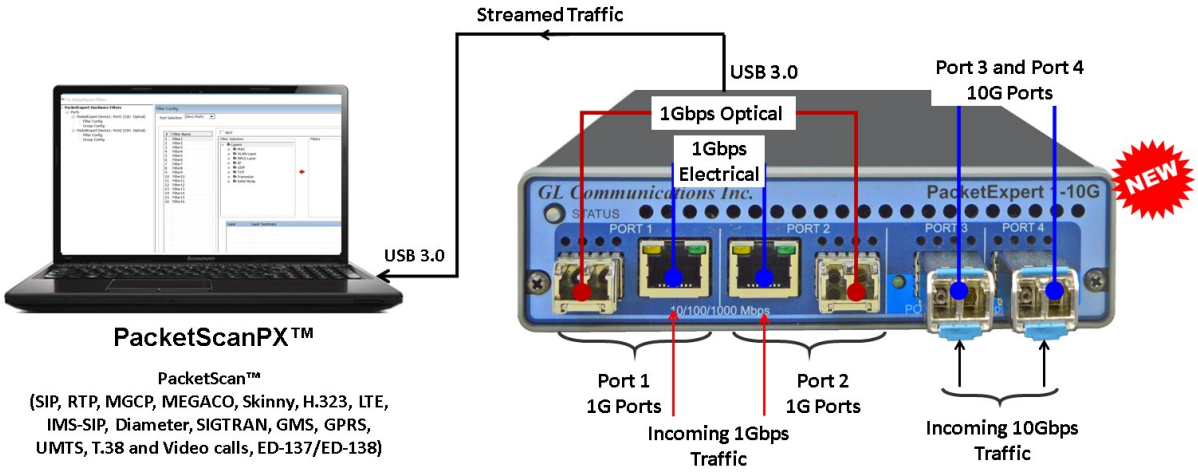
PacketScanPX™ Analyzer

(Wirespeed filter, capture and analysis)



Overview

GL's PacketScanPX™ (PKV125) application combines the features of the PacketScan™ (PKV100) analyzer with the capabilities of PacketExpert™ (PXN100) hardware capture and filter features.

PacketExpert™ hardware is a versatile Ethernet testing tool, with various testing functionalities, one of which is the Wirespeed capture functionality. PacketScan™ - is an All-IP Network Monitoring software that offers powerful features to capture and monitor live signaling and traffic over IP (version 4 and 6).

PacketScanPX™ supports simultaneous capture and processing of high volume of simultaneous calls with bidirectional RTP traffic from 1 Gbps to 10 Gbps rate. Almost all VoIP and Wireless protocols over IP transport layer can be captured and decoded for troubleshooting network problems.

PacketScanPX™ allows setting hardware-level filters to capture flexibility. Up to 16 hardware level filters can be defined per port. Filters can be set for various header fields like Source/Destination MAC/IP addresses, UDP/TCP ports, 802.1Q VLAN Id/Priority fields, IP ToS/DSCP fields, Frame size, etc. and also a user-defined raw hex filter of 120-byte length, with an offset (to filter 120 bytes of raw hex data anywhere within the packet). Further, the individual filters can be combined into groups and the groups can be further combined into supergroups for additional flexibility.

For more information, please visit PacketScanPX™ webpage.

Main Features

- Capture and analyse Ethernet/IP traffic on either 1G ports or 10G ports (two 1G ports or two 10G ports).
- Capture and analyse at full wirespeed, up to 8 Gbytes of traffic utilizing the onboard 8 GB DDR3 RAM.
- Capture and analyse continuously at reduced rates of up to 2 Gbps (depends on the conditions).
- Complex **Filtering** capabilities to filter incoming wirespeed traffic at the hardware level, and forward to packet analyzer.
- Create up to 16 user defined hardware filters per port to filter-out traffic based on **MAC**, **VLAN**, **IP**, **MPLS**, **TCP**, **UDP**, **Framesize** and **Raw Hex Bytes** parameters.
- Precise hardware timestamping with accuracy in microseconds.
- PacketScanPX™ can monitor progress of up to 5000 simultaneous calls with bidirectional RTP traffic
- Capture and analyse packets through real-time analysis. Save the captured trace to a disk
- Statistics can be obtained for any fields or parameters in the protocol to study the performance and trend in the VoIP network.
- PacketScanPX™ can send protocol fields, and call detail records, along with traffic summary of captured calls to a central database. NetSurveyorWeb™ displays the data from the database in a simple web-based browser, featuring rich graphics, custom search, report and filter configurations.

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Main Features (*Contd..*)

- Supports following configurations: 2x1GigE Electrical/Optical, 2x10GigE, 2x10Gig Optical
- Wirespeed unfiltered continuous capture to NVMe SSD – up to hard disk size
- Capture and analyze up to 5,000 simultaneous calls with bidirectional RTP traffic from 1 Gbps to 10 Gbps
- 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

As a Single Point Packet over IP CDR Analysis System

- PacketScanPX™ can send protocol fields, and call detail records, along with traffic summary of captured calls to a central database 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

PacketScanPX™ 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)
- OPUS, EVS (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

Main Features (*Contd.*)

Performance Metrics

- Signaling, audio, and video QoS parameters for each call
- Minimum, maximum, and average Round Trip Delay (RTD)
- Inband (DTMF & 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

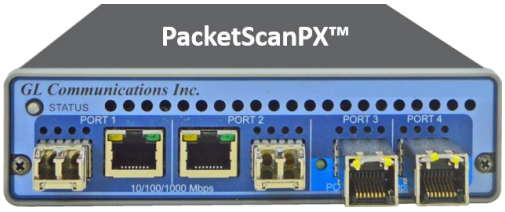
- Ability to export summary report of selected or all completed calls in PDA to CSV or PDF file formats
- Analyze the CSV files using custom Excel® addins
- Ability to save a particular call in HDL, PCAP, or PCAPNG file format for further detail analysis
- Generates alert summary when particular vital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

Specifications

Supported Interfaces	2x 1 Gbps – 850/1310 nm SFP Module; Ethernet/Optical SFP 2x 10 Gbps – 10GBASE-SR SFP+; 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
Filter	Hardware Filter at line rate, Application Level Capture Filter, and Post Processing Filter and Search
Performance	2 x 1GigE, 2 x 10GigE- 5000 calls with bi-directional RTP traffic Extracting/recording voice • 2500 simultaneous calls (maximum) • Option to record filtered calls of interest only



Pelican Carry Case

Specifications (*Contd..*)

Protocols	GSM, UMTS, LTE, IMS, SIP, RTP, T.38, RTCP, and much more (some protocol support requires additional licensing)
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 polyethylene foam • Weight 26 pounds; Total Weight of Computer with Transit 40- 45 pounds

Working Principle

GL's **PacketScanPX™** can capture and analyse Ethernet traffic on either 1G or 10G ports. On software start, user must select which port to capture on – 1G or 10G ports. User can select the specific ports (single port or both ports) on which to capture traffic and can change this on each capture. User can also apply hardware level filters (in addition to the software level filters) to filter traffic at the hardware itself. The captured and filtered packets are multiplexed and temporarily stored on the onboard DDR3 memory, before being transferred to the host PC through the USB 3.0 port. PacketScanPX™ software picks up the traffic from the DDR3 memory, further applies the software level filters (PacketScan Capture filters), and does real time analysis.

