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COMMUNICATION INDUSTRY STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

ICS 33.050.01

M 37

YD/T 2307-2011

Technical requirement and testing methods for general function of mobile telecommunication terminal

数字移动通信终端通用功能技术要求和测试方法

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Issued on: December 10, 2011

Implemented on: December 10, 2011

**Issued by: Ministry of Industry and Information Technology of People's
Republic of China**

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Technical requirement and testing methods for general function of mobile telecommunication terminal

1 Scope

This standard specifies the general functional technical requirements of the digital mobile communication terminal (hereinafter referred to as the mobile terminal) in the single-module single standby, multi-module single standby, single-module multi-standby state, etc., AND specifies the corresponding test methods.

This standard applies to the digital communication terminal equipment of the GSM (GPRS), WCDMA, TD-SCDMA, cdma2000, cdma2000 HRPD and other systems and their combinations. AND the wireless terminals of other systems may also make reference to it.

2 Normative references

The following documents are essential to the application of this document. For the dated documents, only the versions with the dates indicated are applicable to this document; for the undated documents, only the latest version (including all the amendments) are applicable to this Standard.

GB 2312 Code of Chinese graphic character set for information interchange;
Primary set

Regulations of the People 's Republic of China on Telecommunications

3 Terms, definitions and abbreviations

The following terms and definitions apply to this document.

3.1 Terms and definitions

3.1.1

Subscriber identity module

The collective name of SIM, USIM, and R-UIM.

3.1.2

Multi-mode

It supports the multiple modes in such systems as GSM (GPRS), WCDMA, TD-SCDMA, cdma2000, and cdma2000 HRPD.

3.1.3

Multi-standby

It supports the simultaneous standby of multiple same or different wireless access technologies.

3.1.4

Multi-path

It supports the simultaneous communication of multiple same or different wireless access technologies.

3.2 Abbreviations

The following abbreviations apply to this document.

DTMF: Dual tone multifrequency

ME: Mobile equipment

MT: Mobile terminated

MO: Mobile originated

MMS: Multimedia message service

PIN: Personal identification number

PDA: Personal digital assistant

SIM: Subscriber identity module

SMS: Short message service

USIM: Universal subscriber identity module

UIM: User identity module (also known as R-UIM)

4 Overview

In accordance with the number of simultaneous standby network of the mobile terminal AND the number of supported card slot, it may divide the mobile terminal into single-module single standby mobile terminal, single-module multi-standby mobile terminal, multi-module single standby mobile terminal, and multi-module multi-standby mobile terminal.

5.1.1.2.4 Call time prompt indication

During the call, the mobile terminal under test shall be able to display the real-time call duration; after the call is over, the mobile terminal under test shall be able to display the total duration of the call.

5.1.1.2.5 Call progress signal indication

The mobile terminal shall give an indication, such as a tone, a voice prompt, or a visual symbol or graphic display, based on the signaling information returned by the network.

5.1.1.2.6 Signal strength indication

The mobile terminal shall be able to schematically display the received signal strength.

5.1.1.2.7 Message indication and confirmation

The mobile terminal shall make prompt when receiving the SMS or MMS; if such SMS or MMS has not yet been read by the user, it shall also have the unread mark. After the mobile terminal issues SMS or MMS, if the message has been received by the recipient based on the information fed back from the network, AND if the mobile terminal has activated the reception report, the report shall be confirmed on the man-machine interface.

5.1.1.2.8 Short message overflow indication

If the message cannot continue to receive short messages because the subscriber identity module or the short message memory capacity of the mobile phone is insufficient, it shall display the short message overflow information or issue the short message overflow indication tone on the man-machine interface of the mobile terminal. If the user deletes one or more short messages based on the storage location of the short message, this indication disappears. After this indication disappears, it shall at least ensure the reception of the next short message.

5.1.1.2.9 Battery capacity indication and alarm

The mobile terminal shall have a battery capacity indication, AND shall have an alarm indication when the capacity is insufficient. The battery capacity indication shall be changed with the change of the battery capacity.

5.1.1.2.10 Charge status indication

In the process of charging the mobile terminal, the screen shall clearly indicate the message that the battery is being charged, AND the status of the battery being charged in the form of progressive graphics. This indicated information shall be the same as the instructions of the manual.

5.1.1.2.11 Date/time indication

If the photographing function is supported, the mobile terminal shall be able to support the voice prompt when taking photos;

If the camera function is supported, the mobile terminal shall have obvious sound or other prompts when taking photos.

5.1.1.4 Personal information category functions

5.1.1.4.1 Short message

The short message in the mobile terminal or subscriber identity module shall be able to be deleted, replied, forwarded, and so on.

5.1.1.4.2 Call log

The call log shall indicate the type of call type of each call log (dialed, answered, missed), calling number or the identification information corresponding to calling number (answered, missed), AND the called number or the identification information corresponding to called number (dialed).

The call log in the mobile terminal shall be able to perform a single item deletion or all item deletion.

5.1.1.4.3 Phonebook

The mobile terminal shall have the phonebook function, which supports the creation, inquiry, editing, deletion, and reading of the telephone directory records in the subscriber identity module and the mobile phonebook.

