth® option, the Dual UTA HD act as a Bluetooth® Headset and connects to the mobile phone to perform voice quality analysis along with delay measurements on Bluetooth® enabled mobile devices.

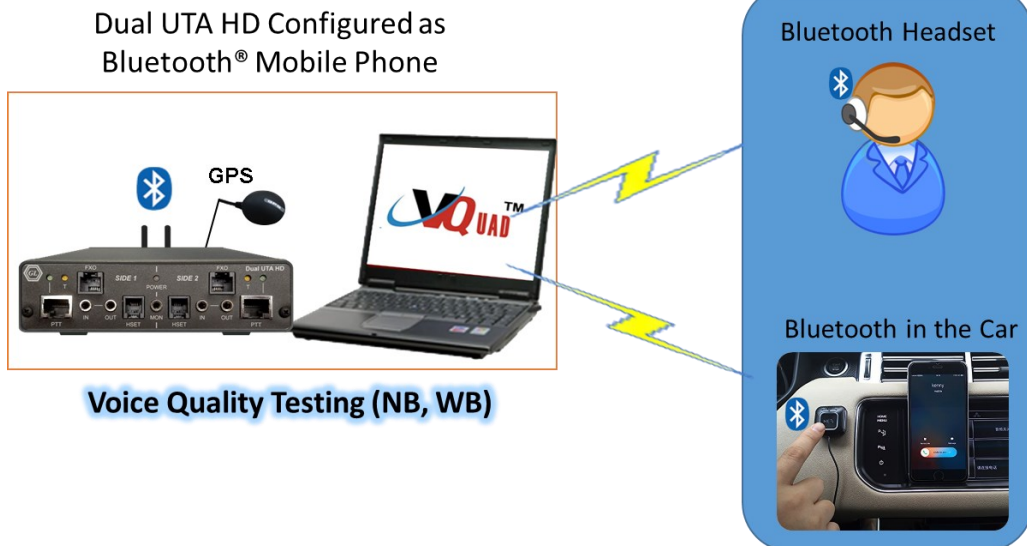
Both Narrowband as well as Wideband devices and networks can be tested. 3G, VoLTE, VoWiFi, VoFemto, 5G networks are supported for both voice quality and one-way delay measurements, while also confirming, using the VQuad™ Audio Analysis function, the VoLTE network maintained Wideband audio during the entire call. Support for voice quality testing on VoLTE network with AMR Wideband codec (with 16000 Sampling Rate) using Bluetooth® Wideband.



As a new feature of the Dual UTA HD Bluetooth® option, and using special firmware, the Dual UTA HD can act as the Mobile Device and connect to any Bluetooth® headset to perform 'Voice Quality Tests' on the Bluetooth® Headsets. In other words, isolate the Bluetooth® headset for voice quality analysis.

This is extremely important for testing Bluetooth® headsets, Bluetooth® in the car, and pretty much any Bluetooth® device which connects to a mobile phone for voice. The Dual UTA HD connects to the Bluetooth® headset and allows voice quality analysis along with delay measurements. Both narrowband and wideband codecs are supported.

Test Bluetooth® Devices



Portable Dual UTA HD Specifications



Dual UTA HD Portable unit

Electrical Specifications

Power Requirements:

- Input Voltage: +5VDC (derived from USB bus)
- Current load: 400mA

4-Wire (Balanced, HSET, PTT):

- Input, Output:
 - Impedance 600Ω, 1KΩ selectable
 - Maximum 1Vrms or 0dBm
- Narrow Band:
 - Tx Rx Frequency Range: 204Hz to 3404Hz
 - Tx Rx Output Level Range: 0dBm to -60 dBm
 - Tx Rx Level Accuracy: + 1dB
- Wide Band:
 - Tx Rx Frequency Range: 204Hz to 6808Hz
 - Tx Rx Output Level Range: 0dBm to -60 dBm
 - Tx Rx Level Accuracy: + 1dB
- Super-Wide Band:
 - Tx Rx Frequency Range: 204Hz to 20000Hz
 - Tx Rx Output Level Range: 0dBm to -60 dBm
 - Tx Rx Level Accuracy: + 1dB

Bluetooth:

- Narrow Band:
 - Frequency Range: 204Hz to 3404Hz
 - TX Output level Range: 0dBm to -60 dBm
 - TX Level Accuracy: \pm 1dB
- Wide Band:
 - Rx Frequency Range: 204Hz to 7200Hz
 - RX Output Level Range: 0dBm to -60 dBm
 - RX Level Accuracy: \pm 1dB
- Super-Wide Band (Future)

4-Wire Analog (Mobile):

