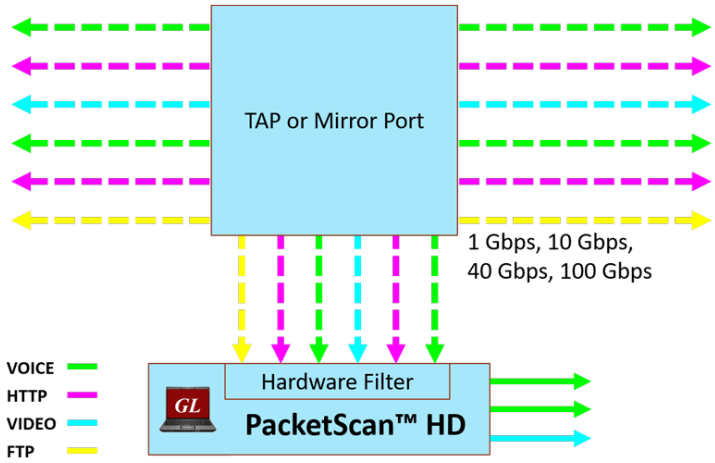
PacketScan™ HD-All IP Analyzer (1G, 10G, 25G, 40/100G)



Overview

PacketScan™ HD is a high density Ethernet monitoring appliance with specialized network interface cards, large storage capacity and protocol analysis software. Customers can choose the specific Ethernet data rate for the network interface cards including 4 x 1 GigE (PKV120), 2 x 10 GigE (PKV122), 2 x 40 GigE (PKV123) and 2 x 40 / 2 x 100 GigE (PKV124) variations.

Capture and analyze high speed Ethernet traffic over 1 Gbps, 10 Gbps, 40 Gbps and 100 Gbps networks. Almost all VoIP and Wireless protocols over IP transport layer can be captured and decoded for troubleshooting network problems. PacketScan™ HD appliance is also available in three new variants.

Part Number	**PKV120(Rack system)/ PKV120P(Portable system)**	**PKV122(Rack system)/ PKV122P(Portable system)**	**PKV124(Rack system)/ PKV124P(Portable system)**
Processor	Single Processor	Dual Processor Xeon /Single Processor	Dual Processor Xeon/Single Processor
RAM	16 GB	32 GB	128 GB
Storage	500 GB SSD up to 5.6 TB NVME SSD		
Data Rate	4x1GigE	4x1/10GigE or 2x1/10GigE	8x10GigE, 2x10/25GigE, 2x40GigE, 2x100GigE

*Customization on these variants are available as per requirement.

GL's PacketScan™ HD 5G Protocol Analyzer can monitor 5G networks. It captures, decodes, and collects statistics over N1N2, N4, N8, N12 and N13 interfaces of the 5G network. The 5G Protocol Analyzer is an optional module available within PacketScan™ HD on purchasing of additional licensing.

PacketScan™ HD supports decoding of eCPRI protocol which enables analysis of eCPRI message types such as IQ Data, Bit Sequence, Generic Data Transfer, Remote Memory Access, One-way Delay Measurement, Remote Reset, and Event Indication.

GL's **TCP Analytics** application analyzes TCP connections between both internal LAN and external WAN computers including servers and clients. The application helps troubleshoot large bandwidth consumption, failed TCP sessions, packet loss, poor TCP throughput and more. TCP Analytics (PKV400) is an optional application with PacketScan™ HD Network Monitoring Appliance. For more details, refer to TCP Analytics webpage.

For more details visit, PacketScan™ HD - Network Monitoring Appliance webpage.

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Main Features

- Supports the following configurations: 4x1GigE, 2x1/10 GigE, and 2x40/100 GigE
- Supports 5G interfaces – N1N2, N4, N8, N12, and N13
- Wirespeed unfiltered continuous capture to NVMe SSD – up to hard disk size
- Capture and analyze up to 20,000 simultaneous calls with bidirectional RTP traffic from 1 Gbps to 100 Gbps
- Simultaneous operations with contiguous/multiple cards, (1GigE, 10 GigE, and 40 GigE) subject to the performance limitation and upto maximum of 4 cards are supported
- Provides wirespeed hardware filter capabilities to filter traffic of interest
- Supports almost all industry standard IP and Wireless Protocols (from SIP to LTE)
- Supports all RTP traffic – Voice, Data, Video, Fax T.38, Digits, Tones, Impairments
- Capture and Call processing is enhanced to handle different Tunnel traffic (VXLAN, GRE and GTP) and multiple tunnelling
- Support for eCPRI decode

As a Single Point Packet over IP CDR Analysis System

- PacketScan™ HD can work with GL's VoiceBand Analyzer (VBA) and Call Data Records (CDR) applications to generate Call Detail Records as (*.CSV files) along with voice files for each direction
- PacketScan™ HD can send protocol fields, and call detail records, along with traffic summary of captured calls to a central data-base and NetSurveyorWeb™ displays the data from the database in a simple web-based browser, featuring rich graphics, custom search, report and filter configurations

Filter and Search Capabilities

PacketScan™ HD supports three stages of filtering:

- Hardware Filter - high speed, discards unwanted packets at the hardware level
- Capture Filter - slower discards unwanted packets at the application level
- View Filter and Search (Post Capture Filter) - performs filtering on the captured trace only for viewing purposes; filtered trace can be exported to PCAP or GL's HDL file format

Supported Codecs

- G.711 (a-Law and µ-Law), G.711 App II (a-Law and µ-Law with VAD)
- G.722, G.722.1 (Wideband), G.726, G.726, with VAD, G729, G729B (8kbps)
- GSM, GSM HR, GSM EFR
- SPEEX/SPEEX_WB (Narrow band/Wideband)
- iLBC (20ms and 30ms), SMV
- AMR/AMR_WB (Narrow band/Wideband) (requires additional license)
- EVRC, EVRC0, EVRC-B, EVRC-B0, EVRC-C (requires additional license). Visit Voice Codec webpage for more details

Supported Protocols

- SIP, SIP-I, SIP-T, H.323, MEGACO, MGCP, Diameter, Skinny (SCCP)
- LTE, SIGTRAN – SS7, ISDN, GSM A and Abis over IP, GPRS Gb and Gn over IP
- UMTS IuCS, IuH, IuPS, and IuUP over IP, T.38 Fax and Video calls. Visit Supported Protocols for more details

QOS Parameters

- E-model (G.107) based MOS/R-Factor scores
- Media Delivery Index (Delay Factor: Media Loss Rate) for video calls
- H.263, H.264 codec support for video conference monitoring capability

Traffic Handling

- All RTP traffic supported – Digits, Tones, Voice, Video, Fax
- SIP ED 137B for Air Traffic Monitoring (Air-to-Ground and Ground-to-Ground Calls)
- Segregation of IP traffic and signaling
- Listen and Record audio streams, Video QoS Statistics
- Filters based on WhiteList Calls, Criteria based Voice/Trace Recording

Main Features (*Contd.*)

Performance Metrics

- Signaling, audio, and video QoS parameters for each call
- Minimum, maximum and average round trip delay
- Inband (DTMF and MF) events, Outband events as per RFC 2833 or RFC 4733 events, RTP/RTCP packet count and reports per direction

Triggers and Actions

- Filter the completed calls captures based on different signaling parameters and then specify a series of actions to be taken

Report Generation

- Ability to export summary report of selected or all completed calls in PDA to CSV file format
- Analyze the CSV files using custom Excel® addins
- Ability to save a particular call in HDL, PCAP, or PCAPNG file format for further detail analysis
- Generates alert summary when particular vital parameters go beyond a specified value

Statistics

- Quality Metrics with E-Model R-Factor and MOS Factors graphs, Jitter Buffer Statistics, Degradation Factor, Burst Metrics, and Delay Metrics
- Active calls, Average jitter, Packets Discarded, RTP packets summary, Detail ladder diagram

