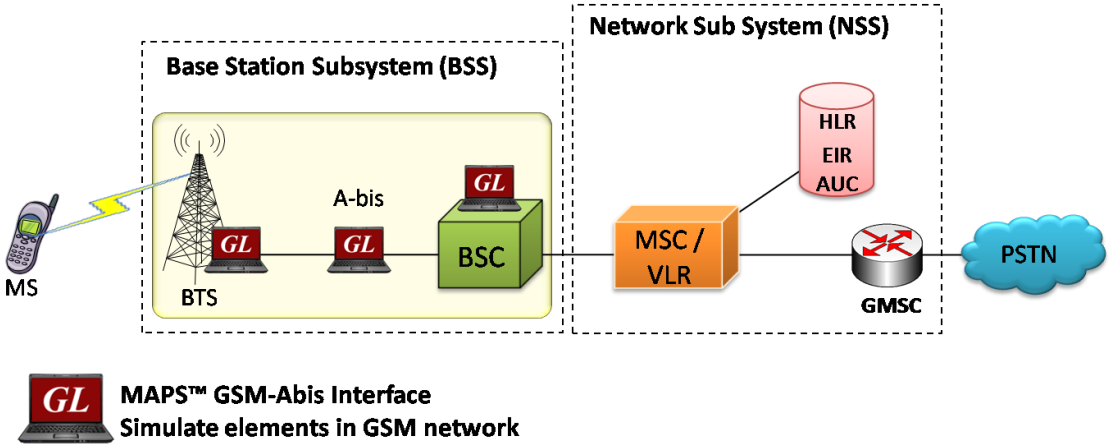
MAPS™ GSM - Abis Interface Emulator



Overview

GL's Message Automation & Protocol Simulation (MAPS™) is a powerful Protocol Test platform-supporting a wide range protocols such as GSM over A interface, A-bis interface, SS7, ISDN, MGCP, SIP, MEGACO, and SIGTRAN.

GL's MAPS™ GSM-Abis Interface Emulator is an advanced protocol simulator/tester for GSM simulation over Abis Interface that can simulate BTSM messages and signaling specification as defined by 3GPP standards. The tester supports testing network elements BTS and BSC, error tracking, regression testing, conformance testing, load testing/call generation and generation of high volumes of GSM traffic. It can run pre-defined test scenarios against GSM Abis interface test objects in a controlled & deterministic manner.

GSM Abis 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 BTSM messages and parameters.

GL also provides an independent GUI based GSM protocol analyzer for online capture and decode of the signaling in real-time both during tests and as a stand-alone tracer for live systems.

For more information, please visit MAPS™ GSM Abis Interface Emulator web page.

Main Features

- GSM Abis Interface simulation over TDM (E1/T1).
- GSM Abis Interface Emulator can be configured to act as either BSC or BTS.
- Supports transmission and detection of TRAU traffic - digits, voice file, single /dual tones.
- Multiple E1/T1 line interfaces supported.
- User-friendly GUI for configuring the LAPD Layer.
- Supports Dedicated Channel Management (DCM), Radio Link Management (RLM), and Common Channel Management (CCM) message groups.
- Configure AGCH, ACCH, SDCCH, BCCH and other logical channels.
- Supports all Call Control, Mobility Management, and Radio Resource messages and procedures.
- Access to all BTSM Message Parameters like TMSI, IMSI, Request Reference, and others.
- 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.
- Logging of all messages in real time.
- Automation, Remote access, and Schedulers to run tests 24/7

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Testbed Setup Configuration

Test Bed configuration feature allows the users to configure the necessary BTS and BSC GSM Abis interface entities with signaling port number and timeslots in order to establish communication between the MAPS™ and the DUT.

Once the LAPD layer is configured properly, BTSM messages can be transmitted and received over LAPD layer.