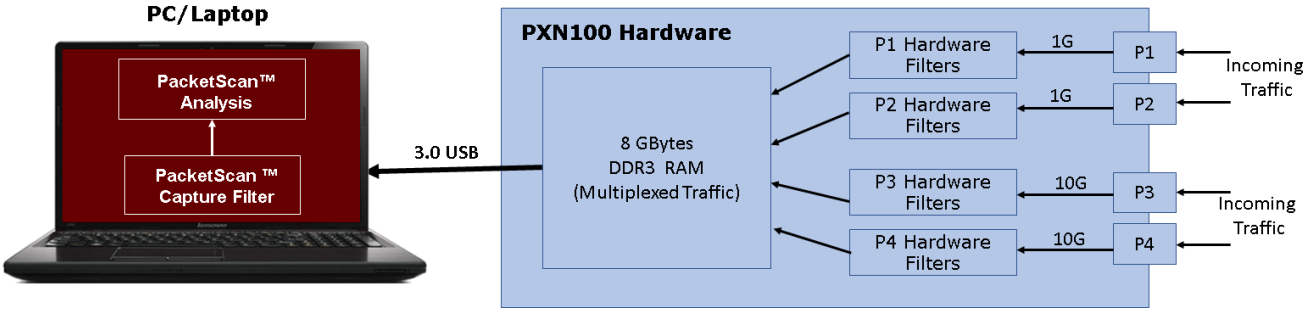


Figure : General Architecture of PacketScanPX™

PacketExpert™ Hardware Filters

Wire-speed Packet Filters:

PacketScanPX™ includes a powerful "Wirespeed filter" that allows users to filter out unwanted traffic, and continuously capture/ analyses the traffic of interest.

Some of the main features of the Wirespeed packet filter are listed below:

- Filter packets and analyze packets of interest
- Filters can be set to each field (Packet Mode) and to each bit in the packet (Raw mode) for greater flexibility
- Up to 16 filters can be defined per port. Each filter supports filtering on the following fields:
- Source/Destination MAC Address, Ethernet Len/Type field
- VLAN Id/Priority
- MPLS Label
- IP Source/Destination Address, ToS/DS field, Protocol field
- UDP Source/Destination Ports
- TCP Source/Destination Ports
- Frame Size
- Raw hex bytes/mask of 120 bytes length along with an offset
- Each field can be set to match to a fixed value or Range of values
- A 'Not' feature is available for each filter – user can either capture a packet that matches the filter or capture all packets that do not match the filter.

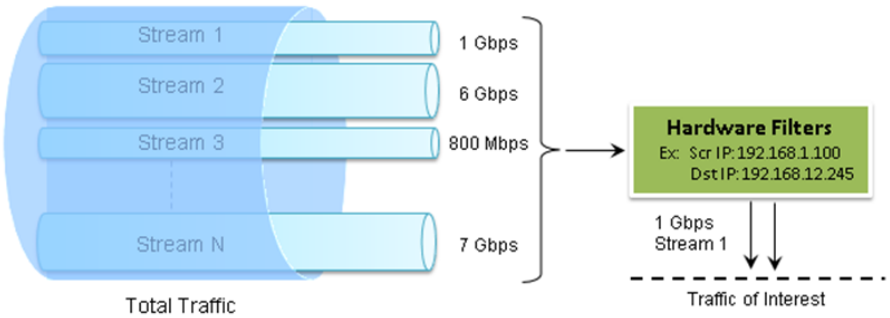


Figure: Capture Traffic of Interest

Basic Mode Filtering

The **PacketScanPX™** hardware filters are "Wirespeed Filters" which can be used to filter wirespeed traffic and capture only the traffic of interest.

Filter option allows user to capture simultaneously on 2 ports and on either port user can set filters. PacketScanPX™ can be configured with up to 16 simultaneous filters to capture real-time traffic. User can edit the various header fields or raw filter bytes and Mask.

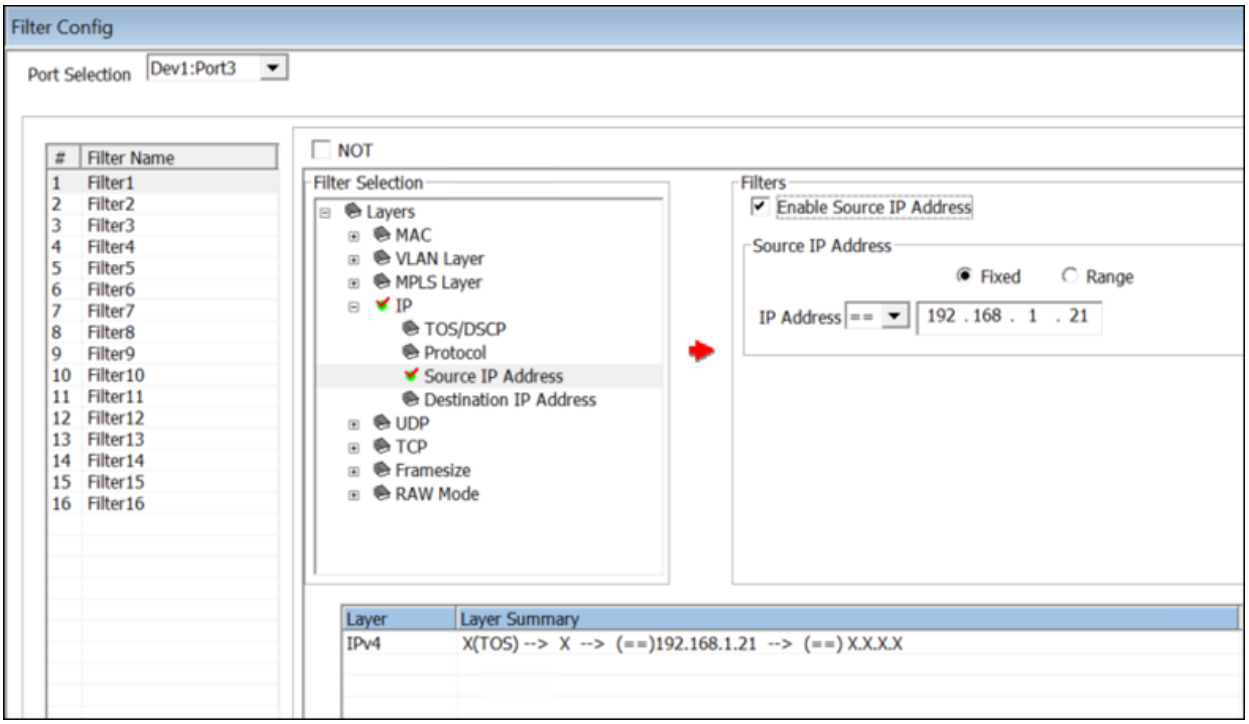


Figure: Wirespeed Filter-Various Protocol Fields

In Raw mode, each bit can be set to 'filtered' or 'don't care' condition via filter mask. For each filter, offset can be set to any byte within the packet (from 0 to 15999) which gives flexibility to filter a particular field within protocol headers and, also the payload.

