QualityLogic®
Making Technologies Work Together

DataProbe T30-T38 Analyzer

V.34 Capable Protocol Analyzer

Features

Captures V.17 and V.34 T.30 traffic generated by a fax call, and SIP/H.323 session control and Ethernet T.38 packets

Detects G3 and Super G3 fax errors and protocol violations in captured T.30 message data

Recreates the sequence of Fax over IP messages and detects protocol violations in captured session control and Ethernet T.38 packets

Records and reports content and structure of call-control protocol used during a fax call

Records T.30 messages and T.38 packets as they arrive at or are generated by the same gateway

Relates T.30 PSTN, SIP/H.323 and T.38 IP traffic by contents and times of arrival/ generation

Describes detailed characteristics of format and data content for V.17 and V.34 fax messages

Describes the details of SIP/H.323 and T.38 IP packets

Performs full ASN.1 decoding

Provides comparative analysis of T.30 and T.38 data types isolating errors and protocol violations

Now, you can get a tool that monitors fax calls at both analog and IP levels, compares the details of the T.30 to T.38 and back transform, and provides expert analysis of the results with error detection and tracking. QualityLogic's DataProbe T30-T38 Analyzer is an analysis and reporting tool that records, displays and compares T.30 messages and T.38 packet contents as they appear across T.38 gateways during facsimile calls.

This multi-node communication channel test tool helps R&D, QA and field service personnel isolate facsimile operational problems quickly with passive monitoring and protocol analysis capabilities.

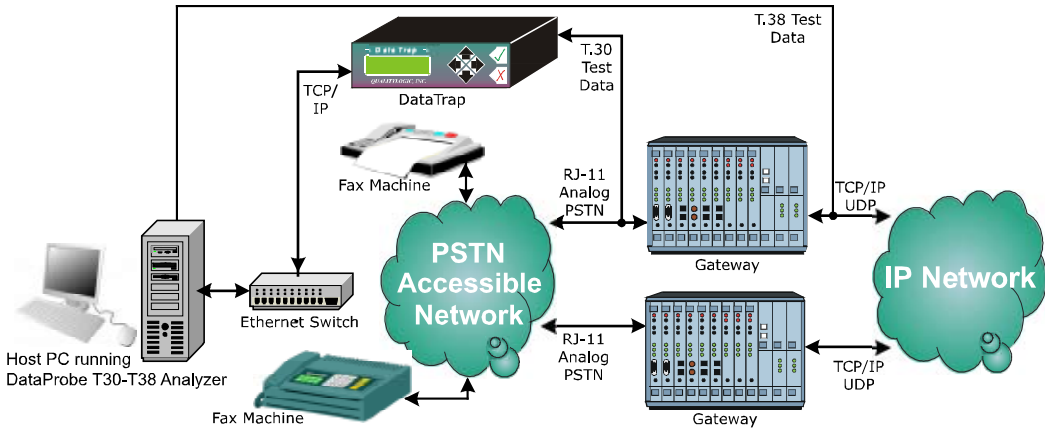
With the FaxSend optional utility, the DataProbe T30-T38 Analyzer can generate T.30 traffic with known characteristics and varying loads to test fax systems. The product's distributed hardware architecture simplifies the task of performing end-to-end testing of facsimile communication systems, and quickly identifies problems caused by the communications network infrastructure.

The DataProbe T30-T38 Analyzer is a software application that runs on any Windows® 2000, Windows XP or Windows Vista™ workstation. Traffic monitoring is performed by self-contained DataTraps and a Network Interface Card (NIC) installed in the DataProbe host computer. The DataTraps monitor T.30 analog facsimile traffic for detailed analysis. The NIC detects and records SIP, H.323, T.38 and associated RTP IP traffic. DataTraps can sit between a fax or telephony gateway unit and an analog interface to the public telephone network or analog switch to monitor and report the communications between the originating and answering fax units.

End-to-End Transmissions

Facsimile calls can be corrupted or degraded as they pass through complex digital and/or analog networks. This can occur as the result of timing delays, dropped packets, or other network anomalies.

The DataProbe T30-T38 Analyzer with the FaxSend utility can be used to control



multiple DataTraps and ChannelTraps to create an end-to-end test system that plays both the originating and answering terminals in fax sessions that are sent across such complex networks. The system monitors each call, providing T.30 analysis at all modulations, including V.34 and T.38 providing analysis including SIP/H.323. This system identifies protocol violations, fax message degradation and timing errors that result from network signal transport.

