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TD-SCDMA / WCDMA digital cellular mobile telecommunication network test methods for UICC-ME (Cu) interface - Part 1: Physical, electrical and logical characteristics of ME

TD-SCDMA / WCDMA 数字蜂窝移动通信网

通用集成电路卡（UICC）与终端间 Cu 接口测试方法

第 1 部分：物理、电气和逻辑特性

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Foreword

YD/T 1763 *TD-SCDMA / WCDMA digital cellular mobile telecommunication network test methods for UICC-ME (Cu) interface* is divided into 4 parts:

a) *Part 1: Physical, electrical and logical characteristics of ME*;
b) Part 2: Application characteristics of USIM;
c) Part 3: USAT characteristics; and
d) Part 4: UICC supporting USIM application.

This Part is Part 1.

This Part shall be used in conjunction with the *TD-SCDMA / WCDMA digital cellular mobile telecommunication network technical requirements for UICC-ME (Cu) interface - Part 1: Physical, electrical and logical characteristics*.

This Part refers to ETSI TS 102 230 Smart cards; UICC-Terminal Interface; Physical, electrical and logical test specification (V7.0.0).

This Part replaces YD/T 1763.1-2008 *TD-SCDMA / WCDMA digital cellular mobile telecommunication network test methods for USIM-ME (Cu) interface - Part 1: Physical, electrical and logical characteristics*. The major technical changes are as follows:

— ADD the CDMA terminal using UICC in the Scope of Application (SEE 1);

— CHANGE USIM into UICC;

— DELETE the test requirements for Class A operating conditions (SEE Sections 5.1.2, 5.1.3, 5.1.5.1, 5.1.5.2, 5.1.5.5 and 5.2 in 2008 edition);

— ADD the test carried out when the terminal supports the maximum current consumption applied to the UICC (SEE Section 5.2.2.3);

— ADD the rate enhancement test during F = 512 and D = 32 (SEE Section 6.4); and

— DELETE the test independent of application (SEE Chapter 8 in 2008 edition).

This Part was proposed by and shall be under the jurisdiction of the China Communications Standards Association.

Drafting organizations of this Part: China Academy of Telecommunication Research of MIIT, China Mobile Communications Corporation, Datang Telecom Technology & Industry Group, and ZTE Corporation.

TD-SCDMA / WCDMA digital cellular mobile telecommunication network test methods for UICC-ME (Cu) interface - Part 1: Physical, electrical and logical characteristics of ME

1 Scope

This Part specifies the test methods and expected results for the physical, electrical and logical characteristics of the UICC-ME (Cu) interface of TD-SCDMA / WCDMA digital cellular mobile telecommunication network. The specific test contents include the physical property test for Cu interface, electrical property test for Cu interface, test for initial communication establishment, transmission protocol test, and test for the program independent of the application, etc.

This Part **is applicable to** the test for the UICC-ME (Cu) interface of TD-SCDMA mobile telecommunication network, and **is also applicable to** the test for the UICC-ME (Cu) interface of WCDMA digital cellular mobile telecommunication network. The CDMA mobile telecommunication terminal using UICC can also use this Part for reference.

2 Normative references

The following documents are essential to the application of this document. For dated references, only the editions with the dates indicated are applicable to this document. For undated references, only the latest editions (including all the amendments) are applicable to this document.

YD/T 1762.1-2011 *TD-SCDMA / WCDMA digital cellular mobile telecommunication network technical requirements for UICC-ME (Cu) interface - Part 1: Physical, electrical and logical characteristics*

ISO / IEC 7816-3 (1997): *Identification cards - Integrated circuit(s) cards with contacts - Part 3: Electronic signals and transmission protocols*

3 Terms, definitions, symbols, abbreviations and protocols

3.1 Terms and definitions

The following terms and definitions are applicable to this document.

3.1.1 3V technology smart card

It refers to the smart card operating at voltages of 3V ± 10% and 5V ± 10%.

3.1.2 1.8V technology smart card

It refers to the smart card operating at voltages of 1.8V ± 10% and 3V ± 10%.

3.1.3 3V technology terminal

It refers to the smart card operating at voltages of 3V ± 10% and 5V ± 10%.

3.1.4 1.8V technology terminal

It refers to the terminal operating the smart card - terminal Cu interface at voltages of 1.8V ± 10% and 3V ± 10%.

3.1.5 Elementary file (EF)

It refers to the file containing access conditions and data only.

3.1.6 File

It refers to a set of ordered bytes or records in UICC.

3.1.7 Command data length (Lc)

It refers to the length of the command data sent by the application layer, when processing the command in cases 3 and 4 using the T = 0 protocol.

3.1.8 Maximum length of response data (Le)

It refers to the maximum length of the response data expected by the application layer, when processing the command in cases 2 and 4 using the T = 0 protocol.

3.1.9 Length of the data sent from UICC to the terminal (Lr)

SFI	Short (elementary) File Identifier
TE	Terminal Equipment
TLV	Tag Length Value
UE	User Equipment
UICC	Universal Integrated Circuit Card
USIM	Universal Subscriber Identity Module
VCC	power supply input
VPP	programming power input, optional use by the card
WI	Waiting time Integer
WTX	Waiting Time eXtension
WWT	Work Waiting Time

3.4 Protocols

The following coding protocols are applicable to this document.

Unless otherwise stated, all lengths are expressed in bytes. Each byte is represented by bits b8 to b1, among which b8 is the MSB while b1 is the LSB. The leftmost bit is the MSB in each representation.

In the UICC, all bytes designated as RFU shall be set to '00', and all bits designated as RFU shall be set to '0'. If there are GSM and / or USIM applications in the UICC, or GSM and / or USIM applications on an ordinary telecom card, other values may be used to apply for non-GSM or non-USIM application. These values shall be defined in the corresponding specifications for such cards and applications. In a GSM or 3G session, the terminal shall not interpret these bytes and bits.

The data objects in this Part are coded in accordance with the provisions of YD/T 1762.1-2011.

4 Physical property test

4.1 Contact pressure

4.1.1 Definition and scope of application

Test steps:

MEASURE the residual voltage of each contact.

5.1.1.5 Expected results

The relative GND for the residual voltage on each contact shall not exceed ±0.4V.

5.1.2 UICC state during power-up

5.1.2.1 Definition and scope of application

Each contact shall be activated in the prescribed order, so as to prevent damage to the UICC during the activation of the user terminal or in the process of UICC-ME interface activation after supply voltage conversion.

