

# C.S0038-A Signaling Conformance Tests

Option CDMA-290 for the CDMA-AIME System

**AEROFLEX**  
A passion for performance.



- 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
- 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

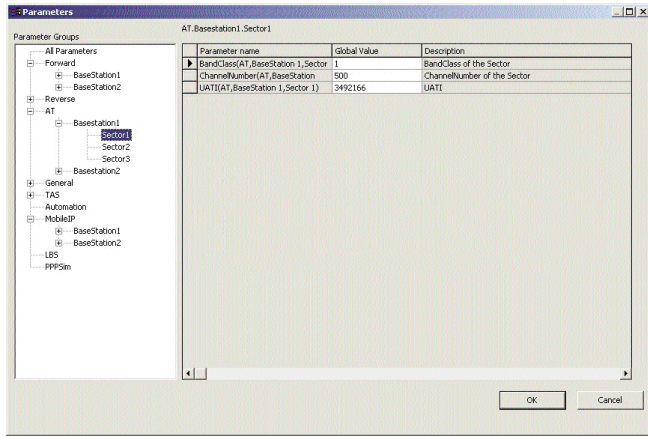
The C.S0038-A option for the Aeroflex CDMA-AIME protocol test system enables signaling conformance testing of CDMA2000 EV-DO access terminals against the 3GPP2 Signaling Conformance Specification for High Rate Packet Data Air Interface (C.S0024-A). The C.S0038-A test cases provide a set of procedures 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

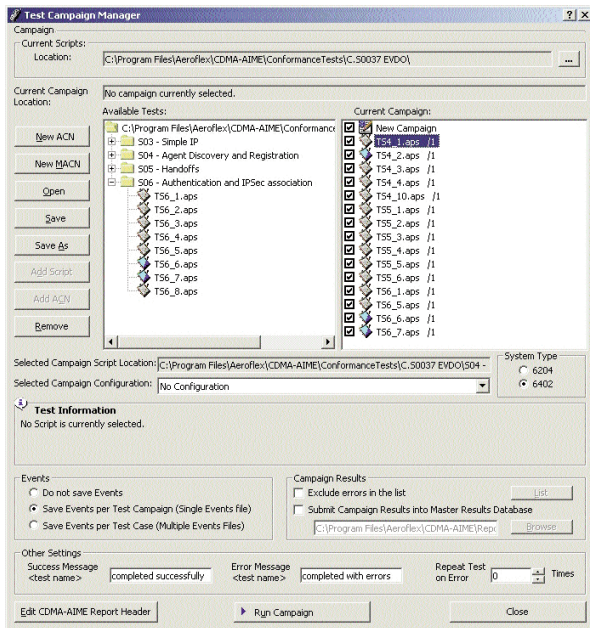
## SIMPLE PARAMETER INTERFACE

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 userfriendly EV-DO Script Parameters editor. For the benefit of the user the EV-DO Revision A specific parameters have been grouped together under the 'Forward' and 'Reverse' tabs.



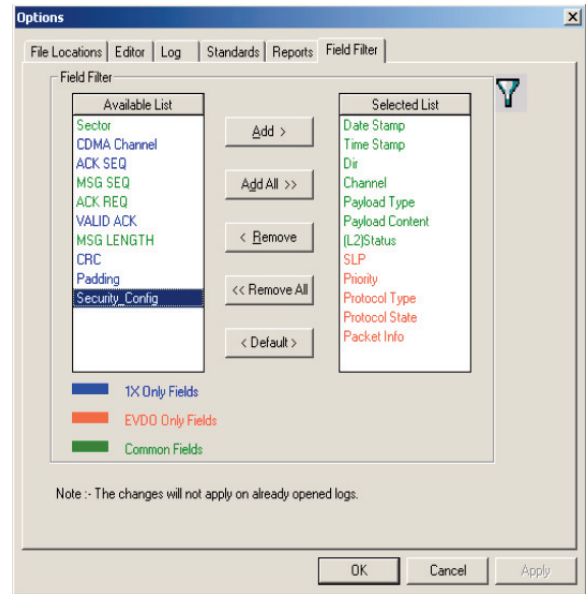
## POWERFUL TEST CAMPAIGN ENVIRONMENT

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. Parameters for each unique campaign are stored separately, but are variable within that campaign, offering multiple levels of customization.