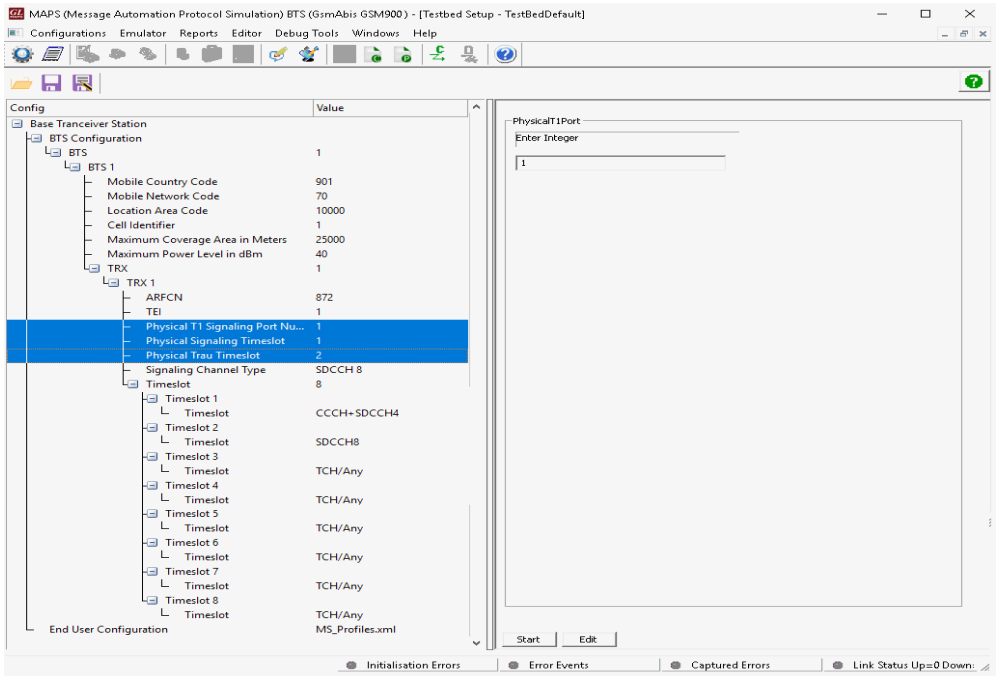


Figure: Testbed Setup

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.

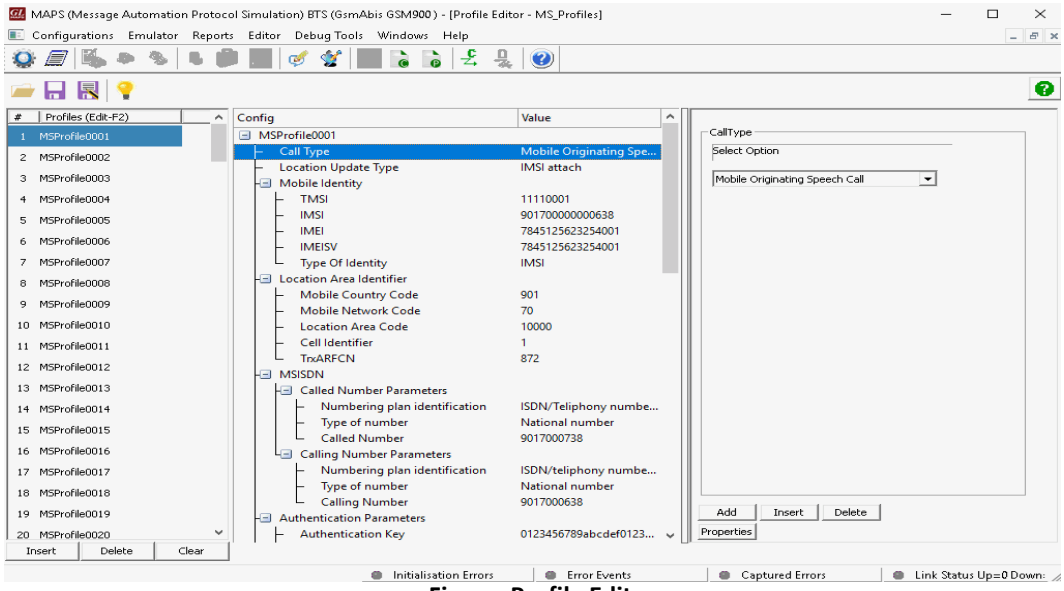


Figure: Profile Editor

Pre-processing Tools...

SCRIPT EDITOR

The script editor allows the user to create/edit scripts and access protocol fields as variables for the message template parameters. The script uses pre-defined message templates to perform send and receive actions.

