ETSI TS 102 694-2 V10.5.0 (2024-03)

TECHNICAL SPECIFICATION

**Smart Cards;
Test specification for the
Single Wire Protocol (SWP) interface;
Part 2: UICC features
(Release 10)**

Reference

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Keywords

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The present document is part 2 of a multi-part deliverable covering the Test specification for the Single Wire Protocol (SWP) interface, as identified below:

Part 1:   "Terminal features";

Part 2:   "UICC features".

Modal verbs terminology

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Introduction

The present document defines test cases for the UICC relating to Single Wire Protocol (SWP). SWP is the communication interface between the UICC and a Contactless Frontend (CLF) as specified in ETSI TS 102 613 [1].

The aim of the present document is to ensure interoperability between the terminal and the UICC independently of the respective manufacturer, card issuer or operator.

1 Scope

The present document covers the minimum characteristics which are considered necessary for the UICC in order to provide compliance to ETSI TS 102 613 [1].

The present document specifies the test cases for:

- the physical layer of the interface CLF - UICC;

- the electrical interface of the UICC;

- the initial communication establishment CLF - UICC;

- the data link layer.

Test cases for the terminal relating to ETSI TS 102 613 [1] and test cases for the Host Controller Interface (HCI) covering both terminal and UICC are out of scope of the present document.

2 References

2.1 Normative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

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NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.

The following referenced documents are necessary for the application of the present document.

[1]   ETSI TS 102 613: "Smart Cards; UICC - Contactless Front-end (CLF) Interface; Physical and data link layer characteristics".

[2]   Void.

[3]   Void.

[4]   Void.

[5]   Void.

[6]   Void.

[7]   Void.

[8]   Void.

[9]   Void.

[10]   ETSI TS 102 694-2: "Smart Cards; Test specification for the Single Wire Protocol (SWP) interface; Part 2: UICC features (Release 11)".

2.2 Informative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

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The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

Not applicable.

3 Definition of terms, symbols, abbreviations and formats

Void.

4 Test environment

Void.

5 Test cases

All test cases are present in ETSI TS 102 694-2 [10].

Annex A (informative):
Void

Annex B (informative):
Void

Annex C (normative):
Void

Annex D (informative):
Void

Annex E (informative):
Change history

The table below indicates all changes that have been incorporated into the present document since it was placed under change control.