After the terminal analyzes the ATR and determines the voltage category of the UICC, the terminal activates the UICC by deactivating the UICC and activating the UICC with a new supply voltage. The 1.8V technology terminal converts from 1.8V to 3V.

This test is applicable to: 1.8V technology terminals supporting Class B and Class C operating conditions.

5.1.2.2 Conformity requirements

a) When the UE is soft-booted, the contacts of the UICC-ME interface shall be activated to 1.8V mode in the following order:
   1) VCC stabilizes at State H;
   2) CLK is stable;
   3) after the clock signal is applied to the CLK, RST is in State L for at least 400 clock cycles; and
   4) after the clock signal is applied to the CLK, I/O is in State Z within 200 clock cycles.

b) After 1.8V / 3V conversion, the contacts of the UICC-ME interface shall be activated to 3V mode in the order given in b-1).

SEE Section 4.4.2 of YD/T 1762.1-2011 for specific requirements.

5.1.2.3 Test purpose

VERIFY that the contacts at the UICC-ME interface meet the requirements of Section 5.1.2.2 and are activated in a correct order.

5.1.2.4 Test method

4) VCC is deactivated.

If the clock stops and is not restarted, it is only necessary to ensure that all signals reach the end level before VCC leaves the high level, and the terminal is allowed to activate all contacts in any order.

b) When the UICC-ME interface is deactivated for achieving 1.8V / 3V conversion, the contacts shall be deactivated according to the order given in b-1).

SEE Section 4.4.2 of YD/T 1762.1-2011 for specific requirements.

5.1.3.3 Test purpose

VERIFY the clock-based state (running or stop). DEACTIVATE the contacts of the UICC-ME interface in a correct order according to the requirements of Section 5.1.3.2.

5.1.3.4 Test method

Initial conditions:

The terminal is connected to a UICC simulator.

The directory attribute in the UICC shall indicate that the clock stop mode is supported.

Test steps:

UE shall be soft-booted to test the Item a) in the conformity requirements.

UE shall be conducted with the voltage conversion at the UICC-ME interface, so as to test the Item b) in the conformity requirements.

The entire deactivation process of the UICC-ME interface shall be monitored during the test.

5.1.3.5 Expected results

The contacts of the UICC-ME interface are deactivated in the order specified in Section 5.1.3.2.

5.1.4 Time requirements for hot reset

5.1.4.1 Definition and scope of application

5.1.5.1 Response of 1.8V technology terminal during 1.8V technology UICC type identification

5.1.5.1.1 Definition and scope of application

During the ATR analysis, when a 1.8V technology terminal detects a 1.8V technology UICC, the terminal can convert to 3V operating mode, and can also stay in 1.8V operating mode.

This test is applicable to the 1.8V technology terminals supporting Class B and Class C operating conditions.

5.1.5.1.2 Conformity requirements

a) 1.8V technology terminal shall use 1.8V supply voltage to activate UICC for the first time.
b) The terminal shall analyze the ATR and identify the voltage category supported by the USIM.
c) If the 1.8V technology terminal identifies a 1.8V technology UICC, the terminal can convert to 3V for operation. Conversion from 1.8V voltage to 3V voltage only needs to activate UICC immediately after ATR analysis. Then ME interface (no command is issued) uses a 3V supply voltage to activate the USIM.

SEE Section 6.2 of YD/T 1762.1-2011 *TD-SCDMA / WCDMA digital cellular mobile telecommunication network technical requirements for UICC-ME (Cu) interface - Part 1: Physical, electrical and logical characteristics* for specific requirements.

5.1.5.1.3 Test purpose

a) VERIFY that a 1.8V supply voltage is used for activating the 1.8V technology terminal for the first time.
b) VERIFY that the 1.8V technology terminal can correctly identify the supply voltage indicated by the ATR.
c) VERIFY that the 1.8V technology terminal immediately deactivates the UICC-ME interface (no command is issued) after ATR analysis and uses a 3V supply voltage to activate the UICC; or that the 1.8V supply voltage is continued to be used without converting to a 3V supply voltage during the entire card session.

5.1.5.1.4 Test method

Initial conditions:

SEE Section 6.2 of YD/T 1762.1-2011 for specific requirements.

5.1.5.2.3 Test purpose

a) VERIFY that a 1.8V supply voltage is used for activating the 1.8V technology terminal for the first time.
b) VERIFY that the 1.8V technology terminal can correctly identify the supply voltage indicated by the ATR.
c) VERIFY that the 1.8V technology terminal deactivates the UICC-ME interface immediately after identifying a 3V technology UICC (for voltage conversion).
d) VERIFY that the 1.8V technology terminal uses a 3V supply voltage to activate the UICC.

5.1.5.2.4 Test method

Initial conditions:

The terminal shall be connected to a simulated 3V technology UICC simulator, under the standard test conditions in line with the descriptions in Section 5.2.1. All basic files shall be encoded as default values. The terminal shall be powered on.

Test steps:

The UICC simulator shall send an ATR to indicate the 3V technology UICC.

The UICC-ME interface shall be monitored for at least 1min until the UE is turned off.

5.1.5.2.5 Expected results

a) USE a 1.8V supply voltage for the initial activation of the UICC-ME interface.
b) The terminal shall deactivate the UICC-ME interface immediately after analyzing the ATR received from the UICC, then shall use a 3V supply voltage to activate the UICC. The UICC then uses a 3V voltage to continue the card session.

5.1.5.3 Response of the terminal without receiving the ATR

5.1.5.3.1 Definition and scope of application

The terminal shall first use the minimum voltage category available to activate the UICC. If no ATR is received, the UICC-ME interface shall be deactivated and the terminal shall use the next adjacent higher voltage category to activate the UICC.

VERIFY that the terminal is able to keep the voltage of the contact C1 at the UICC-ME interface within the range specified in Section 5.2.2.1.2.

5.2.2.1.4 Test method

Initial conditions:

The terminal shall be connected to a UICC simulator. The UE shall be activated. The remaining contacts of the UICC-ME interface shall meet the standard test conditions (SEE Section 5.2.1).

Test steps:

MEASURE the voltage of the contact C1 (VCC) in the UICC-ME interface.

5.2.2.1.5 Expected results

The terminal shall maintain the voltage of contact C1 in the UICC-ME interface within the range specified in Section 5.2.2.1.2.

5.2.2.2 Test 2

5.2.2.2.1 Definition and scope of application

When the user terminal is activated, the supply voltage on the UICC-ME interface shall be able to neutralize the peak in the UICC current consumption given in the conformity requirements to ensure that the supply voltage remains within the specified range.