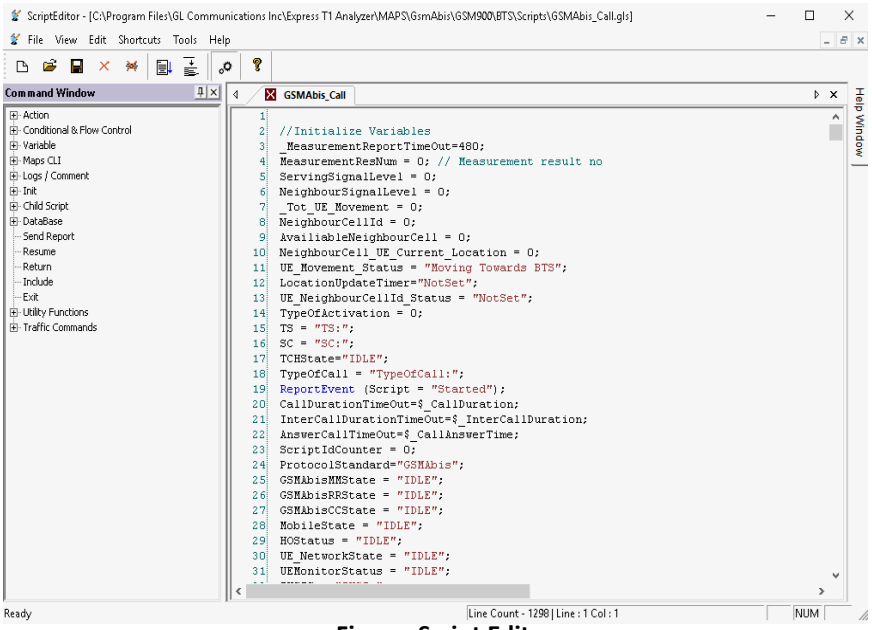


Figure: Script Editor

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.

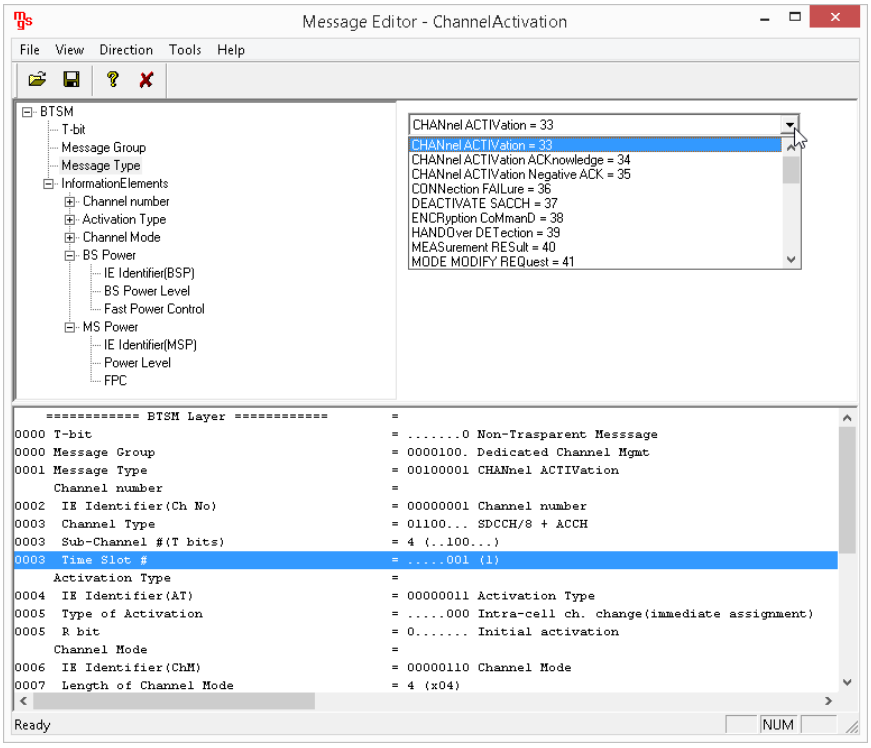


Figure: Message Editor

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.