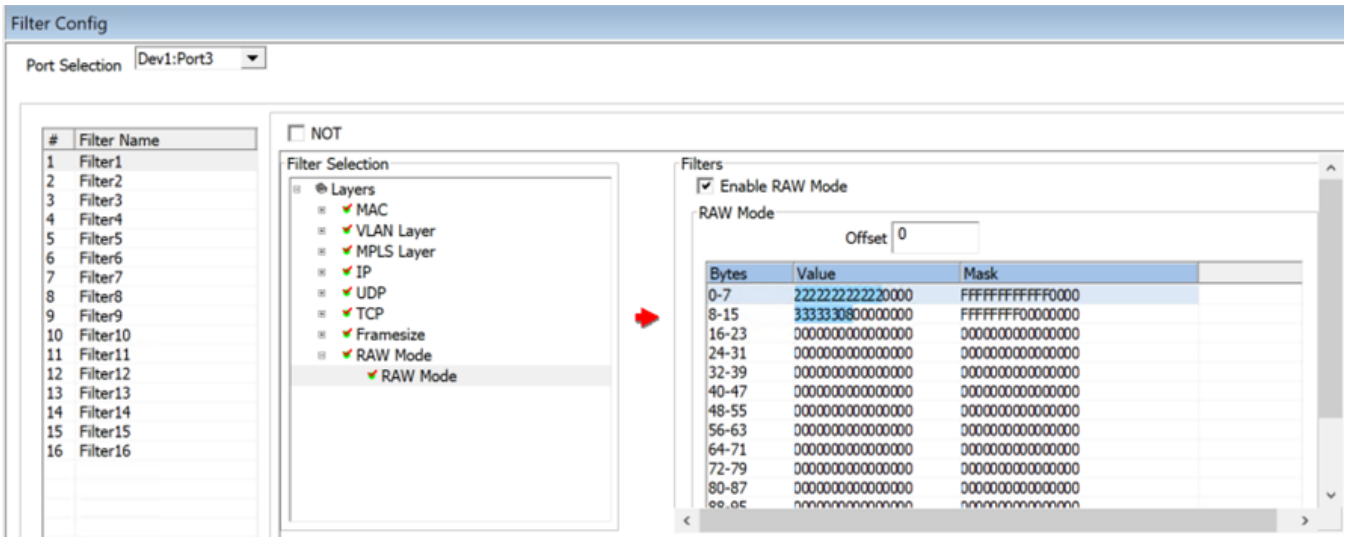


Figure: Wirespeed Filter - Raw Mode

Group Mode Filter Configuration:

Hardware Filters includes an option to group the configured filters. Individual filters can be selected and combined to form a group. Using “AND” and “OR” operators any combination of filter groups can be created. Maximum of 16 groups can be setup.

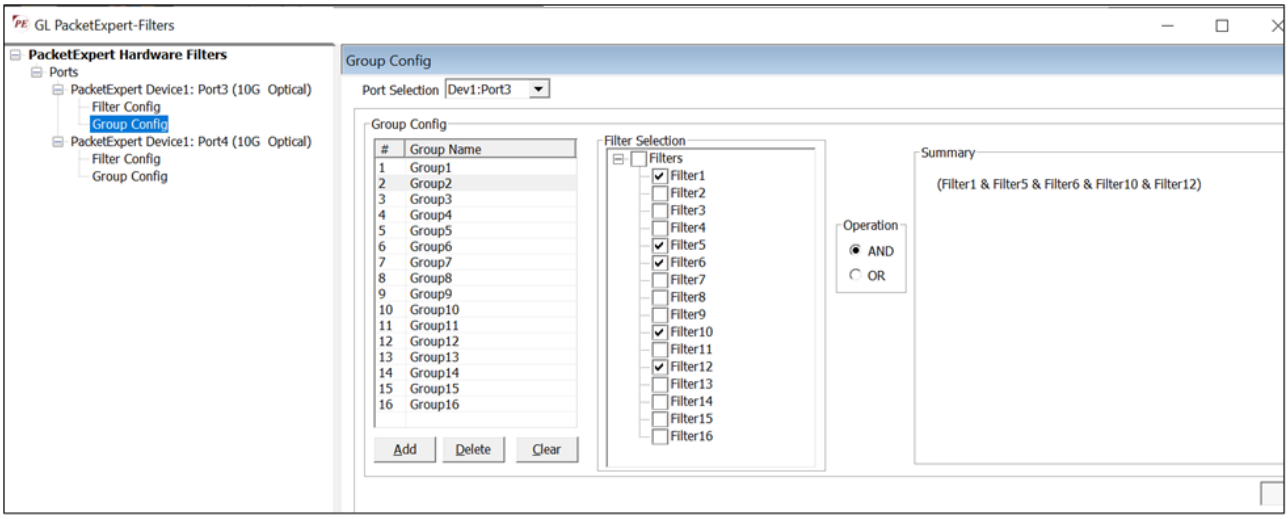


Figure: Grouping Filters

Super Group:

The multiple filter groups created can be further grouped to form Super Groups using “AND” or “OR” operators.

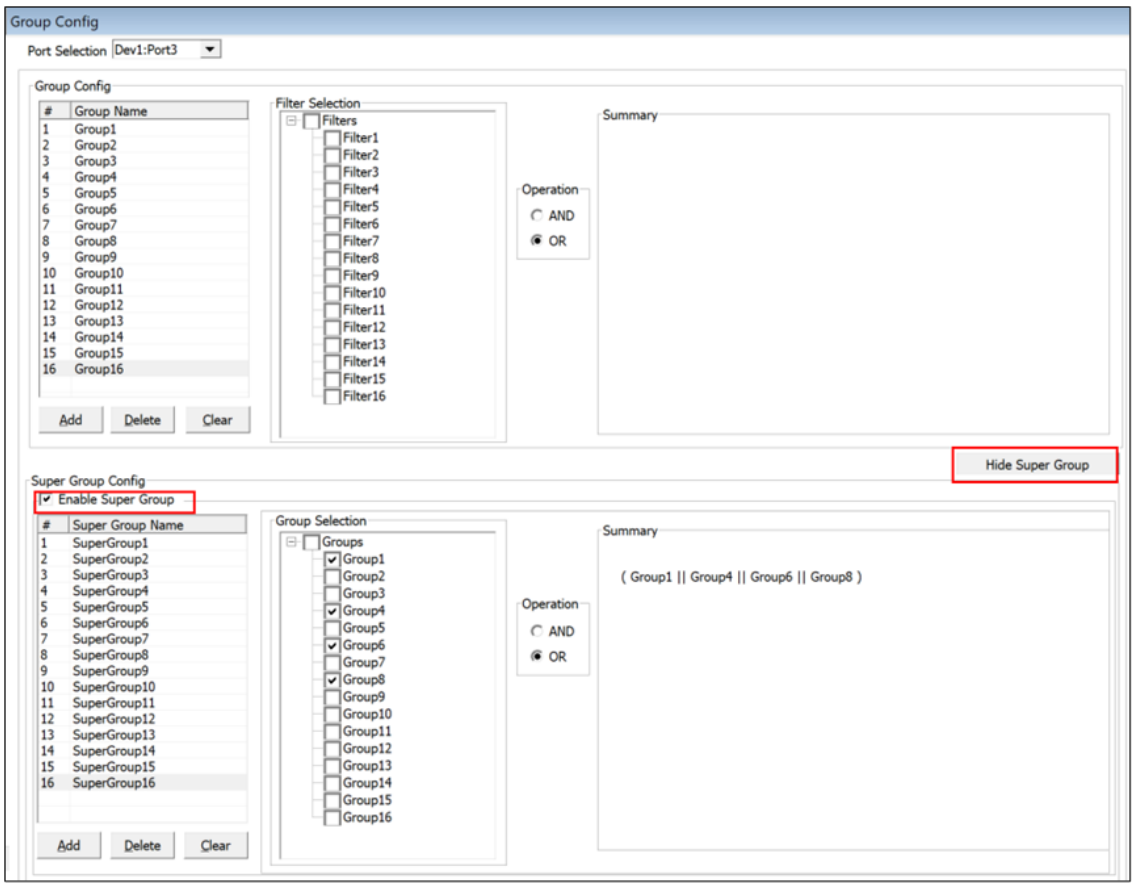


Figure: Super Grouping

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.

