## 3.5 Conventions for mathematical notations

The conventions for mathematical notations specified below shall apply.

### 3.5.1 Mathematical signs

The "plus or minus" sign is expressed by "±".

The sign "multiplied by" is expressed by "\*".

The sign "divided by" is expressed by "/", or the common division bar.

The sign "greater than or equal to" is expressed by "≥".

The sign "less than or equal to" is expressed by "≤".

# 4 Test equipment

The test equipment is specified in TS 34.108 [12] clause 4.

# 5 Testing methodology in general

When possible the present document refers to ETSI TS 102 384 [26] to describe generic aspects of application toolkit tests.

## 5.1 Testing of optional functions and procedures

Any function or procedure which is optional, as indicated in the present document, may be subject to a conformance test if it is implemented in the ME.

## 5.2 Test interfaces and facilities

The UICC and NG-SS/NB-SS/E-USS/USS/SS interfaces provide the main test interfaces for the purpose of performing conformance tests.

The tests which require a network simulator shall be carried out with using a Next Generation System Simulator when accessing a NG-RAN, a NB System Simulator when accessing an E-UTRAN in NB-S1 mode, an Evolved Universal System Simulator when accessing an E-UTRAN in WB-S1 mode, a Universal System Simulator when accessing a UTRAN, and if these tests have to be performed additionally when accessing a GERAN a System Simulator shall be used instead.

## 5.3 Information to be provided by the apparatus supplier

The information to be provided by the apparatus supplier specified in TS 38.508-1 [39], TS 36.523-2 [34], TS 36.508 [33], TS 34.108 [12] and TS 51.010-1 [23] shall apply, unless otherwise specified in the present clause.

In addition, the apparatus supplier shall provide the information with respect to the Supported Option table A.1 and to ME's default configuration table A.2.

Table A.2: ME's default configuration

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Description | Value | Status |
| 1 | DISPLAY TEXT: No Response from user timeout interval |  | C |
| 2 | GET INKEY: No response from user Timeout interval |  | C |
| 3 | GET INPUT: No response from user Timeout interval |  | C |
| 4 | SELECT ITEM: No response from user Timeout interval |  | C |
| 5 | DISPLAY TEXT Text Attributes Alignment [Left or Center or Right] |  | C |
| 6 | GET INKEY Text Attributes Alignment [Left or Center or Right] |  | C |
| 7 | GET IMPUT Text Attributes Alignment [Left or Center or Right] |  | C |
| 8 | PLAY TONE Text Attributes Alignment [Left or Center or Right] |  | C |
| 9 | SET UP MENU Text Attributes Alignment [Left or Center or Right] |  | C |
| 10 | SELECT ITEM Text Attributes Alignment [Left or Center or Right] |  | C |
| 11 | SEND SHORT MESSAGE Text Attributes Alignment [Left or Center or Right] |  | C |
| 12 | SEND SS Text Attributes Alignment [Left or Center or Right] |  | C |
| 13 | SEND USSD Text Attributes Alignment [Left or Center or Right] |  | C |
| 14 | SET UP CALL Text Attributes Alignment [Left or Center or Right] |  | C |
| 15 | SET UP IDLE MODE TEXT Text Attributes Alignment [Left or Center or Right] |  | C |
| 16 | RUN AT Text Attributes Alignment [Left or Center or Right] |  | C |
| 17 | SEND DTMF Text Attributes Alignment [Left or Center or Right] |  | C |
| 18 | LAUNCH BROWSER Text Attributes Alignment [Left or Center or Right] |  | C |
| 19 | OPEN CHANNEL Text Attributes Alignment [Left or Center or Right] |  | C |
| 20 | CLOSE CHANNEL Text Attributes Alignment [Left or Center or Right] |  | C |
| 21 | RECEIVE DATA Text Attributes Alignment [Left or Center or Right] |  | C |
| 22 | SEND DATA Text Attributes Alignment [Left or Center or Right] |  | C |
| 23 | IMEI |  | M |
| 24 | IMEISV |  | C |
| 25 | [Reserved] |  |  |
| 26 | Additional Card Reader Id |  | C |
| 27 | Channel Id |  | C |
| 28 | Manufacturer identification as implemented according to TS 27.007, cl. 5.1 |  | C |
| 29 | Preferred buffer size supported by the terminal for Open Channel command |  | C |
| Note: Conditional values shall be provided if the corresponding option is supported in the table A.1 | | | |

# 6 Implicit testing

For some 3GPP features conformance is not verified explicitly in the present document. This does not imply that correct functioning of these features is not essential, but that these are implicitly tested to a sufficient degree in other tests.

It should be noted that for these features some aspects have to be and are explicitly tested, e.g. the ability to switch between 1.8v and 3v operation.

Some UICC features will be explicitly tested as result of other tests. These should be identified for the following reason:

- To identify the areas of overlap and thus provide a more efficient testing.

# 7 Measurement uncertainty

The measured value relating to the corresponding limit shall be used to determine whether or not a terminal equipment meets the requirement. (ETR 028, annex B).

This process is often referred to as "shared risk".

# 8 Format of tests

In general the following basic format for tests is used:

**27.22.X.X. Tested command**

**27.22.X.X.1 Command tested in «environment #1" (NORMAL, ICONS, UCS2 …)**

**27.22.X.X.1.1 Definition and applicability**

This clause refers back to clause 3.2.2.