This test is applicable to:

1.8V technology terminals supporting Class B and Class C operating conditions.

5.2.2.2.2 Conformity requirements

a) When the terminal is in the 3V operating mode, in the case that the maximum charge of the peak current in the current consumption is 12nAs, the duration is not greater than 400ns, and the maximum amplitude is 60mA, the voltage of contact C1 in the UICC-ME interface shall be 3V ± 10%.
b) When the terminal is in the 1.8V operating mode, in the case that the maximum charge of the peak current in the current consumption is 12nAs, the duration is not greater than 400ns, and the maximum amplitude is 60mA, the voltage of contact C1 in the UICC-ME interface shall be 1.8V ± 10%.

SEE Sections 5.1 and 5.2 of YD/T 1762.1-2011 for specific requirements.

5.2.2.2.3 Test purpose

current available at the CU interface is greater than or equal to 50mA (in 3V operating mode) or 30mA (in 1.8V operating mode).

5.2.2.3.2 Conformity requirements

a) When the terminal is in the 3V operating mode, and after the USIM application is selected via the select command, the power consumption indicated in the returned response is 50mA. During the USIM session, the voltage of contact C1 in the UICC-ME interface shall be 3V ± 10% for I_{cc} up to 50mA.
b) When the terminal is in the 1.8V operating mode, and after the USIM application is selected via the select command, the power consumption indicated in the returned response is 30mA. During the USIM session, the voltage of contact C1 in the UICC-ME interface shall be 1.8V ± 10% for I_{cc} up to 30mA.

SEE Section 6.2.3 of YD/T 1762.1-2011 for specific requirements.

5.2.2.3.3 Test purpose

VERIFY that the terminal is able to keep the voltage of the contact C1 at the UICC-ME interface within the range specified in Section 5.2.2.3.2.

5.2.2.3.4 Test method

Initial conditions:

The terminal shall be connected to a UICC simulator. The terminal activates the UICC. The remaining contacts of the UICC-ME interface shall meet the standard test conditions (SEE Section 5.2.1).

Test steps:

a) The terminal selects the USIM application to measure the requirement a) in the conformity requirements. The application power indicated in the response of the SELECT command is 50mA. I_{cc} is up to 50mA during the session. MEASURE the voltage of contact C1 (VCC) in the UICC-ME interface.
b) The terminal selects the USIM application to measure the requirement b) in the conformity requirements. The application power indicated in the response of the SELECT command is 30mA. I_{cc} is up to 30mA during the session. MEASURE the voltage of contact C1 (VCC) in the UICC-ME interface.

5.2.2.3.5 Expected results

VERIFY that the terminal is able to keep the voltage, rise and fall time, signal duty ratio and frequency of the contact C3 at the UICC-ME interface within the ranges specified in Section 5.2.4.2.

5.2.4.4 Test method

Initial conditions:

The terminal shall be connected to a UICC simulator. The UE shall be activated. The remaining contacts of the UICC-ME interface shall meet the nominal test conditions (SEE Section 5.2.1).

Test steps:

MEASURE the voltage, rise / fall time, clock signal's duty ratio and frequency of the contact C3 (CLK) in the UICC-ME interface.

5.2.4.5 Expected results

The terminal shall maintain the voltage, rise / fall time, clock signal's duty ratio and frequency of contact C3 in the UICC-ME interface within the ranges specified in Section 5.2.4.2.

5.2.5 Electrical performance test for the contact C7 (I/O)

5.2.5.1 Definition and scope of application

After the user device is activated, the voltage, current and signal rise / fall time of the contact C7 in the UICC-ME interface shall be kept within the specified ranges to ensure correct operation and no damage to the UICC.

This test is applicable to the 1.8V technology terminals supporting Class B and Class C operating conditions.

5.2.5.2 Conformity requirements

a) The terminal receives State A
When the terminal is in the 3V operating mode, APPLY a voltage of 0V, and the current flowing out of the terminal shall not exceed 1mA.
b) The terminal sends State A
When the terminal is in the 3V operating mode, APPLY a current of 1mA to flow into the terminal, and the voltage shall be between -0.3V and 0.2 × V_{cc}.
c) The terminal sends or receives State Z
When the terminal is in the 3V operating mode, APPLY a current of 20μA to flow out of the terminal, and the voltage shall be between 0.7 × V_{cc} and V_{cc} + 0.3V.

d) When the terminal is in the 3V operating mode, the rise and fall time of the I/O signal shall not exceed 1μs.
e) The terminal receives State A
When the terminal is in the 1.8V operating mode, APPLY a voltage of 0V, and the current flowing out of the terminal shall not exceed 1mA.
f) The terminal sends State A
When the terminal is in the 1.8V operating mode, APPLY a current of 1mA to flow into the terminal, and the voltage shall be between -0.3V and 0.2 × V_{cc}.
g) The terminal sends or receives State Z
When the terminal is in the 1.8V operating mode, APPLY a current of 20μA to flow out of the terminal, and the voltage shall be between 0.7 × V_{cc} and V_{cc} + 0.3V.
h) When the terminal is in the 1.8V operating mode, the rise and fall time of the I/O signal shall not exceed 1μs.

SEE Sections 5.1 and 5.2 of YD/T 1762.1-2011 for specific requirements.

5.2.5.3 Test purpose

VERIFY that the terminal is able to keep the voltage, current, rise and fall time of the contact C7 at the UICC-ME interface within the ranges specified in Section 5.2.5.2.

5.2.5.4 Test method

Initial conditions:

The terminal shall be connected to a UICC simulator. The UE shall be activated. The remaining contacts of the UICC-ME interface shall meet the nominal test conditions (SEE Section 5.2.1).

Test steps:

MEASURE the voltage, current and rise / fall time of the contact C7 (I/O) in the UICC-ME interface.

5.2.5.5 Expected results

The terminal shall maintain the voltage, current and rise / fall time of contact C7 in the UICC-ME interface within the ranges specified in Section 5.2.5.2.