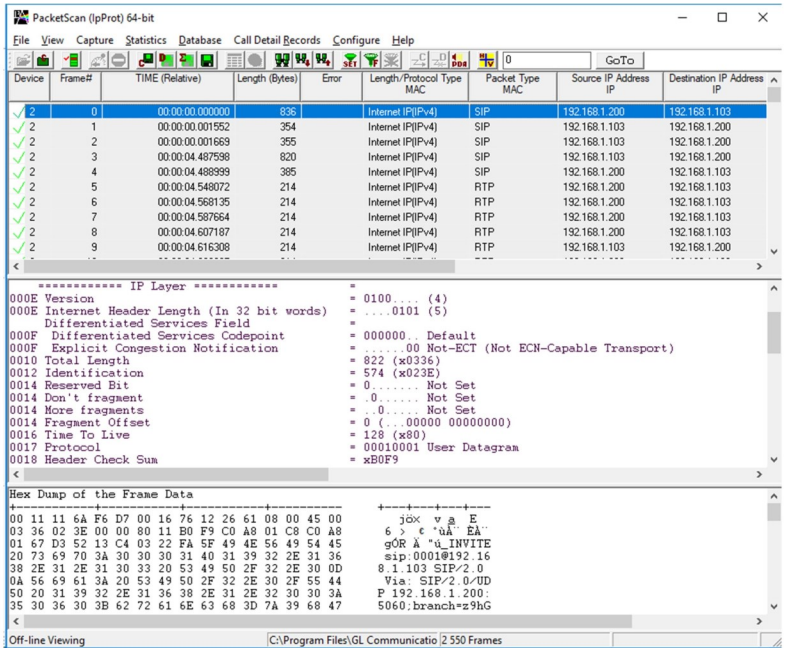


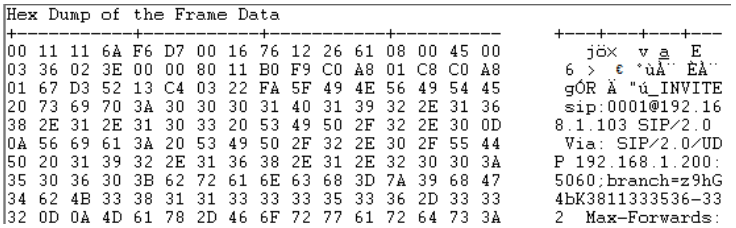
Figure: Different Views

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.

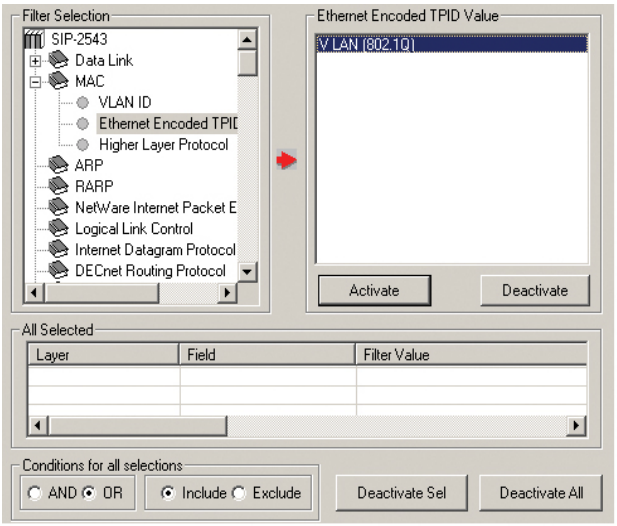


Figure: View Filter

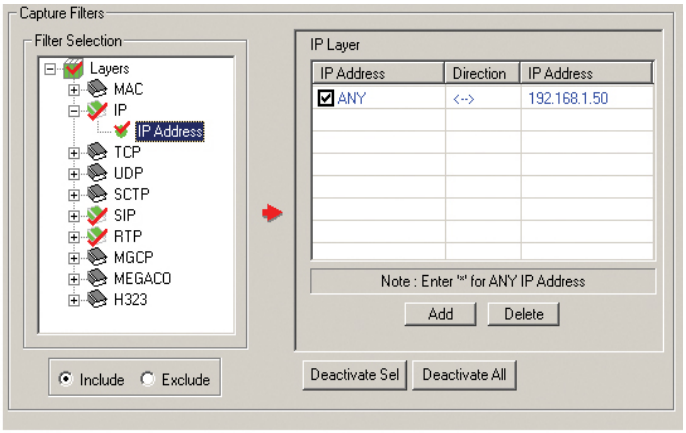


Figure: Capture Filter

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, & 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.

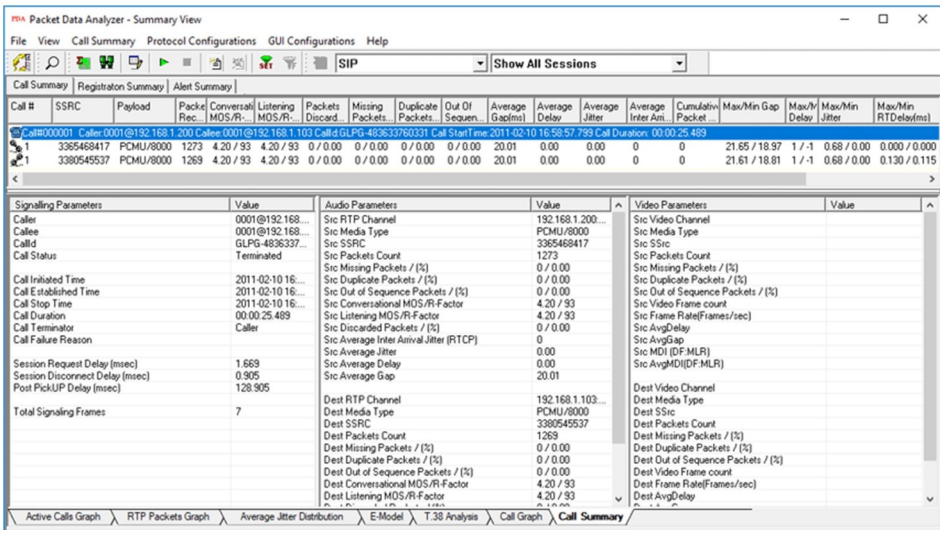
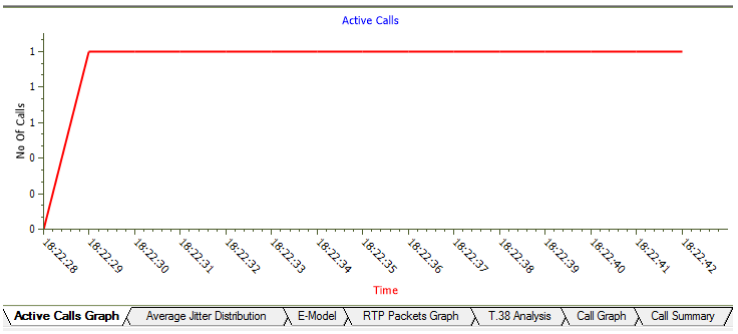


Figure: Call Summary, Audio and Video Statistics

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.



