PacketScan™ LTE Protocol Analyzer

Long Term Evolution is the all packet architecture and provides significantly greater air interface bandwidth to the mobile handset. It was developed as an enhancement to the existing 3G UMTS System (Universal Mobile Telecommunications System) to provide users enhanced mobile radio and internet access.

GL’s LTE Protocol Analyzer within PacketScan™-All IP Protocol Analyzer is an optional module (PKV107) available within PacketScan (PKV100) on purchase of additional licensing.

GL’s LTE Protocol Analyzer offers powerful features to capture and monitor live signaling and traffic over LTE networks. It captures, segregates, monitors and collects statistics on all calls. Test eNodeB or UE over S1, S3, S4, S5 (or S8), S6a, S10, S11, S13 and X2 interfaces of the LTE network.

GL’s PacketScan™-All IP Protocol Analyzer supports monitoring almost all of 2G, 3G and 4G protocols over IP network such as GSM, GPRS, UMTS, SIGTRAN, and LTE, in addition to SIP, MGCP, MEGACO, Skinny, SCCP, Diameter, and H.323.


Features
- Capture, Decode, and Analysis of Calls in LTE Network
- Supported protocols - NAS, S1AP, X2AP, eGTP, GTP-U, Diameter, SCTP, UDP, TCP, and IP
- Supported interfaces - LTE S1, S3, S4, S5 (or S8), S6a, S10, S11, S13 and X2 interfaces
- 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
- Supported on Windows® 7/8.1 (32 bit and 64 bit) OS

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Summary and Detail View of LTE
User can select a frame in Summary View to analyze and decode each LTE frame in the Detail View.
The detail view of LTE call displays the following:
- MAC Layer
- IP Layer
- UDP Layer
- eGTP Layer

Call Detail Records
LTE call detail view displays Call ID, Call status, Protocol, Call Originating (Number/Address), Call Destination (Number/Address), Call Start Date & Time, Call Duration, and Protocol Specific Information.

LTE Statistics
The Statistics are calculated based on the LTE protocol fields.
Displays statistic data based on message types of LTE protocol decodes in PacketScan™.

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 LTE protocols, the following options can be edited to customize the way the PacketScan™ decodes LTE protocols.
- eGTP Version – Rel 8 / Rel 9
- SCTP protocol payload identifier for S1AP – Rel 98 / Rel 9
- SCTP protocol payload identifier for X2AP

IN Menu
VoLTE Call Analysis in PDA View
Displays a Voice over LTE call graph with decode of the selected message displayed to the right of message sequence.

Network-Wide Monitoring of LTE Network
GL’s NetSurveyorWeb™ is a web-based client that can connect to LTE protocol analyzer probe for monitoring the entire LTE network through a web server that facilitates display of call data records, protocol frames, and KPIs. This system allows you to deploy multiple LTE 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 information, please http://www.gl.com/networkmonitoring.html#voip.

Supported Protocol Stack and Standards
LTE stack supported by PacketScan™.

![UMTS Protocol Stack](image)

**Supported Protocols**

<table>
<thead>
<tr>
<th>Protocols</th>
<th>Standard / Specification Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCTP</td>
<td>RFC 2960</td>
</tr>
<tr>
<td>S1AP</td>
<td>3GPP TS 36.413 V9.0.0</td>
</tr>
<tr>
<td>X2AP</td>
<td>3GPP TS 36.423 V9.0.0</td>
</tr>
<tr>
<td>eGTP</td>
<td>3GPP TS 29.274 V8.0.0</td>
</tr>
<tr>
<td>NAS</td>
<td>3GPP TS 24.301 V9.0.0</td>
</tr>
</tbody>
</table>

![LTE Call Flow Ladder Diagram](image)

Buyers Guide
PKV107 – LTE (Long Term Evolution) Analyzer, requires PKV100
PKV108 – Offline LTE (Long Term Evolution) Analyzer (Optional with PacketScan™), requires PKV101
PKV100 – PacketScan™ (Real-time and Offline)
PKV101 – PacketScan™ - Offline
PKV120 – PacketScan™ HD – includes PKV100 – Online (not Offline) for temporary audio codec support
PKV121 – PacketScan™ FB - (Offline Analyzer)
PKV301 – LAN Switch w/ Mirror Port
PKV105 – SIGTRAN Offline Analyzer
PKV106 – Offline SIGTRAN Analyzer (Optional with PacketScan™)
PKV103 – IP Based GSM and UMTS Analyzer, requires PKV100
PKV109 – Offline IP Based GSM and UMTS Analyzer (Optional with PacketScan™)
PKV104 – FaxScan™ - Decodes Fax images in TIFF format from PCAP files
PCD103 – AMR Codec for PacketScan™
PCD104 – EVRC Codec for PacketScan™
PCD105 – EVRC-B Codec for PacketScan™
PCD106 – EVRC-C Codec for PacketScan™
PKV170 – NetSurveyorWeb™ (Network Surveillance Software) for IP Network
PKV171 – Network Surveillance Agent Toolkit