

# Conformance Tests

## C.S0044 Interoperability tests Option 271 for CDMA-AIME System

**AEROFLEX**  
A passion for performance.



- Phased delivery of complete set of C.S0044 interoperability test cases
- Total of 275 test cases, covering all 18 functional sections of the standard
- Allows cost-effective lab-based testing early in production cycle in a simulated environment
- Reduces overall product production and test costs by providing ease of access to full interoperability and stability tests
- Capability to test 1x and EVDO features on the CDMA-AIME System
- Capability to test PRev 7 features on the CDMA-AIME System
- Fully-automated testing environment (dependent on mobile station support)
- Detailed logging of forward and reverse link signaling messaging packets at each layer, and RLP frames
- Handoff and power control testing capability
- Script-driven network emulation
- Easy to use Windows™ user interface
- 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
- Available as add-on for both 6204 and 6402 hardware platforms

### PRODUCT DESCRIPTION

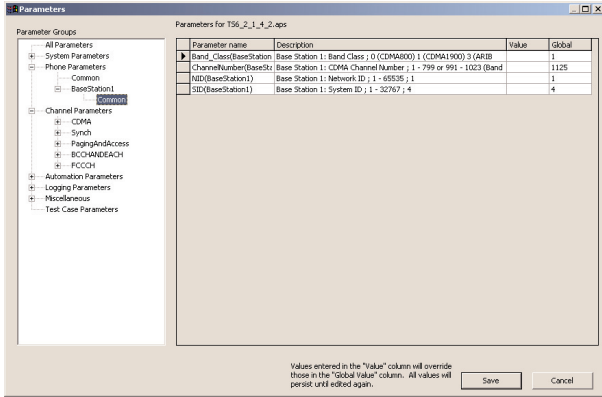
The C.S0044 option for the Aeroflex CDMA-AIME protocol test system enables the testing of CDMA2000 1X/EVDO Mobile Stations against the 3GPP2 Interoperability Specification for cdma2000 Air Interface (C.S0044-0 v1.0). The C.S0044 test cases allow laboratory-based testing of mobile interoperability using simulated base stations at an earlier and more cost-effective point in the development process. This achieves a more stable and better quality product at the point where the device would normally be sent for test with test laboratories or operators, increasing product confidence and reducing the costs and possible re-work caused by these tests. These C.S0044 test cases operate with the Aeroflex CDMA-AIME System. The C.S0044 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.S0044 option provides full access to the CDMA2000 Air interface interoperability 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 mobile station to be tested. These include signaling messages, data protocol performance, mobile power control, authentication, encryption, and handoff. Tests can also be performed for CDMA 2000 Release A channels such as BCCH, FCCCH and EACH.

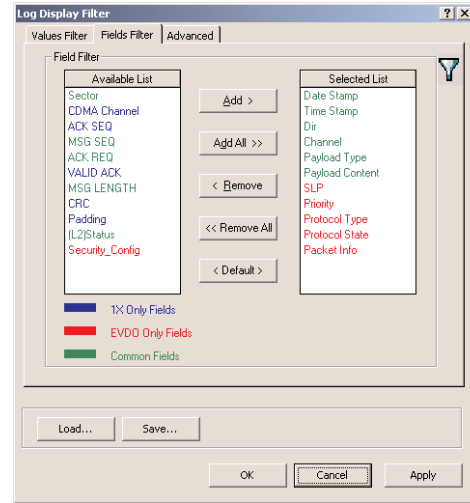
## SIMPLE PARAMETER INTERFACE

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 Parameter editor. Only the parameters relevant to each script are displayed, avoiding errors where unrelated parameters could be mistakenly altered.