5.1.1.4.4 Personal documents

All personal files stored in the mobile terminal and in the subscriber identity module (which are not copyrighted) shall be able to be read normally AND can be operated and used; AND the new personal files can be stored in the mobile terminal or in the subscriber identity module.

5.1.1.5 Information security category function

5.1.1.5.1 Subscription recognition management

If the subscriber identity module of the mobile terminal is removed at the time of operation, the service that the mobile terminal is performing shall be interrupted AND no communication other than the emergency call can be made. At the same time, the man-machine interface of the mobile terminal under test shall have the related indications of "INSERT or DETECT the subscriber identity module".

5.1.1.5.2 PIN code protection

As for the subscriber identity module which has PIN code protection setting, it is required to input correct PIN code before making operation against the

Unless otherwise specified, all the contents of this clause are non-user default mode to select the subscriber identity module.

5.1.2.1 Card slot requirements

- a) For mobile terminals that support multiple card slots, the identification of different card slots which is the same as in the description in the instruction manual in an eye-catching position;
- b) If the same card slot supports multiple network modes, the card slot shall be able to support multi-mode cards;
- c) The mobile terminal shall be able to select the network correctly and work normally in accordance with the information of the subscriber identity module and the network mode supported by the card slot.

5.1.2.2 Emergency call

- a) After boot under the conditions that all card slots are inserted of the subscriber identity module AND all card slots are not inserted of the subscriber identity module, the mobile terminal shall be able to make an emergency call. The emergency call function of the mobile terminal shall comply with the requirements of 5.1.1.1.2.
- b) For mobile terminals that support multiple network modes, it may initiate an emergency call on any supported network, AND the emergency call function of any network shall comply with the requirements of 5.1.1.1.2.

5.1.2.3 Subscriber identity module selection

5.1.2.3.1 Boot subscriber identity module selection

The mobile terminal shall provide the following boot subscriber identity module selection methods:

- a) Subscriber identity module list selection (display order shall be described in the manual);
- b) User default mode subscriber identity module selection (optional): it is allowed for the user to set any subscriber identity module as the default subscriber identity module through menu setting OR changing the position of module in the card slot (the setting mode shall be described in the manual).

5.1.2.3.2 Subscriber identity module selection during boot (one module)

- a) When only one subscriber identity module is inserted in the mobile terminal AND the subscriber identity module supports only one network mode, the mobile terminal shall enter directly into the standby state after boot OR the network search state, AND finish the network search.

meanwhile it shall use the identifications consistent with the user manual to distinguish the data files of different storage areas;

- b) It is possible to choose supporting the operation and use of the subscriber identity module not in use OR the personal files in non-current network mode (non-copyrighted).

5.2 Basic function technical requirements in multi-standby

5.2.1 Single-module multi-standby function

This clause applies to mobile terminals that support single-module multi-standby.

5.2.1.1 Display/indication category function

5.2.1.1.1 Network mode identification

In the single-module multi-standby state, the mobile terminal screen shall display the network modes in the standby mode AND the corresponding operator identifications. The operator's information shall comply with the requirements of the Regulations of the People's Republic of China on Telecommunications.

5.2.1.1.2 Signal strength indication

The mobile terminal shall be able to schematically display the received signal strength; in the single-module multi-standby state, it shall be able to simultaneously and correctly display the strength of all network signals in the standby state, AND the signal strength of all networks shall be distinguished using the sequence or identification consistent with the user manual.

5.2.2 Multi-module multi-standby functions

5.2.2.1 Subscriber identity module selection

5.2.2.1.1 Boot subscriber identity module selection method

The mobile terminal shall provide the following boot subscriber identity module selection methods:

- a) Subscriber identity module list selection (display order shall be described in the user manual);
- b) Subscriber identity module selection by the method defaulted by the user (optional): it is allowed for the user to set any multiple subscriber identity modules to the defaulted subscriber identity module through the menu setting OR changing the card position in the card slot (the setting mode shall be described in the user instructions).

- c) When the user selects the other networks than those in which the subscriber identity module currently being used by the mobile terminal is working, the mobile terminal shall perform the deactivation process of the network corresponding to the currently active subscriber identity module, AND select to attempt to enter the new network based on the user's selection;
- d) When the mobile terminal fails in searching for a user-selected network, the mobile terminal shall be able to re-list the subscriber identity module for the user to select again.

5.2.2.2 Display/indication category function

5.2.2.2.1 Operator identification

In the multi-module multi-standby state, the mobile terminal shall be able to simultaneously and correctly display the operator identifications corresponding to all subscriber identity modules in the standby state, AND the operator identifications of all networks shall be distinguished in the sequence or identification consistent with the user manual. The operator's information shall comply with the requirements of the Regulations of the People's Republic of China on Telecommunications.

5.2.2.2.2 Network mode identification

In the multi-module multi-standby state, the mobile terminal shall use a method consistent with the user manual to distinguish between different network modes.

5.2.2.2.3 Signal strength indication

The mobile terminal shall be able to schematically display the received signal strength; in the multi-module multi-standby state, the mobile terminal shall be able to simultaneously and correctly display the strength of all network signals in the standby state, AND the signal strength of all networks shall be distinguished using the sequence or identification consistent with the user manual.