PacketScan™ HD Rack System -1G/10G/40G/100G

PacketScan™ HD Portable System 1G/10G/40G/100G

Pelican Carry Case

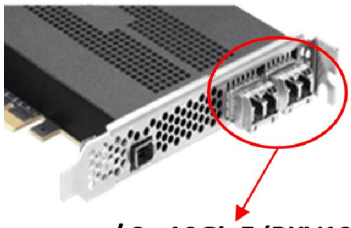
Specifications

Supported Interfaces	4x 1 Gbps – 850/1310 nm SFP Module; Ether-net/Optical SFP 2x 10 Gbps – 10GBASE-SR SFP+; Optical only 2x 40 Gbps – MTP/MPO Connector for CFP2; Optical only 2x 40/2x 100 Gbps – MTP/MPO Connector for CFP2; Optical only
OSI	MAC, ARP, IP, IGMP, ICMP, TCP, UDP, SCTP, FTP, HTTP, TLS, SMTP
Protocols	GSM, UMTS, LTE, IMS, SIP, RTP, T.38, RTCP, and much more (some protocol support requires additional licensing)
Capture Timestamp	Absolute, Relative, Difference, NTP 4 Nano-second resolution
Captured Trace Format	GL's Proprietary HDL, PCAP, PCAPNG Frame Decodes can be saved to TXT file format

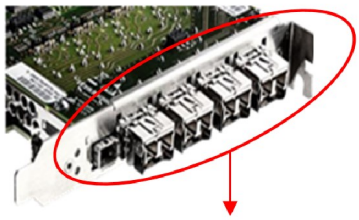
Specifications

Filter	Hardware Filter at line rate, Application Level Capture Filter, and Post Processing Filter and Search
Performance	4 x 1GigE - 20000 calls with bi-directional RTP traffic 2 x 10GigE - 30000 calls with bi-directional RTP traffic Extracting/recording voice • 2500 simultaneous calls (maximum) • Option to record filtered calls of interest only
Protocols	GSM, UMTS, LTE, IMS, SIP, RTP, T.38, RTCP, and much more (some protocol support requires additional licensing)
Rack/Portable System Specifications	• Intel® Core™ i7 • 16GB expandable Memory • Intel DQ67SW uATX LGA1155/Q67 Motherboard • 17" 1280 x 1024 LCD (Optional Resistive Touch) • LCD Specifications : 180°H/180°V viewing angle, 250 nits, 1500:1contrast ratio 16.7M colors, 8ms response time • DVI-A for integrated LCD Video Interface • Std I/O Interfaces Integrated GbE, Serial Port, 2 USB3, 4 USB2, 2 eSATA, 2 SATA6, 2 SATA3, 1394, Audio/Speaker • PCI Expansion Slots One PCIex 16, one PCIex 4 (or PCI) • PCI Slot Lengths 9-13" depending on configuration • Removable Hard Drives Up to 4 2.5" SATA/SSD • Total storage up to 4 TBytes • Optical Drive DVD/CD Writer or BluRay Burner • Video Projector Ports DVI-I and Display Port • Power Supply 275 Watt 90 – 264VAC 50 – 60 Hz • Size Closed 16"W x 16.3"H x 5.4"D • Size Open 16"W x 16.3"H x 8"D • Environmental 0° - 50°C 10-90% Rel. humidity • Transit Case (Optional) Pelican™ 1610 with custom poly-ethylene foam • Weight 26 pounds; Total Weight of Computer with Transit 40-45 pounds

Portable Platforms



w/ 2x 10GigE (PKV122)



w/ 4x 1GigE (PKV120)

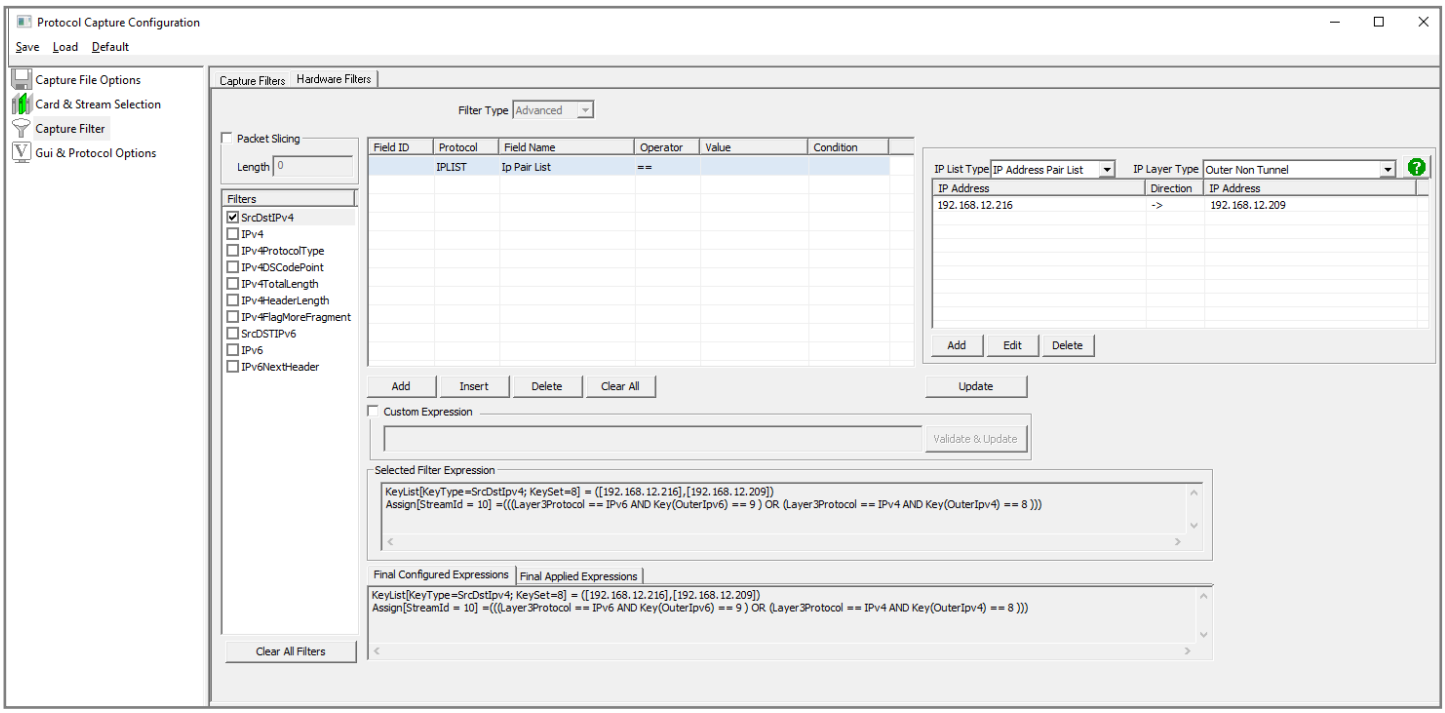
w/40 or 100 GigE (PKV124)

Comprehensive Filtering Capabilities

The PacketScan™ HD application permits user to filter out traffic of interest at two levels prior to capture.

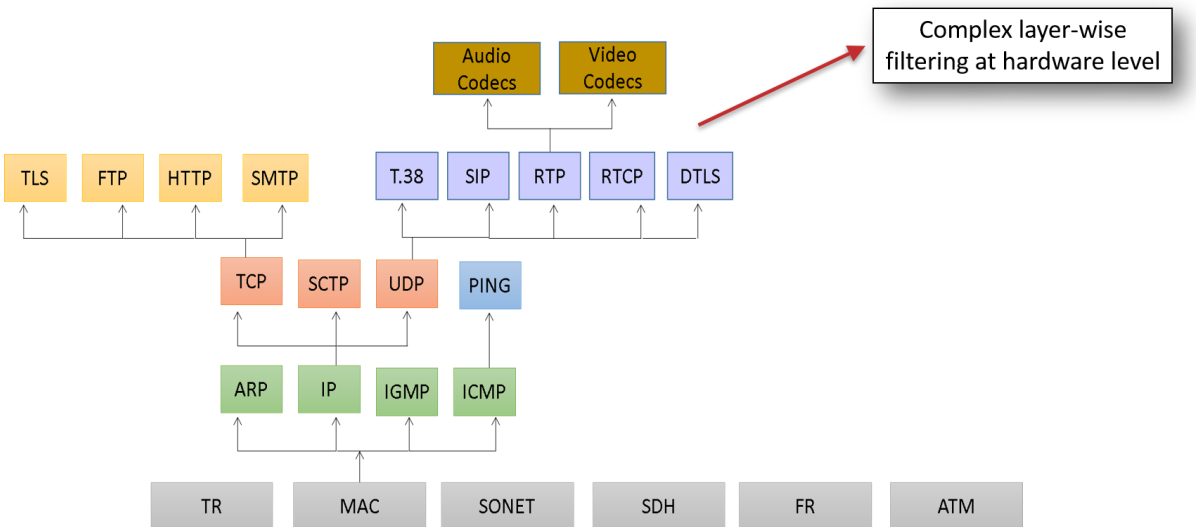
Hardware Filter

- Permits user to filter out packets of interest at hardware level on high density network and discard unwanted traffic.
- Create up to 10 user defined hardware filters to filter-out traffic based on Layer-wise parameters such as Frame size and MAC, 802.1Q (VLANs), IPv4 /IPv6, TCP, UDP, SCTP, GTP, SIP, RTP and more
- Ability to set filter conditions either before capturing the packets, or while running real-time capture
- Complex filtering capabilities at the lower hardware level result in Low CPU load on the host server
- User can create their own filters using custom filter option which provides flexibility to the user to check the fields and use the logical conditions more efficiently