Change history								
Date	Meeting	Plenary Doc	CR	Rev	Cat	Subject/Comment	Old	New
2009-07	SCP #42	SCP-090254				Creation of the specification	2.4.0	7.0.0
2009-10	SCP #43	SCP-090315	001	-	F	Test Case 5.3.2.3.3: initial activation in low power mode with corrupted frames	7.0.0	7.1.0
		SCP-090315	002	-	F	Correction of the RQ verification of TC 4: 'Communication with frames - idle bits and wakeup sequence'	7.0.0	7.1.0
		SCP-090315	003	2	F	Addition of test cases for CLT LLC definition	7.0.0	7.1.0
		SCP-090315	004		F	Changes with respect to ETSI TS 102 221 interface	7.0.0	7.1.0
2010-03	SCP #44	SCP(10)0066	005	1	D	Editorial corrections	7.0.0	7.1.0
		SCP(10)0067	006	1	F	Modify test case 5.2.4.5 and adding new test cases 5.2.4.x and 5.2.4.y	7.0.0	7.1.0
		SCP(10)0068	007	1	F	Reword RQ6 in clause 5.7.7.5	7.0.0	7.1.0
		SCP(10)0069	008	1	F	Correct test case 5.7.7.6.3	7.0.0	7.1.0
		SCP(10)0070	009	1	F	Modified 5.2.4.2 to start clock in middle of frame exchange	7.0.0	7.1.0
		SCP(10)0071	010	1	F	Modification of 5.2.4.4/5 to send ISO command after SWP deactivation	7.0.0	7.1.0
		SCP(10)0072	011	1	F	Updated 5.3.2.3.6 to test both with and without activation of ETSI TS 102 221 interface	7.0.0	7.1.0
		SCP(10)0073	012	1	F	Loosened test equipment timing constraints in 5.7.1.X	7.0.0	7.1.0
		SCP(10)0074	013	1	D	Various editorial corrections	7.0.0	7.1.0
		SCP(10)0075	014	1	F	Updated test cases for activation / corrupted frames to send subsequent frames in order to check for response	7.0.0	7.1.0
		SCP(10)0076	015	1	F	Correction of tests wrongly implying an ACT_POWER_MODE after a correct ACT_SYNC in low power mode	7.0.0	7.1.0
		SCP(10)0077	016	1	F	5.5.1.3 - removal of redundant test execution parameters	7.0.0	7.1.0
		SCP(10)0078	017	1	F	5.6.2.3.9: removal of redundant and unclearly specified test case	7.0.0	7.1.0
		SCP(10)0079	018	1	F	Correction of test case 5.6.2.2.4	7.0.0	7.1.0
2010-07	SCP #45	SCP(10)0119	019	-	F		7.1.0	7.2.0
		SCP(10)0119	020	-	F	Addition of specific max. Time for 'no response'	7.1.0	7.2.0
		SCP(10)0119	022	-	F	Delete test case 5.6.2.1.2	7.1.0	7.2.0
		SCP(10)0119	023	-	F	Addition of new test case to test RQ5 from ETSI TS 102 694-2, clause 5.5.1.1 and remove this RQ from the related test cases	7.1.0	7.2.0
		SCP(10)0119	024	-	F	Removal of duplication/invalid execution parameters in activation tests	7.1.0	7.2.0
		SCP(10)0119	025	-	F	Correction of test case 5.7.7.8.3	7.1.0	7.2.0
		SCP(10)0119	026	-	F	Improved testing of idle bits	7.1.0	7.2.0
		SCP(10)0119	027	-	F	Change of usage of 10 I-frames throughout specification to 9 I-frames	7.1.0	7.2.0
		SCP(10)0119	029	-	F	Test case 5.6.4.1.6: removal of redundant parameter	7.1.0	7.2.0
		SCP(10)0119	030	-	F	ACT_INFORMATION in ACT_SYNC during initial interface activation made mandatory	7.1.0	7.2.0
		SCP(10)0119	031	-	F	Correction of Terminal Capability support to be optional	7.1.0	7.2.0
		SCP(10)0119	032	-	F	Test case 5.7.1.2: correction of ambiguous text	7.1.0	7.2.0
		SCP(10)0119	033	-	F	Test case 5.4.1.2.2: correction of ATR test	7.1.0	7.2.0
		SCP(10)0119	035	-	F	Test case 5.7.7.3.4: consistency of window size support	7.1.0	7.2.0
		SCP(10)0119	021	-	F	Update of SHDLC test cases to align with ETSI TS 102 694-1	7.1.0	7.2.0
		SCP(10)0119	028	1	F	HCP message fragmentation	7.1.0	7.2.0
		SCP(10)0119	034	1	F	Clarification of O_WS_3	7.1.0	7.2.0
2010-10	SCP #46	SCP(10)0222	016	-	F	Removal of execution parameter in test cases 'interpretation of incorrect formatted frames'	7.2.0	7.3.0

