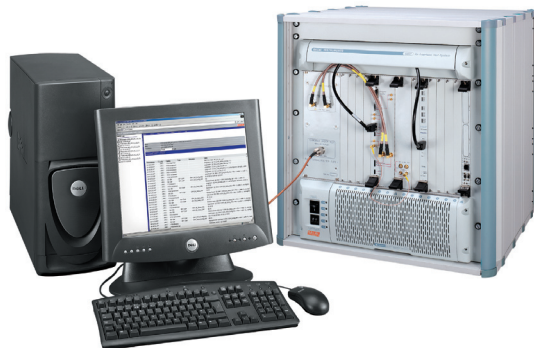


# C.S0044-A Interoperability Tests

## Option CDMA-291 for the CDMA-AIME System



- Cost effective Laboratory based testing for C.S0044-A Interoperability Standard – High Rate Packet Data section
- Software upgrade to the CDMA-AIME system
- Reduces overall product and test costs by providing access to full interoperability and stability tests
- Support for Hybrid Mode (simultaneous 1X and EV-DO operation)
- Capability to test both EV-DO Release 0 and EV-DO Revision A features
- Provides EV-DO Revision A specific test functionality for Physical Layer Subtype 2, Enhanced Control Channel MAC, Enhanced Access Channel MAC, Enhanced Forward Traffic Channel MAC, Subtype 3 Reverse Traffic Channel MAC, Multiflow Packet Application and Enhanced Idle State protocols
- Test support for Mobile IP enabled Access Terminals using the Aeroflex Mobile IP Server
- Fully-automated testing environment.
- Detailed logging of forward and reverse link signaling messaging packets at each layer, and RLP frames
- Script-driven network emulation
- Campaign manager enables a series of tests to be saved and then either run automatically, sequentially and/or at a later date (or dates)
- User-customizable Report Generation options

### PRODUCT DESCRIPTION

The C.S0044-A option for the Aeroflex CDMA-AIME protocol test system enables the testing of EV-DO Access Terminals against the 3GPP2 Interoperability Specification C.S0044-A 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 for test with Interoperability Laboratories or Operators, increasing product confidence and reducing the costs and possible re-work caused by failures.

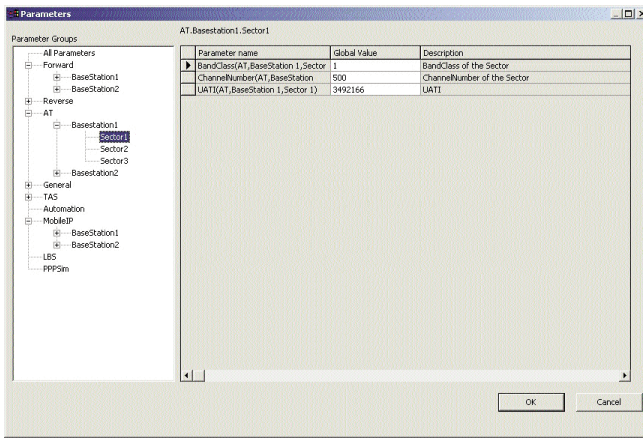
The C.S0044-A option works in conjunction with the Aeroflex CDMA-AIME System. The conformance scripts drive the CDMA-AIME System to act as a network emulator, providing built-in logging of all signaling procedures to enable full testing and investigation.

### OVERVIEW

Aeroflex Option 291 provides test capabilities for the High Rate Packet Data section of C.S0044-A and is a supplemental option to the Aeroflex Option 271 C.S0044-0 Interoperability Tests. This solution provides test scripts that are compliant with the C.S0044-A standard and enables many aspects of the performance of the Access Terminal to be tested. All signaling messages are time-stamped and logged for subsequent review. The option enables many aspects of the performance of the mobile station to be tested.

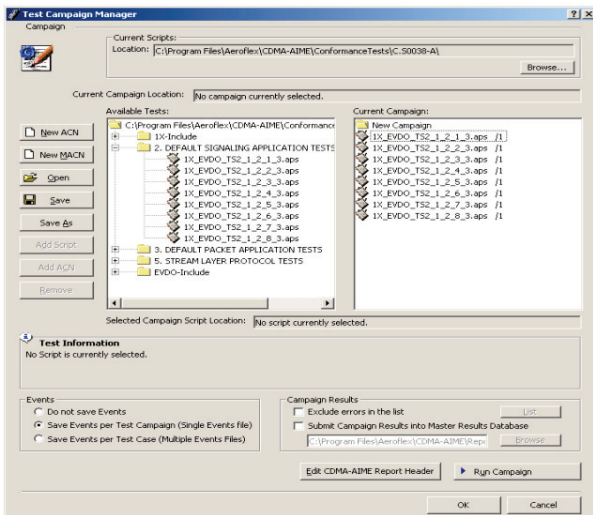
## SIMPLE PARAMETER INTERFACE

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.