6 Initial communication test

6.1 ATR

		UICC supports the T = 1 protocol
TA2	'81'	Use the T = 1 protocol in a specific mode The interface bytes indicate the parameter, and the card cannot switch mode
TD2	'B1'	TA3, TB3 and TD3 appear UICC supports the T = 1 protocol
TA3	'FE'	IFSC is 254 bytes long
TB3	'00'	Block waiting integer = 0 Character waiting integer = 0
TD3	'1F'	Followed by the global interface byte (T = 15)
TA4	'46'	Support the clock stop mode (low power state) 1.8V technology UICC
T1	'80'	
T2	'31'	Card data service
T3	'A0'	Support SELECT via AID EF_{DIR} appears
T4	'73'	Ability of the card
T5	'BE'	Support SFI
T6	'21'	Data encoding bytes
T7	'00'	No extension of Lc and Le Logical channels are not supported
TCK	'7D'	Check bytes

l) The operating terminal sends further commands to the UICC or UICC simulator (e.g. ENTER a PIN to send further commands).

m) TURN off the terminal, and TURN it on again.

n) The UICC or UICC simulator sends the following ATR.

Character	Value	Description
TS	'3F'	Indicate a reverse convention
T0	'97'	Both TA1 and TD1 appear 7 bytes of history bytes
TA1	'11'	Clock rate conversion factor FI = 1 (F = 372) Baud rate adjustment factor DI = 1 (D = 1)
TD1	'91'	Both TA2 and TD2 appear UICC supports the T = 1 protocol
TA2	'81'	Use the T = 1 protocol in a specific mode The interface bytes indicate the parameter, and the card cannot switch mode
TD2	'B1'	TA3, TB3 and TD3 appear UICC supports the T = 1 protocol
TA3	'FE'	IFSC is 254 bytes long
TB3	'00'	Block waiting integer = 0 Character waiting integer = 0

TD3	‘1F’	Followed by the global interface byte (T = 15)
TA4	‘46’	Support the clock stop mode (low power state) 1.8V technology UICC
T1	‘80’	
T2	‘31’	Card data service
T3	‘A0’	Support SELECT via AID EF_{DIR} appears
T4	‘73’	Ability of the card
T5	‘BE’	Support SFI
T6	‘21’	Data encoding bytes
T7	‘00’	No extension of Lc and Le Logical channels are not supported
TCK	‘7D’	Check bytes

o) The operating terminal sends further commands to the UICC or UICC simulator (e.g. ENTER a PIN to send further commands).

6.1.1.5 Expected results

In Step c), the terminal uses a positive convention to start a session of T = 0 and works with a UICC or a UICC simulator.

In Steps f) and i), the terminal uses a reverse convention to start a session of T = 0 and works with a UICC or a UICC simulator.

In Step l), the terminal uses a positive convention to start a session of T = 1 and works with a UICC or a UICC simulator.

In Step o), the terminal uses a reverse convention to start a session of T = 1 and works with a UICC or a UICC simulator.

6.2 Clock stop mode of the 1.8V technology UICC

6.2.1 Definition and scope of application

Even if the terminal only uses the T = 0 and T = 1 protocols, the terminal shall be able to receive the interface bytes, history bytes and check bytes.

The UICC shall return T = 15 global interface parameters.

The UICC shall support the clock stop program. The clock stop mode is indicated in TAi (i > 2) of T = 15 of ATR.

6.2.2 Conformity requirements

In Steps b), d) and f), the terminal shall wait at least 744 clock cycles after the restart of the clock to send the first command.

Note: The terminal shall operate at 1.8V or 3V. If the terminal does not support the first voltage value, it shall enable the supply voltage program.

6.3 Clock stop mode of the 3V technology UICC

6.3.1 Definition and scope of application

Even if the terminal only uses the T = 0 and T = 1 protocols, the terminal shall be able to receive the interface bytes, history bytes and check bytes.

The UICC shall return T = 15 global interface parameters.

The UICC shall support the clock stop program. The clock stop mode is indicated in TAi (i > 2) of T = 15 of ATR.

6.3.2 Conformity requirements

If the UICC supports the operating conditions other than Class A operating conditions (even if Class A operating conditions are also supported), the UICC shall support the clock stop mode and the corresponding indications shall be set. The terminal shall only follow this indication irrespective of the operating conditions indicated by the card.

If the UICC does not support any operating voltage indication, the terminal shall consider the UICC as a card supporting 3V only.

The terminal shall wait at least 1,860 clock cycles (including the guard time of 2etu) after the last character of the response is received before the clock is turned off. After the clock is turned on, the terminal shall wait at least 744 clock cycles before sending the first command.

SEE Sections 6.7 and 11.1.1.4.6.1 of YD/T 1762.1-2011 as well as Sections 5.3.4 and 6.5.5 of ISO / IEC 7816-3 (1997) for specific requirements.

6.3.3 Test purpose

a) VERIFY that the clock is only turned off as indicated by the first global interface byte and file characteristics in ATR.
b) VERIFY that the clock conversion time meets the specified requirements.

6.3.4 Test method

Initial conditions:

		UICC supports the T = 0 protocol
TD2	'1F'	Only TA3 appears Followed by the global interface byte (T = 15)
TA3	'83'	Support the clock stop mode (high level state) 3V technology UICC
T1	'80'	
T2	'31'	Card data service
T3	'A0'	Support SELECT via AID EF_{DIR} appears
T4	'73'	Ability of the card
T5	'BE'	Support SFI
T6	'21'	Data encoding bytes
T7	'00'	No extension of Lc and Le Logical channels are not supported
TCK	'67'	Check bytes

The byte settings are as follows:

b8	b7	b6	b5	b4	b3	b2	b1	Meaning
0	0	1	1	0	1	0	1	Support the voltage category AB and the clock stop mode. Preferred high level.

d) When the terminal is in the PIN verification state, ENTER the PIN after 10s.
e) TURN off the terminal, and TURN it on again. The UICC simulator sends the following ATR.

Character	Value	Description
TS	'3B'	Indicate a positive convention
T0	'97'	Both TA1 and TD1 appear 7 bytes of history bytes
TA1	'11'	Clock rate conversion factor FI = 1 (F = 372) Baud rate adjustment factor DI = 1 (D = 1)
TD1	'80'	Only TD2 appears UICC supports the T = 0 protocol
TD2	'1F'	Only TA3 appears Followed by the global interface byte (T = 15)
TA3	'43'	Support the clock stop mode (low level state) 3V technology UICC
T1	'80'	
T2	'31'	Card data service
T3	'A0'	Support SELECT via AID EF_{DIR} appears
T4	'73'	Ability of the card
T5	'BE'	Support SFI

Initial conditions:

The terminal shall be connected to a UICC simulator.

Test steps:

a) TURN on the terminal.
b) The UICC simulator sends the following ATR.