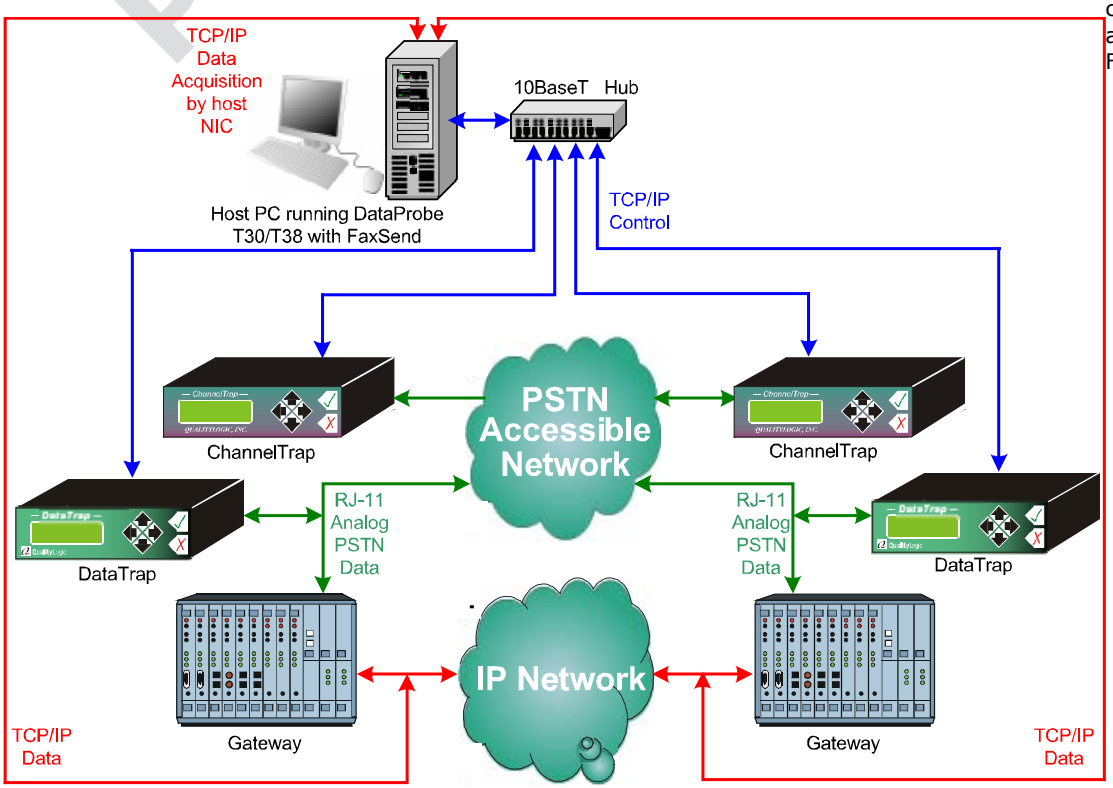
Isolating Fax Traffic Volume Problems

Communication servers, routers and system software can fail when subjected to high volumes of fax traffic. To isolate this type of failure, DataProbe T30-T38 Analyzer with the FaxSend utility controls pairs of DataTraps and ChannelTraps to generate, monitor and capture fax traffic, and a host computer NIC captures FoIP traffic under these conditions.

DataTrap/ChannelTrap units can be distributed in a variety of locations to realistically monitor and simulate traffic patterns.

Viewing Captured Data

The following page contains a preliminary illustration of the DataProbe T30-T38 Analyzer display of monitored T.30 vs. T.38 messages.



Benefits

Powerful 2nd generation fax passive monitor/protocol analyzer

Provides T.30 analysis with V.34 support

Facilitates direct comparison of T.30 messages against T.38 packets across FoIP gateways

Saves time troubleshooting interoperability problems

Get the whole picture – from high level structure to bit level content

Configure send/receive calls for monitoring and analysis (with FaxSend option)