5.2.2.2.4 Service state indication

In the multi-module multi-standby state, the mobile terminal shall be able to correctly display the service state AND the service state display shall comply with the requirements of 5.1.1.2.3, AND it shall use the sequence or identification in consistent with the user manual to distinguish the service states of all subscribers.

5.2.2.2.5 Prompt information

In the multi-module multi-standby state, when one own number of the mobile terminal is in call state, if the other network modes of the own number OR

5.2.2.3.3 Multiple own number incoming call at the same time in idle state

For a mobile terminal that supports multi-module multi-standby multi-pass, in the multi-module multi-standby state, when the standby network of all subscriber identity modules is in idle state AND when there are multiple own number incoming calls, it shall comply with the following requirements:

- a) The mobile terminal shall be able to display all calling numbers or corresponding identification information at the same time, AND shall be able to indicate the own number or own subscriber identity module dialed respectively by all the calling parties;
- b) The user shall be able to select any of the incoming calls;
- c) After one of the incoming calls is answered, other calls shall continue to be prompted OR in call waiting state OR automatically be rejected.

5.2.2.3.4 There is other own number incoming call during the call of an own number

For a mobile terminal that supports multi-module multi-standby multi-pass, in the multi-module multi-standby state, when an own number is on a call AND there is other own number incoming call, it shall comply with the following requirements:

- a) The mobile terminals shall have prompt, AND the quality of the original call shall not be affected;
- b) The mobile terminal shall be able to display the calling party number or the corresponding identification information, AND be able to indicate the own number or own subscriber identity module dialed by the calling party;
- c) The mobile terminal shall be able to allow the user to choose to answer incoming calls. If the user chooses to answer the call, the mobile terminal shall be able to normally switch to the incoming call of the new own number, AND the original call is interrupted or maintained. If the user refuses to answer or does not handle other own number incoming calls, the user shall be able to continue the original call. If the user does not handle other own number incoming calls, the mobile terminal screen shall display the missed calls, AND the missed calls shall include the calling party number or the corresponding identification information, AND it shall be able to indicate the calling party number or the own subscriber identity module as dialed by the calling party;
- d) After the call is over, callback shall be able to be made for missed calls.

5.2.2.3.5 There is other own number incoming calls during the dialing process of one own number

For a mobile terminal that supports multi-module multi-standby multi-pass, in the multi-module multi-standby state AND in an own number dialing process, if

- c) The received short message shall include the sender number, be able to indicate the own number of the subscriber identity module as sent by the sender, AND the contents of the short message shall be correct;
- d) The original data service shall not be affected.

6 Mobile terminal common function test method

6.1 Function test method in single-standby

6.1.1 Function in single-module single-standby

6.1.1.1 Communication category function

6.1.1.1.1 Voice calls

6.1.1.1.1.1 Test method

- a) USE the mobile terminal under test to make a voice call to other non-own numbers by the direct number input, MAKE it connected and PERFORM calling; HANG up it through the mobile terminal under test;
- b) It may use such methods as phonebook records, call log, short message extraction, and shortcut key setting, etc., to dial other non-own numbers through the mobile terminals under test;
- c) USE other non-own number to initiate a voice call to the mobile terminal under test; ANSWER the call.

6.1.1.1.1.2 Expected results

The mobile terminal shall be capable of providing one or more means for dialing, answering, talking and on-hook operations, AND the supported operation methods are normal and valid.

6.1.1.1.2 Emergency call

6.1.1.1.2.1 Test method

- a) DO not insert the mobile terminal into the subscriber identity module, and DIAL the emergency call number in accordance with the support state of the operator network;
- b) INSERT the subscriber identity module into the mobile terminal, and DIAL the emergency call number in accordance with the support state of the operator network;

6.1.1.1.2.2 Expected results

Emergency call is dialed out normally.

- b) SELECT or INPUT the telephone number as stored in the step a) from/into the phonebook of the mobile terminal under test, and INITIATE a call;
- c) INITIATE a call to the mobile terminal under test through the mobile terminal the own number of which is the number stored in the step a).

6.1.1.2.1.2 Expected results

- a) The telephone number and its corresponding identification information are stored correctly and valid;
- b) Before and after the call is initiated, the mobile terminal under test shall correctly display the called number or the corresponding identification information;
- c) The mobile terminal under test shall correctly display the calling number or the corresponding identification information.

6.1.1.2.2 Operator identification

6.1.1.2.2.1 Test method

- a) INSERT the subscriber identity module into the mobile terminal under test, and BOOT it;
- b) VERIFY whether the screen correctly displays the operator identification as corresponding to the network.

6.1.1.2.2.2 Expected results

The mobile terminal shall correctly display the operator identification corresponding to the current registered network.

6.1.1.2.3 Service Indicators

6.1.1.2.3.1 Test method

- a) INSERT the subscriber identity module into the mobile terminal under test, and BOOT it;
- b) In the standby state, VIEW the screen information of the mobile terminal under test;
- c) In the region covered by the network, VIEW the screen information of the mobile terminal under test;
- d) In the region not covered by the network OR through shielding the signal reception of the mobile terminal under test, VIEW the screen information of the mobile terminal under test;

- c) CHECK the display information of the man-machine interface of the mobile terminal under test in the calling process.