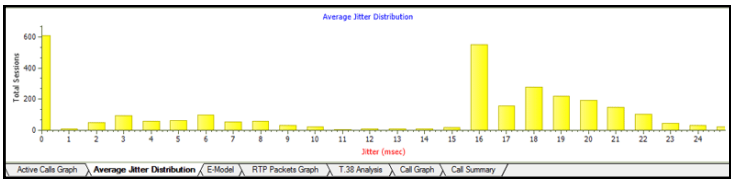


Figure: Active Calls and Average Distribution Graphs

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

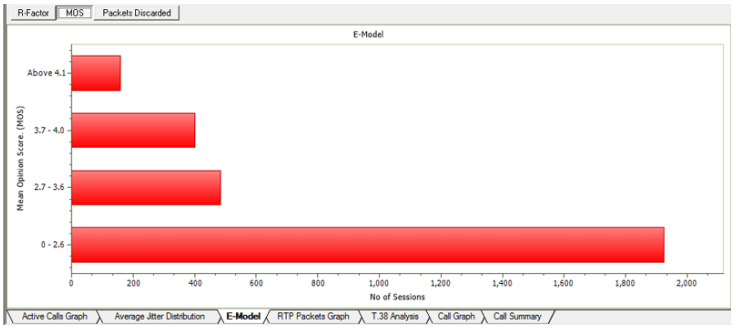


Figure: E-Model Graph

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.

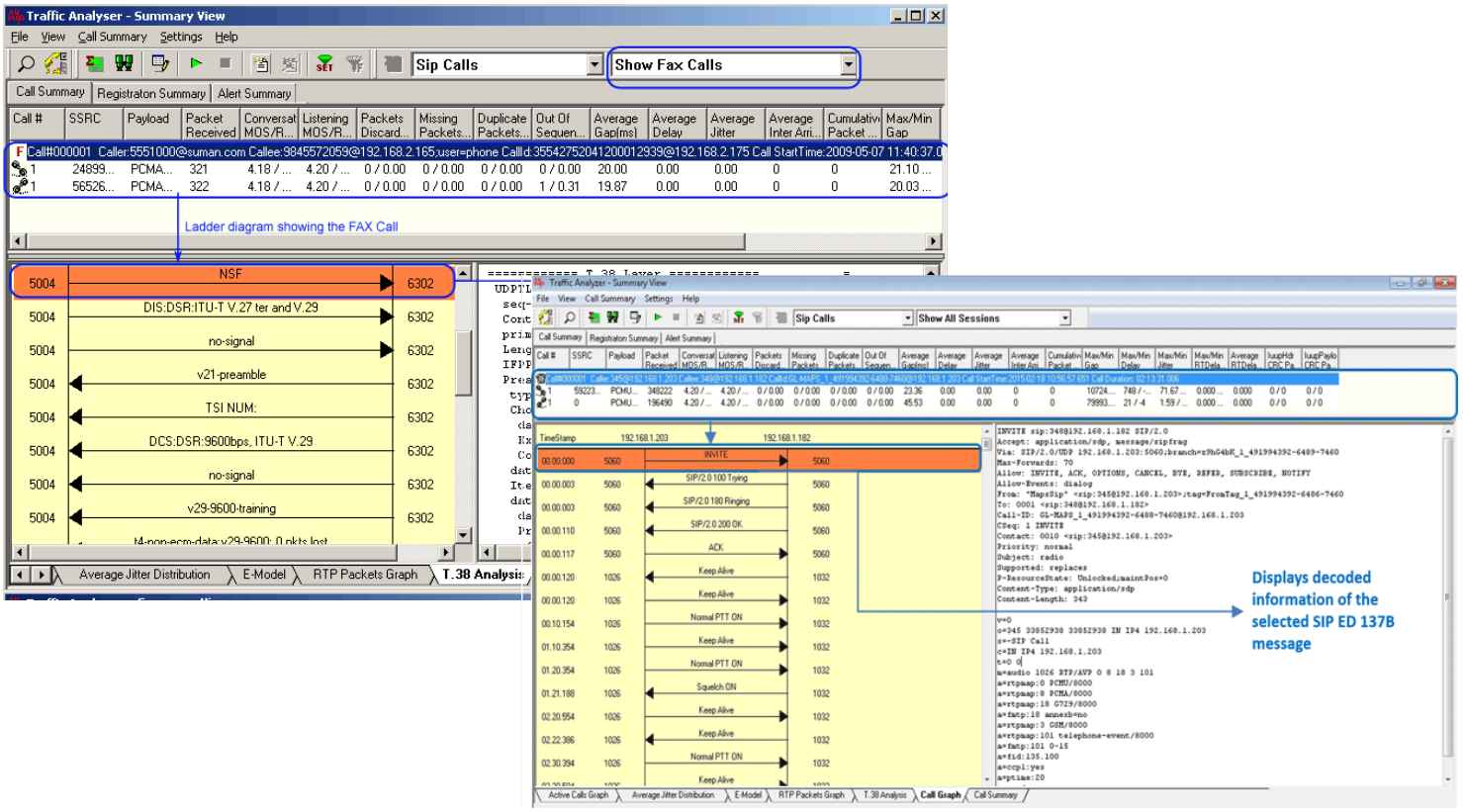


Figure: SIP, MEGACO, H.323, T.38, GSMA IuCS, SCCP Call Graph

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.

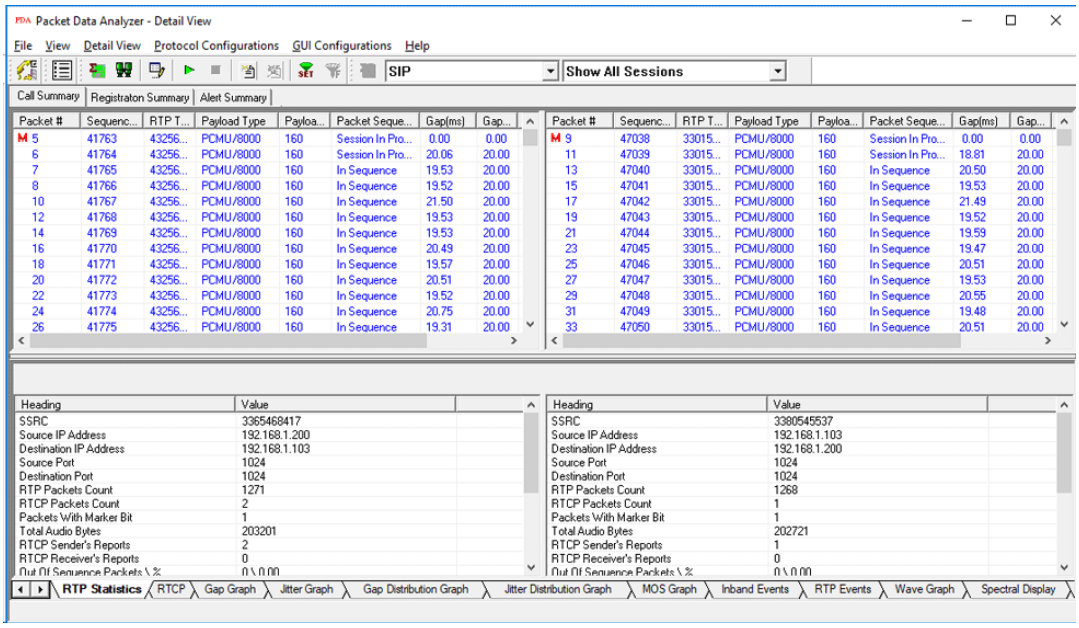


Figure: Traffic Analyzer Detail View

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.

