

Conformance Tests

C.S0038-A Conformance Signaling Tests

Option CDMA-290 for the CDMA-AIME System



- C.S0038-A Signaling Conformance test cases for C.S0024-A EV-DO Revision A devices
- Capability to test both EV-DO Release 0 and EV-DO Revision A features by setting a single parameter on the CDMA-AIME System
- C.S0038-A is a mandatory part of CCF, CTIA, CDG Stage 1 and operator test plans.
- Capability to test Hybrid Mode (1X and EV-DO) on the CDMA-AIME System
- Can force the device to use, or the device can choose, the following EV-DO Revision A parameters:
 - Physical Layer Subtype 0/1/2
 - Reverse Traffic Channel MAC Subtype 1/2/3
 - Enhanced Forward Traffic Channel
 - Enhanced Access Channel
 - Enhanced Control Channel
 - Enhanced Idle State
 - All Sub-Sync and Async rates
 - Single and Multi-User Packets
 - Multi-Flow Packet Application
- Data call support for Mobile IP on the CDMA-AIME System including integrated PPP and MIP signaling messages
- Fully-automated testing environment
- Detailed logging of forward and reverse link signaling messaging packets at each layer, and RLP frames

- The campaign manager enables a series of tests to be saved and then either run automatically, sequentially and/or at a later date.
- User-customizable Report Generation options

PRODUCT DESCRIPTION

The C.S0038-A option for the Aeroflex CDMA-AIME protocol test system enables signaling conformance testing of CDMA2000 EV-DO access terminals against the 3GPP2 Signaling Conformance Specification for High Rate Packet Data Air Interface (C.S0024-A). The C.S0038-A test cases provide a set of procedures that the access terminal can use to conduct the signaling conformance tests in a laboratory environment at an earlier and more cost-effective point in the development. This achieves a more stable and better quality product at the point where the device would normally be sent to test laboratories and/or operators, increasing product confidence and reducing product launch delays and re-design costs.

The C.S0038-A test cases operate with the Aeroflex CDMA-AIME System. The C.S0038-A conformance scripts drive the CDMA-AIME system to act as a network emulator, providing built-in logging of all signaling procedures to enable full testing and investigation.

OVERVIEW

The C.S0038-A provides a set of procedures that the access terminal can use to conduct the signaling conformance tests via the scripts installed. All signaling messages are time-stamped and logged for subsequent review. The option enables many aspects of the performance of the access terminal to be tested. These include test cases for the Default Signaling application, Default Packet application, Multi-Flow Packet application and MAC protocol tests.

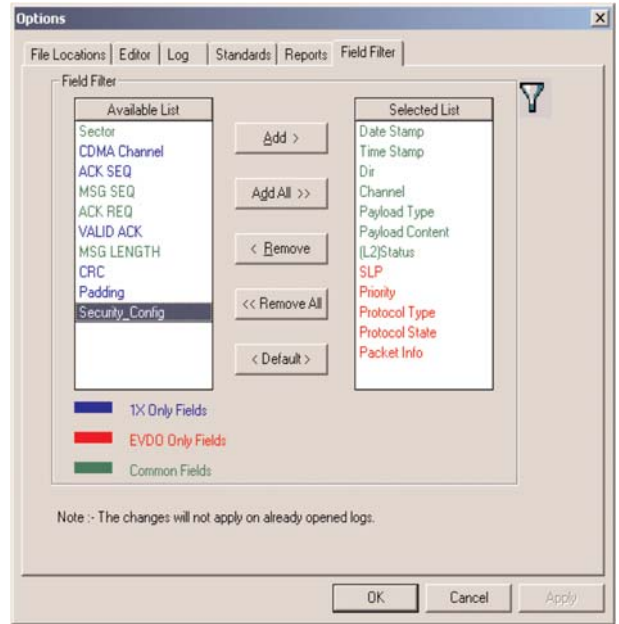
SIMPLE PARAMETER INTERFACE

The conformance scripts can be executed with various parameter options. The parameters, grouped in various categories based on CDMA Channels and usage, can be easily modified using the user friendly EV-DO Script Parameters editor. For the benefit of the user the EV-DO Revision A specific parameters have been grouped under the 'Forward' and 'Reverse' tabs.



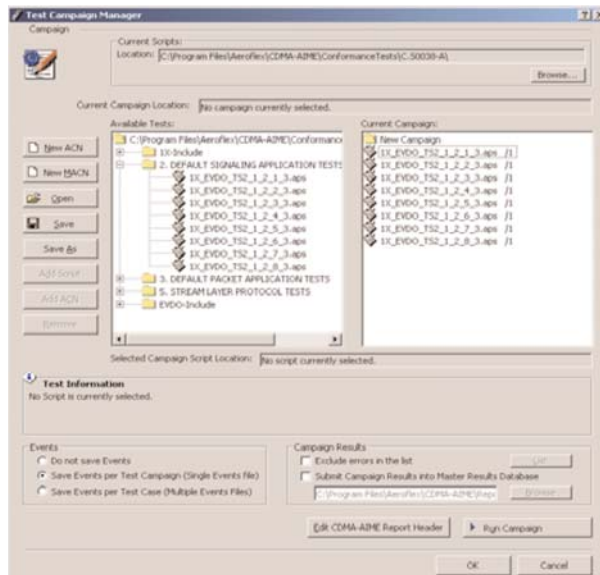
TAILORED FILTERING AND SEARCHING

All messages displayed during test execution can be 'filtered' so that only those of interest are displayed. In addition, the ability to quickly search for a particular message or event is also provided.