6.1.1.2.5.2 Expected results

The mobile terminal shall give an indication, such as a tone, a voice prompt, or a visual symbol or graphic display, based on the signaling information returned by the network.

6.1.1.2.6 Signal strength indication

6.1.1.2.6.1 Test method

- a) INSERT the subscriber identity module into the mobile terminal, and BOOT it;
- b) Check whether the standby interface has a signal strength indication.

6.1.1.2.6.2 Expected results

The mobile terminal under test shall be able to schematically display the received signal strength.

6.1.1.2.7 Message indication and confirmation

6.1.1.2.7.1 Test method

- a) INSERT the subscriber identity module into the mobile terminal, and BOOT it, to enter the standby state;
- b) USE the other mobile subscribers to send SMS to the mobile terminal under test; OBSERVE the performance of the mobile terminal under test when it receives the SMS;
- c) USE the other mobile subscribers to send MMS to the mobile terminal under test; OBSERVE the performance of the mobile terminal under test when it receives the MMS;
- d) USE the mobile terminal under test to send SMS to other mobile subscribers; OBSERVE the performance of the mobile terminal under test after it sends the SMS;
- e) USE the mobile terminal under test to send MMS to other mobile subscribers; OBSERVE the performance of the mobile terminal under test after it sends the MMS;

6.1.1.2.7.2 Expected results

- a) The mobile terminal shall have prompt when receiving SMS or MMS; if the SMS or MMS has not yet been read by the user, there shall be an unread mark.

6.1.1.3.5.2 Expected results

Headset shall function normally.

6.1.1.3.6 Charging capacity

6.1.1.3.6.1 Test method

- a) ASSEMBLE a low voltage battery which cannot ensure normal boot into the mobile terminal under test; PRESS the boot key;
- b) CONNECT the mobile terminal under test with the power adapter, and MAKE the power adapter connect to the power grid;
- c) After the mobile terminal under test is charged for 10 min, PRESS down the boot button; then START normal operation;
- d) PERFORM charging operation in the boot state until the battery is full, OBSERVE the screen of the mobile terminal under test; CONTINUE charging in the shutdown state; OBSERVE the screen of the mobile terminal under test.

6.1.1.3.6.2 Expected results

- a) The mobile terminal under test cannot be turned on.
- b) When the mobile terminal under test is connected to the power supply, there shall be a charging indication, AND the on/off state of the mobile terminal under test shall have no change.
- c) The mobile terminal under test shall be able to be boot normally; when the user performs operation after boot, the mobile terminal under test shall be able to perform normal reception and handling operation; when the user does not perform operation, the on/off state of the mobile terminal under test shall have no change.
- d) In the boot and shutdown state, if the battery is charged full, the mobile terminal under test shall prompt that the battery is charged full AND stop automatically charging.

6.1.1.3.7 Photographing or camera function

6.1.1.3.7.1 Test method

FOLLOW the descriptions of the mobile terminal user instruction to use the photographing or camera function of the mobile terminal; CHECK the photographing or camera prompt information of the mobile terminal.

6.1.1.3.7.2 Expected results

6.1.1.4.3.1 Test method

- a) INSERT the subscriber identity module into the mobile terminal under test, and BOOT it;
- b) ENTER the telephone phone directory of the mobile terminal under test; ADD the new telephone number record;
- c) ENTER the telephone phone directory of the mobile terminal under test; MODIFY the telephone number which had been added to the mobile terminal under test OR the subscriber identity module;
- d) ENTER the telephone phone directory of the mobile terminal under test; DELETE the telephone number which had been added to the mobile terminal under test OR the subscriber identity module.

6.1.1.4.3.2 Expected results

The mobile terminal shall support the creation, editing, deletion and reading of the telephone number records in the subscriber identity module and the mobile terminal telephone number directory.

6.1.1.4.4 Personal files

6.1.1.4.4.1 Test method

- a) BOOT the mobile terminal;
- b) CREATE a file, such as a ringtone, a picture taken by the built-in camera of the mobile terminal, and SAVE it;
- c) READ the data files stored in the mobile terminal folder or the subscriber identity module, and OPERATE and USE it.

6.1.1.4.4.2 Expected results

- a) The user shall be able to correctly read all personal files (not copyrighted) stored in the mobile terminal and in the subscriber identity module, AND be able to operate and use it;
- b) For new personal file, it can be stored in the mobile terminal or in the subscriber identity module.