Software Filter

- Layer-wise complex software filtering further can be applied at the application level based on different signaling parameters further, with Triggers and action feature, one can perform automated actions on the filtered completed calls



Summary Frame View

Summary, Detail, and Hex Dump Views

The Summary View displays various information such as Frame Number, Time, Length, Message Types, IP source and destination addresses, and so on. Any field from the protocol headers can be added to Summary view, i.e., summary fields are completely user-configurable. User can select a frame in Summary View to analyze and decode each frame in the Detail View. The Hex dump view displays the frame information in HEX and ASCII octet dump.

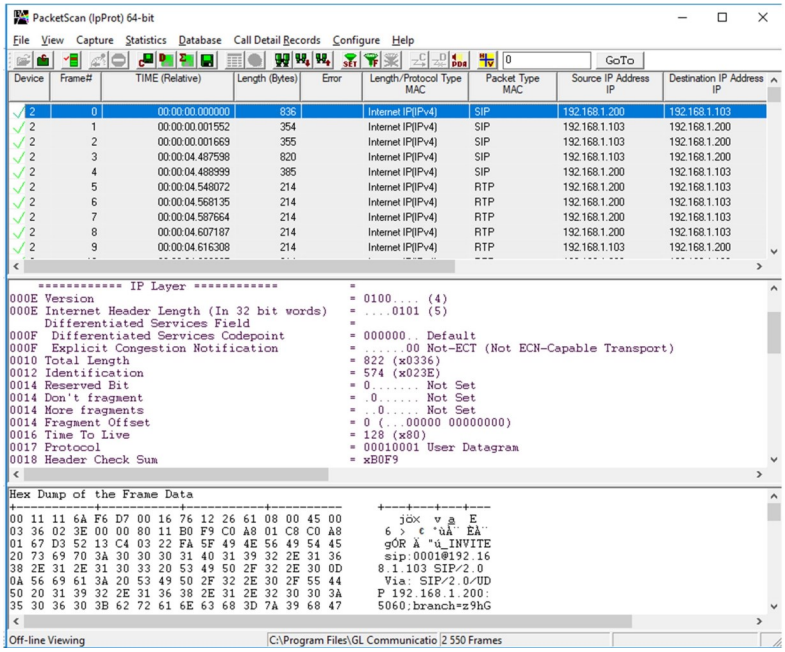
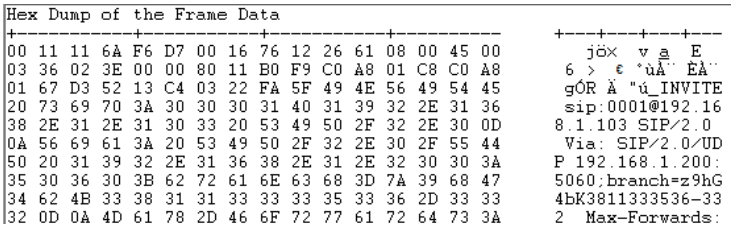


Figure: Different Views

Summary View

Device	Frame#	TIME (Difference)	Length (Bytes)	Error	Length/Protocol Type MAC	Packet Type MAC	Source IP Address IP	Destination IP Address IP	Source Port UDP	Destination Port UDP	SIP Method Sip3261	SIP From Sip3261
2	0	00:00:00.000000	836		Internet IP(IPv4)	SIP	192.168.1.200	192.168.1.103	54098	5060	INVITE	0001@192.168.1.200
2	1	00:00:00.001552	354		Internet IP(IPv4)	SIP	192.168.1.103	192.168.1.200	54098	5060	SIP/2.0 100 Trying	0001@192.168.1.200
2	2	00:00:00.000117	355		Internet IP(IPv4)	SIP	192.168.1.103	192.168.1.200	54098	5060	SIP/2.0 180 Ringing	0001@192.168.1.200
2	3	00:00:04.485929	820		Internet IP(IPv4)	SIP	192.168.1.103	192.168.1.200	54098	5060	SIP/2.0 200 OK	0001@192.168.1.200
2	4	00:00:00.001401	385		Internet IP(IPv4)	SIP	192.168.1.200	192.168.1.103	54098	5060	ACK	0001@192.168.1.200
2	5	00:00:00.059073	214		Internet IP(IPv4)	RTP	192.168.1.200	192.168.1.103	1024	1024		
2	6	00:00:00.020063	214		Internet IP(IPv4)	RTP	192.168.1.200	192.168.1.103	1024	1024		
2	7	00:00:00.019529	214		Internet IP(IPv4)	RTP	192.168.1.200	192.168.1.103	1024	1024		
2	8	00:00:00.019523	214		Internet IP(IPv4)	RTP	192.168.1.200	192.168.1.103	1024	1024		
2	9	00:00:00.009121	214		Internet IP(IPv4)	RTP	192.168.1.103	192.168.1.200	1024	1024		
2	10	00:00:00.012377	214		Internet IP(IPv4)	RTP	192.168.1.200	192.168.1.103	1024	1024		

Detail Decode View



Hex Dump View

Filtering and Search

Filter and search capabilities adds a powerful dimension to the SIP analyzer. These features isolate required frames from original frames in real-time/offline. Users can record all or filtered traffic into a trace file.

Allows real-time filtering based on parameters set in Data Link layer, MAC layer, IP, TCP/UDP, and more. The offline filter allows filtering based on Frame Number, Time, Length, Message Types, and so on. Similarly, search capability helps user to search for a particular frame based on specific search criteria.

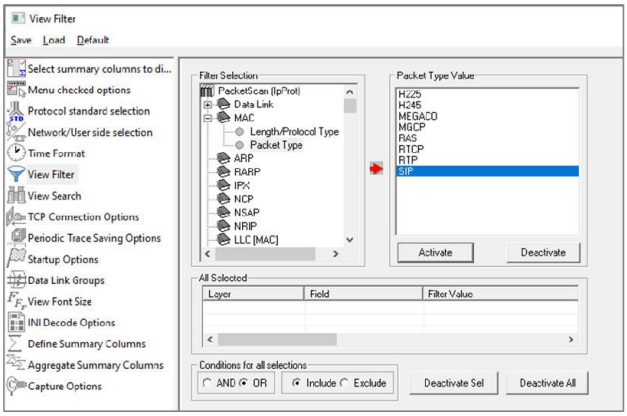


Figure: View Filter

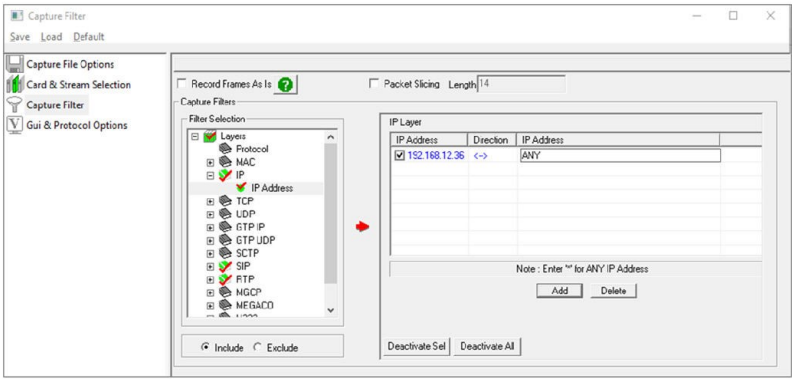


Figure: Capture Filter

Analysis of VoIP and Wireless Calls – Summary View

Summary View

TA Summary view displays summary of data transmission in each direction including calling number, called number, call id, start time, duration, missing packets, max/min RTD, average RTD and so on. Calls and sessions are classified as active, completed, or failed giving the user an idea about the calls and its status in the network. It includes separate statistical counts on total packets, calls, failed calls, and more, for SIP, H.323, MEGACO, RTP, GSMA, IuCS, and SCCP based calls.

