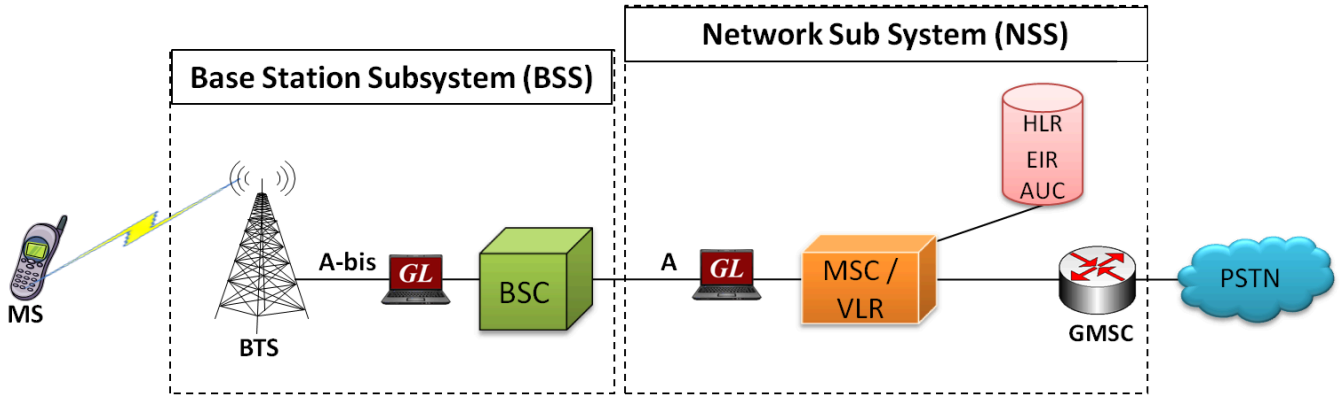
PacketScan™ GSM Protocol Analyzer for Wireless & IP Networks



PacketScan™ - GSM Protocol Analyzer
For A and Abis Interfaces

Overview

The Global System for Mobile (GSM) communications standard in GSM network can be delivered over TDM transport networks as well as with IP or Ethernet transport services. GL's GSM Protocol Analyzer within PacketScan™-All IP Protocol Analyzer is an optional module (PKV103) available with additional licensing with PacketScan analyzer (PKV100).

With the support of additional license, the PacketScan™ can be used to analyze the protocol exchanged between the MSC and BSC (A-interface) and BSC & BTS (Abis-interface) nodes of GSM network over IP backhaul. GL's GSM analyzer offers powerful features to capture, monitor, decode, and collect statistics of GSM messages over IP.

For more details, refer PacketScan™-All IP Protocol Analyzer webpage.

Main Features

- Decode and analyze complete GSM protocol stack on A and Abis interface
- Supports BSSAP, DTAP, BSSMAP , and GSM MAP protocols
- Advanced filtering and search based on any user selected protocol fields
- Any protocol field can be added to the summary view, filtering, and search features providing users more flexibility to monitor required protocol fields
- Trigger intelligent actions based on signaling and traffic conditions
- Support for Multi-technology, Multi-protocol
- Displays Summary, Detail, Hex dump, Statistics, and Call Detail Views
- Hex dump View displays the frame information in HEX and ASCII format, the contents of this view can also be copied to clipboard
- Statistics View displays statistics based on frame count, byte count, frames/sec, bytes/sec etc for the entire capture data
- Call Detail View displays called/ calling number, released calls, call status, & more
- Provides a consolidated interface for all the important settings required in the analyzer. All the configuration settings done in any of these options can be saved to a file, loaded from a configuration file
- Allows the captured frames to be saved to a trace file using different conventions such as user-defined prefixes, date-time prefixes, total number of files, file size, frame count, or time limit
- Supported on Windows® 10 and above operating system