6.1.1.5 Information security category function

6.1.1.5.1 Subscription recognition management

6.1.1.5.1.1 Test method

- a) UNPLUG the subscriber identity module from the mobile terminal under test; BOOT it; CHECK the screen information;

- i) INSERT any subscriber identity module without PIN code protection and any subscriber identity module with PIN code protection in any combination into the mobile terminal.
- j) BOOT the mobile terminal, LIST the subscriber identity module.
- k) SELECT one of the available subscriber identity modules or SELECT multiple available subscriber identity modules simultaneously (for the mobile terminals supporting multi-standby functions); as for the subscriber identity module with PIN code protection, INPUT the PIN code.
- l) TRY to read and write the information in the PIN code-protected subscriber identity module that did not enter the PIN correctly.
- m) In the standby state, RE-SELECT the subscriber identity module; REPEAT the steps k) ~ l), until all the subscriber identity modules or the combinations of the subscriber identity modules (for the mobile terminals supporting multi-standby functions) are selected;
- n) REPEAT steps j) to m), until finishing the PIN code input combination for all subscriber identity modules with PIN code protection.
- o) SHUTDOWN the mobile terminal.
- p) REPEAT steps h) ~ o), until all module insertion combinations.
- q) For the mobile terminal that selects the subscriber identity module by default, SET the mobile terminal to the default mode to select the subscriber identity module. The subscriber identity module as selected by default during boot is tested respectively under two conditions: without PIN code protection AND with PIN code protection.

6.1.1.5.2.2 Expected results

- a) When the subscriber identity module has PIN protection, the mobile terminal shall not operate any information in the subscriber identity module that has not entered the PIN code correctly.
- b) For a subscriber identity module that does not have PIN protection, the mobile terminal shall be able to perform normal operation without entering a PIN.

For mobile terminals that support multiple card slots, it shall also comply with the requirements c) to e):

- c) When the mobile terminal selects the subscriber identity module in accordance with the non-default mode, after boot, if the mobile terminal shall list the subscriber identity modules, the mobile terminal shall be able to correctly select the subscriber identity module which does not set the PIN code protection and correctly enters the PIN code.

- b) SHUTDOWN the mobile terminal;
- c) INSERT the corresponding single-mode card or multi-mode card or its combination in the card slot in accordance with the descriptions in the use manual based on the network mode as supported by the terminal card slot;
- d) BOOT the mobile terminal;
- e) SELECT any subscriber identity module in accordance with the descriptions in the user manual based on the network mode as supported by the card slot AND the information of the inserted subscriber identity module;
- f) SHUTDOWN the mobile terminal;
- g) REPEAT steps d) ~ f), until all possible subscriber identity modules and combinations have been tested;
- h) REPEAT steps c) ~ g), until all possible card insert-methods have been tested.

6.1.2.1.2 Expected results

- a) The mobile terminal may choose single-card slot or multi-card slot;
- b) For mobile terminals that support multi-card slots, there shall be identifications same as the descriptions in the user manual on an eye-catching position to distinguish different card slots;
- c) If the same card slot supports multiple network modes, this card slot shall be able to support multi-mode cards;
- d) The mobile terminal shall be able to select the network correctly AND work properly in accordance with the information of the card and the network mode supported by the card slot.

6.1.2.2 Emergency call

6.1.2.2.1 Test method

- a) SHUTDOWN the mobile terminal;
- b) CHECK all card slots of the mobile terminal, to ensure that no card is inserted in card slot;
- c) BOOT the mobile terminal;
- d) CHECK whether the mobile terminal can make an emergency call;
- e) SHUTDOWN the mobile terminal;

- a) SHUTDOWN the mobile terminal.
- b) INSERT a single-mode or multi-mode card into the card slot, depending on the network mode supported by the terminal card slot, as described in the user manual.
- c) BOOT the mobile terminal.
- d) If the card slot inserted with the subscriber identity module in step b) supports only one network mode, OBSERVE whether the mobile terminal can enter the network search state; if the card slot inserted with the subscriber identity module in step b) supports multiple network mode, SELECT any network mode depending on the network mode supported by the terminal card slot AND the information of the inserted subscriber identity module, as described in the user manual.
- e) SHUTDOWN the mobile terminal.
- f) REPEAT steps d) ~ e), until all possible network modes have been selected.
- g) REPEAT steps c) ~ f), until all possible card insert-modes have been tested.

6.1.2.3.2 Expected results

- a) When only one subscriber identity module is inserted in the mobile terminal AND this subscriber identity module supports only one network mode, the mobile terminal shall, after boot, enter directly the standby state or the network search state AND complete the network search.
- b) When only one subscriber identity module is inserted in the mobile terminal AND the subscriber identity module supports multiple network modes, the mobile terminal shall, after boot, correctly select the network automatically or manually in accordance with the setting of the current working network mode.
- c) When only one subscriber identity module is inserted in the mobile terminal AND the subscriber identity module supports multiple network modes, as for the mobile terminal which supports manual network selection method, if the user selects a network BUT the mobile terminal fails in searching for the network, the mobile terminal shall be able to re-list the selectable network for the user to make re-selection.

6.1.2.3.3 Subscriber identity module selection during boot (multi-module)

6.1.2.3.3.1 Test method

- a) SHUTDOWN the mobile terminal.

terminal shall, after boot, be able to correctly display the subscriber identity modules which can be selected by the user, for manual selection of the user; if the subscriber identity module selected by the user supports only one network mode, the mobile terminal shall be able to select AND finish the network search based on users; if the subscriber identity module as selected by the user supports multiple network modes, the mobile terminal shall be able to correctly select the network, automatically or manually, in accordance with the setting of the current working network mode.