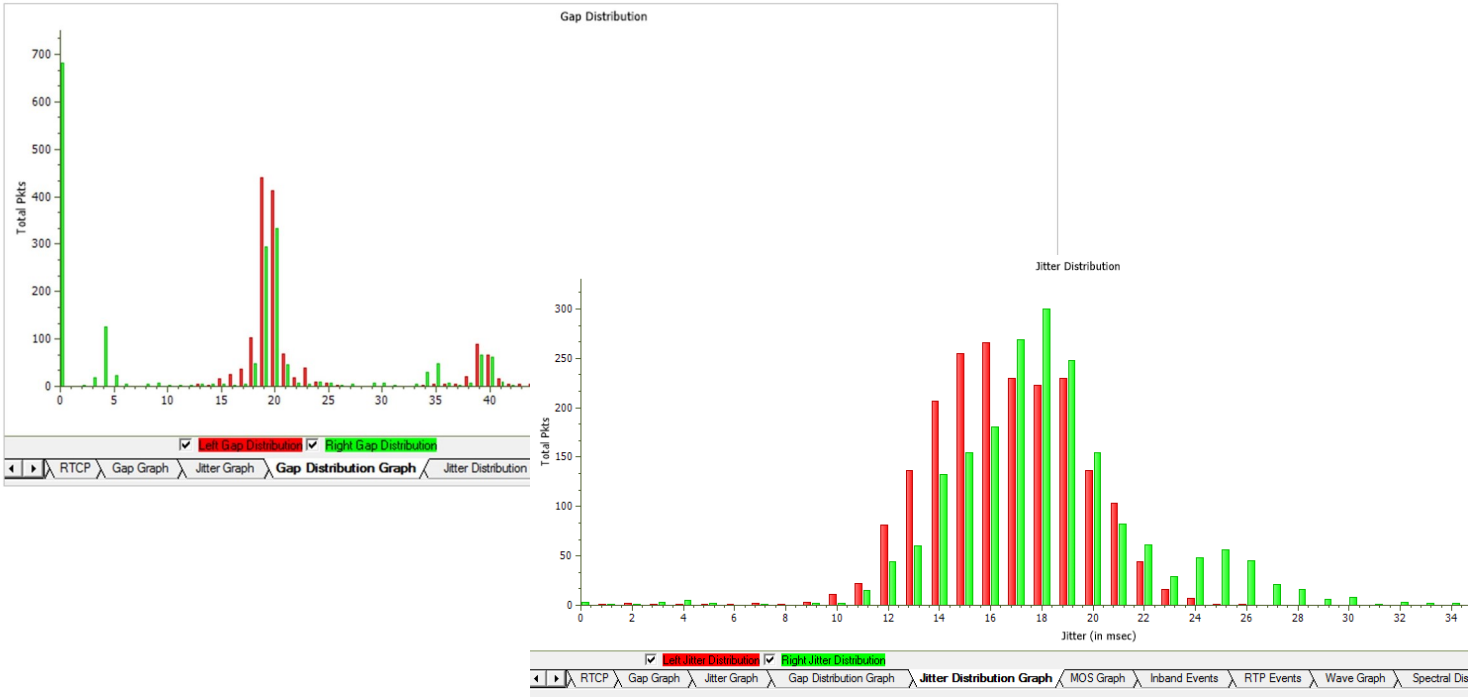


Figure: Gap/Jitter Distribution Graph

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.

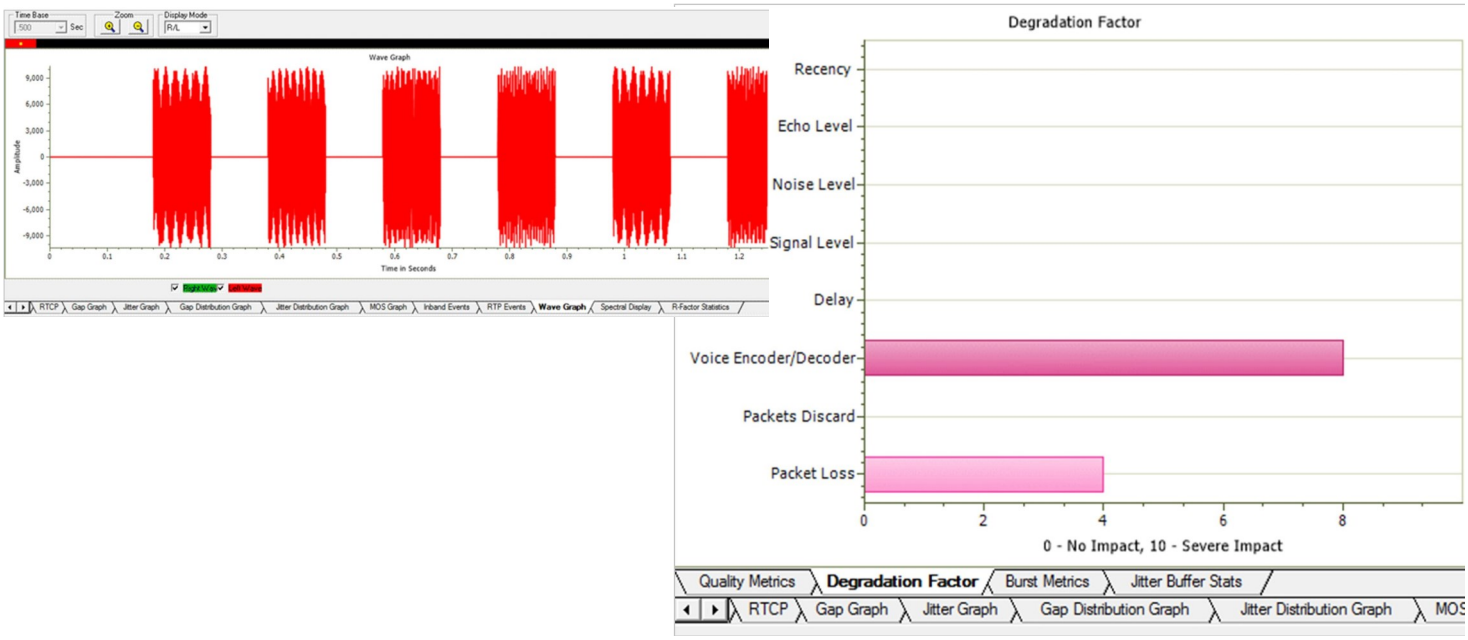


Figure: Wave Graph and Degradation Factors

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.