Call Summary – Signaling, Audio, and Video QoS Statistics

The Call Summary displays the signaling, audio, and video parameters of each call for SIP, RTP, MEGACO, H.323, GSMA, IuCS, and SCCP protocols. Video QoS parameters such as Codec Info, Frame Rate, Missing Packets, Delay, Gap, Video Frame Count, Out Of Sequence count, Duplicate Packets count, Media Delivery Index (MDI), etc. are displayed for all video calls with H.263 and H.264 codecs.

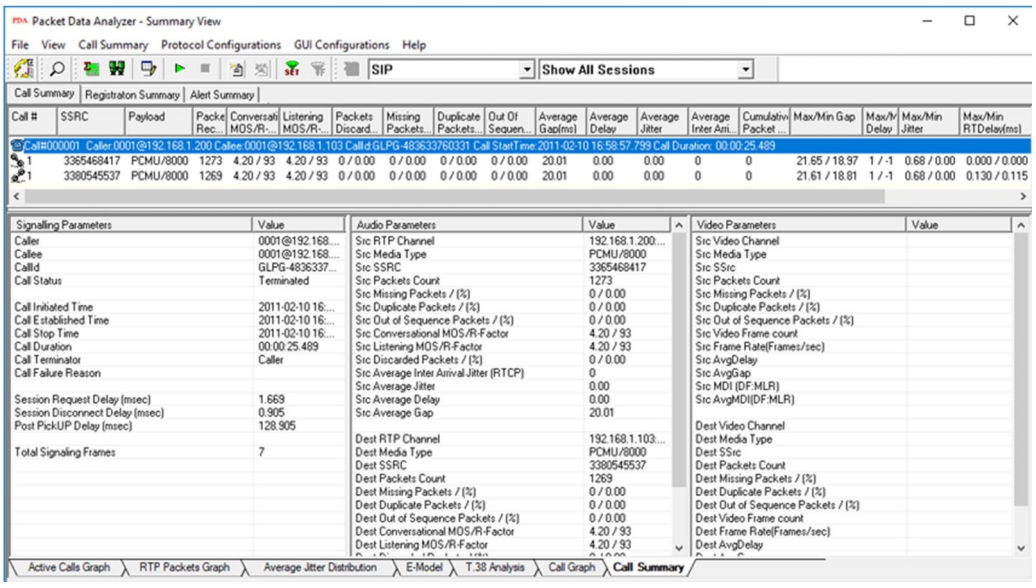
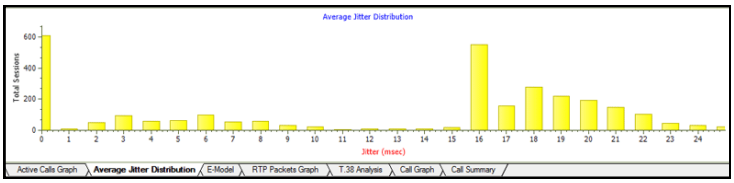


Figure: Call Summary, Audio and Video Statistics

Analysis of VoIP and Wireless Calls – Summary View (*Contd.*)

Graphs in PDA – Summary View

Active Calls – A line graph, depicting the Number Of Calls Vs Time.
Average Jitter Distribution – Distribution of the Average Jitter values across the Total Sessions.



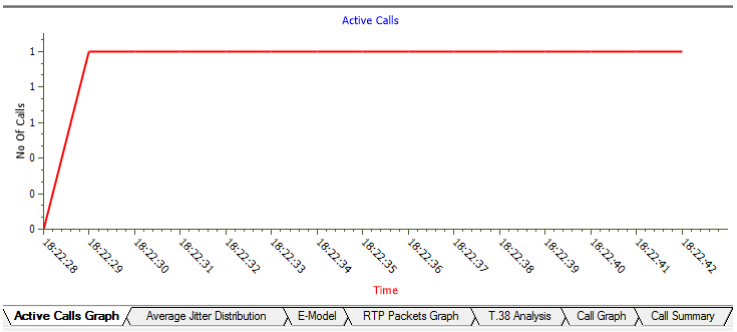


Figure: Active Calls and Average Distribution Graphs

E-model - This graph provides R-factor, MOS and packets discarded against number of sessions- all these three graphs show statistics of terminated calls.

- **R-Factor** – A bar Graph that plots R-Factor across No of Sessions
- **MOS** – A bar Graph that plots Mean Opinion Score values across No. of Sessions
- **Packets Discarded** – A bar Graph that plots Packets Discarded across No. of Sessions
- **RTP Packets Graph** – Plots and compares out of ordered packets, missing packets and duplicate packets against Total Audio Packets

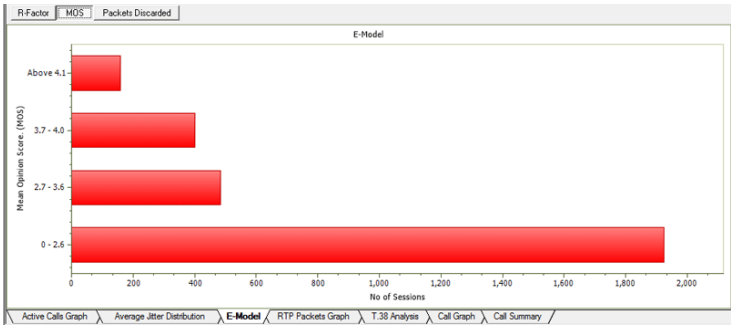


Figure: E-Model Graph

T.38 Analysis - Fax (T.38 data) over VoIP monitoring and decoding capability.
Call Graph - Displays the message sequence of SIP, SIP ED137B, MEGACO, and H.323 captured VoIP calls.