DataProbe T30-T38 Analyzer

Correlated View of T.30 and T.38 Messages Captured at the Answering Terminal

Answering G3 Fax Terminal **Receiving T.38 FoIP Gateway**

Answerer Send	Answerer Receive	Time Stamp	Port	Message	Peer
		00.000	5060	SIP/SDP Request: INVITE fax2@209.77.42.107:5060, with session description	< 209.77.42.101:5060
		00.065	5060	SIP Status: 180 Ringing	< 209.77.42.101:5060
		05.228	5060	SIP/SDP Status: 200 OK, with session description	< 209.77.42.101:5060
		05.247	49156	RTP G711uLaw, 20ms silence	> 209.77.42.101:49156
		05.255	5060	SIP Request: ACK	< 209.77.42.101:5060
		05.268	49156	RTP G711uLaw, 260ms silence	> 209.77.42.101:49156
		05.270	49156	RTP G711uLaw, 8ms CNG	< 209.77.42.101:49156
		05.278	49156	RTP G711uLaw 212ms silence	< 209.77.42.101:49156
		05.509	49156	RTP Comfort noise, 2780ms silence	< 209.77.42.101:49156
		05.526	49156	RTP Comfort noise, 3120ms silence	> 209.77.42.101:49156
		08.288	49156	RTP G711uLaw, 10ms silence	< 209.77.42.101:49156
		08.298	49156	RTP G711uLaw, 500ms CNG	< 209.77.42.101:49156
	CNG Tone, 510ms	08.313			
		08.448	49156	RTP Comfort noise, 3300ms silence	> 209.77.42.101:49156
		08.798	49156	RTP G711uLaw, 230ms silence	< 209.77.42.101:49156
		09.028	49156	RTP Comfort noise, 2760ms silence	< 209.77.42.101:49156
CED Tone, 3090ms		11.735			
		11.747	49156	RTP G711uLaw, 1ms silence	> 209.77.42.101:49156
		11.748	49156	RTP G711uLaw, 660ms CED	> 209.77.42.101:49156
		11.787	49156	RTP G711uLaw, 13ms silence	< 209.77.42.101:49156
		11.800	49156	RTP G711uLaw, 487ms CNG	< 209.77.42.101:49156
	CNG Tone, 480ms	11.814			
		12.287	49156	RTP G711uLaw, 80ms silence	< 209.77.42.101:49156
		12.349	5060	SIP/SDP Request: INVITE fax2@209.77.42.107:5060, with session description	< 209.77.42.101:5060
		12.365	49157	RTCP Goodbye	< 209.77.42.101:49157
		12.378	5060	SIP/SDP Status: 200 OK, with session description	> 209.77.42.101:5060
		12.395	49157	RTCP Goodbye	< 209.77.42.101:49157
		12.407	5060	SIP Request: ACK	< 209.77.42.101:5060
		12.418	7601	T.38 UDPTL t30ind: ced	> 209.77.42.101:7601
CSI, FSK, 1998ms		15.312			
		15.347	7601	T.38 UDPTL t30ind: v21-preamble	> 209.77.42.101:7601
		16.394	7601	T.38 UDPTL data:v21:hdlc-data[CSI], hdlc-fcs-OK	> 209.77.42.101:7601
DIS, FSK, 1122ms		17.315			
		17.886	7601	T.38 UDPTL data:v21:hdlc-data[DIS], hdlc-fcs-OK-sig-end	> 209.77.42.101:7601
		18.410	7601	T.38 UDPTL t30ind: no-signal	> 209.77.42.101:7601
		19.307	7601	T.38 UDPTL t30ind: v21-preamble	< 209.77.42.101:7601
		20.351	7601	T.38 UDPTL data:v21:hdlc-data[TSI], hdlc-fcs-OK	< 209.77.42.101:7601
	TSI, FSK, 2050ms	20.634			
		21.843	7601	T.38 UDPTL data:v21:hdlc-data[DCS], hdlc-fcs-OK-sig-end	< 209.77.42.101:7601
		22.288	7601	T.38 UDPTL t30ind: no-signal	< 209.77.42.101:7601
	DCS, FSK, 1400ms	22.704			
	TCF V17-9600, 2820ms (locally)	23.290			
		25.445	7601	T.38 UDPTL t30ind: no-signal	< 209.77.42.101:7601
CFR, FSK, 1260ms		26.080			
		26.386	7601	T.38 UDPTL t30ind: v21-preamble	> 209.77.42.101:7601
		27.430	7601	T.38 UDPTL data:v21:hdlc-data[CFR], hdlc-fcs-OK-sig-end	> 209.77.42.101:7601
		27.609	7601	T.38 UDPTL t30ind: no-signal	> 209.77.42.101:7601
		28.287	7601	T.38 UDPTL t30ind: v17-9600-short-training	< 209.77.42.101:7601
	V17-9600 short training, 90ms	28.337			
		28.647	7601	T.38 UDPTL data:v17-9600:hdlc-data[image], hdlc-fcs-OK,	< 209.77.42.101:7601
	Image: V.17-9600, JBIG 200x200, 200ms	28.658			
		28.647	7601	T.38 UDPTL data:v17-9600: hdlc-data[RCP], hdlc-fcs-OK	< 209.77.42.101:7601
	RCP, 70ms	28.760			
		28.808	7601	T.38 UDPTL data:v17-9600:hdlc-data[RCP], hdlc-fcs-OK	< 209.77.42.101:7601
		28.808	7601	T.38 UDPTL data:v17-9600: hdlc-data[RCP], hdlc-fcs-OK, hdlc-fcs-OK-sig-end	< 209.77.42.101:7601
	RCP, 70ms	28.841			
		28.868	7601	T.38 UDPTL t30ind: no-signal	< 209.77.42.101:7601
	RCP, 70ms	29.111			
		29.255	7601	T.38 UDPTL t30ind: v21-preamble	< 209.77.42.101:7601
		30.303	7601	T.38 UDPTL data:v21:hdlc-data[PPS_EOP], hdlc-fcs-OK-sig-end	< 209.77.42.101:7601
	PPS_EOP, FSK, 1466ms	30.360			
MCF, FSK, 1421ms		30.480			
		30.587	7601	T.38 UDPTL t30ind: no-signal	< 209.77.42.101:7601
		31.252	7601	T.38 UDPTL t30ind: v21-preamble	> 209.77.42.101:7601
		32.297	7601	T.38 UDPTL data:v21:hdlc-data[MCF], hdlc-fcs-OK-sig-end	> 209.77.42.101:7601
		32.475	7601	T.38 UDPTL t30ind: no-signal	> 209.77.42.101:7601
		33.012	7601	T.38 UDPTL t30ind: v21-preamble	< 209.77.42.101:7601
		34.029	7601	T.38 UDPTL data:v21:hdlc-data[DCN], hdlc-fcs-OK-sig-end	< 209.77.42.101:7601
	DCN, FSK, 1360ms	34.360			
		36.300	5060	SIP Request: BYE sip:209.77.42.107:5060	< 209.77.42.101:5060
		36.340	5060	SIP Status: 200 OK	> 209.77.42.101:5060

