STS Association

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Standard Transfer Specification- Compliance Test Specification - Entity Type B - POSToTokenCarrierInterface physical layer protocol for TCT = 01 and TCT = 02

CONTENTS

Revision History

Edition	Clause	Date	Change details from previous Edition
1.1	General	Feb 2015	Edition number changed from 1 to 1.1 to match document set
1.2	General	May 2015	Edition number changed from 1.1 to 1.2 to match document set
1.3	General	July 2015	Removed Annexure B and C since these forms are not used by test houses. Added Edition column to this table.
1.4	General	Oct 2015	Only Edition number changed from 1.3 to 1.4 to match the document suite
1.5	General	April 2016	Change to new STS logo
1.6	General	June 2016	Only Edition number changed from 1.5 to 1.6 to match the document suite
1.7	General	Nov 2016	Only Edition number changed from 1.6 to 1.7 to match the document suite
1.8			Not published
1.8.1	General	Nov 2017	Only Edition number changed from 1.7 to 1.8.1 to match the document suite
1.8.2	General	Jan 2018	Only Edition number changed from 1.8.1 to 1.8.2 to match the document suite
1.9	Bibliography	August 2017	Removed Bibliography, Ed3 compliance
1.9.1	General	March 2019	Added note to 4.1.4 regarding token combinations
			Removed table in 1.1, added foreword.
1.9.2	General	July 2019	Only Edition number changed to match the document suite
1.9.3	General	Jan 2020	Only Edition number changed to match the document suite
1.9.4	Foreword	Jan 2021	Added note on voting
1.9.5	General	Apr 2022	Only Edition number changed to match the document suite
1.9.6	4.1.7, 4.1.8	April 2023	Corrected IDRecord

STANDARD TRANSFER SPECIFICATION ASSOCIATION

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STANDARD TRANSFER SPECIFICATION –

Compliance Test Specification – Entity Type B - POSToTokenCarrierInterface physical layer protocol for TCT = 01 and TCT = 02

FOREWORD

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Standard Transfer Specification STS 531-2-1 has been prepared by working group 8.

The text of this standard is based on the following documents:

FDS	Report on voting
STS531-0/CD	see note1

Note1: due to the large number of documents in the test set, member voting is not performed prior to publication. However, corrections will be made to the document set if errors are reported.

This publication has been drafted in accordance with STSA Directive STS 2100-1 with the exception of Note1

1 Scope

1.1 General

This document provides the compliance criteria and test descriptions for prepayment meters designed to accept tokens that comply with the STS and POS systems designed to produce STS-compliant tokens.

2 Normative references

2.1 General

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 62051 - *ELECTRICITY METERING – Glossary of terms*

IEC 62055-41 Ed3 - *ELECTRICITY METERING – PAYMENT SYSTEMS – Part 41: Standard Transfer Specification – Application layer protocol for one-way token carrier systems*

ISO/IEC 7810 - IDENTIFICATION CARDS - *characteristics*

ISO/IEC 7811-2 - *IDENTIFICATION CARDS — RECORDING TECHNIQUE — Part 2: Magnetic stripe — Low coercivity*

ISO/IEC 7813 - *INFORMATION TECHNOLOGY — Identification cards — Financial transaction cards*

STS531-0 *Compliance Test Specification – Quality plan*

3 Terms and definitions

3.1 Definitions

For the purposes of this test specification, the definitions given in the normative references identified in paragraph 2 apply.

3.2 Terms

For the purposes of this test specification, the terms given in the normative references identified in paragraph 2 apply.

4 Entity type B: POS to Token Carrier Interface – Physical layer protocol

4.1.1 Equipment to be submitted

The following equipment is required for certification:

1. Encoding equipment to be certified.

4.1.2 Information to be submitted

Annexure A.1 must be completed by the manufacturer.

4.1.3 Test equipment required

The following test equipment is required:

4.1.3.1 For TCT = 01

1. A magnetic card reader that is compliant with ISO/IEC 7810, ISO/IEC 7811-2, and ISO/IEC 7813 and is capable of reading tracks 2 and 3.
2. Blank unused token carriers together with the token carrier manufacturer's statement/proof of compliance with ISO/IEC 7810.