Character	Value	Description
TS	'3B'	Indicate a positive convention
T0	'97'	Both TA1 and TD1 appear 7 bytes of history bytes
TA1	'94'	F = 512, D = 8
TD1	'80'	Only TD2 appears T = 0
TD2	'1F'	Only TA3 appears Followed by the global interface byte (T = 15)
TA3	'46'	Support the clock stop mode (low level state) 1.8V technology UICC supporting Class B and Class C operating conditions
T1	'80'	
T2	'31'	Card data service
T3	'A0'	Support SELECT via AID EF_{DIR} appears
T4	'73'	Ability of the card
T5	'BE'	Support SFI
T6	'21'	Data encoding bytes
T7	'00'	No extension of Lc and Le Logical channels are not supported
TCK	'27'	Check bytes

c) Upon receipt of the PPS request, the UICC simulator uses the work waiting time (initial waiting time) of 9,600etu to respond to a PPS response "FF 10 94 7B".
d) The UICC simulator uses the enhanced rate (F = 512, D = 8) for transmission.
e) TURN off the terminal, and TURN it on again. The UICC simulator sends the following ATR.

Character	Value	Description
TS	'3B'	Indicate a positive convention
T0	'97'	Both TA1 and TD1 appear 7 bytes of history bytes
TA1	'95'	F = 512, D = 16
TD1	'80'	Only TD2 appears

T7	'00'	No extension of Lc and Le Logical channels are not supported
TCK	'25'	Check bytes

i) Upon receipt of the PPS request, the UICC simulator uses the work waiting time (initial waiting time) of 9,600etu to respond to a PPS response "FF 10 96 79".
j) The UICC simulator uses the enhanced rate (F = 512, D = 32) for transmission.

6.4.5 Expected results

After Step b), the terminal shall send a PPS request "FF 10 94 7B" to a UICC simulator.

After Step c), the terminal shall work with the UICC simulator.

After Step e), the terminal shall send a PPS request "FF 10 95 7A" to a UICC simulator.

After Step f), the terminal shall work with the UICC simulator.

After Step h), the terminal shall send a PPS request "FF 10 96 79" to a UICC simulator.

After Step j), the terminal shall work with the UICC simulator.

7 Transmission protocol test

7.1 Character transmission

7.1.1 Byte / character duration during the transmission from the terminal to the UICC

7.1.1.1 Definition and scope of application

The character contains 10 consecutive bits: 1 start bit in state L, 8 data bits and 1 parity check bit.

7.1.1.2 Conformity requirements

The duration of the bit / character and the delay between the two consecutive characters (between the leading start bits) sent by the terminal shall be within the specified ranges. SEE Section 7.2.1 of YD/T 1762.1-2011 for specific requirements.

Test steps:

The UICC simulator sends a response to the terminal with the maximum (10.2etu) and minimum (9.8etu) bit / character duration, respectively.

7.1.2.5 Expected results

The terminal shall accept the response and perform the corresponding action according to the contents of the response.

7.2 T = 0 protocol test

7.2.1 Time requirements

7.2.1.1 Definition and scope of application

The minimum interval between the leading start bits of two consecutive characters shall be at least 12etu. The work waiting time (WWT) refers to the maximum interval between the leading start bit of any character sent by the UICC and that of the character sent by the UICC or terminal.

The WWT value shall not exceed 960 × WI × Fi / f. WI is an integer received in the specific interface byte TC2. The clock rate conversion factor Fi is indicated in TA1.

7.2.1.2 Conformity requirements

a) If there is no TA1, the terminal uses the default value Fi = 372.
b) If there is no TC2, the terminal uses the default value WI (10).
c) If the character sent by the UICC is within the specified WWT range, the terminal shall accept this character.

SEE Section 7.2.2.1 of YD/T 1762.1-2011 for specific requirements.

7.2.1.3 Test purpose

a) VERIFY that the terminal is able to correctly evaluate the characters TA1 and TC2 indicated in the ATR.
b) VERIFY that the terminal is able to accept the minimum and maximum WWT during the character transmission from the UICC to the terminal.
c) VERIFY that the terminal will deactivate the UICC if the WWT times out.

7.2.1.4 Test method

Initial conditions:

The terminal shall be connected to a UICC simulator and turned on.

The terminal shall be connected to a UICC simulator and turned on. Meanwhile, the terminal shall have received an ATR response of T = 0 and the PPS program has been successfully completed.

Test steps:

a) The operating terminal initiates a VERIFY PIN command carrying 8 bytes of data.
b) The UICC simulator shall use ACK = INS to respond to the first 5 bytes.
c) The UICC simulator shall use NULL (NULL = '60') to respond to subsequent data bytes.
d) When the time after Step b) exceeds the WWT, the UICC simulator shall send ACK = INS.
e) The UICC simulator shall use NULL to respond to the remaining data sent.
f) When the time after Step b) exceeds the WWT, the UICC simulator shall respectively send SW1 and SW2 to indicate that the command has been executed correctly (SW1 and SW2 are '90' and '00', respectively).

7.2.2.5 Expected results

The command shall be executed correctly.

7.2.3 Case 2 command, using the program bytes '61XX' and '6CXX'

7.2.3.1 Definition and scope of application

The UICC returns the program bytes '61XX' and '6CXX' to control the exchange between the terminal and the UICC's transmission layer. The UICC shall not return these program bytes to the application layer of the terminal. If the UICC returns the program bytes '61XX' and '6CXX', it indicates that the command processing in the UICC has not yet been completed.

7.2.3.2 Conformity requirements

The UICC returns the program bytes '61XX' and '6CXX' to the terminal's transmission layer, which indicates to the terminal that the data requested by the command being executed is to be retrieved. This program byte is used only when processing the case 2 and case 4 commands when the T = 0 protocol is in use.

SEE Section 7.3.1.1.5 of YD/T 1762.1-2011 and Section 8.3 of ISO / IEC 7816-3 (1997) for specific requirements.

7.2.3.3 Test purpose

VERIFY that the terminal can correctly process the program bytes '61XX' and '6CXX' under the circumstance of case 2 and case 4 commands.

7.2.3.4 Test method

Initial conditions:

The terminal shall be connected to a UICC simulator and turned on. Meanwhile, the terminal shall have received an ATR response of T = 0 and the PPS program has been successfully completed.