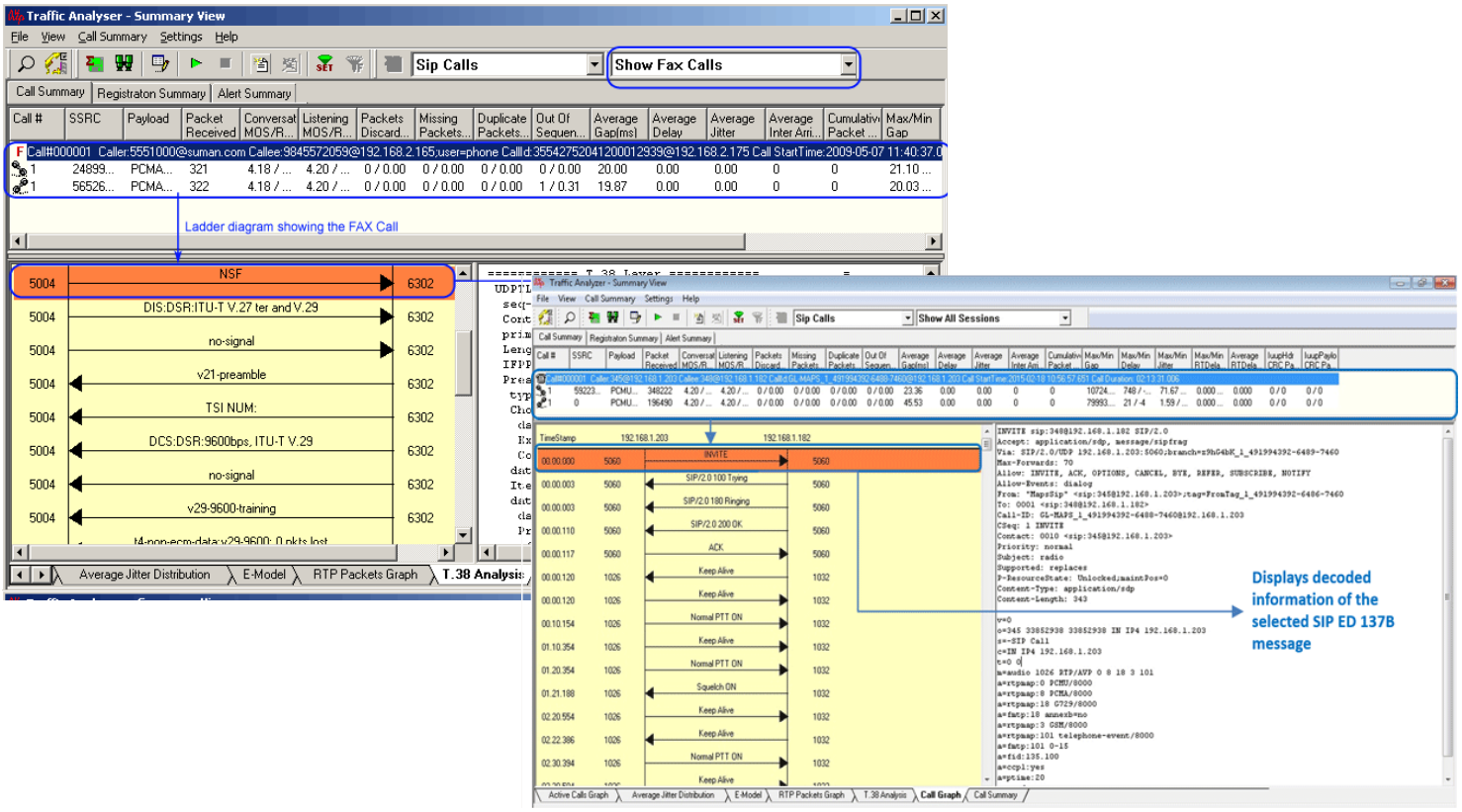


Figure: SIP, MEGACO, H.323, T.38, GSMA IuCS, SCCP Call Graph

Analysis of VoIP and Wireless Calls – Detail View

Detail View

This display assists in any comparisons that are to be made between the two RTP sessions of a call. Each frame of the selected session is dissected and its contents are displayed in a tabular form for easier viewing and comparisons. Vital aspects from the RTP frame needed for close analysis are included in the table.

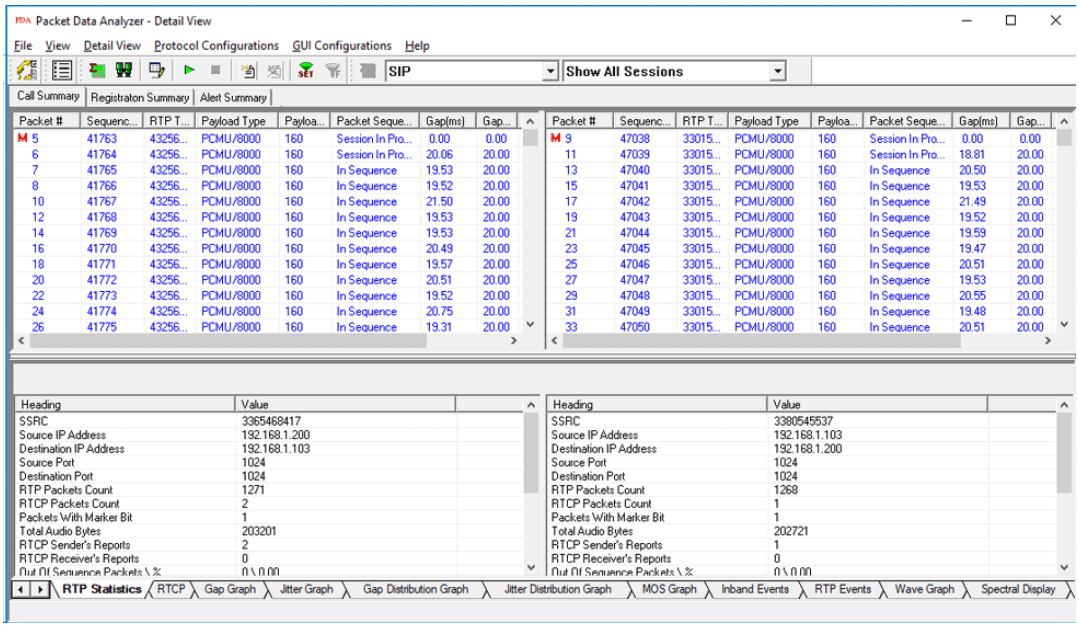


Figure: Traffic Analyzer Detail View

Graphs in Detail View

Gap/Jitter graphs - Plots the Gap (in milliseconds)/Jitter versus the packet number.

Gap Distribution Graph - Number of packets with a particular value of gap is plotted against the (gap) value.

Jitter Distribution Graph - Number of packets with a particular value of jitter is plotted against the jitter value.

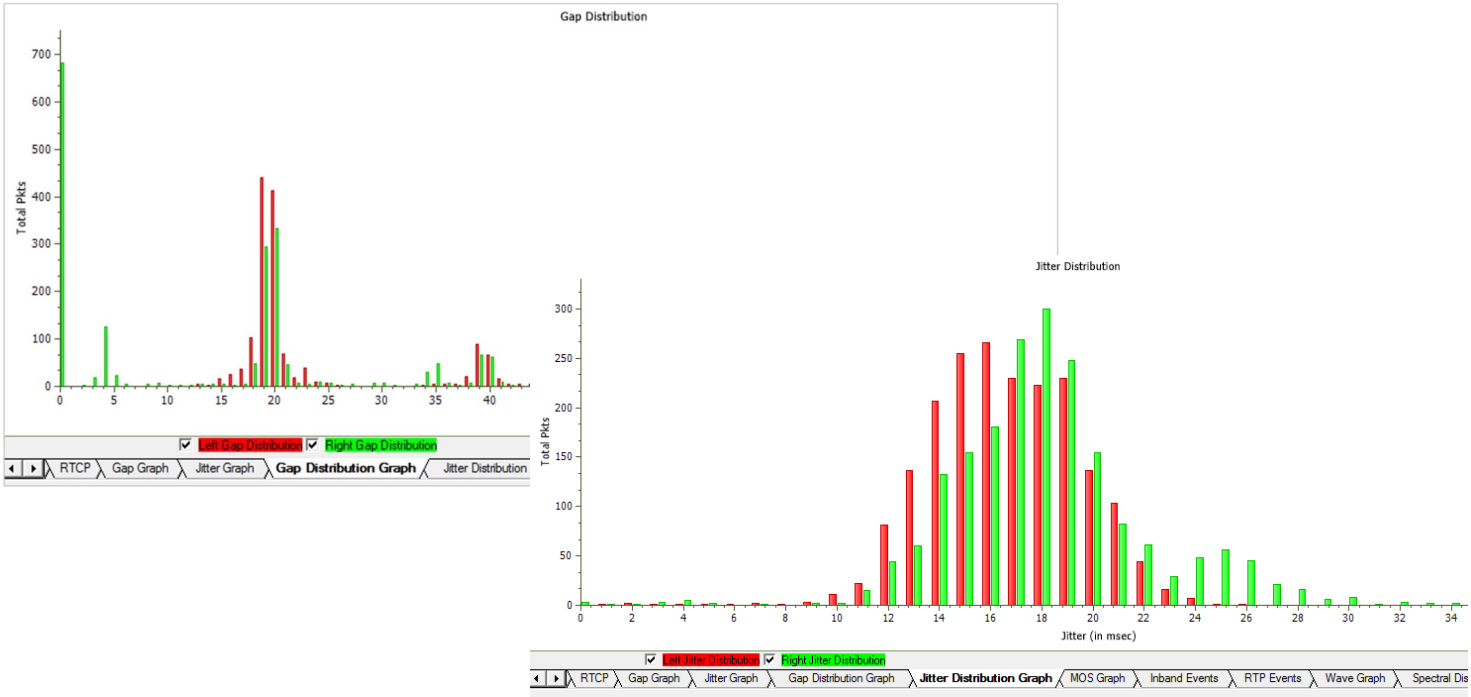


Figure: Gap/Jitter Distribution Graph

Analysis of VoIP and Wireless Calls – Detail View (*Contd.*)

MOS Graph – Plots Mean Opinion Score values throughout the duration of the call.

Wave graph – Displays the amplitude of the incoming signal in a selected call as a function of time.

Spectral Display – Displays the power of incoming signal while the capturing is going on as a function of frequency.

Degradation Factor – A pie chart plots and compares different statistics such as Good Quality, Packets discarded, Echo level, Packet loss, and Regency against total Packets for each individual sessions.