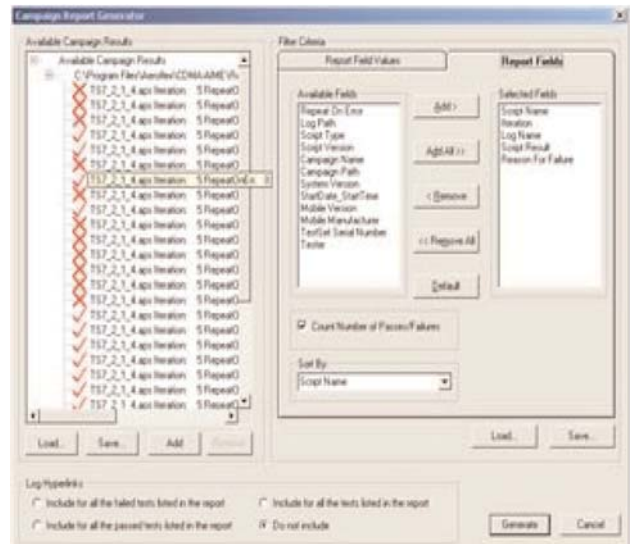
POWERFUL TEST CAMPAIGN ENVIRONMENT

The conformance scripts can be executed in test campaigns in automation mode to perform reliability testing. The scripts can be grouped in the form of user-specified campaigns and stored for execution. Campaigns can be copied/transferred between CDMA systems. Multiple user-defined test campaigns can also be sequenced for execution, allowing an intervention-free test environment. There is an additional feature where within repeated test campaigns, parameters can be incremented automatically, allowing a range of tests to be automatically performed. Parameters for each unique campaign are stored separately, but are variable within that campaign, offering multiple levels of customization.



FLEXIBLE REPORT GENERATION

The campaign report generator is used to generate customized reports. It facilitates the generation of reports from data collected across various test campaigns, or test systems over a user-defined period of time. Filter options are built and saved by the user to generate a custom-built set of useful reports. These reports can be further exported to other programs for even more flexibility.



TEST SCRIPTS

The eight sections of the C.S0038-A Conformance scripts supported, and their dependencies, are detailed in the following sections.

Note that all test cases require the following Aeroflex software options to function:

- Option 101-R0 EV-DO (Release 0)
- Option 290 C.S0038-A Signaling Conformance test cases

To execute the C.S0038-A Conformance Scripts for EVDO Revision A, the following additional option is required:

- Option 101-RA EV-DO (Revision A)

To execute the C.S0038-A Conformance Scripts in Mobile IP Mode, the following additional option is required:

- Option 141 Mobile IP support

The functionality of each section within the standard is detailed below.

Default Signaling Application Tests

This section includes the scripts to perform tests for the Signaling Network Protocol (SNP) and the Signaling Link Protocol (SLP) of the Default Signaling Application.

Default Packet Application Tests

The scripts from this section are used to test the Radio Link Protocol, Location Update Protocol, and the Flow Control Protocol.

Multi-flow Application Protocol tests

The scripts from this section are used to test the Radio Link Protocol, Location Update Protocol, and the Flow Control Protocol.

Stream Layer Protocol Tests

This section contains the script to test the Default Stream Layer Protocol.

Session Layer Tests

This section includes the tests for the Default Session Management Protocol, Default Address Management Protocol and Default Session Configuration Protocol.

Connection Layer Tests

This section includes the tests for the Default Air-Link Management Protocol, Default Initialization State Protocol, Default Idle State Protocol, Enhanced Idle State Protocol Tests, Default Connected State Protocol, Default Route Update Protocol and Overhead Messages Protocol.

Security Layer Tests

This section includes the tests for the DH Key Exchange Protocol, SHA-1 Authentication Protocol and Security Protocol.

Mac Layer Tests

This section includes the tests for the Default Control Channel MAC Protocol, Default Access Channel MAC Protocol, Default Forward Traffic Channel MAC Protocol, Default Reverse Traffic Channel MAC Protocol, Enhanced Control Channel MAC Protocol, Enhanced Access Channel MAC Protocol, Enhanced Forward Traffic Channel MAC Protocol and Enhanced Reverse Traffic Channel MAC Protocol. The last four MAC Protocols are used in EVDO Revision A.

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