

Protocol Test

6113 AIME Base Station Test

AEROFLEX
A passion for performance.



- GPRS BTS Air Interface Monitor/MS Emulator for protocol analysis
- Applications in R & D, test, evaluation and support
- Protocol regression testing and fault finding
- Multi slot packet switched functionality
- User friendly Windows™ user interface
- Full training and support included

INTRODUCTION

The (E)GPRS base station protocol tester provides the user with layer 1, layer 2 and layer 3 monitoring and emulation capability for the Um interface. It uses the 6113G test set and the GPRS AIME (Air Interface Monitoring and Emulation) software package which is a member of the ProCLAIME series of protocol testers.

The features of this powerful test and development tool allow the (E)GPRS software designer to monitor, debug and fault find the layer 1 and protocol interchanges on the Um interface. The tester is suitable for (E)GPRS development programs as well as integration and regression testing of base stations.

PRODUCT DESCRIPTION

The 6113-GPRS AIME is a script driven software package which runs on a separate PC controlling a 6113G Digital Radio Test Set via its GPIB/IEEE488 interface.

The AIME user interface provides the user with a sophisticated script editing and control facility, captures all the layer 2 and 3 signaling exchanges with frame and time stamps and logs all the traffic frames.

USER INTERFACE

The user interface software runs under Windows™ NT 4.0 based environments, providing the following functionality:

- Control of the 6113G via GPIB interface
- Script editing, debugging, execution and automation
- Logging of all air interface signaling
- Logging of all traffic frames
- Filtering of viewed data
- Fully decoded display of layer 2 and 3 messages
- Remote control ethernet interface

PHYSICAL LAYER LINK FUNCTION

- GPRS and GSM logical channels
- GPRS and GSM 51 & 52 Multiframe formats
- GPRS coding schemes CS1-4
- GPRS multi slot up to 4 Tx + 4 Rx time slots (maximum combination of 6 time slots)
- Includes ability to test Type 2 terminals
- Supports GPRS TBF transfer and GSM voice and data transfer, but not simultaneously
- Sending and receiving on PDCH and PACCH

- Automatic checking for BCS in DL. Calculating/coding of BCS in UL
- FR, HR, EFR GSM circuit switched voice

SIGNALING

- GPRS packet system information, RLC/MAC control & data block and signaling
- Procedures for GPRS Attach
- MO and MT GPRS TBF establishment
- Single UL and DL TBF
- Acknowledged and unacknowledged mode GPRS RLC
- All air interface GSM L2 signaling (LAPDm) and L3 system information

ADDITIONAL OPTIONS

- Additional options are available which significantly reduce the engineering time needed to develop scripts to implement test cases:
- Layer 3 encoder - a productivity tool which automatically generates correctly formatted Layer 3 script commands using plain language instructions
- Aeroflex can provide a cost-effective script development service to implement customer specific test cases
- Layer 2 control - an option to provide control over the behavior of Layer 2 protocol is under development to allow GSM and GPRS test cases to be implemented.

SPECIFICATION

RF INTERFACE

Frequency Range

E-GSM 900

880 to 960 MHz

DCS 1800

1710 to 1880 MHz

PCS 1900

1850 to 1990 MHz

Resolution

1 Hz

LEVEL

Simplex mode - -40 to -120 dBm into 50 Ω

Duplex mode - -47 to -120 dBm into 50 Ω

RF Layer Function

GMSK modulation and demodulation

GSM and GPRS frequency hopping (one frequency per frame)

SYNCHRONIZATION

Conventional GSM FCCH, SCH, BCCH for synchronization

SCRIPT

Visual Basic based shell

SAX Basic scripting language and interpreter

SUPPLIED SCRIPTS

Basic GPRS Attach

Synchronization / Registration

Call Setup

Call Termination

Asynchronous Handover

Detach

These scripts may be used as a basis for user script development and are supplied as examples only

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