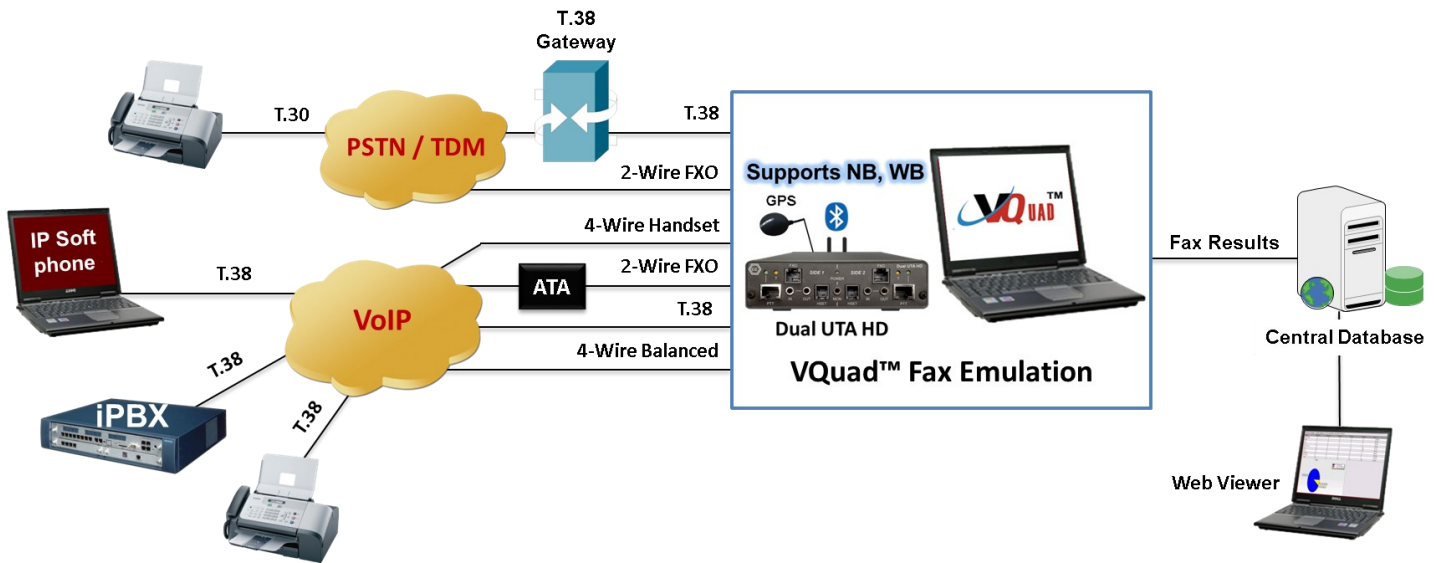# FAX Emulation using VQuad™

Overview

VQuad™ coupled with Dual UTA HD provides easy and flexible "quality of service" assessment across almost every network interface – whether its IP, TDM, Analog, or Wireless – one platform handles all possibilities - Voice Quality, Video Quality, Data Quality, and now Fax Quality. Fax is not going away – not by a long shot. For financial and legal reasons fax is a necessity.

GL's VQuad™ has been enhanced to support sending and receiving of up to 4 independent and simultaneous T.30 faxes over the Dual UTA HD hardware platform. The user can configure the TX and RX fax rate from 2400 bps to 33,600 bps - V.34 is fully supported. Interfaces supported for fax generation include WB 2-wire FXO and WB 4-wire analog.

Fax Emulation is fully automated using VQuad™ scripts and can be initiated remotely such that one VQuad™ can control both sides of the fax. The VQuad™ Fax provides all pertinent real-time fax messaging with proper time sequences. In other words, one can follow the fax session from start to finish on both the send and receive sides.

Fax Emulation provides fax summary (fax completed or failed along with fax results), and all errors associated for each fax with proper time sequence and an understanding of what the error might indicate. All results (errors and summary) can be sent automatically to the WebViewer™ Central Database for query using the WebViewer™ browser.

WebViewer™ provides access and display, in real time, to all results associated with VQuad™ including the Fax events, errors, and summary logs. It includes the ability to automatically save the fax session (both East and West directions) to a PCM file. This file can be exported to the GLInsight™ or FaxScan™ analysis software packages for further analysis of the fax session.