Test steps:

a) The operating terminal initiates a case 2 command, whose Le > L_{UICC} (i.e. READ RECORD command).
b) The UICC simulator shall send the program byte '6CL_{UICC}'.
c) After receiving the command, the UICC simulator shall send the program byte '61xx'.
d) After receiving the command, the UICC simulator shall send the response data and program byte '61yy'.
e) Upon receipt of the command, the UICC simulator shall send the remaining data as well as SW1 and SW2 to indicate that the command has been executed correctly (SW1 and SW2 are '90' and '00', respectively).

7.2.3.5 Expected results

After Step b), the terminal shall use Le = 'L_{UICC}' to send the previous command.

After Step c), the terminal shall use Le = 'xx' to send a GET RESPONSE command.

After Step f), the terminal shall use Le = 'yy' to send a GET RESPONSE command.

7.2.4 Case 4 command, using the program byte '61XX'

7.2.4.1 Definition and scope of application

The UICC returns the program bytes '61XX' and '6CXX' to control the exchange between the terminal and the UICC's transmission layer. The UICC shall not return these program bytes to the application layer of the terminal. If the UICC returns the program bytes '61XX' and '6CXX', it indicates that the command processing in the UICC has not yet been completed.

7.2.4.2 Conformity requirements

The UICC returns the program bytes '61XX' and '6CXX' to the terminal's transmission layer, which indicates to the terminal that the data requested by the command being executed is to be retrieved. This program byte is used only

If an error occurs, the UICC returns a status to indicate an error or an alarm without returning to '61XX' and '6CXX'.

SEE Sections 7.2.2.3 and 10.2.1 of YD/T 1762.1-2011 for specific requirements.

7.2.5.3 Test purpose

VERIFY that the terminal can correctly process the non-'9000' status byte.

7.2.5.4 Test method

Initial conditions:

The terminal shall be connected to a UICC simulator and turned on. Meanwhile, the terminal shall have received an ATR response of T = 0 and the PPS program has been successfully completed.

Test steps:

a) Alarm
   1) The operating terminal initiates a case 4 command (e.g. SELECT command).
   2) The UICC simulator shall send an alarm status byte ('62xx', '63xx' or '9xxx').
   3) Upon receipt of the command, the UICC simulator shall send the remaining data as well as SW1 and SW2 to indicate that the command has been executed correctly (SW1 and SW2 are '90' and '00', respectively).

b) Error
   1) The operating terminal initiates a case 4 command (e.g. SELECT command).
   2) The UICC simulator shall send an error status word ('6xxx', except '6Cxx', '61xx', '62xx' and '63xx').

7.2.5.5 Expected results

After Step a) ~ 2), the terminal shall use Le = '00' to send a GET RESPONSE command.

After Step b) ~ 2), the terminal shall terminate the command processing.

7.2.6 Error detection

7.2.6.1 Definition and scope of application

In addition to the terminal in the ATR process, for the T = 0 protocol, error detection and error correction are required.

If the terminal detects a parity error as a receiver within 11 ± 0.2etu starting from the leading start bit of the character just received the terminal shall indicate to the UICC that an error has occurred by setting the I/O line to the state L.

7.2.6.2 Conformity requirements

SEE Section 7.2.2.4 of YD/T 1762.1-2011 for specific requirements.

7.2.6.3 Test purpose

VERIFY that the terminal can perform error processing during the data transmission from the UICC to the terminal.

7.2.6.4 Test method

Initial conditions:

The terminal shall be connected to a UICC simulator and turned on.

Test steps:

The UICC simulator responds with incorrect parity to check whether the terminal is able to handle it correctly.

7.2.6.5 Expected results

The terminal shall be able to detect the parity error and set the I/O line to the state L after 10.5 ± 0.2etu starting from the leading start byte of the wrong character. The maximum duration is 2etu, while the minimum duration is 1etu.

7.2.7 Error correction

7.2.7.1 Definition and scope of application

In addition to the terminal in the ATR process, for the T = 0 protocol, error detection and error correction are required.

If the terminal detects a parity error as a receiver within 11 ± 0.2etu starting from the leading start bit of the character just received, the UICC shall indicate to the terminal that an error has occurred by setting the I/O line to the state L.

7.2.7.2 Conformity requirements

SEE Section 7.2.2.4 of YD/T 1762.1-2011 for specific requirements.

7.2.7.3 Test purpose

TB3	'31'	Block waiting integer = 3, indicating BWT = 11etu + 8 × 960 × 372 / f (sec) Character waiting integer = 1, indicating CWT = 13etu
TD3	'1F'	Only TA4 appears Followed by the global interface byte
TA4	'46'	Support the clock stop mode (low level state) 1.8V technology UICC
T1	'80'	
T2	'31'	Card data service
T3	'A0'	Support SELECT via AID EF_{DIR} appears
T4	'73'	Ability of the card
T5	'BE'	Support SFI
T6	'21'	Data encoding bytes
T7	'00'	No extension of Lc and Le Logical channels are not supported
TCK	'33'	Check bytes

b) After the UICC simulator receives the first block, the operating terminal initiates a command to demand to receive the linked I-Block.
c) The UICC simulator shall measure the delay between the last character of each block sent by the UICC and the first character of the block sent by the closely followed terminal.
d) BWT:
   1) The UICC simulator uses BGT = 22etu to send the I-Block.
   2) The UICC simulator uses BWT = 11etu + 2^{BWI} × 960 × 372 / f (sec) to send each I-Block.

   BWT timeout:

   3) The UICC simulator does not send the I-Block.

7.3.2.5 Expected results

In Step c), the terminal shall use a BGT with a value of at least 22etu.

In Steps d) ~ 1) and d) ~ 2), the terminal shall confirm that I-Block has been received without error.

In Step d) ~ 3), the terminal shall be able to detect a timeout and send an R-Block to request the retransmission of the last block.

7.3.3 Extension of the block waiting time

7.3.3.1 Definition and scope of application

(2) After receiving the block (correct or incorrect) sent by the terminal, the UICC simulator shall perform error-free S (WTX request) retransmission.
(3) When the S (WTX response) is received, the UICC simulator shall use the extended BWT to complete the command (data + '9000' indicates that the command has been executed correctly).

7.3.3.5 Expected results

After the Steps c) ~ 1) ~ (1) and c) ~ 2) ~ (2), the terminal shall send S (WTX response).

After the Step c) ~ 2) ~ (1), the terminal shall send an R-Block to request the retransmission of the last block.

7.3.4 IFSC taken into account by the link - terminal

7.3.4.1 Definition and scope of application

The link function allows the terminal or UICC to send the information longer than IFSC or IFSD. If the information longer than IFSC or IFSD is sent, the information shall be divided into segments, each of which is less than or equal to IFSC or IFSD. Each segment is sent in the I-Block using the link function.