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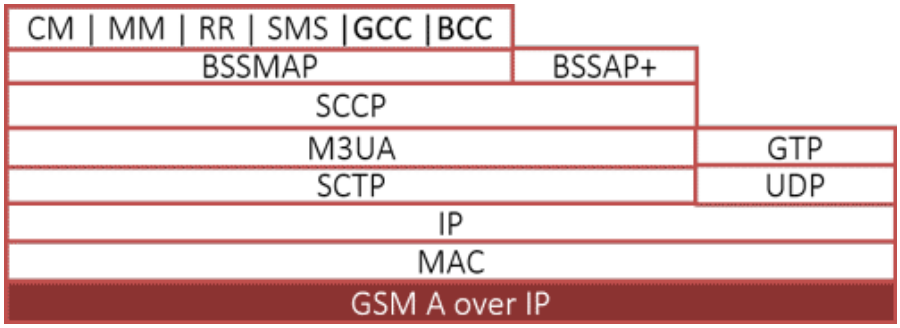
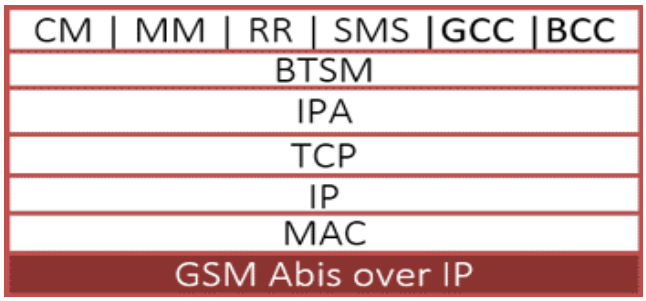
Protocol Stack and Standards

Entire GSM IP stack supported by PacketScan™.



GSM A over IP Protocol Stack



GSM Abis over IP Protocol Stack

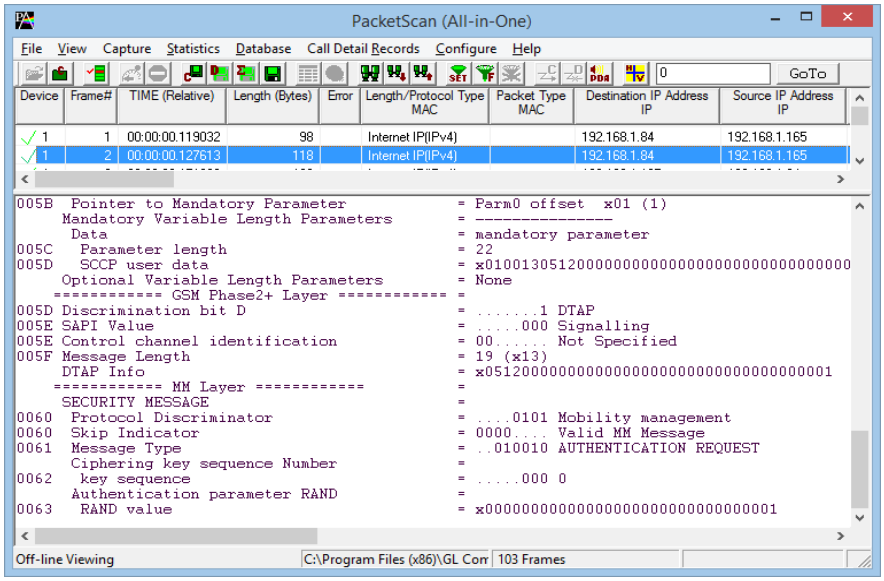
Supported Protocols	Standard / Specification Used
MTP3	Q.704, ITU-T Blue Book / ANSI T1.111-1996
SCCP	Q.713, CCITT (ITU-T) Blue Book / ANSI T1.112-1996
BSSMAP / DTAP	3GPP TS 08.08 V8.9.0
SMS	3GPP TS 03.40 V7.5.0 & 3GPP TS 04.11 V7.1.0 GSM 03.38 version 7.2.0 Release 1998
Test & Network Management Messages (ITU)	ITU-T Q.703, Q.704
Test & Network Management Messages (ANSI)	ANSI T1.111.4, ANSI T1.111.7
MM	3GPP TS 04.08 V7.17.0
CC	3GPP TS 04.08 V7.17.0
RR	3GPP TS 04.18 V8.13.0
BSSAP+	3GPP TS 29.018 V6.0.0
GCC (Group Call Control)	3GPP TS 44.068 V9.0.0
BCC (Broadcast Call Control)	3GPP TS 44.069 V9.0.0
BTSM	3GPP TS 08.58 V8.6.0

Summary and Detail View of GSM A over IP

User can select a frame in Summary View to analyze and decode each GSM A over IP frame in the Detail View.