## 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

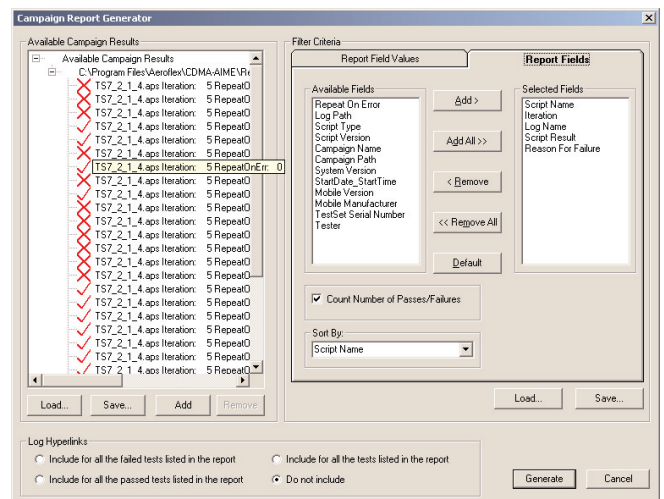
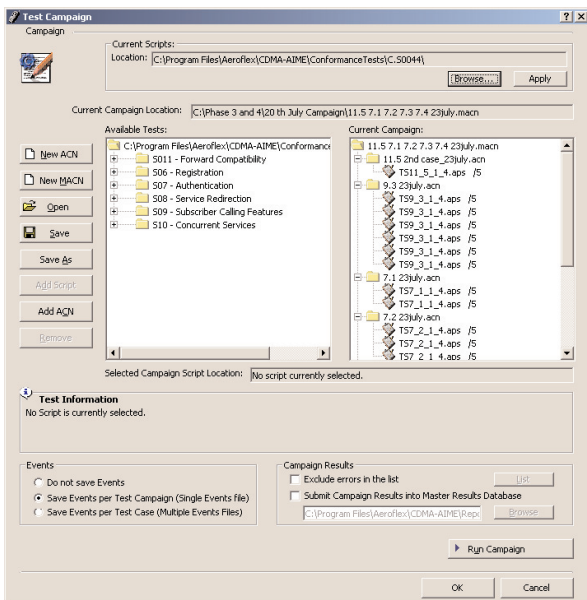
The conformance scripts can be executed in test campaigns in automation mode to perform reliability testing. The scripts can be grouped in the form of user-specified campaigns and stored for execution. Campaigns can be copied/transferred between CDMA systems. Multiple user-defined test campaigns can 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 eighteen sections of the C.S0044 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 111 1x-CDMA-AIME base software
- Option 200 Aeroflex Common script component

A small number of scripts also require the internal AWGN and/or Fading simulators; please ask the local sales office for details on this requirement.

Further sectional-related requirements are detailed below.

### Basic Call Processing Tests

The C.S0044 Conformance Scripts on CDMA-AIME can be used to perform tests on mobile stations for basic CDMA-1X related call processing such as Mobile Originated/terminated voice calls, Reverse radio link failure, Slot Cycle Index, Service negotiation, and PACA.

### Handoff Tests

The C.S0044 Conformance Scripts support Soft and Hard Handoff within the CDMA-1x environment using the CDMA-AIME System. External equipment can be used to simulate fading and interference.

### Power Control Tests

Forward traffic Channel Power Control and R-FCH Gating tests can be performed with the scripts in this section. Note that the FFPC tests can only be performed on the 6402 hardware platform.

### Registration

Registration in various conditions (Power-up, power-down, Distance, Timer, Parameter, and Zone based) can be tested.

### Authentication

Authentication (SSD and A-Key) and Voice Privacy tests can be performed with scripts in this section.

### Service Re-direction

Service re-direction across various frequencies and Band class supported by the CDMA-AIME System.

### Short Message Service

Mobile-originated and -terminated SMS and EMS tests can be performed.

### Subscriber calling Features

Features such as Call forwarding, Call waiting, Caller Id Presentation and Voice Mail Notification can be tested using various parameters in these scripts.

### Asynchronous Data and Fax Tests

Tests for circuit switched data calls such as Asynchronous Data and Fax service options supported by the CDMA-AIME system can be tested in this section.

### Low Speed Packet Data and Medium Speed Packet Data Tests

This section tests IS95A and IS95B packet data calls.

### High Speed Packet Data

CDMA2000 Packet data calls can be tested using these test cases.

### Over The Air Services

OTAPA and OTASP test cases are supported by C.S0044 Conformance Scripts.

### Position Determination Tests

A-GPS and AFLT position determination tests are supported as an option along with C.S0044 test cases. Note that these tests require the Aeroflex Location-based services hardware and software options to be purchased to be fully functional (Options 171 and 190).

### Concurrent Services

Simultaneous Voice and Data tests can be performed with test scripts of this section.

### HRPD

EVDO support of the mobile stations can be tested for conformance using the scripts of this section. Mobile IP testing is also provided. Aeroflex software option 101 is required to support the HRPD section of the test cases and software option 141 is required to support Mobile IP tests.

**Emergency Calls and Miscellaneous Air Interface tests** are also covered.

**CHINA Beijing**

Tel: [+86] (10) 6467 2716  
Fax: [+86] (10) 6467 2821

**CHINA Shanghai**

Tel: [+86] (21) 6282 8001  
Fax: [+86] (21) 62828 8002

**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 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 2005.

[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.