- b) For the mobile terminal which is set to the subscriber identity module selection by the default method, the mobile terminal shall, after boot, directly search the default selected subscriber identity module. If the subscriber identity module selected by the user supports only one network mode, the mobile terminal shall be able to select AND finish the network search based on users; if the subscriber identity module as selected by the user supports multiple network modes, the mobile terminal shall be able to correctly select the network, automatically or manually, in accordance with the setting of the current working network mode.
- c) When the mobile terminal fails in searching for the network as selected by the user, the mobile terminal shall be able to relist the available subscriber identity module for the re-selection of the user.

6.1.2.3.4 Subscriber identity module selection in standby mode (single-module)

6.1.2.3.4.1 Test method

- a) SHUTDOWN the mobile terminal;
- b) INSERT a single-mode or multi-mode card into the card slot, depending on the network mode supported by the terminal card slot, as described in the user manual.
- c) BOOT the mobile terminal.
- d) Manually or automatically SELECT any of the available networks to enter the standby state;
- e) TRIGGER the subscriber identity module selection menu through pressing the shortcut key or menu selection;
- f) CHECK the list of available subscriber identity modules;
- g) RE-SELECT the subscriber identity module in accordance with the list of available subscriber identity modules displayed by the mobile terminal;
- h) REPEAT a) ~ g), until all the card insert-methods have been tested.

- g) USE all the own standby number to dial other non-own numbers in turn;
- h) CHECK the call log menu.
- i) REPEAT steps d) ~ h), until all possible networks have been tested;
- j) REPEAT steps a) ~ i), until all card insertion combinations have been tested.

6.1.2.4.2 Expected results

- a) The call log shall be able to indicate the type of call (dialed, answered, missed) of each call log, the calling number (answered and missed), and the called number (dialed) of each call log;
- b) It shall be able to view the own number call log which is currently in standby state;
- c) It may select supporting the view of the own number call log which is not in the standby mode; when the mobile terminal supports the view of multiple own number call logs simultaneously, it shall distinguish the call logs of different numbers, such as “a certain own number has been dialed”, “a certain own number has been answered”, AND “a certain own number has been missed”;
- d) The user shall be able to perform single item deletion or all item deletion for the call log from the mobile terminal.

6.1.2.4.3 Phonebook

6.1.2.4.3.1 Test method

- a) SHUTDOWN the mobile terminal;
- b) INSERT any single-mode card or multi-mode card or the combination thereof into the mobile terminal card slot in accordance with the network mode supported by the mobile terminal card slot as described in the user manual;
- c) BOOT the mobile terminal;
- d) FOLLOW the instructions in the user manual, to manually or automatically select any one of the available network to enter the standby state;
- e) READ the phonebook, and PERFORM editing, deletion, revoking (making call or sending short message) and other operation against any log in the phonebook;
- f) ADD a log to the phonebook;

module currently in use under the current working network mode, AND meanwhile it shall use the identifications consistent with the user manual to distinguish the data files of different storage areas;

- b) It is possible to choose supporting the operation and use of the subscriber identity module not in use OR the personal files in non-current network mode (non-copyrighted).

6.2 Multi-standby function test method

6.2.1 Single-module multi-standby function

6.2.1.1 Display/indication category function

6.2.1.1.1 Network mode identification

6.2.1.1.1.1 Test method

- a) SHUTDOWN the mobile terminal;
- b) INSERT the multi-mode card into the mobile terminal card slot in accordance with the network mode supported by the mobile terminal card slot as described in the user manual;
- c) BOOT the mobile terminal;
- d) FOLLOW the instructions in the user manual, to manually or automatically select more than one available networks to enter the single-module multi-standby state;
- e) CHECK the current working network mode identification of the mobile terminal in the standby state;
- f) CHECK the operator identification corresponding to the network when the mobile terminal is in the standby mode;
- g) REPEAT steps d) ~ f), until all possible combinations of networks have been tested;
- h) REPEAT steps a) ~ f), until all card insertion combinations have been tested.

6.2.1.1.1.2 Expected results

- a) In the single-module multi-standby state, the mobile terminal screen shall display the current working network mode;
- b) In the single-module multi-standby state, the mobile terminal screen shall display the operator identifications corresponding to the network which is currently in standby state, AND the operator's information shall comply

- a) SELECT the subscriber identity module in accordance with the subscriber identity module list (the display order shall be consistent with the descriptions in the manual).
- b) User default mode subscriber identity module selection (optional): it is allowed for the user to set any subscriber identity module as the default subscriber identity module through menu setting OR changing the position of module in the card slot (the setting mode shall be described in the user manual).