The detail view of GSM A over IP call displays the following:

- MAC Layer
- IP Layer
- SCTP Layer
- MTP3 Layer
- SCCP Layer
- GSM Phase 2+ (BSSMAP) Layer
- MM Layer
- CC Layer



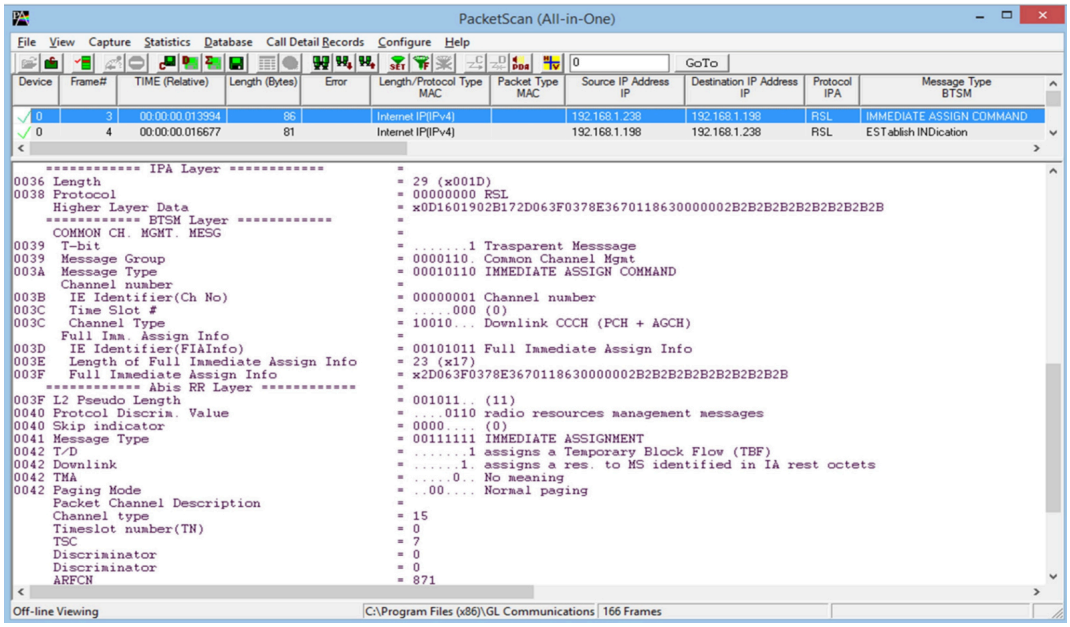
Detail View of GSM A over IP

Summary and Detail View of GSM Abis over IP

User can select a frame in Summary View to analyze and decode each GSM Abis over IP frame in the Detail View.

The detail view of GSM Abis over IP call displays the following:

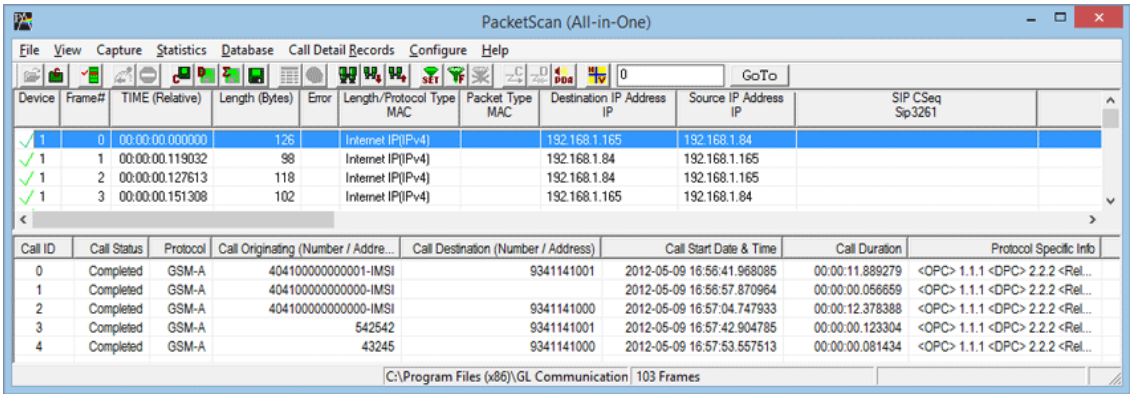
- MAC Layer
- IP Layer
- TCP Layer
- IPA Layer
- BTSM Layer
- MM, CC, RR Layer