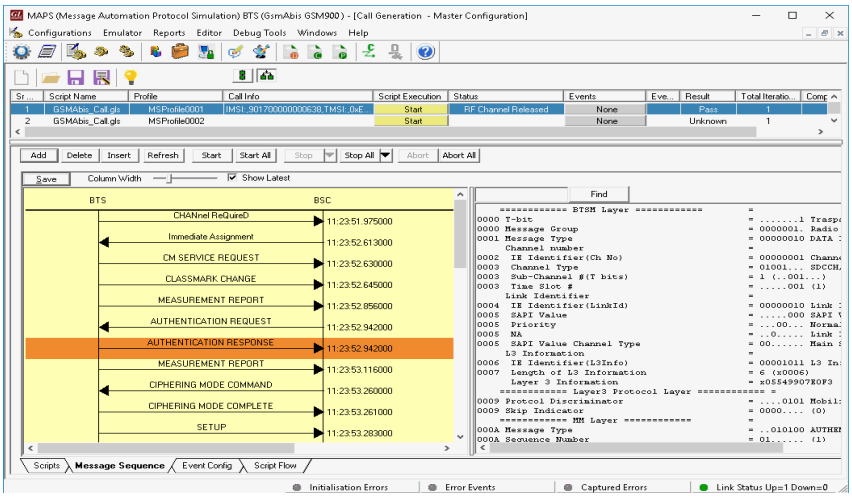


Figure: Call Generation

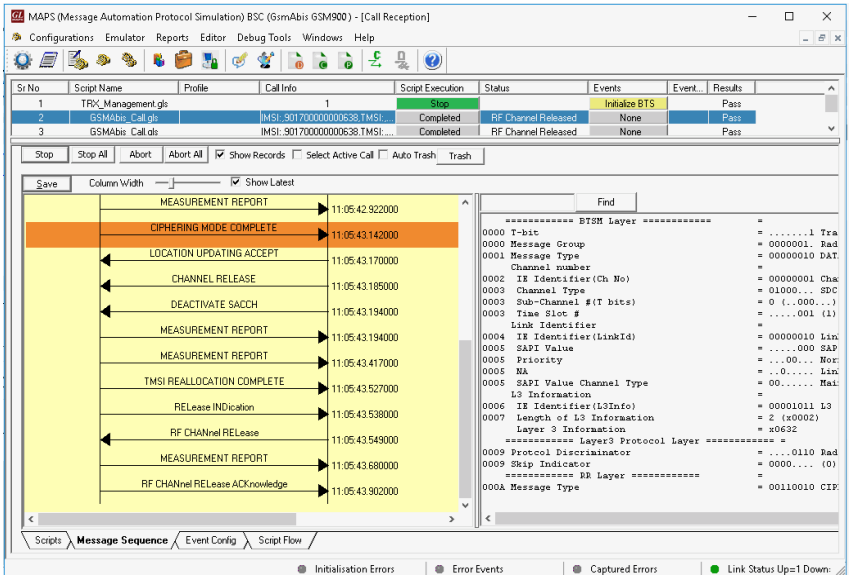


Figure: Call Reception

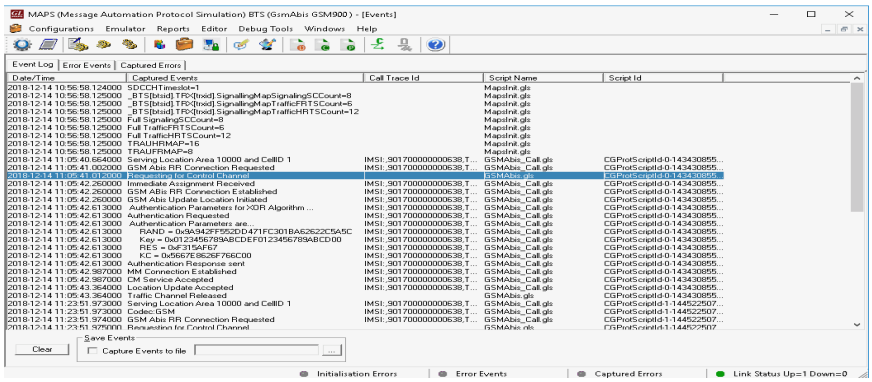


Figure: Events Log

GSM Abis Interface Call Procedures

MAPS™ GSM Abis can be configured as Base Transceiver Station (BTS) or BSC to simulate LUC, MOC, and MTC call procedures in the GSM Abis interface.

In Channel Assignment procedure, Channel Required request message is sent from BTS end, the BSC activates the channel and replies with Immediate Assignment message to BTS.