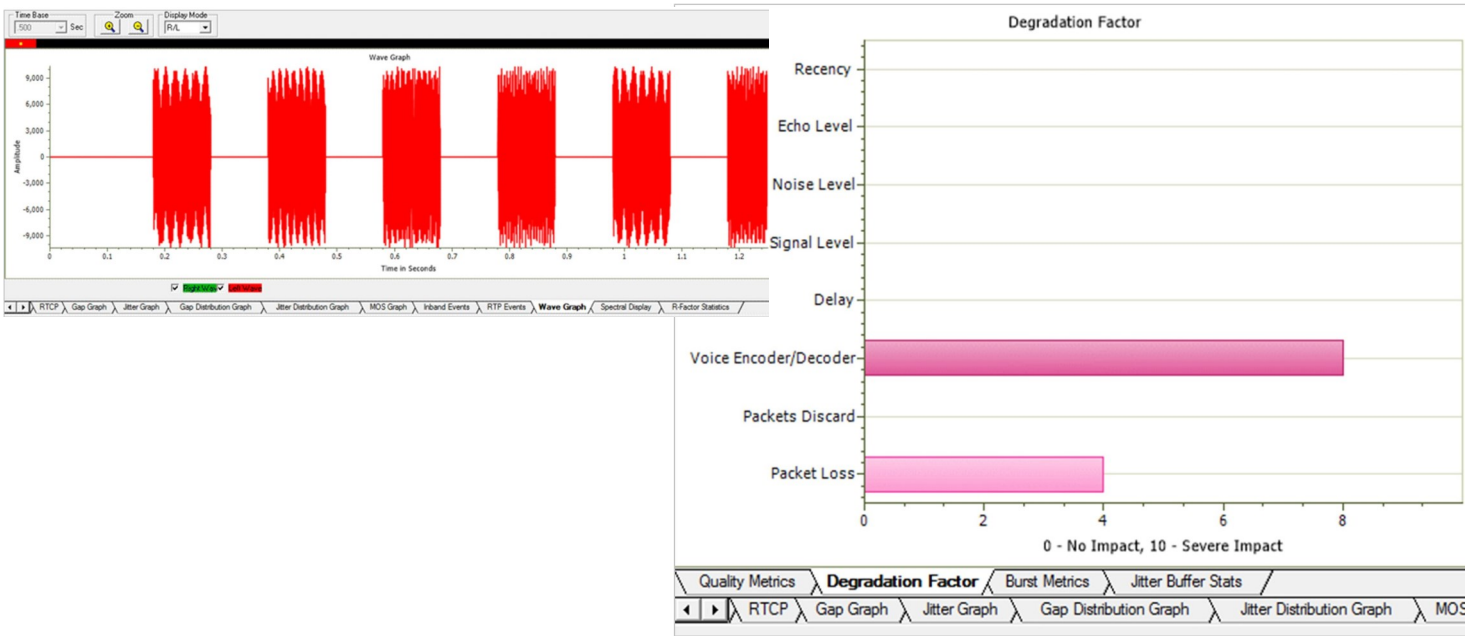


Figure: Wave Graph and Degradation Factors

R-Factor Statistics

Quality Metrics based on E-model includes R-Factor and MOS Factor. **R-Factor** bar graph will display statistics such as R Listening, R Conversational, R-G107, and R-Nominal values.

MOS Factor bar graph will display statistics such as MOS CQ, MOS PQ, and MOS Nominal values during a call.

Jitter Buffer Statistics – A pie chart plots and compares packets received, packets discarded and packets lost against total Packets for each individual sessions. Also provides a tabular data on average.

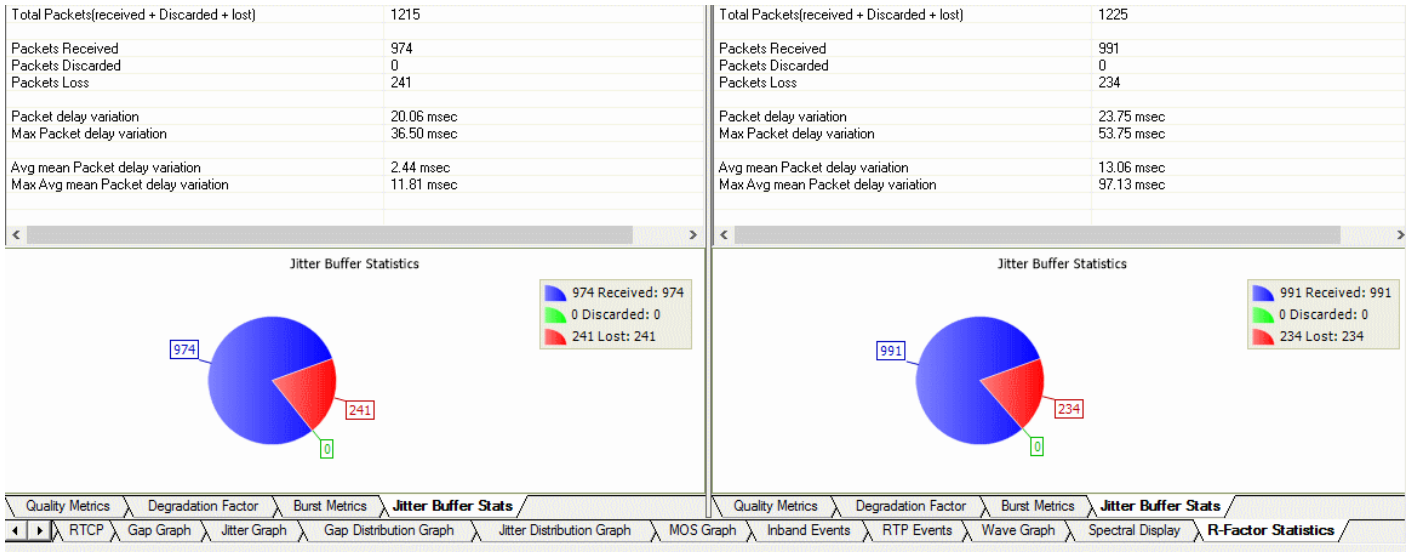


Figure: Jitter Buffer Statistics

Other Features

Play Audio and Write to File

The Play Audio plays the selected call to the PC speaker. Write to File is similar to the Play Audio option. The basic difference being that the output is written to a file instead of playing to the speaker. PDA can monitor video calls and display both audio and video RTP streams in summary view.

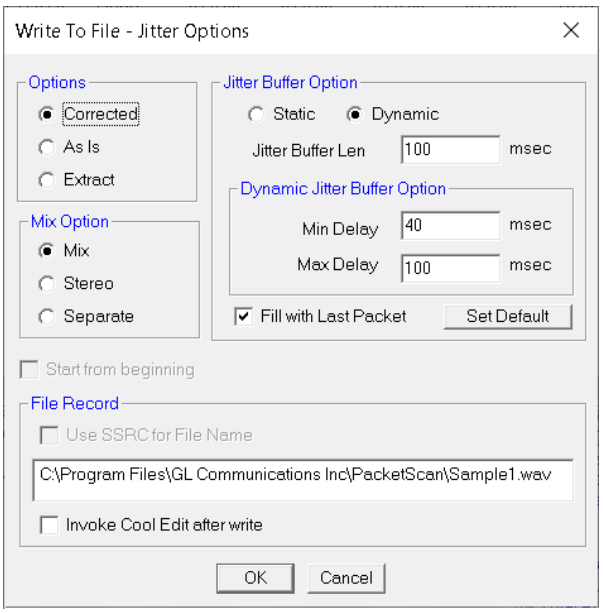


Figure: Write to File

Save Call

The Save Call feature enables the user to save a particular call either in GL's proprietary *.HDL file format or in Ethereal *.PCAP file format or *.PCAPNG file format. Call Summary details could also be saved for a particular call as a *.rtf file. This is especially useful to get data from real-time traffic locations to the lab for detail analysis of a flawed call.