Detail View of GSM Abis over IP

GSM Call Detail Records over IP

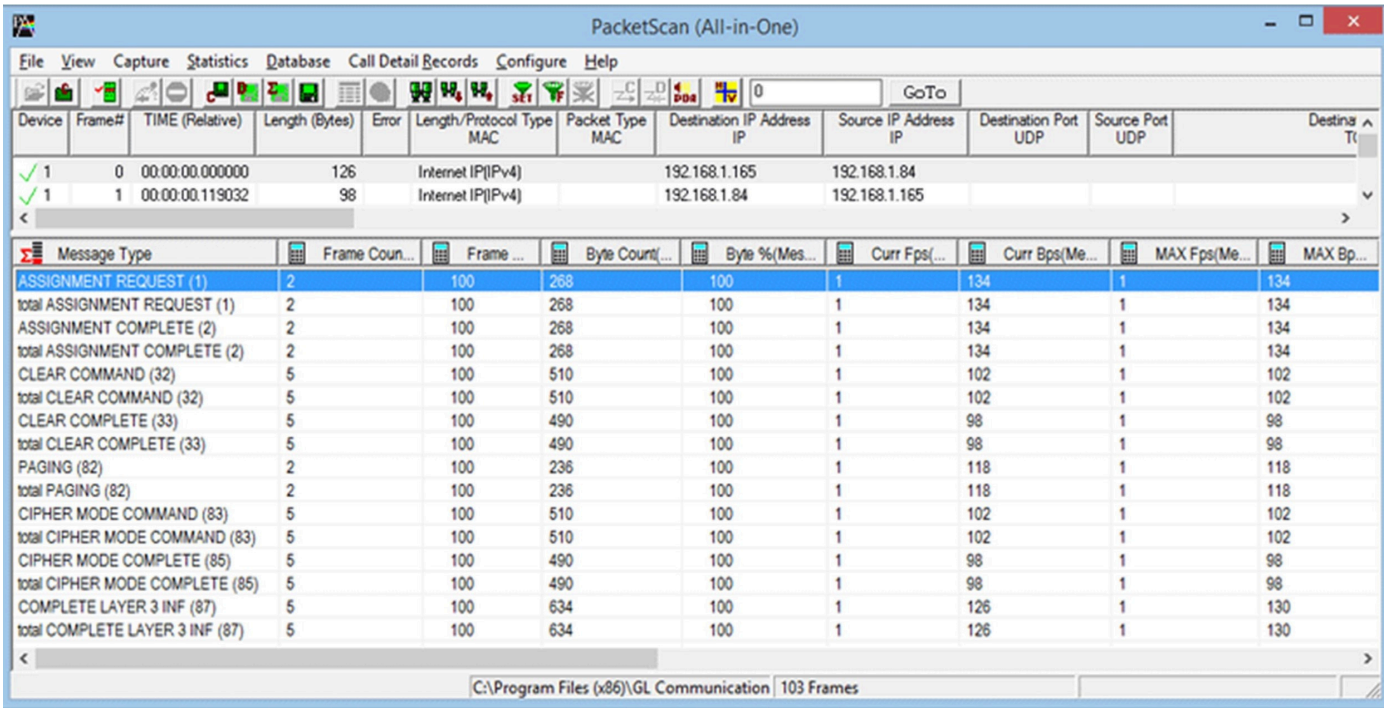
It displays the following fields - Call ID, Call status, Protocol, Call Originating (Number/Address), Call Destination (Number/Address), Call Start Date & Time, Call Duration, and Protocol Specific Information.