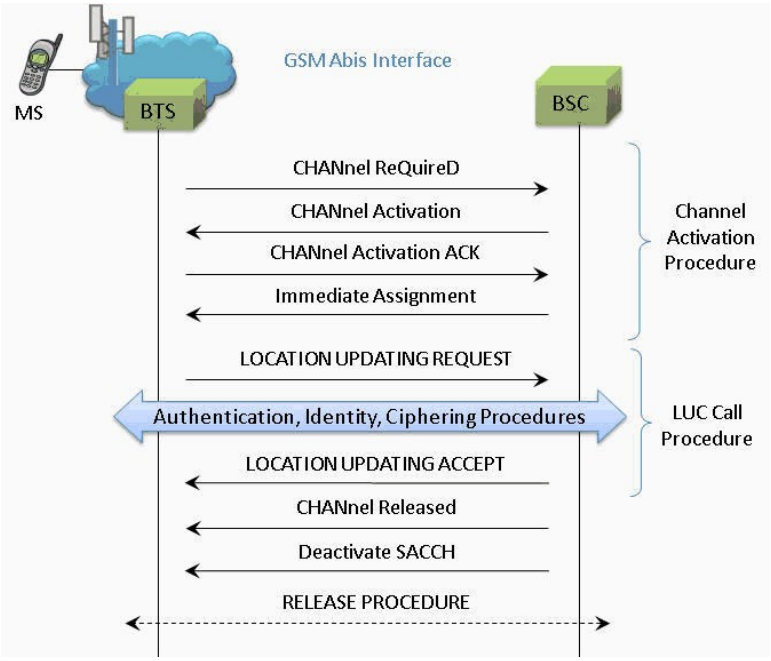


Figure: LUC Call Procedure

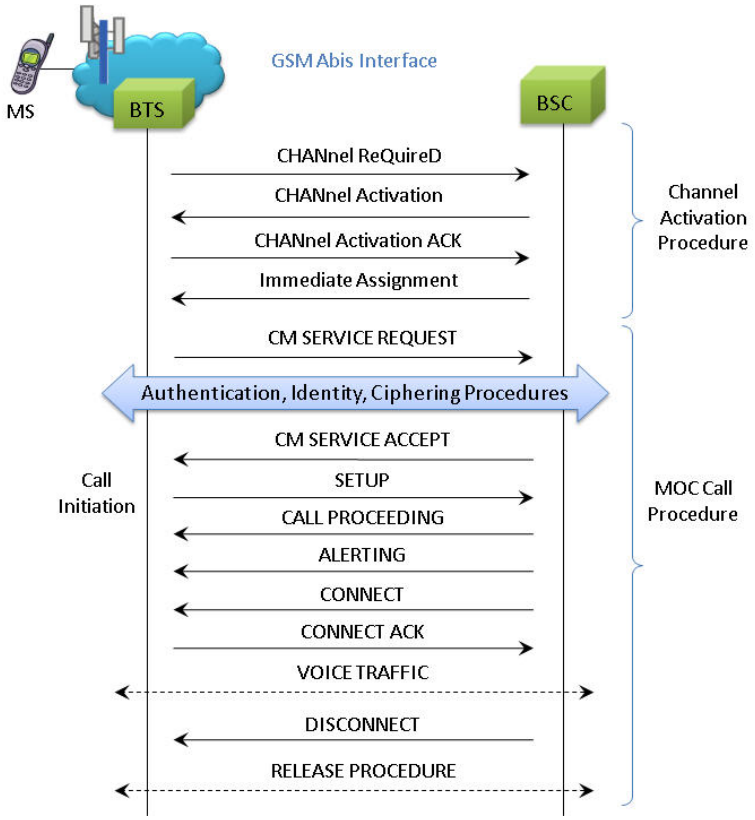


Figure: MOC Call Procedure

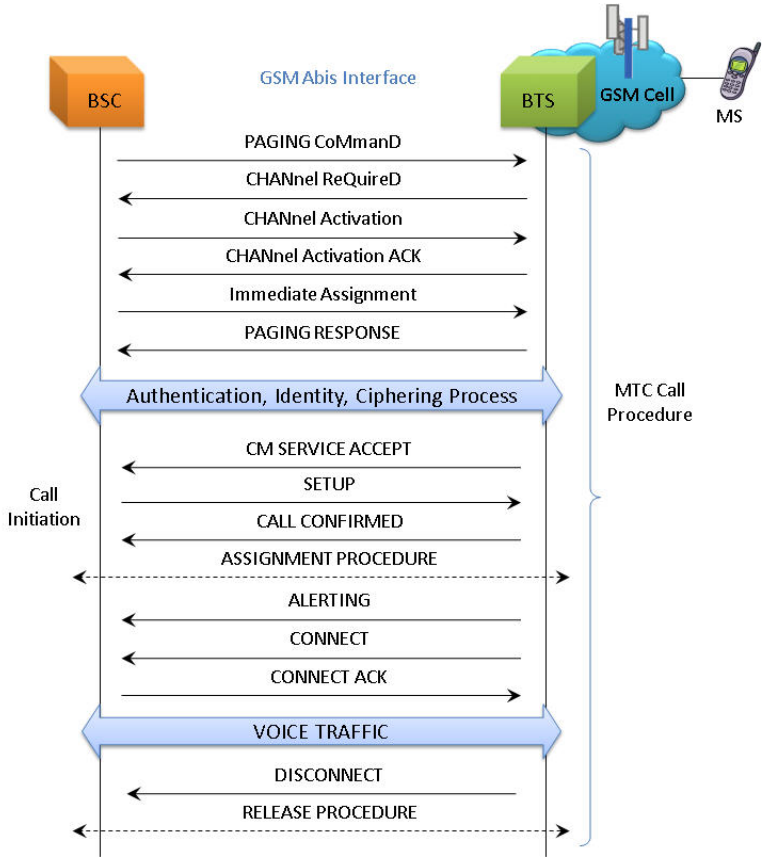
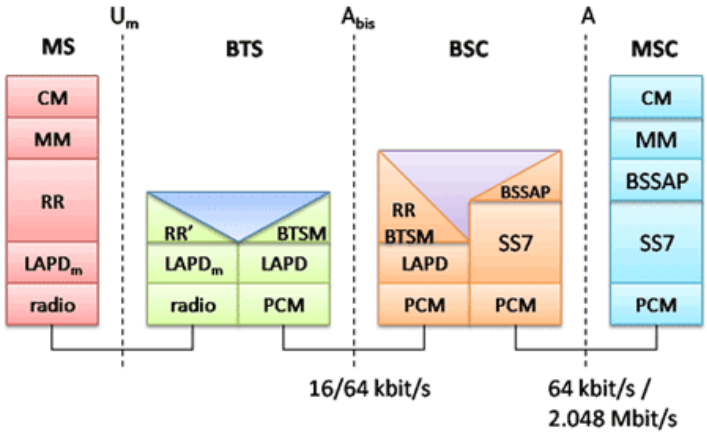


Figure: MTC Call Procedure

Supported Protocol Standards



Supported Protocols	Standard / Specification Used
BTSM	3GPP TS 08.58 V8.6.0
MM	3GPP TS 04.08 V7.17.0
CC	3GPP TS 04.08 V7.17.0
RR	3GPP TS 04.18 V8.13.0
SMS	3GPP TS 03.40 V7.5.0 & 3GPP TS 04.11 V7.1.0 GSM 03.38 version 7.2.0 Release 1998

Buyer's Guide

Item No	Product Description
XX693	MAPS™ GSM-Abis Interface Emulator
XX692	MAPS™ GSM A Emulator
XX610	File based Record/Playback
XX620	Transmit/Detect digits (Place Call/ Answer Call)
XX646	Multi-Channel TRAU Tx/Rx Emulation and Analysis

Item No	Related Software
XX648	MAPS™ ISDN
XX692	MAPS™ GSM-A Interface Emulator
PKS130	MAPS™ SIGTRAN (SS7 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)

Item No	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	MAPS™ MAPIP Emulator
PKS130	ISDN Analyzer Software

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Buyer's Guide

Item No	Related Hardware
PTE001	tProbe™ Dual T1 E1 Laptop Analyzer (Require Basic Software)
FTE001	QuadXpress T1 E1 Main Board (Quad Port)
ETE001	OctalXpress T1 E1 Daughter boards (Octal Port)
XTE001	Dual Express (PCIe) T1 E1 Boards
TTE001	tScan16™ T1 E1 Boards

For more information, please visit MAPS™ GSM Abis Interface Emulator webpage.

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