For more details, refer Fax Emulation using VQuad™ webpage.

Main Features

- Fax Emulation supporting up to 4 independent and simultaneous sessions with speeds up to 33600 baud (V.34)
- Supports both Tx and Rx fax emulation using the VQuad™ with Dual UTA HD analog interfaces (2-wire FXO, 4-wire balanced, 4-wire Handset, PTT)
- Supports Fax Rates from 2400baud up to 33600baud
- VQuad™ Fax events includes messages, summary, and errors log
- Ability to auto save fax (both East and West directions) to PCM file for enhanced analysis using GLInsight™ or FaxScan™ analysis software packages
- VQuad™ scripting supports fax send or receive sessions configurations
- Support for querying Fax events/results/errors over web interface
- Full support for VQuad™ CLI and API (both Windows® and Linux) to remotely control operations
- Send and Receive Fax via VQuad™ Remote Control
- Fax Events Query over Web Interface

FAX Tx/Rx Configuration

VQuad™ scripting provides the ability to both send and receive a fax session along with specifying necessary fax configuration settings. The settings include Max Transmit Rate and Min Receive Rate which can effectively restrict available fax sessions. The other configuration settings include:

- ECM (Error Correction mode) on / off option to automatically detect and correct errors
- RX Image Coding (receive fax only) options - MH (Modified Huffman), MR (Modified read), MMR (Modified Modified READ)
- Supported modem types include UnSpec, V27, V29, V17, and V34
- For the specified modem type, the Tx Rx rate as per ITU standards are automatically applied. Standard Tx and Rx rates ranges from 2400baud to 33600baud
- Auto saved fax (both east and west) to PCM file can be analyzed using GL Insight and GL Fax Extractor
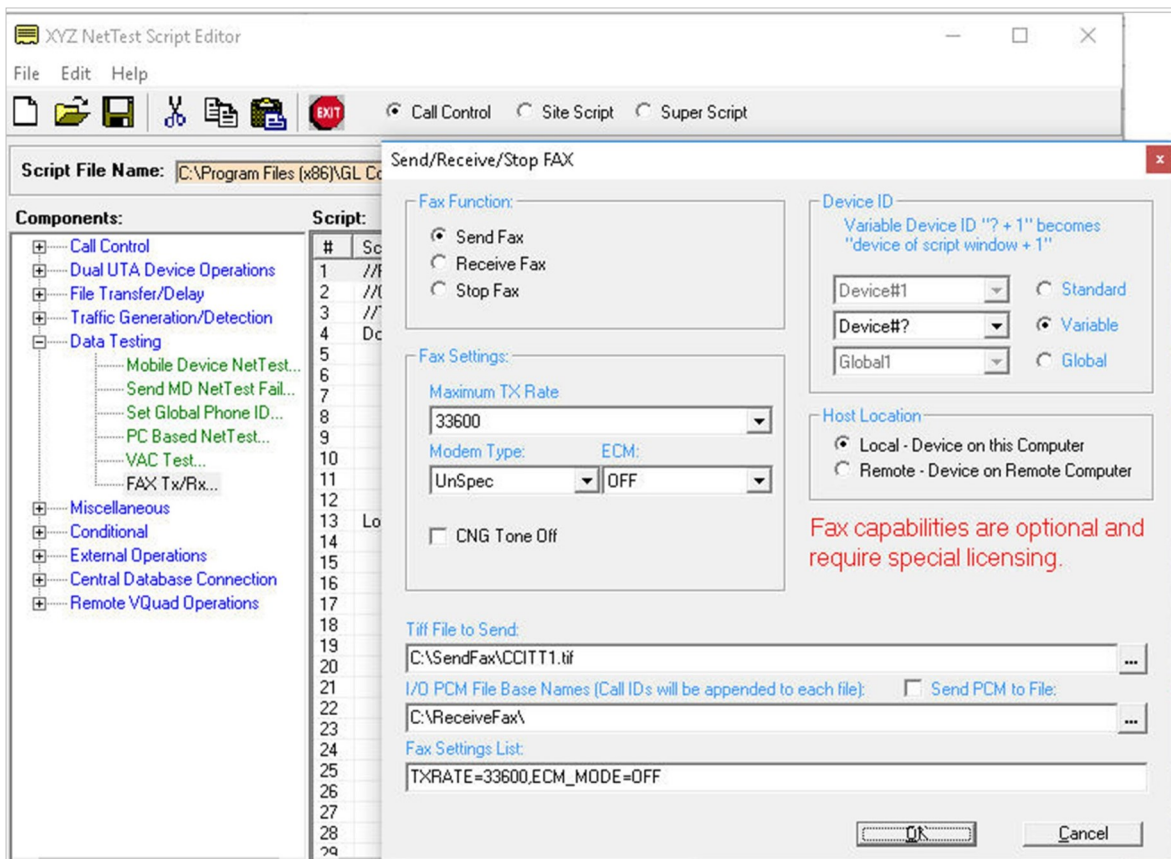
Figure: VQuad™ Fax Tx/Rx Configuration

