MAPS™ GSM - A Interface Emulator

Overview

GL’s Message Automation & Protocol Simulation (MAPS™) is a powerful Protocol Test platform-supporting a wide range of protocols such as GSM over A interface, A-bis interface, SS7, ISDN, MGCP, UMTS, LTE, and many others.

GL’s GSM A Interface Emulator is an advanced protocol simulator/tester for GSM simulation over A interface that can simulate BSSMAP and DTAP messages and signaling specification as defined by 3GPP standards. The tester supports testing network elements MSC and BSC, Error tracking, regression testing, load testing/call generation and generation of high volumes of GSM traffic. It is able to run pre-defined test scenarios against GSMA interface test objects in a controlled & deterministic manner.

GSM A Interface Emulator supports powerful utilities like Message Editor, Script Editor and Profile Editor which allow new scenarios to be created or existing scenarios to be modified using BSSMAP and DTAP messages and parameters.

For more details, refer to http://www.gl.com/maps-gsma.html

Main Features

- GSM A Interface simulation over TDM (E1/T1)
- Supports transmission and detection of TDM traffic - digits, voice file, single/dual tones
- MAPS™ can be configured to act as either BSC or MSC
- User-friendly GUI for configuring the MTP Layers
- User Configurable Signaling Links
- Supports all Call Control, Mobility Management, and Radio Resource messages
- Access to all BSSMAP and DTAP Message Parameters like CM Service Request, Paging, Call Control messages, Release messages, and more
- User controlled access to optional parameters such as timers.
- Supports Authentication, TMSI Reallocation, Encryption, and other optional procedures
- Ready scripts for Mobile Originating, Mobile terminating, and Location Updating procedures
Testbed Setup Configuration

Test Bed setup is provided to establish communication between MAPS™ GSM A and the DUT. It includes Source and Destination node parameter configurations, MTP signaling, Link Set parameters, Circuit Group parameters, and end user configuration to transmit and receive GSM A messages. Default profile used to configure MAPS™ GSM A with BSC and MSC end terminal parameters.

Pre-processing Tools

Profile Editor
This feature allows loading profile to edit the values of the variables using GUI, replacing the original value of the variables in the message template.

An XML file defines a set of multiple profiles with varying parameter values that allow users to configure call instances in call generation and to receive calls.

Users can configure the traffic options for Auto traffic type or User-defined traffic type. Supported traffic configuration includes Send/Receive file, DTMF/MF digits, and Single/Dual tones.

Message Editor

With message editor, users can build a template for each protocol message type. The value for each field may be changed in the message template prior to testing. The protocol fields comprises of mandatory fixed parameters, mandatory variable parameters, and optional variable parameters.

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Call Generation and Reception

In call generation, MAPS™ is configured for the out going messages, while in call receive mode, it is configured to respond to incoming messages. Tests can be configured to run once, multiple iterations and continuously. Also, allows users to create multiple entries using quick configuration feature.

The editor allows to run the added scripts sequentially (order in which the scripts are added in the window) or randomly (any script from the list of added script as per the call flow requirements). The test scripts may be started manually or they can be automatically triggered by incoming messages.

Typical GSM A Interface Call Procedures

MAPS™ GSM A can be configured as Base Station Controller (BSC) and at the network as MSC. Location Update procedure is initiated by sending request message to the Network (MSC), and following the LUC procedure the Mobile Originating Call (MOC) is initiated with CM Service Request sent to the Network (MSC).
Supported Protocol Standards

<table>
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<th>Supported Protocols</th>
<th>Standard / Specification Used</th>
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<tr>
<td>SCCP</td>
<td>Q.713, CCITT (ITU-T) Blue Book</td>
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<td>MTP3</td>
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<td>BSSMAP/DTAP</td>
<td>3GPP TS 08.08 V8.9.0</td>
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<td>MM / CC</td>
<td>3GPP TS 04.08 V7.17.0</td>
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<td>RR</td>
<td>3GPP TS 04.18 V8.13.0</td>
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<td>SMS</td>
<td>3GPP TS 03.40 V7.5.0 &amp; 3GPP TS 04.11 V7.1.0 GSM 03.38 version 7.2.0 Release 1998</td>
</tr>
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Buyer’s Guide

XX692 – MAPS™ GSM-A Interface Emulator
xx610, xx620 – TDM Traffic Options

Recommended Software

XX120 - SS7 Analysis Software
PKV107 - LTE Protocol Analyzer
XX165 - T1 or E1 UMTS Protocol Analyzer
OLV165 - Offline UMTS Protocol Analyzer
LTS206 - OC-3 / STM-1 UMTS Protocol Analysis
LTS306 - OC-12 / STM-4 UMTS Protocol Analysis
XX100 - ISDN Analyzer Software

Related Software

XX648 – MAPS™ ISDN
XX642 - MAPS™ ISDN LAPD Conformance Test Suite
XX693 – MAPS™ GSM-Abis
PKS130 - MAPS™ SIGTRAN (SS7 over IP)
PKS132 - MAPS™ MAP over IP
PKS140 - MAPS™ LTE- S1 Interface
PKS142 - MAPS™ LTE- eGTP (S3, S4, S5, S8, S10, S11 and S16) Interfaces
PKS164 - MAPS™ UMTS - IuPS Interface Emulation
PKS160 - MAPS™ UMTS - IuCS and Iuh Interface Emulation
PKS135 - MAPS™ ISDN-SIGTRAN (ISDN over IP)
PKS120 - MAPS™ SIP
PKS121 - MAPS™ SIP Conformance Test Suite (Test Scripts)
PKS122 – MAPS™ MEGACO
PKS123 – MAPS™ MEGACO Conformance Test Suite (Test Scripts)
PKS124 - MAPS™ MGCP
PKS125 - MAPS™ MGCP Conformance Test Suite (Test Scripts)

Related Hardware

HTE001 - Universal HD T1 or E1 PCI Cards
UTE001 - USB based Dual T1 or E1 Laptop Analyzer
PTE001 - tProbe™ T1 E1 Base Unit
FTE001 - QuadXpress T1 E1 Main Board (Quad Port– requires additional licenses)
FTE001 - OctalXpress T1 E1 Main Board plus Daughter Board (Octal Port– requires additional licenses)

For complete list of MAPS™ products, refer to http://www.gl.com/maps.html webpage.