- Input, Output:
 - Impedance Nominal 1.3KΩ
 - Maximum 1Vrms or 0dBm
- Narrow Band:
 - Rx Frequency Range: 204Hz to 3404Hz
 - RX Output Level Range: 0dBm to -60 dBm
 - TX Output level Range: 0dBm to -50 dBm
 - RX Level Accuracy: + 1dB
- Wide Band:
 - Rx Frequency Range: 204Hz to 6808Hz
 - RX Output Level Range: 0dBm to -60 dBm
 - TX Output level Range: 0dBm to -50 dBm
 - RX Level Accuracy: + 1dB
- Super-Wide Band:
 - Rx Frequency Range: 204Hz to 20000Hz
 - RX Output Level Range: 0dBm to -60 dBm
 - RX Level Accuracy: + 1dB

Mechanical Specifications

External Connections:

- Dual 3.5mm In/Out Jacks (Balanced Audio - Side 1 and 2)
- Dual RJ-11 Jacks (2W FXO - Side 1 and 2)
- Dual RJ-22 Jacks (Handset - Side 1 and 2)
- 3.5mm Output Jack (Monitor)
- Dual RJ-45 Jacks (PTT - Side 1 and 2)
- Dual RJ-45 Stacked Jacks (GPS)
- Bluetooth® Antennas - Side 1 and 2

USB Connection:

- USB 2.0: Type B USB Jack (Communication with PC and Power)

LEDS:

- 1 Blue Power LED
- 1 GPS 1PPS Yellow/Green LED
- 1 Programmable LED
- 2 Trigger Yellow LEDs
- 2 PTT Green LEDs

Terminal Block:

- Terminal Block for Ground Connection

VQuad™ Dual UTA HD mTOP™ Rack Specifications



VQuad™ Dual UTA HD mTOP™ 1U Rack Unit

Space Requirements	<p>Height: Two-stacked 1U mTOPs [Total space—2U]</p> <p>Length: 16 Inches</p> <p>Width: 19 Inches</p> <p>mTOP™ 1 System (embedded SBC, 3x DUAL UTA HD)</p> <p>mTOP™ 2 System (3x DUAL UTA HD)</p>
DUAL UTA HD interfaces	<p>3.5mm In/Out Jacks (Balanced Audio)</p> <p>RJ-11 Jacks (FXO)</p> <p>RJ-22 Jacks (Handset/Handset Base)</p> <p>3.5mm Audio (Monitor)</p> <p>Dual RJ-45 PTT Jacks</p> <p>Dual RJ-45 GPS (In/Out) Jacks</p> <p>Bluetooth® Antennas</p>
SBC specifications	<p>Intel Core NUC i3 or optional i7 equivalent, Windows® 11 64-bit Pro operating system</p> <p>USB 2.0 and 3.0 ports, USB Type C ports, Ethernet 2.5GigE port</p> <p>12V/3A Power Supply, ATX Power Supply</p> <p>256GB Hard drive, 8G Memory (Min)</p> <p>Two HDMI ports</p>

mTOP™ VQuad™ Dual UTA HD Specifications



VQuad™ Dual UTA HD mTOP™ Probe (Front Panel View)



VQuad™ Dual UTA HD mTOP™ Probe (Back Panel View)

Space Requirements	Length: 10.4 inches Height: 3 inches Width: 8.4 inches
DUAL UTA HD interfaces	3.5mm In/Out Jacks (Balanced Audio) RJ-11 Jacks (FXO) RJ-22 Jacks (Handset/Handset Base) 3.5mm Audio (Monitor) Dual RJ-45 PTT Jacks Dual RJ-45 GPS (In/Out) Jacks Bluetooth® Antennas External USB based Wi-Fi adaptor
SBC specifications	Intel Core NUC i3 or optional i7 equivalent, Windows® 11 64-bit Pro operating system USB 2.0 and 3.0 ports, USB Type C ports, Ethernet 2.5GigE port, 12v/ 3A Power Supply 256 GB Hard drive, 8G Memory (Min) Two HDMI ports

Buyer's Guide

Item No	Product Description
VQT251	Dual UTA HD with Wideband options
VQT252	Dual UTA HD with Bluetooth Option
VQT253	Dual UTA HD with E&M Option
VQT010	VQuad™ Software (Stand Alone)
VQT280	VQuad™ Probe HD (with Dual UTA HD)
MT001	mTOP™ 1U Rack Mount Enclosure w/SBC (intel core i3)
MT001E	mTOP™ Rack Mount Enclosure w/SBC (intel core i7)
MT005	mTOP™ Probe (Portable Stand-alone) (intel core i3)
MT005E	mTOP™ Probe (Portable Stand-alone) (intel core i7)

Item No	Related Software
VQT013	VQuad™ with SIP (VoIP) Call Control
VQT015	VQuad™ with T1 E1 Call Control
VQT002	Voice Quality Testing (PESQ only)
VQT006	VQT w/ POLQA Server License
VQT014	AutoVQT™
VQT014U	Upgrade from VQT POLQA to AutoVQT™
VQT040	WebViewer™

Note: PCs which include GL hardware/software require Intel or AMD processors for compliance.

For more information, refer to [HD Audio and Versatile Testing Capabilities - Dual UTA UD](#) webpage.



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