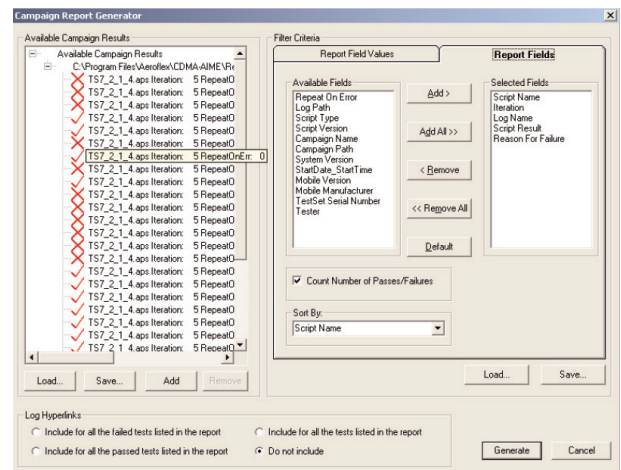
## TAILORED FILTERING AND SEARCHING

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.



## 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:

- 6402-101-R0 EV-DO (Release 0)
- 6402-290 C.S0038-A Signaling Conformance test cases

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

- 6402-101A EV-DO (Revision A)

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

- 6402-141 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 EV-DO Revision A.

## LICENSE OPTIONS

The C.S0038-A signaling conformance support is obtained through the following options:

- 6402-290 C.S0038-A Signaling Conformance Test Cases

**CHINA Beijing**

Tel: [+86] (10) 6539 1166  
Fax: [+86] (10) 6539 1778

**CHINA Shanghai**

Tel: [+86] (21) 5109 5128  
Fax: [+86] (21) 5150 6112

**FINLAND**

Tel: [+358] (9) 2709 5541  
Fax: [+358] (9) 804 2441

**FRANCE**

Tel: [+33] 1 60 79 96 00  
Fax: [+33] 1 60 77 69 22

**GERMANY**

Tel: [+49] 8131 2926-0  
Fax: [+49] 8131 2926-130

**HONG KONG**

Tel: [+852] 2832 7988  
Fax: [+852] 2834 5364

**INDIA**

Tel: [+91] 80 5115 4501  
Fax: [+91] 80 5115 4502

**KOREA**

Tel: [+82] (2) 3424 2719  
Fax: [+82] (2) 3424 8620

**SCANDINAVIA**

Tel: [+45] 9614 0045  
Fax: [+45] 9614 0047

**SPAIN**

Tel: [+34] (91) 640 11 34  
Fax: [+34] (91) 640 06 40

**UK Burnham**

Tel: [+44] (0) 1628 604455  
Fax: [+44] (0) 1628 662017

**UK Cambridge**

Tel: [+44] (0) 1763 262277  
Fax: [+44] (0) 1763 285353

**UK Stevenage**

Tel: [+44] (0) 1438 742200  
Fax: [+44] (0) 1438 727601  
Freephone: 0800 282388

**USA**

Tel: [+1] (316) 522 4981  
Fax: [+1] (316) 522 1360  
Toll Free: 800 835 2352



As we are always seeking to improve our products, the information in this document gives only a general indication of the product capacity, performance and suitability, none of which shall form part of any contract. We reserve the right to make design changes without notice. All trademarks are acknowledged. Parent company Aeroflex, Inc. ©Aeroflex 2006.

[www.aeroflex.com](http://www.aeroflex.com)  
[info-test@eroflex.com](mailto:info-test@eroflex.com)



Our passion for performance is defined by three attributes represented by these three icons: solution-minded, performance-driven and customer-focused.