The IFSC defines the maximum length of the information field of the block that the UICC can receive.

7.3.4.2 Conformity requirements

The default value of IFSC is 32 bytes. Other values are indicated in TA3 of ATR.

When the terminal is the transmitter, the LEN of all I-Blocks in the link is equal to IFSC bytes (except the last block), and the length of the last block's information field can be 0 to IFSC.

When the receiver receives a multi-data I-Block, B (N (R)) shall be sent. N (R) = N (S), N (S) is the expected I-Block. There shall be at least one linked block to follow.

SEE Sections 7.2.3.1.1 and 7.2.3.5 of YD/T 1762.1-2011 as well as Section 9.7.3 of ISO / IEC 7816-3 (1997) for specific requirements.

7.3.4.3 Test purpose

VERIFY that the terminal will consider the size of the information field that the UICC can receive in the link mode.

7.3.4.4 Test method

Initial conditions:

The terminal shall be connected to a UICC simulator and turned on.

Test steps:

a) No TA3

1) After receiving a reset command, the UICC simulator shall send the following ATR.

Character	Value	Description
TS	'3B'	Indicate a positive convention
T0	'97'	Both TA1 and TD1 appear 7 bytes of history bytes
TA1	'11'	Clock rate conversion factor FI = 1 (F = 372) Baud rate adjustment factor DI = 1 (D = 1)
TD1	'81'	Only TD2 appears UICC supports the T = 1 protocol
TD2	'A1'	Both TB3 and TD3 appear UICC supports the T = 1 protocol
TB3	'00'	Block waiting integer = 0 Character waiting integer = 0
TD3	'1F'	Only TA4 appears Followed by the global interface byte
TA4	'46'	Support the clock stop mode (low level state) 1.8V technology UICC
T1	'80'	
T2	'31'	Card data service
T3	'A0'	Support SELECT via AID EF_{DIR} appears
T4	'73'	Ability of the card
T5	'BE'	Support SFI
T6	'20'	
T7	'00'	No extension of Lc and Le Logical channels are not supported
TCK	'03'	Check bytes

2) After the UICC simulator receives the first block, the operating terminal initiates a command to demand to send the linked I-Block.

3) Upon receipt of the command, the UICC simulator shall evaluate the length and the response has received the I-Block without error.

b) TA3 = 'F3'

7.3.5.1 Definition and scope of application

The link function allows the terminal or UICC to send the information longer than IFSC or IFSD. If the information longer than IFSC or IFSD is sent, the information shall be divided into segments, each of which is less than or equal to IFSC or IFSD. Each segment is sent in the I-Block using the link function.

When the receiver receives a multi-data I-Block, B (N (R)) shall be sent. N (R) = N (S), N (S) is the expected I-Block. There shall be at least one linked block to follow.

The IFSC defines the maximum length of the information field of the block that the UICC can receive.

The default value of IFSD is 32 bytes, which can be adjusted during a card session. The maximum IFSD value is 254 bytes.

If the IFSD supported by the terminal is 254 bytes, this test item does not apply.

7.3.5.2 Conformity requirements

When the UICC is the transmitter, the LEN of all I-Blocks in the link is less than or equal to IFSD.

SEE Section 7.2.3 of YD/T 1762.1-2011 for specific requirements.

7.3.5.3 Test purpose

VERIFY that the terminal can correctly process the size of the information field in the link mode.

7.3.5.4 Test method

Initial conditions:

The terminal shall be connected to a UICC simulator and turned on. ATR has been received and the PPS program has been successfully completed.

Test steps:

a) After the UICC simulator receives the first block, the operating terminal initiates a command to request to receive the linked I-Block.
b) The UICC simulator shall send an I-Block of LEN > IFSD.
c) After the next block is received correctly, the UICC simulator shall send the remaining I-Blocks (data + ‘9000’ indicates that the command has been executed correctly).

— R-Block's PCB

— S-Block's PCB

— LEN error (= 'FF')

— EDC error

c) After correctly receiving the block sent by the terminal, the UICC simulator shall retransmit the I-Block without error and complete the command (data + '9000' indicates that the command has been executed correctly).

Note: You can use the linked block in a session to generate an error to complete the test, or you can generate each error by separate tests.

7.3.6.5 Expected results

In Step b), the terminal shall be able to detect invalid blocks and send an R-Block to request to retransmit the last block [N (R) is equal to the last I-Block's serial number].

In Step c), the terminal shall respond to the correct reception of the I-Block.

7.3.7 Error correction of I-Block

7.3.7.1 Definition and scope of application

The information block is used to transmit APDU commands and responses.

I-Block is represented by I (N (S), M), where N (S) is the transmission serial number of the block, and M is the multi-data byte indication for the link function.

7.3.7.2 Conformity requirements

When an I-Block has been sent, followed by a BWT timeout or the receipt of an invalid block, an R-Block shall be sent.

SEE Section 7.2.3.4 of YD/T 1762.1-2011 as well as Section 9.7.3 of ISO / IEC 7816-3 (1997) for specific requirements.

7.3.7.3 Test purpose

VERIFY that the terminal will retransmit the I-Block when the terminal discovers that the UICC does not receive the data block correctly (R-Block means reception error).

7.3.7.4 Test method

a) After the UICC simulator receives the first block, the operating terminal initiates a command to request to send an unlinked I-Block.
b) The UICC simulator assumes that the received block is invalid and sends an R-Block with the following errors.

   — Parity error

   — NAD ≠ '00'

   — PCB with incorrect serial number

   — PCB of b6 = 1

   — S-Block's PCB

   — LEN error

   — EDC error

c) After correctly receiving the block sent by the terminal, the UICC simulator shall retransmit the R-Block without error.

7.3.8.5 Expected results

In Step b), the terminal shall be able to detect invalid blocks and send an R-Block to request to retransmit the last block [N (R) = invalid R-Block's serial number].

After Step c), the terminal shall retransmit the first I-Block.

7.3.9 Error processing of R-Block in linked mode

7.3.9.1 Definition and scope of application

The receive-ready block (R-Block) is used for transmitting the acknowledgment response.

R-Block is represented by R (N (R)), where N (R) refers to the serial number of the desired I-Block.

7.3.9.2 Conformity requirements

When an R-Block has been sent, followed by the receipt of an invalid block or a BWT timeout, an R-Block shall be retransmitted.

SEE Section 7.2.3.4 of YD/T 1762.1-2011 as well as Section 9.7.3 of ISO / IEC 7816-3 (1997) for specific requirements.