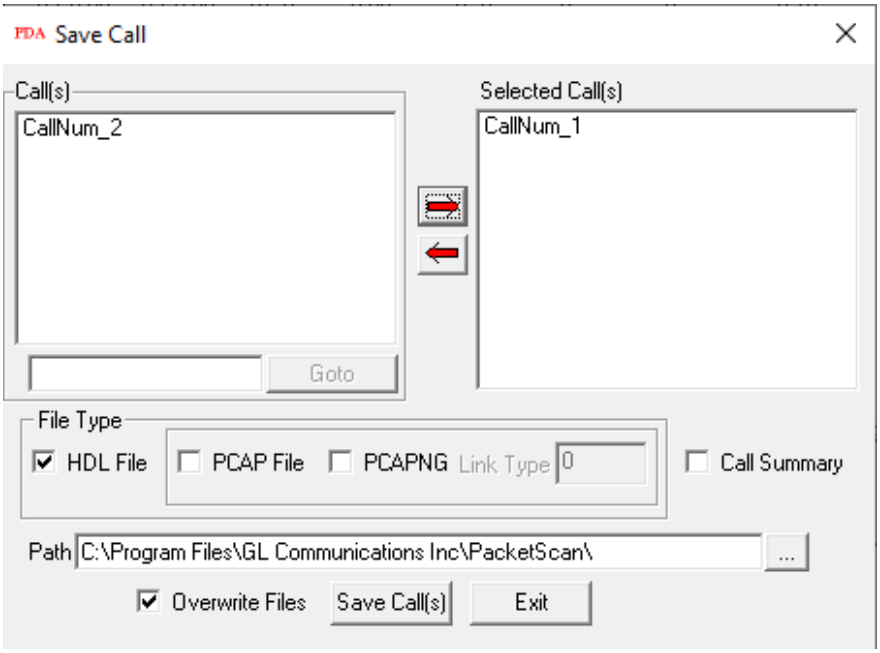


Figure: Save Call

Other Features (*Contd.*)

RTP/RTCP Statistics, Inband Events, Outband Events

The user can get the complete details of a single selected call such as total packets count, SSRC, RTP packet count, RTCP packet count, total Audio bytes, and more.

Inband Events display Inband DTMF and MF digits as they are received with details such as Timestamp, Type, Event, On-Time, Power, and Frequency. Outband Events display RTP events as per RFC 2833 or 4733 with details such as Timestamp, Event, Power, and Duration.

Triggers and Action Settings

Triggers and Action Settings allow the user to filter calls based on certain SIP, RTP, MEGACO, H.323, GSMA, and IuCS parameters followed by a set of actions for the completed calls. The filtered file can be saved in either GL's proprietary HDL file, Ethereal PCAP, or PCAPNG file format. It extracts fax image for the selected fax calls. Additionally, a summary of call signaling and audio parameters can be saved as *.rtf file, or generate Call Detail Records in CSV file format along with voice files for each direction. The CSV files can be used for further analysis and retrieval of **calls of interest**.

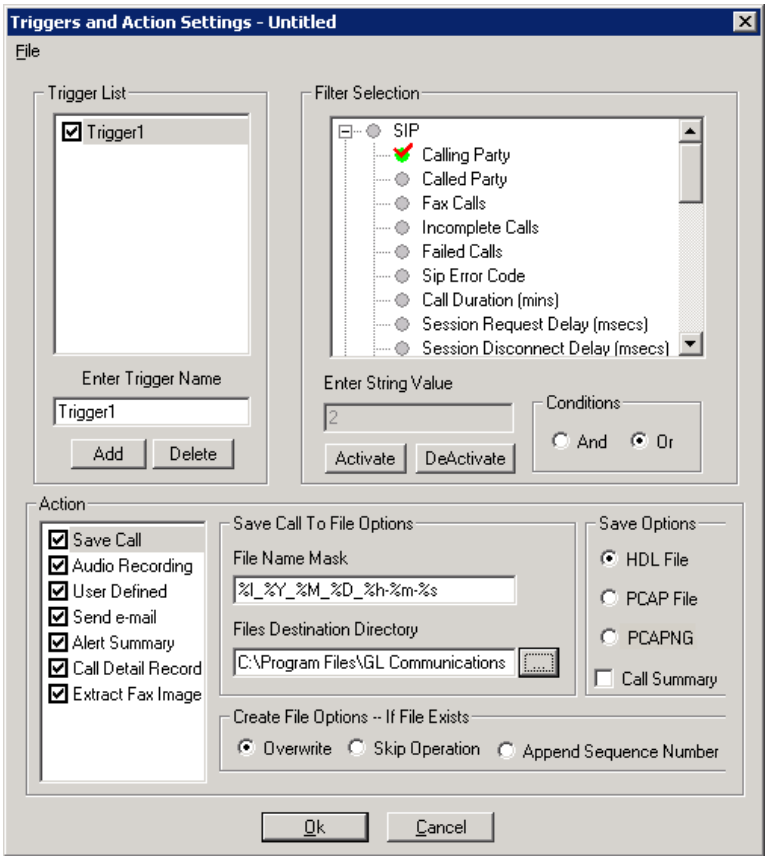
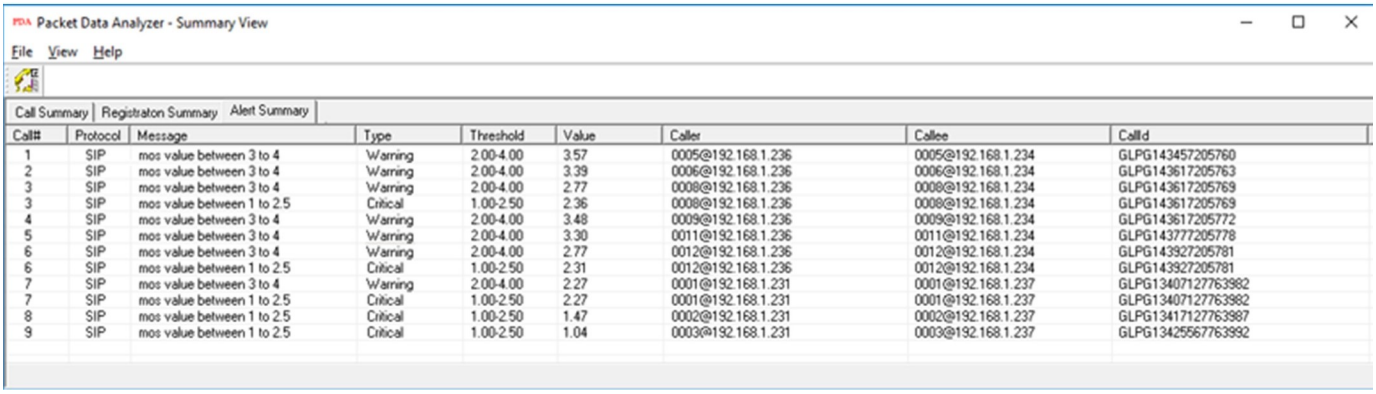


Figure: Trigger and Action Settings

Other Features (*Contd.*)

Alert Summary

Generates alerts when particular vital parameters go beyond a specified value and display in Alert Summary table. The user can specify the criteria based on which the alerts are to be generated. The tab provides an active list of the alerts that have occurred during the test session in tabular columns.