VQuad™ FAX Events Log

The VQuad™ Fax Emulation includes three event screens, Fax Messages, Fax Summary and Fax Errors. The Fax Messages is shown in chronological order for simple understanding of the fax process. Multiple Fax Message screens can be displayed simultaneously thus showing full duplex fax sessions.

The **Fax Summary** includes one event per fax (Fax Send and Fax Receive) which shows both the initial settings and final settings upon fax completion (i.e. Fax Speed, Line Sent, Bad Lines, Pages Received). The Fax Summary also provides insight whether the fax was successful or the fax failed in which case an error will be generated.

The **Fax Error** screen provides all Fax Errors associated with the Fax Send/Receive. Additional information is provided for each Fax error in order to understand the cause of the error. All event screens can be saved to text file in real-time.

The **Fax Status** as shown on Fax Events screen displays Total Successful and Total Failed faxes for each VQuad™ device ID.

Figure: VQuad™ Fax Events Log

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VQuad™ Remote Control

VQuad™ CLI and API is enhanced to support fax simulation (both Windows® and Linux). The VQuad™ Remote Access (Client) allows VQuad™ operations to be remotely controlled by one (or several) VQuad™ clients over a LAN, WAN, or Internet. Supported modem types include UnSpec, V27, V29, V17, and V34. For the specified modem type, the Tx Rx rate as per ITU standards are automatically applied. Standard Tx and Rx rates ranges from 2400baud to 33600baud.

The following table refers to Maximum Tx and Minimum Rx data transmission rates.

ITU Standard	Data Rates (bit/s)
V.27	2400 to 4800 bps
V.29	4800 to 9600 bps
V.17	7200 to 14400 bps
V.34	2400 to 33600 bps (incompatible with other modems)
Unspec	All the modem supporting the configured rate (tx/rx) will be used

Figure: VQuad™ CLI (Windows)

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Remote Client WebViewer™

The VQuad™ Fax emulation Summary and Error results can be sent to the WebViewer™ Central database. These events can be queried using the WebViewer™ web based browser. From the WebViewer™ one can filter the results based on specific Error, Starting or Ending speed, Completed pages, Tx/Rx Lines including Bad Lines, Resolution and ECM settings.

Various Fax results can be queried over web interface including VQuad Timestamp, Call Timestamp, VQuad Location, VQuad Phone ID, VQuad Lat/Long, Duration (sec), Error, Event, Modem, Starting Speed, Final Speed, Completed Pages, Tx/Rx lines, Bad Lines, Encoding, Resolution, ECM (Error Correction Mode), Call Type Originating, Call Type Terminating, and VQuad™ Call ID parameters.

Figure: Remote Client WebViewer™

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Buyer's Guide

Item No	Product Description
VQT022	VQuad™ Fax Emulation (2 simultaneous ports)
VQT022a	VQuad™ Fax Emulation (8 simultaneous ports)
VBA038	FaxScan™

Item No	Related Software
FXT001	GLInsight™ - Single Fax Analysis - TDM
FXT002	GLInsight™ - Single Fax Analysis - IP
VQT010	VQuad™ Software (Stand Alone)
VQT251	Dual UTA HD with Wideband options
VQT252	Dual UTA HD with Bluetooth Option
VQT013	VQuad™ with SIP (VoIP) Call Control
VQT015	VQuad™ with T1 E1 Call Control
VQT280	VQuad™ Probe HD (with Dual UTA HD)
VQT040	VQuad™ WebViewer™

For more details, refer Fax Emulation using VQuad™ webpage.

Document Number: VQT022-01