6.2.2.1.2 Subscriber identity module selection during boot (multi-module)

6.2.2.1.2.1 Test method

- a) SHUTDOWN the mobile terminal.
- b) INSERT more than one single-mode or multi-mode card combination into the mobile terminal card slot in any combination in accordance with the instructions of the user manual, and BOOT it (the mobile terminal is not set to the default mode to select the subscriber identity module).
- c) BOOT the mobile terminal.
- d) CHECK the list of available subscriber identity modules displayed by the mobile terminal.
- e) SELECT any number of subscriber identity modules from the list of available subscriber identity modules.
- f) SHUTDOWN the mobile terminal.
- g) REPEAT steps c) ~ f), until all possible subscriber identity module combinations have been tested.
- h) For a mobile terminal that supports the subscriber identity module selection by the user's default method, when the mobile terminal is in standby state, USE the menu to set the mobile terminal boot to select multiple subscriber identity module by the user default method.
- i) For a mobile terminal that supports the subscriber identity module selection by the user's default method, SELECT any more subscriber identity module combination as the default selected subscriber identity module through menu setting OR changing the position of module in the card slot.
- j) SHUTDOWN the mobile terminal.
- k) BOOT the mobile terminal.
- l) If the user default subscriber identity module supports only one network mode, OBSERVE the mobile terminal search network state; if the user

- e) CHECK the network mode identification of the mobile terminal in standby state;
- f) REPEAT steps d) ~ e), until all possible combinations of networks have been tested;
- g) REPEAT steps a) ~ f), until all card insertion combinations have been tested.

6.2.2.2.2 Expected results

In the multi-module multi-standby state, the mobile terminal shall use a method consistent with the user manual to distinguish between different network modes.

6.2.2.2.3 Signal strength indication

6.2.2.2.3.1 Test method

- a) SHUTDOWN the mobile terminal;
- b) INSERT any single-mode or multi-mode card combination into the mobile terminal card slot in accordance with the instructions of the user manual based on the network mode as supported by the mobile terminal card slot;
- c) BOOT the mobile terminal.
- d) Manually or automatically SELECT any number of available networks to enter the multi-module multi-standby state in accordance with the instructions of the user manual;
- e) CHECK the signal strength indication of the mobile terminal in the standby interface;
- f) REPEAT steps d) ~ e), until all possible combinations of networks have been tested;
- g) REPEAT steps a) ~ f), until all card insertion combinations have been tested.

6.2.2.2.3.2 Expected results

- a) The mobile terminal shall be able to schematically display the received signal strength;
- b) In the multi-module multi-standby state, the mobile terminal shall be able to simultaneously and correctly display the strength of all network signals in the standby state, AND the signal strength of all networks shall be distinguished using the sequence or identification consistent with the user manual.

- e) USE the non-own number to dial the own number 1 and MAKE a call;
- f) USE the non-own number to dial the own number 2, or otherwise SEND data to the own number 2;
- g) For the mobile terminal in which multiple network modes of the same subscriber identity module are in the standby mode simultaneously, USE the other non-own number to dial the other network mode of the own number 1, or otherwise send data to the other network modes of the own number 2;
- h) REPEAT steps d) ~ g), until all possible combinations of networks have been tested;
- i) REPEAT steps a) ~ h), until all card insertion combinations have been tested.

6.2.2.2.5.2 Expected results

In the multi-module multi-standby state, when one own number of the mobile terminal is in call state, if the other network modes of the own number OR other own numbers receive calls or data, the mobile terminal shall have prompt.

6.2.2.3 Functions for handling call services

6.2.2.3.1 Dialing non-own number in idle state

6.2.2.3.1.1 Test method

- a) SHUTDOWN the mobile terminal;
- b) INSERT any single-mode or multi-mode card combination into the mobile terminal card slot based on the network mode as supported by the mobile terminal card slot;
- c) BOOT the mobile terminal.
- d) Manually or automatically SELECT any number of available networks to enter the multi-module multi-standby state in accordance with the instructions of the user manual;
- e) SELECT an own number to dial another non-own number;
- f) After a period of dialing, HANG up the call, RETURN to the standby state;
- g) REPEAT steps d) ~ f), until all possible networks and combinations have been tested;
- h) REPEAT steps a) ~ g), until all card insertion combinations have been tested;

- b) INSERT any single-mode or multi-mode card combination into the mobile terminal card slot based on the network mode as supported by the mobile terminal card slot;
- c) BOOT the mobile terminal.
- d) Manually or automatically SELECT any number of available networks to enter the multi-module multi-standby state in accordance with the instructions of the user manual;
- e) USE any of non-own numbers to dial any own standby number; CHECK the incoming call interface; MAKE the call connected to enter the call state;
- f) END the call;
- g) USE any of non-own numbers to dial this own number again; DO not answer the call; VIEW the missed call and CALL back the missed call;
- h) RETURN to the standby interface;
- i) REPEAT steps d) ~ h), until all possible own numbers have been tested;
- j) REPEAT steps a) ~ i), until all card insertion combinations have been tested.

6.2.2.3.2 Expected results

- a) No matter which one of the own number calls, the user shall be able to be normally connected, AND it shall be able to make normal call after connection;
- b) The incoming call interface shall be able to display the calling party number or the corresponding identification information;
- c) The incoming call interface shall indicate the own number or own subscriber identity module which is dialed by the calling party;
- d) The missed calls shall be obviously prompted in the standby interface;
- e) The missed call display shall include the calling party number or the corresponding identification information, AND it shall be able to indicate the own number or own subscriber identity module as dialed by the calling party;
- f) The user shall be able to call back the missed number.

6.2.2.3.3 Multiple own number incoming call at the same time in idle state

6.2.2.3.3.1 Test method

the calling party number or the own subscriber identity module as dialed by the calling party;

- c) After the call is over, callback shall be able to be made for missed calls.