4.1.3.2 For TCT = 02

A method of printing or visualising the generated token.

4.1.4 General

Each test comprises a number of steps with associated recordings and expected results. Any deviation from these shall be interpreted as non-compliance and a failure recorded against that step.

Note: The tests in this document do not test all combinations of tokens. It is the manufacturer's responsibility to ensure that all the required tokens for the entity type, as specified in IEC62055-41, are supported.

4.1.5 CTSB01 – Magnetic Token Carrier, TCT = 01

Overview: This test verifies general compliance with respect to the encoding of the TokenData and optional ID record onto the TokenCarrier.

Note: only perform this test if the UUT supports TokenCrrierType TCT=01.

TCDU data elements to be used for this test:

TCT	01
IDRecord	600727000000000009=0107123456011
PRNRecord	<Not specified>

Notes:

- The TokenData specified above is an InitiateMeterTest/Display with the InitiateMeterTest/DisplayControl field set to $FFFFFFFF_{16}$.

Step	Instruction	Expected Result
1	Encode a token using the information given above. Read the encoded token using the magnetic card reader.	The data read off the token must be: **5649 3153 7254 5031 3471** Optionally the ID record shall also be read off the token.

4.1.6 CTSB02 – Numeric token carrier, TCT = 02

Overview: This test verifies general compliance with respect to the encoding of the TokenData and optional ID record onto the TokenCarrier.

Note: only perform this test if the UUT supports TokenCrrierType TCT=02.

TCDU data elements to be used for this test:

TCT	02
IDRecord	600727000000000009=0207123456011
PRNRecord	<Not specified>

Notes:

- The TokenData specified above is an InitiateMeterTest/Display with the InitiateMeterTest/DisplayControl field set to $FFFFFFFF_{16}$.

Step	Instruction	Expected Result
1	Encode a token using the information given above.	The numeric token carrier shall display the following 20 Decimal digits: **5649 3153 7254 5031 3471**

4.1.7 CTSB03 – Magnetic Token Carrier, TCT = 01

Overview: This test verifies general compliance with respect to the encoding of the TokenData and optional ID record onto the TokenCarrier.

Note: only perform this test if the UUT supports TokenCrrierType TCT=01.

TCDU data elements to be used for this test:

TCT	01
IDRecord	000001000000000082=0107123456011
PRNRecord	<Not specified>

Notes:

- The TokenData specified above is an InitiateMeterTest/Display with the InitiateMeterTest/DisplayControl field set to $FFFFFFFF_{16}$.

Step	Instruction	Expected Result
1	Encode a token using the information given above. Read the encoded token using the magnetic card reader.	The data read off the token must be: **0230 5843 0050 5295 1967** Optionally the ID record shall also be read off the token.

4.1.8 CTSB04 – Numeric token carrier, TCT = 02

Overview: This test verifies general compliance with respect to the encoding of the TokenData and optional ID record onto the TokenCarrier.

Note: only perform this test if the UUT supports TokenCrrierType TCT=02.

TCDU data elements to be used for this test:

TCT	02
IDRecord	000001000000000009=0107123456011
PRNRecord	<Not specified>

Notes:

- The TokenData specified above is an InitiateMeterTest/Display with the InitiateMeterTest/DisplayControl field set to $FFFFFFFF_{16}$.

Step	Instruction	Expected Result
1	Encode a token using the information given above.	The numeric token carrier shall display the following 20 Decimal digits: **0230 5843 0050 5295 1967**

4.1.9 DKGA=04 with EA=07 and DKGA=04 with EA=11

Since the InitiateMeterTestDisplay is not an encrypted token, the above tests will suffice for all DKGA and EA selections.

6 Annexure A – Compliance Verification Request

1	Manufacturer:			
2	Product Name/Model:			
3	Product Firmware Version:			
4	TCT supported:	TCT=01	TCT=02	Tick where applicable
5	Contact Name:			
6	Mobile Number: Phone Number: Faxcimile Number: Email Address:			
7	Physical and/or Postal Address			
8	Date:			