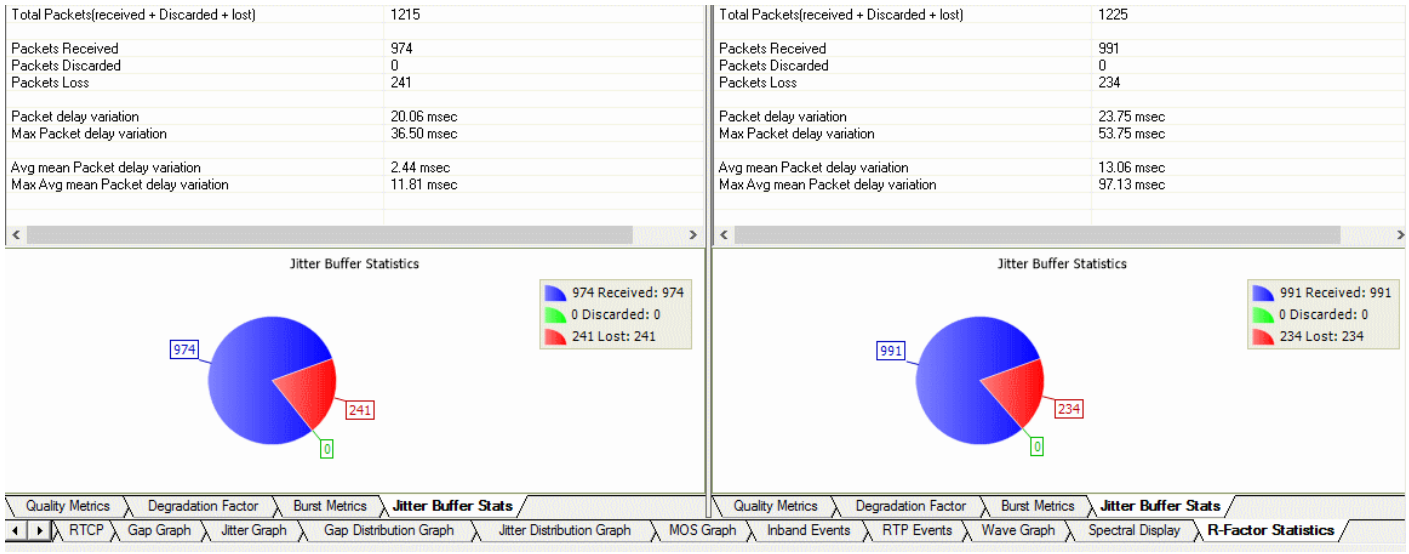


Figure: Jitter Buffer Statistics

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.

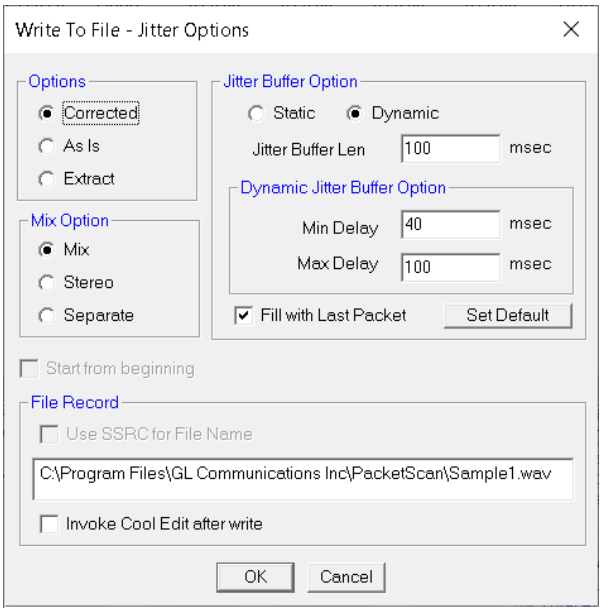


Figure: Write to File

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.

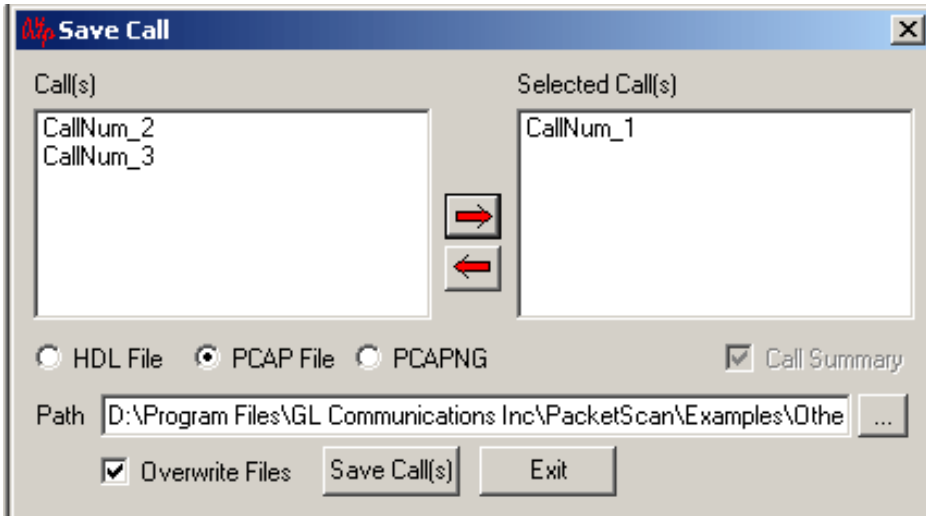


Figure: Save Call

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, & Frequency. Outband Events display RTP events as per RFC 2833 or 4733 with details such as Timestamp, Event, Power, & 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**.