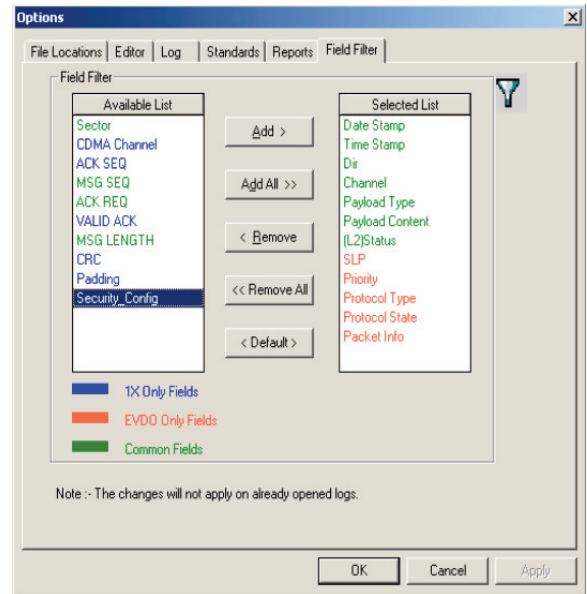
## POWERFUL TEST CAMPAIGN ENVIRONMENT

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.



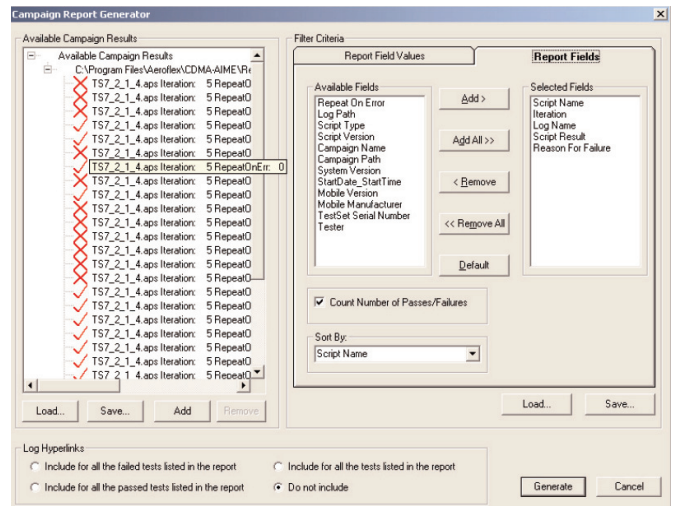
## TAILORED FILTERING AND SEARCHING

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



## 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 scripts from High Rate Packet Data section 18 of C.S0044-A Conformance are 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 CDMA2000 EV-DO (Release 0)
- Option 291 C.S0044-A Signaling Conformance test cases

To execute the C.S0044-A Conformance Scripts for EV-DO Revision A, the following additional option is required:

- Option 101-RA CDMA2000 EV-DO (Revision A)

To execute the C.S0044-A Conformance Scripts in Mobile IP Mode, the following additional option is required:

- Option 141 Mobile IP support

The script related functionalities are detailed below.

### Basic HRPD Scenarios

The access terminal can be tested for conformance for basic HRPD scenarios like session setup, connection setup, forward and reverse data transfer in Release 0 and Revision A using the scripts of this section.

### Handoff Test Cases

The access terminal can be tested for conformance for Soft, Softer and Hard handoff scenarios in Release 0 / Revision A.

### System Re-Selection Test Cases

The access terminal can be tested for conformance in Inter/Intra HRPD Idle and Connected State scenarios in Release 0 / Revision A.

### Access Persistence Test Case

The access terminal can be tested for conformance for interpreting the persistence value from the Access Parameters Message.

### Hybrid Test cases

The access terminal can be tested for conformance for MO/MT voice calls in Active, Idle and Dormant HRPD scenarios and MO/MT SMS calls can be tested in Idle, active and Dormant HRPD scenarios.

### Inter-Revision Handoff Test cases

The access terminal can be tested for conformance for handoff from Revision A to Rel 0 and from Rel 0 to Rev A, while in Data active and dormant modes. These tests also validate the Multi-personality support of the AT.

### Inter-RNC Handoff Test cases

The access terminal can be tested for conformance for Inter RNC handoffs from Revision A to Rel 0 and from Rel 0 to Rev A, while in Data active, idle and dormant modes. These tests also validate the Multi-personality support of the AT.

### Inter-technology Handoff Test cases

The access terminal can be tested for conformance for Inter technology handoffs from EV-DO (both Rev A and Rel 0 modes) to 1X system and 1X to EV-DO, while in Data active and dormant modes.

## Enhanced Idle State protocol Test cases

The access terminal can be tested for conformance while configured for Enhanced Idle state protocol for attribute negotiations, evenly distributed hashing and slotted mode.

## DRC and DSC compliance Test cases

The access terminal can be tested for conformance to DRC and DSC requirements during Soft and Softer handoff scenarios, DRC translation offset and DRC supervision scenarios.

## Multi-user packet and subtype 3 RTCMAC Test cases

The access terminal can be tested for Multi-user packets and single user packets support. Also the access terminal can be tested for conformance to, RTC interlace re-ordering and non-default attribute negotiation scenarios.

## Multiple Reservations, Activation of RLP Flows and QoS Setup Test cases

The access terminal can be tested for Multiple Reservations, Activation of Multiple RLP Flows and QoS Setup support. Also the access terminal can be tested for conformance to, Rejection of Reservation Request by AN and upon Receiving ProfileType set to NULL.

## LICENSE OPTIONS

The C.S0044-A interoperability test support is obtained through the following options:

- 6402-271 C.S0044-0 Interoperability Test Cases for 1X, EV-DO and LBS
- 6402-291 C.S0044-A Interoperability Test Cases for High Rate Packet Data Section

**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

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[info-test@aeroflex.com](mailto:info-test@aeroflex.com)



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