DataProbe T30-T38 Analyzer

Specifications

T.30 Facsimile Capabilities

- Support for 2003 ITU-T T.30 Recommendation, including passwords, sub-addressing and use of V.34 modulation
- Facsimile call monitoring, up to 33.6 kbps (with a single DataTrap)
- Post-call analysis of T.4, T.6, T.30, T.81 and T.85 conformance
- Send or receive predefined test fax pages via optional FaxSend utility
- HDLC frame analysis and data decoding
- T.30 help system
- T.4, T.6, T.81 and T.85 (MH, MR, MMR, JBIG, JPEG) data decoding and data display at all T.30 supported resolutions
- JBIG data display
- JPEG data display at V.34 and 200x200 resolution
- Bitmap viewer for page content

T.38 IP Capabilities

- Recording and reporting the content and structure of the call-control protocol used during a fax call (H.323, SIP, ASN.1)
- Recording T.38 packets as they arrive at or are generated by the same gateway during its handling of a fax call (T.38, UDP, TCP, RTP, UDPTL – packet redundancy and FEC)
- Relating these messages and packets by their contents and times of arrival/generation
- Correlating, analyzing and reporting the content and structure of both T.30 messages and T.38 packets
- Providing error expert analysis of the T.38 content and correlation to T.30 content

DataTrap/ChannelTrap Characteristics

- Monitor/capture facsimile calls (DataTrap only)
- Originate and answer facsimile calls (ChannelTrap only)
- External control connection via TCP/IP
- Software configurable
- Browse for DataTraps/ChannelTraps over IP network
- Status display for connected DataTrap/ChannelTrap units

Operational Parameters

- Linear rather than switching power supplies are provided and required to be used with DataTraps to maintain low noise levels for DataProbe's operation
- DataProbe T.30 Analyzer records a Post Detection Signal to Noise Ratio (PDSNR) and displays a graph in the Detailed view. While PDSNR values of 28dB to 30dB will usually allow page decoding, its optimum value is 30dB or above.
- The suggested input power level for V.34 Partial Pages is -13dBm
- DataProbe T.30 Analyzer performs all timing analyses at a resolution of 30ms
- Minimum host computer system requirements:
  - PC with 1 GHz 32-bit (x86) or 64-bit (x64) processor
  - Microsoft Windows 2000, XP, XP Pro or Windows Vista operating system
  - 1 GB of RAM memory
  - A minimum 40 GB hard drive with at least 200 MB of available space
  - DirectX 9 graphics capability with 128 MB of graphics memory (minimum), Pixel Shader 2.0
  - 32 bits per pixel graphics rendering capability
  - DVD-ROM drive
  - Keyboard and mouse or compatible pointing device

Ordering Information

T5501-K DataProbe T30-T38 Analyzer Kit includes:
T5501-SE: DataProbe T30-T38 Analyzer Software
T5001-KEY: DataProbe T30-T38 Sofware Key
F3001-T: DataTrap

T5501-KSEND FaxSend Send/Receive Optional Utility includes:
T5001-SE: FaxSend Software
T5001-KEY: FaxSend Software Key
F2008-T: ChannelTrap III

For a quote or more information on DataProbe T30-T38 Analyzer and QualityLogic's other testing products, contact us at info@qualitylogic.com, or call (800) 436-6292 ext. 35 (US toll free) or +1(805) 531-9030 ext. 35.

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