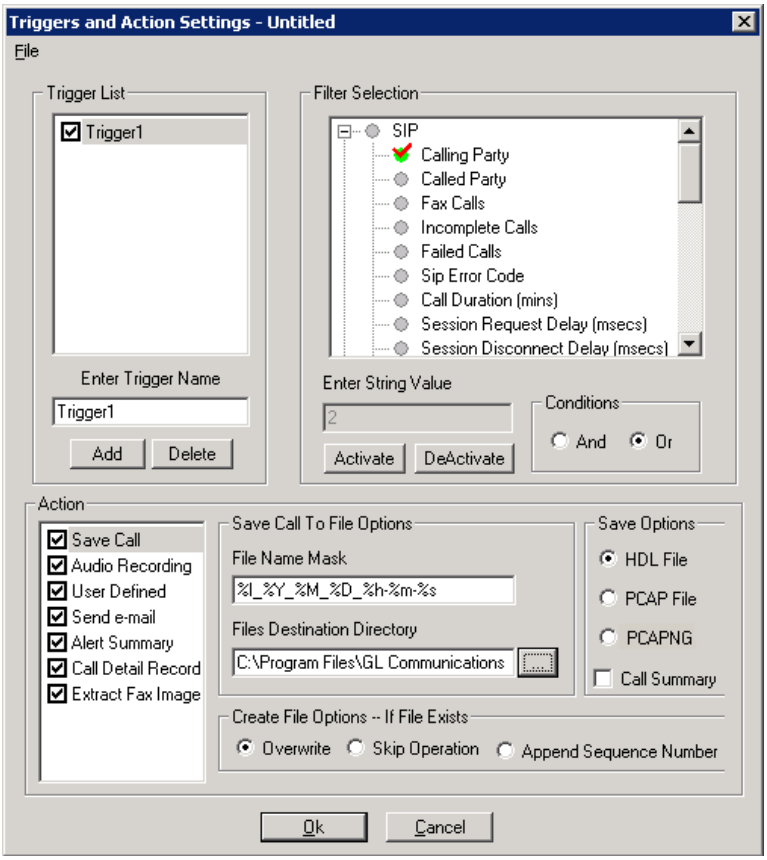
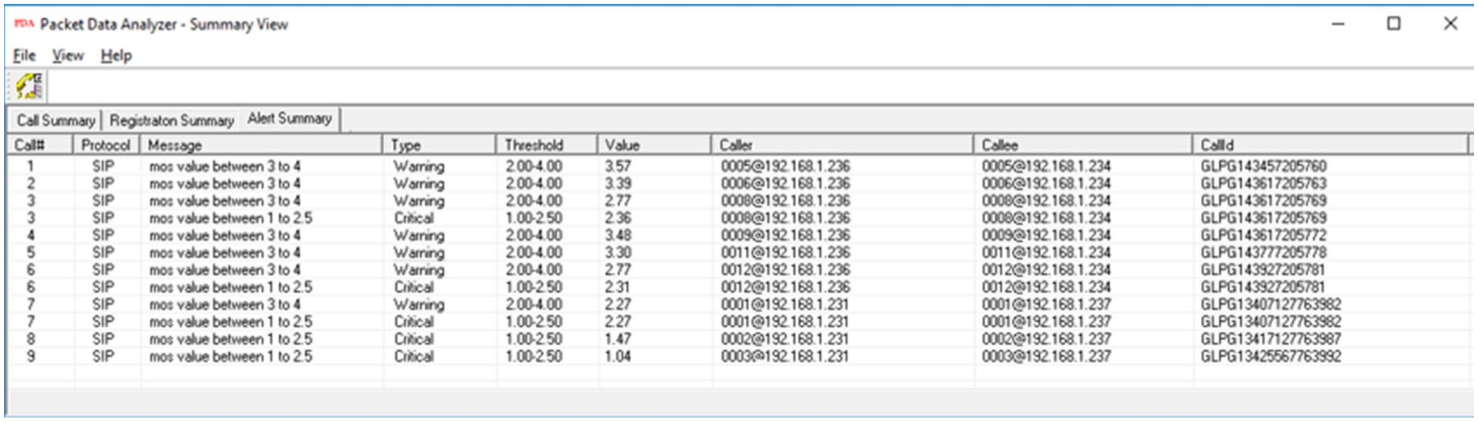


Figure: Trigger and Action Settings

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.

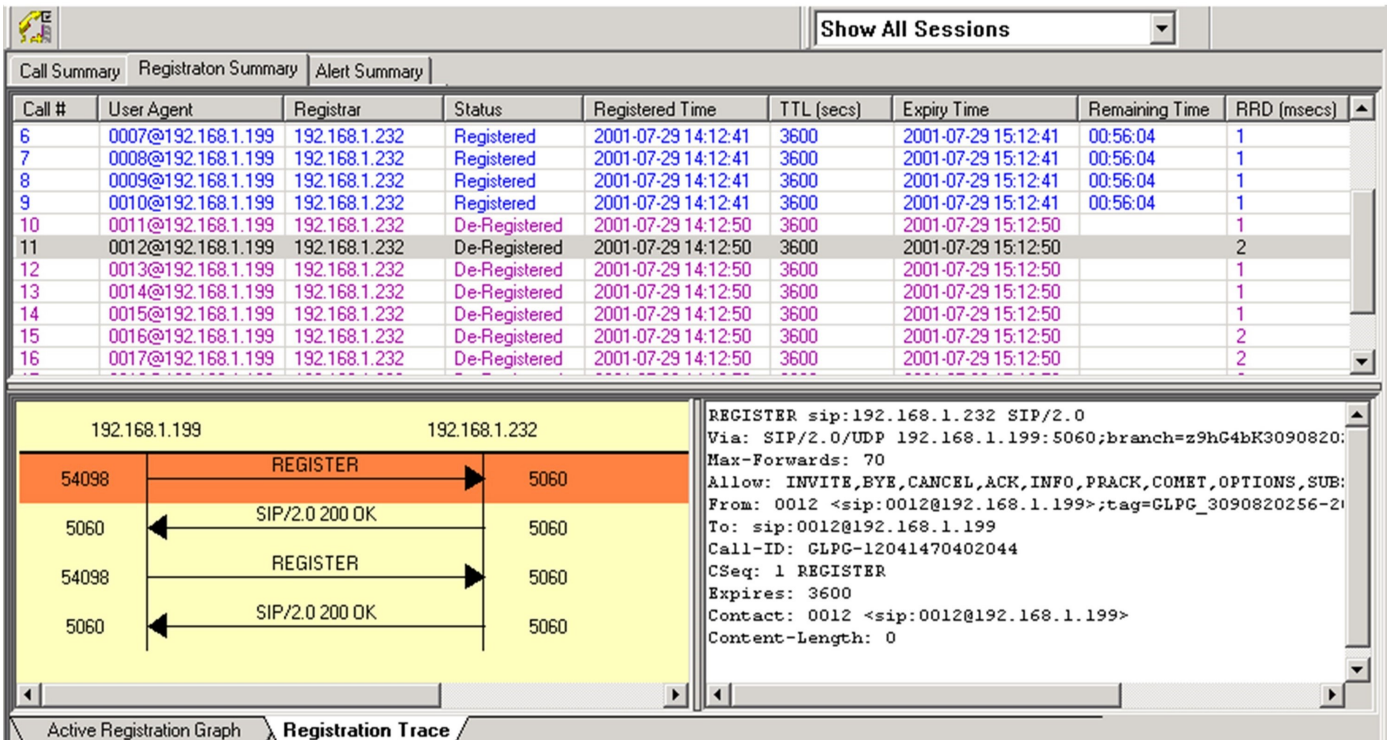


Call#	Protocol	Message	Type	Threshold	Value	Caller	Callee	CallId
1	SIP	mos value between 3 to 4	Warning	2.00-4.00	3.57	0005@192.168.1.236	0005@192.168.1.234	GLPG143457205760
2	SIP	mos value between 3 to 4	Warning	2.00-4.00	3.39	0006@192.168.1.236	0006@192.168.1.234	GLPG143617205763
3	SIP	mos value between 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	Related Hardware
PKV125	PacketScanPX™ Wirespeed filter, capture and analysis
PKV1251G	PacketScanPX™+PacketExpert™10GX – 1G
PKV12510G	PacketScanPX™+PacketExpert™10GX – 10G
PXN100	PacketExpert™ 10GX
PXN101	10G option for PXN100
PXN105	PacketExpert™ Wirespeed Record / Playback for PXN100
PKV100	PacketScan™ (Real-time and Offline)
PKV100	PacketScan™ - Offline
PKV120	PacketScan™ HD – High Density IP Traffic Analyzer w/ 4x1GigE

For more information, please visit PacketScanPX™ webpage.

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