Change history								
Date	Meeting	Plenary Doc	CR	Rev	Cat	Subject/Comment	Old	New
2011-01	SCP #47	SCP(11)0027	037		F	Correction to "only one SREJ at any one time" test case	7.3.0	7.4.0
2011-03	SCP #48	SCP(11)0108	040		F	Addition of testing for reception of closely spaced frames	7.3.0	7.4.0
2011-03	SCP #48	SCP(11)0106	038		F	Creation of ETSI TS 102 694-2 Rel-8	7.4.0	8.0.0
2011-12	SCP #53	SCP(11)0342	046		F	Deletion of test case 5.7.7.9.3	8.0.0	8.1.0
2011-12	SCP #53	SCP(11)0345r1	044	1	F	Clarification of the representative SWP frame exchange procedure when HCI is used.	8.0.0	8.1.0
2011-12	SCP #53	SCP(11)0343	042		B	Creation of ETSI TS 102 694-2 REL-9	8.1.0	9.0.0
2012-03	SCP #54	SCP(12)000040r2	045	3	F	Correction of test procedure in 5.2.4.6 and 5.2.4.7	9.0.0	9.1.0
2012-03	SCP #54	SCP(12)000036r2	047	2	F	Modification of the test execution parameters of test case 5.5.4.5 and 5.5.4.6	9.0.0	9.1.0
2012-03	SCP #54	SCP(12)000039r2	050	2	F	Addition of test case 5.2.4.X	9.0.0	9.1.0
2012-09	SCP #56	SCP(12)000184r1	051	2	F	Introduction of Execution Requirements	9.1.0	9.2.0
2012-09	SCP #56	SCP(12)000180r1	052	1	F	Clarification of RNR reception vs. window size in TC 5.7.7.8.2	9.1.0	9.2.0
2012-09	SCP #56	SCP(12)000181r1	053	1	D	Correction of editorial errors	9.1.0	9.2.0
2012-09	SCP #56	SCP(12)000182r1	054	1	F	Modify the test execution in clauses 5.6.4.1.5.1 and 5.6.4.1.7.1	9.1.0	9.2.0
2012-09	SCP #56	SCP(12)000183r1	055	1	F	Addition of first non-ACT frame sent by CLF test case	9.1.0	9.2.0
2012-12	SCP #57	SCP(12)000237	056		F	Correction of test case 5.2.4.3 regarding PPS after warm reset	9.2.0	9.3.0
2012-12	SCP #57	SCP(12)000246	057		F	Removal of low power mode execution for test case 5.3.2.3.4	9.2.0	9.3.0
2012-12	SCP #57	SCP(12)000238	058		F	Removal of test case 5.5.4.9	9.2.0	9.3.0
2012-12	SCP #57	SCP(12)000239	059		F	Clarification of test cases 5.3.2.3.6/7	9.2.0	9.3.0
2012-12	SCP #57	SCP(12)000240	060		F	Test case 5.7.7.8.3: addition of compliance to T2	9.2.0	9.3.0
2012-12	SCP #57	SCP(12)000241r1	061	1	F	Definition of measurement process for power consumption	9.2.0	9.3.0
2012-12	SCP #57	SCP(12)000242	062		F	Clarification of test case 5.7.7.8.2 to not allow empty I-frames	9.2.0	9.3.0
2012-12	SCP #57	SCP(12)000243	063		F	Refinement of the Wake-Up sequence definition	9.2.0	9.3.0
2013-02	SCP #58	SCP(13)000030	048	3	F	Clarification on the flow control used by the UICC	9.2.0	9.3.0
2013-02	SCP #58	SCP(13)000025	064		F	Clarification of setting uncertainty	9.2.0	9.3.0
2013-02	SCP #58	SCP(13)000026	065		F	Extension of T_S1_HIGH_V timings applied in test cases	9.2.0	9.3.0
2013-02	SCP #58	SCP(13)000027	066		F	Clarification of bit stuffing test case	9.2.0	9.3.0
2013-02	SCP #58	SCP(13)000028	067		F	Clarification of power consumption phases and values	9.2.0	9.3.0
2013-02	SCP #58	SCP(13)000029	068		F	Splitting of O_EXTENDED_T into two options	9.2.0	9.3.0
2013-04	SCP #59	SCP(13)000071r1	069	1	F	Update of test case 5.6.2.3.2 to clarify validation logic	9.3.0	9.4.0
2013-04	SCP #59	SCP(13)000072	070		F	Initial Reset state test enhancement	9.3.0	9.4.0
2013-04	SCP #59	SCP(13)000073	071		F	SHDLC window size negotiation	9.3.0	9.4.0
2013-04	SCP #59	SCP(13)000074r1	074	1	F	Clause 5.5.4 correction of RQ5 and test cases	9.3.0	9.4.0
2013-04	SCP #59	SCP(13)000075	072		B	Creation of ETSI TS 102 694-2 REL-10	9.4.0	10.0.0
2013-07	SCP #60	SCP(13)000131r1	075	1	F	Test case 5.6.2.3.2: removal of invalid I-frame bit pattern	10.0.0	10.1.0
		SCP(13)000132r1	076	1	F	Clause 5.5.4 addition of test cases related to EVT_HCI_END_OF_OPERATION	10.0.0	10.1.0
2014-02	SCP #62	SCP(14)000017	077		F	Clarification of Type F initialization command and response parameters	10.1.0	10.2.0
2014-04	SCP #63	SCP(14)000112	078		B	Addition of Type F UICC test for 694-2	10.1.0	10.2.0
2014-12	SCP #66	SCP(14)000305	079		F	Removal of explicit ANDs in applicability table	10.2.0	10.3.0
		SCP(14)000306r1	080	2	F	Addition of test case 5.5.3.X	10.2.0	10.3.0
		SCP(14)000307r1	081	1	B	Clarification of time to wait and retransmission for response / acknowledgement	10.2.0	10.3.0
		SCP(14)000308	082		F	Definition of the way to measure the S2 current	10.2.0	10.3.0
		SCP(14)000309	083		F	Test case 5.2.4.8: replacement of SPW frame exchange procedure with I-frame	10.2.0	10.3.0
		SCP(14)000310	084		F	Test case 5.6.4.1.7: clarification of applicability	10.2.0	10.3.0
		SCP(14)000311	085		F	Consideration of upper layer indication	10.2.0	10.3.0
		SCP(14)000312	086		F	Test cases 5.5.4.5 6: clarification of SWP activation and initialization phase	10.2.0	10.3.0