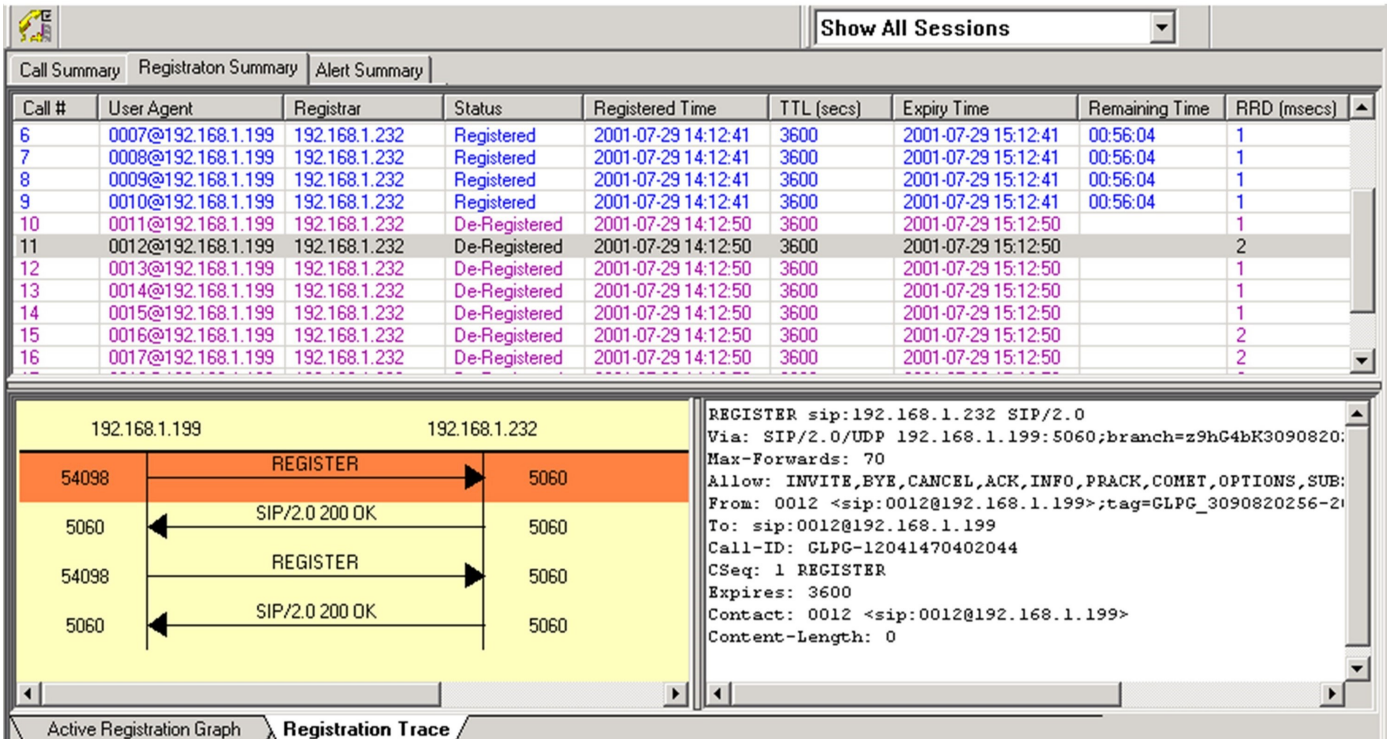


Call#	Protocol	Message	Type	Threshold	Value	Caller	Callee	CallId
1	SIP	mos value between 3 to 4	Warning	2.00-4.00	3.57	0005@192.168.1.236	0005@192.168.1.234	GLPG143457205760
2	SIP	mos value between 3 to 4	Warning	2.00-4.00	3.39	0006@192.168.1.236	0006@192.168.1.234	GLPG143617205763
3	SIP	mos value between 3 to 4	Warning	2.00-4.00	2.77	0008@192.168.1.236	0008@192.168.1.234	GLPG143617205769
3	SIP	mos value between 1 to 2.5	Critical	1.00-2.50	2.36	0008@192.168.1.236	0008@192.168.1.234	GLPG143617205769
4	SIP	mos value between 3 to 4	Warning	2.00-4.00	3.48	0009@192.168.1.236	0009@192.168.1.234	GLPG143617205772
5	SIP	mos value between 3 to 4	Warning	2.00-4.00	3.30	0011@192.168.1.236	0011@192.168.1.234	GLPG143777205778
6	SIP	mos value between 3 to 4	Warning	2.00-4.00	2.77	0012@192.168.1.236	0012@192.168.1.234	GLPG143927205781
6	SIP	mos value between 1 to 2.5	Critical	1.00-2.50	2.31	0012@192.168.1.236	0012@192.168.1.234	GLPG143927205781
7	SIP	mos value between 3 to 4	Warning	2.00-4.00	2.27	0001@192.168.1.231	0001@192.168.1.237	GLPG13407127763982
7	SIP	mos value between 1 to 2.5	Critical	1.00-2.50	2.27	0001@192.168.1.231	0001@192.168.1.237	GLPG13407127763982
8	SIP	mos value between 1 to 2.5	Critical	1.00-2.50	1.47	0002@192.168.1.231	0002@192.168.1.237	GLPG13417127763987
9	SIP	mos value between 1 to 2.5	Critical	1.00-2.50	1.04	0003@192.168.1.231	0003@192.168.1.237	GLPG13425567763992

Figure: Alert Summary View

Registration Summary

- Provides the registration summary of each SIP registration including the user agent, registrar, status, registered time, expiry time, time to live, remaining time, registration request delay (RRD), and Re-registration attempts.
- Provides graphical view of the active registrations and registration trace of each registration.



Call #	User Agent	Registrar	Status	Registered Time	TTL (secs)	Expiry Time	Remaining Time	RRD (msecs)
6	0007@192.168.1.199	192.168.1.232	Registered	2001-07-29 14:12:41	3600	2001-07-29 15:12:41	00:56:04	1
7	0008@192.168.1.199	192.168.1.232	Registered	2001-07-29 14:12:41	3600	2001-07-29 15:12:41	00:56:04	1
8	0009@192.168.1.199	192.168.1.232	Registered	2001-07-29 14:12:41	3600	2001-07-29 15:12:41	00:56:04	1
9	0010@192.168.1.199	192.168.1.232	Registered	2001-07-29 14:12:41	3600	2001-07-29 15:12:41	00:56:04	1
10	0011@192.168.1.199	192.168.1.232	De-Registered	2001-07-29 14:12:50	3600	2001-07-29 15:12:50		1
11	0012@192.168.1.199	192.168.1.232	De-Registered	2001-07-29 14:12:50	3600	2001-07-29 15:12:50		2
12	0013@192.168.1.199	192.168.1.232	De-Registered	2001-07-29 14:12:50	3600	2001-07-29 15:12:50		1
13	0014@192.168.1.199	192.168.1.232	De-Registered	2001-07-29 14:12:50	3600	2001-07-29 15:12:50		1
14	0015@192.168.1.199	192.168.1.232	De-Registered	2001-07-29 14:12:50	3600	2001-07-29 15:12:50		1
15	0016@192.168.1.199	192.168.1.232	De-Registered	2001-07-29 14:12:50	3600	2001-07-29 15:12:50		2
16	0017@192.168.1.199	192.168.1.232	De-Registered	2001-07-29 14:12:50	3600	2001-07-29 15:12:50		2

Figure: Registration Summary

Buyer's Guide

Item No	Product Description
PKV120	PacketScan™ HD – High Density IP Traffic Analyzer w/ 4x1GigE - includes PKV100 – Online (not Offline) for temporary audio codec support
PKV120p	PacketScan™ HD w/4 x 1GigE - Portable
PKV122	PacketScan™ HD–High Density IP Traffic Analyzer w/ 2x10GigE includes PKV100 – Online (not Offline) for temporary audio codec support)
PKV122p	PacketScan™ HD w/2 x 10 GigE - Portable
PKV124	PacketScan™ HD – High Density IP Traffic Analyzer w/ 40/100 GigE
PKV124P	PacketScan™ HD – High Density IP Traffic Analyzer w/ 40/100 GigE - Portable
PKV121	PacketScan™ FB - (Offline Analyzer)

Item No	Related Software
PKV112	5G Analyzer (Optional with PacketScan™)
PKV113	Offline 5G Analyzer (Optional with PacketScan™ and NetSurveyorWeb™)
PKV105	SIGTRAN Analysis
PKV103	IP Based GSM and UMTS Analysis
PKV110	IMS Protocol Decodes (Optional with PacketScan™)
PKV107	LTE (Long Term Evolution) Analyzer, requires PKV100
PKV104	FaxScan™ – Decodes T.38 Fax images in TIFF format from captured PCAP files

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Buyer's Guide (*Contd.*)

Item No	Related Software
PCD103	AMR Narrowband Codec for PacketScan™
PCD107	Optional Codec – AMR Wideband
PCD104	EVRC Codec for PacketScan™
PCD105	EVRC-B Codec for PacketScan™
PCD106	EVRC-C Codec for PacketScan™
PKV170	NetSurveyorWeb™
PKV171	Network Surveillance Agent Toolkit
PKV172	Network Surveillance for GSM – GPRS Systems
PKS118	MAPS™ ED137 Radio
PKS119	MAPS™ ED137 Telephone (Includes PKS102)
PKS117	MAPS™ ED137 Recorder (Includes PKS102)
PKS107	RTP EUROCAE ED137
PKV169	NetSurveyorWeb™ Lite
PKV 400	TCP Analytics

For more details visit, PacketScan™ HD - Network Monitoring Appliance webpage.

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