R-Block is represented by R (N (R)), where N (R) refers to the serial number of the desired I-Block.

7.3.10.2 Conformity requirements

When an R-Block has been sent, followed by the receipt of an invalid block or a BWT timeout, an R-Block shall be retransmitted.

SEE Section 7.2.3.4 of YD/T 1762.1-2011 as well as Section 9.7.3 of ISO / IEC 7816-3 (1997) for specific requirements.

7.3.10.3 Test purpose

VERIFY that the terminal is able to recover from error when receiving a continuous error and is notified of sending a continuous error.

7.3.10.4 Test method

Initial conditions:

The terminal shall be connected to a UICC simulator and turned on. ATR has been received and the PPS program has been successfully completed.

Test steps:

a) After the UICC simulator receives the first block, the operating terminal initiates a command to request to receive the I-Block.
b) The UICC simulator shall send an invalid I-Block.
c) After correctly receiving the block sent by the terminal, the UICC simulator assumes that the received block is invalid and sends an invalid R-Block.
d) After the block sent by the terminal is correctly received:
    1) No error: The UICC simulator shall retransmit the I-Block without error and completes the command (data + '9000' indicates that the command has been executed correctly).
    2) Hypothetical error:
        (1) The UICC simulator shall assume that the received block is invalid and send an R-Block to request retransmission [N (R) = correct serial number of Step c].
        (2) After correctly receiving the block sent by the terminal, the UICC simulator shall complete the command (data + '9000' indicates that the command has been executed correctly).

7.3.10.5 Expected results

After Steps b) and c), the terminal shall be able to detect invalid blocks and send an R-Block to request to retransmit the last block [N (R) = invalid I-Block's serial number].

3) After receiving the second I-Block, the UICC simulator sends an S (ABORT request).
4) The UICC simulator confirms that the response has been received and returns the right of transmission back to the terminal (R-Block without error) while completing the next command.

b) The UICC sends the link data:
1) After the UICC simulator receives the first block, the operating terminal initiates a command to request to receive the linked I-Block.
2) The UICC simulator shall send the first linked I-Block without error.
3) After receiving the block sent by the terminal correctly, the UICC simulator sends an S (ABORT request).
4) The UICC simulator gives a response that the response has been received without error.
5) The UICC simulator shall restart and complete the command (data + '9000' indicates that the command has been executed correctly).

7.3.11.5 Expected results

After Steps a) ~ 3) and b) ~ 3), the terminal shall send an S (ABORT response).

In Step b) ~ 5), the terminal shall acknowledge that the I-Block has been received without error by sending the R-Block [N (R) = expected I-Block's serial number].

7.3.12 Retransmission and resynchronization of the block

7.3.12.1 Definition and scope of application

The resynchronization of the protocol can be retried at three consecutive levels. If a level is unsuccessful, TRY the next level.

For the terminal, the three levels are as follows: retransmitted block, S (RESYNCH request) application, card reset or deactivation.

The monitoring block and S-Block are used for sending the control information.

S-Block is always used in pairs. An S (request) is always followed by an S (response) block.

— S (RESYNCH request), request the resynchronization.

— S (RESYNCH response), confirmation of the resynchronization.

7.3.12.2 Conformity requirements

When an S (... request) is sent, followed by a BWT timeout or the received response is not S (… response), the S (... request) shall be retransmitted.

— S (RESYNCH request) replaces S (RESYNCH response)

— Other S (… response)

— EDC error

(2) After correctly receiving the block [S (RESYNCH request)] sent by the terminal, the UICC simulator sends an S (RESYNCH response), and then completes the next command without error.

7.3.12.5 Expected results

After Step b), the terminal shall send an R-Block to request retransmission.

In Step c), the terminal shall send the same R-Block twice as in b) and then initiate an S (RESYNCH request).

After Step d) ~ 2) ~ (1), the terminal shall retransmit an S (RESYNCH request).

7.3.13 UICC without response

7.3.13.1 Definition and scope of application

The resynchronization of the protocol can be retried at three consecutive levels. If a level is unsuccessful, TRY the next level.

For the terminal, the three levels are as follows: retransmitted block, S (RESYNCH request) application, card reset or deactivation.

7.3.13.2 Conformity requirements

The communication between the terminal and the UICC is initiated after the ATR caused by a hot reset or a successful PPS program. However, if the terminal fails to receive the fault tolerant block, the terminal is allowed to try two more times at most before reset or card deactivation, at the beginning of the protocol.

If the terminal fails to receive a fault tolerant block during a card session, the terminal is allowed to try two more times at most before S (RESYNCH request) is sent.

SEE Section 7.2.3.4 of YD/T 1762.1-2011 as well as Section 9.7.3 of ISO / IEC 7816-3 (1997) for specific requirements.

7.3.13.3 Test purpose

VERIFY that the terminal is able to correctly reset or deactivate the UICC at the beginning of the protocol and during the protocol (resynchronization is unsuccessful).

7.3.13.4 Test method

Initial conditions:

The terminal shall be connected to a UICC simulator and turned on. ATR has been received and the PPS program has been successfully completed.

Test steps:

a) At the beginning of the protocol:
   1) After receiving the first block, the UICC simulator shall be unresponsive.
   2) After correctly receiving the block sent by the terminal, the UICC simulator shall remain unresponsive twice.
b) During the protocol:
   1) After the UICC simulator receives the first block, the operating terminal initiates a command to request to send an I-Block.
   2) After receiving the first I-Block, the UICC simulator shall be unresponsive.
   3) After correctly receiving the block sent by the terminal, the UICC simulator shall remain unresponsive twice.
   4) After receiving the S (RESYNCH request) sent by the terminal, the UICC simulator shall remain unresponsive three times.

7.3.13.5 Expected results

After Step a) ~ 1), the terminal shall:

— SEND R-Block, if its first block sent is an I-Block

— RESEND S-Block, if its first block sent is an S-Block

In Step a) ~ 2), the terminal shall send the same block twice as in Step a) ~ 1), after which the UICC shall be reset or deactivated.

After Step b) ~ 2), the terminal shall send an R-Block whose N (R) is equal to the serial number of the previous I-Block.

In Step b) ~ 3), the terminal shall send the same R-Block twice as in Step b) ~ 2), after which an S (RESYNCH request) shall be initiated.

In Step b) ~ 4), the terminal shall retransmit S (RESYNCH request) twice, after which the UICC shall be reset or deactivated.

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