Change history								
Date	Meeting	Plenary Doc	CR	Rev	Cat	Subject/Comment	Old	New
2015-02	SCP #67	SCP(15)000017	087		F	Terminal Capability test cases: addition of normal processing response from UICC	10.2.0	10.3.0
2015-04	SCP #68	SCP(15)000095	089		F	Refinement of bit duration used by test equipment	10.3.0	10.4.0
		SCP(15)000096	090		F	Addition of test case 5.5.2.3 - S2 switching with variation of bit duration	10.3.0	10.4.0
		SCP(15)000097	091		F	Clarification of the test execution parameters for test case 5.7.7.6.2	10.3.0	10.4.0
		SCP(15)000098r1	092	1	C	Moving of test cases related to TR1 from clause 5 to Annex C (new)	10.3.0	10.4.0
		SCP(15)000110	094		D	Compliance with ETSI drafting rules regarding hanging paragraphs	10.3.0	10.4.0
2015-10	SCP #70	SCP(15)000221r1	097	1	F	Update of SHDLC checking to indicate inconclusive for initial conditions	10.3.0	10.4.0
		SCP(15)000222r1	098	1	F	Modifications on the test procedure of test cases 5.5.4.5, 5.5.4.6, 5.5.4.7, 5.5.4.8 5.5.4.10 and 5.5.4.11	10.3.0	10.4.0
		SCP(15)000223r1	099	1	F	Test case 5.7.7.8.3: correction of details about retransmission	10.3.0	10.4.0
		SCP(15)000224r1	100	1	F	Test cases 5.2.3.3/4/5: specification of successful response	10.3.0	10.4.0
2019-09						Correction of TS 102 613 references in clause 5.5.4.1	10.4.0	10.4.1
2019-03	SCP #87	SCP(19)000030	115		F	Deletion of REL-10 content of TS 102 694-2	10.4.1	10.5.0

History

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V10.0.0	July 2013	Publication
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