**27.22.X.X.1.2 Conformance requirement**

Only if required, this clause details the necessary core specification references.

**27.22.X.X.1.3 Test purpose**

This clause details the purpose of the test.

**27.22.X.X.1.4 Method of test**

**27.22.X.X.1.4.1 Initial conditions**

If present this clause defines the initial conditions to be established before running each test sequence.

**27.22.X.X.1.4.2 Procedure**

This clause details the test procedure. Each test sequence shall be carried out independently unless otherwise stated.

- Sequence 1.1 (further initial conditions, added here)

|  |
| --- |
| Command 1.1.1 |
| TERMINAL RESPONSE1.1.1A or 1.1.1B |
| Command 1.1.2 |
| TERMINAL RESPONSE1.1.2 |

PROACTIVE COMMAND 1.1.1

TERMINAL RESPONSE 1.1.1A

TERMINAL RESPONSE 1.1.1B

PROACTIVE COMMAND 1.1.2

TERMINAL RESPONSE 1.1.2

- Sequence 1.2

|  |
| --- |
| Command 1.2.1 |
| TERMINAL RESPONSE 1.2.1 |
| Command 1.2.2 |
| TERMINAL RESPONSE1.2.2 (same as TERMINAL RESPONSE 1.2.1) |
| Command 1.2.3 |
| TERMINAL RESPONSE 1.2.3 |

PROACTIVE COMMAND 1.2.1

PROACTIVE COMMAND 1.2.2

PROACTIVE COMMAND 1.2.3

TERMINAL RESPONSE 1.2.1

TERMINAL RESPONSE 1.2.2

TERMINAL RESPONSE 1.2.3

- Sequence 1.3

|  |
| --- |
| Command 1.3.1 |
| TERMINAL RESPONSE1.3.1 |

PROACTIVE COMMAND 1.3.1

TERMINAL RESPONSE 1.3.1

**27.22.X.X.1.5 Test requirement**

This clause details the conditions to be met for successful completion of the test.

**27.22.X.X.2 Command tested in "environment #2" (NORMAL, ICONS, UCS2 …)**

**27.22.X.X. 2.1 Definition and applicability**

**27.22.X.X. 2.2 Conformance requirement**

**27.22.X.X. 2.3 Test purpose**

**27.22.X.X. 2.4 Method of test**

**27.22.X.X. 2.4.1.1 Initial conditions**

**27.22.X.X. 2.4.1.2 Procedure**

- Sequence 2.1

|  |
| --- |
| Command 2.1.1 |
| TERMINAL RESPONSE2.1.1A or 2.1.1B |
| Command 2.1.2 |
| TERMINAL RESPONSE2.1.2 |

PROACTIVE COMMAND 2.1.1

TERMINAL RESPONSE 2.1.1A

TERMINAL RESPONSE 2.1.1B

PROACTIVE COMMAND 2.1.2

TERMINAL RESPONSE 2.1.2

- Sequence 2.2

|  |
| --- |
| Command 2.2.1 |
| TERMINAL RESPONSE 2.2.1 |
| Command 2.2.2 |
| TERMINAL RESPONSE 2.2.2 (same as TERMINAL RESPONSE 2.2.1) |
| Command 2.2.3 |
| TERMINAL RESPONSE 2.2.3 |

PROACTIVE COMMAND 2.2.1

PROACTIVE COMMAND 2.2.2

PROACTIVE COMMAND 2.2.3

Coding TERMINAL RESPONSE 2.2.1

Coding TERMINAL RESPONSE 2.2.2

Coding TERMINAL RESPONSE 2.2.3

**27.22.X.X.2.5 Test requirement**

# 9 Generic call set up procedures

The generic call set up procedure for PS and CS calls specified for GERAN, UTRAN, E-UTRAN and NG-RAN shall apply.

For a ME accessing E-UTRAN in NB-S1 mode the procedures defined in TS 36.508 [33] shall be the basis for all performed procedures during the test. The procedures in TS 36.508 [33] clause 8.1.5 describe the default behaviour of a conformant ME regarding the specified protocols to be used for E-UTRAN in NB-S1 mode and the required procedures from the NAS.

For a ME accessing E-UTRAN in WB-S1 mode the procedures defined in TS 36.508 [33] shall be the basis for all performed procedures during the test. The procedures in TS 36.508 [33] clause 4.5 describe the default behaviour of a conformant ME regarding the specified protocols to be used for E-UTRAN in WB-S1 mode and the required procedures from the NAS.

For a ME accessing UTRAN the call set up procedures specified in TS 34.108 [12] clause 7.2 shall be the basis for all performed procedures during the test. The procedures in TS 34.108 [12] clause 7 describe the default behaviour of a conformant UE regarding the specified protocols to be used for UTRAN and the required procedures from the NAS.

For a ME accessing GERAN the call set up procedures specified in TS 51.010-1 [23] clause 26.9 shall apply, for session setup the ones defined in clauses 45.2 and 45.4, unless otherwise specified in the present clause.

For a ME accessing NG-RAN the procedures defined in TS 38.508-1 [39] shall be the basis for all performed procedures during the test. The procedures in TS 38.508-1 [39] clause 4.5 describe the default behaviour of a conformant ME regarding the specified protocols to be used for NG-RAN and the required procedures from the NAS.

# 10 - 26 Not used