CDR View

GSM Statistics

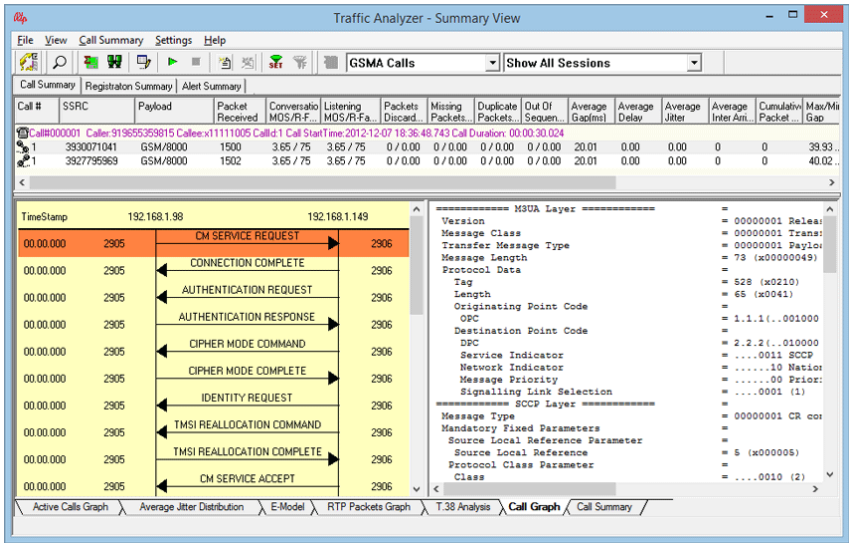
The Statistics are calculated based on the GSM protocol fields. The figure below depicts statistic data based on message types of GSM Phase2+ in PacketScan™.



Statistic View

GSM A Call Flow Analysis in PDA

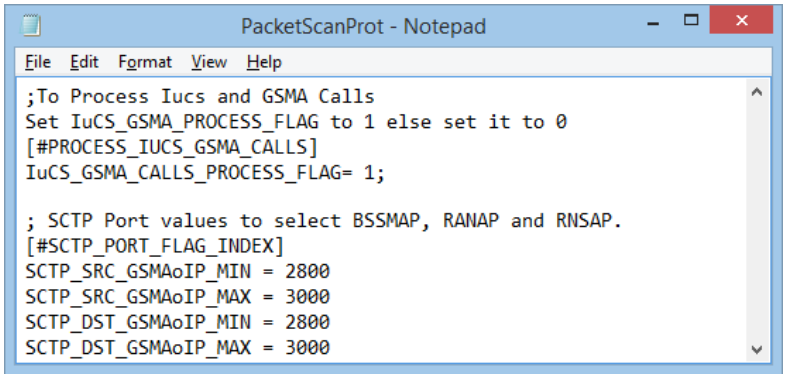
Displays GSM A call graph with decode of the selected message displayed to the right of message sequence.



Real-time / Offline Filter

INI Decode Options

The .INI file configuration enables the user to enter the required custom value for each protocol in the PacketScanProt.ini file (located in Program Files\GL Communication Inc) to get proper decodes. For GSM protocols, enter the minimum and maximum SCTP source and destination port values. Also, set the IuCS_GSMA_PROCESS_FLAG to 1 to decode GSM A over IP messages.



INI Decode Option for GSM

Network-Wide Monitoring of GSM Network

GL's NetSurveyorWeb™ is a web-based client that can connect to UMTS protocol analyzer probe for monitoring the entire GSM network through a web server that facilitates display of call data records, protocol frames, and KPIs.

This system allows you to deploy multiple GSM Analyzer probes to be deployed at strategic locations in a network, transmit and collect voice, data, protocol, statistics, and performance information, and relay this information to a central / distributed network management system (NMS).

For more details, visit NetSurveyorWeb™ webpage.

Buyer's Guide

Item No	Related Software
PKV103	IP Based GSM and UMTS Analysis
PKV109	Offline GSM and UMTS Analyzer, requires PKV101
PKV100	PacketScan™ All IP/VoIP Analysis Software (Real-time and Offline)
PKV101	PacketScan™ - Offline
PKV120	PacketScan™ HD – High Density IP Traffic Analyzer w/ 4x1GigE - includes PKV100 – Online (not Offline) for temporary audio codec support
PKV122	PacketScan™ HD – High Density IP Traffic Analyzer w/ 2x10GigE - includes PKV100 – Online (not Offline) for temporary audio codec support
PKV170	NetSurveyorWeb™ (Network Surveillance Software) for IP Network

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