6.2.2.4 Functions for handling short message services

6.2.2.4.1 Sending short message in idle state

6.2.2.4.1.1 Test method

- a) SHUTDOWN the mobile terminal;
- b) INSERT any single-mode or multi-mode card combination into the mobile terminal card slot based on the network mode as supported by the mobile terminal card slot;
- c) BOOT the mobile terminal.
- d) Manually or automatically SELECT any number of available networks to enter the multi-module multi-standby state in accordance with the instructions of the user manual;
- e) SELECT any one of the own numbers to send short messages to other non-own numbers;
- f) REPEAT steps d) ~ e), until all possible network combinations and number combinations have been tested;
- g) REPEAT steps a) ~ f), until all card insertion combinations have been tested.

6.2.2.4.1.2 Expected results

- a) The user shall be able to choose any own number of the mobile terminal to send a short message;
- b) No matter which own number is chosen to send a short message, the short message shall be able to be sent normally.

6.2.2.4.2 Receiving short message in idle state

6.2.2.4.2.1 Test methods

- a) SHUTDOWN the mobile terminal;
- b) INSERT any single-mode or multi-mode card combination into the mobile terminal card slot based on the network mode as supported by the mobile terminal card slot;
- c) BOOT the mobile terminal.

- g) REPEAT steps d) ~ f), until all possible network combinations and number combinations have been tested;
- h) REPEAT steps a) ~ g), until all card insertion combinations have been tested.

6.2.2.5.1.2 Expected results

- a) When the data service of an own number that supports data service is in the activated state, after the other own numbers use the data service, the original data service shall remain connected;
- b) When the second data service is interrupted, the original data service shall be able to continue.

6.2.2.6 Function of handling concurrent calls, short messages, and data services

6.2.2.6.1 When an own number is on a call, the other own number send short message

6.2.2.6.1.1 Test method

- a) SHUTDOWN the mobile terminal;
- b) INSERT any single-mode or multi-mode card combination into the mobile terminal card slot based on the network mode as supported by the mobile terminal card slot as instructed in the user manual;
- c) BOOT the mobile terminal.
- d) Manually or automatically SELECT any number of available networks to enter the multi-module multi-standby state in accordance with the instructions of the user manual;
- e) LET any own number in a call state; USE the other own number in standby state to send short message to the other non-own number;
- f) REPEAT steps d) ~ e), until all possible network combinations and number combinations have been tested;
- g) REPEAT steps a) ~ f), until all card insertion combinations have been tested.

6.2.2.6.1.2 Expected results

- a) Short messages shall be sent successfully;
- b) The original call shall not be affected.

- a) SHUTDOWN the mobile terminal;
- b) INSERT any single-mode or multi-mode card combination into the mobile terminal card slot based on the network mode as supported by the mobile terminal card slot as instructed in the user manual;
- c) BOOT the mobile terminal.
- d) Manually or automatically SELECT any number of available networks to enter the multi-module multi-standby state in accordance with the instructions of the user manual;
- e) SELECT one own number 1 to use the data service and LET it remain in active state; USER other non-own number to dial other own number 2; SELECT to answer the new incoming call;
- f) SELECT one own number 1 to use the data service and LET it remain in active state; USER other non-own number to dial other own number 2; REJECT to answer the new incoming call;
- g) END the original call, CALL back the rejected incoming call;
- h) SELECT one own number 1 to use the data service and LET it remain in active state; USER other non-own number to dial other own number 2; DO not handle the new incoming call;
- i) END the original call, and CALL back the unhandled call;
- j) REPEAT steps d) ~ i), until all possible network combinations and number combinations have been tested;
- k) REPEAT steps a) ~ o), until all card insertion combinations have been tested.

6.2.2.6.3.2 Expected results

- a) The mobile terminal shall have a prompt, the mobile terminal shall be able to display the calling party number or the corresponding identification information, AND be able to indicate the own number or subscriber identification number as dialed by the calling party.
- b) The mobile terminal shall be able to allow the user to choose to answer the incoming call. If the user chooses to answer the call, the mobile terminal shall be able to normally switch to other own numbers. If the user refuses to answer or does not handle calls from other own numbers, the user shall be able to continue the original data service.
- c) If the user does not handle other own number calls, the mobile terminal shall have an incoming call prompt. The missed call display shall include the calling party number or the corresponding identification information, AND it shall indicate the own number as dialed by the calling party.

Sending short message in idle state	It is mandatory for the mobile terminal which supports multi-module multi-standby to support it
Receiving short message in idle state	It is mandatory for the mobile terminal which supports multi-module multi-standby to support it
Functions of handling concurrent data services	It is mandatory for the mobile terminal which supports multi-module multi-standby multi-pass to support it
When an own number is on a call, the other own number send short message	It is mandatory for the mobile terminal which supports multi-module multi-standby multi-pass to support it
When an own number is on a call, the other own number receives short message	It is mandatory for the mobile terminal which supports multi-module multi-standby multi-pass to support it
When an own number uses the data service, other own numbers having incoming call	It is mandatory for the mobile terminal which supports multi-module multi-standby multi-pass to support it
When an own number uses the data service, other own numbers send a short message	It is optional to support it
When an own number uses the data service, other own numbers receive short messages	It is optional to support it

_____ **END** _____