Smart Ticketing Alliance - Certification Working Group

STA Contactless Interface Certification for Public Transport Products Implementation Conformance Statement (ICS) for PCD

REVISION LIST

Version	Date	Modifications
V1.0	13/12/2017	First public version for PICC and PCD
V2.1	16/11/2018	Separation in two different documents: one for PICC and this document for PCD Version applicable for PCD testing in accordance with CEN/TS 16794:2017 Version 2.1 to be consistent with the Implementation Conformance Statement (ICS) for PICC document
V2.2	12/06/2019	The ICS data "Transaction supported when more than one PICC in the field" shall be published in the certification letter. A new item is added: The S(PARAMETERS) support.
V2.3	16/06/2020	Editorial update on the item [PCD3.1] The information about a previous certification shall be published in the certification letter. Two new items are added: PCD internal output and input buffer sizes. A note about these new fields is also added.
V2.4	12/12/2023	Document updated to indicate precisely which hardware is provided to the Test Laboratory ([PCD1.6])
V2.5	09/07/2024	Document updated to indicate the operating distance for each PT reader type ([PCD2.1])
V3.0	17/11/2022	Version applicable for PCD testing in accordance with ISO/IEC TS 24192:2021 Release Candidate version subject to adjustments post round robin tests campaign with accredited Test Laboratories
V3.1	09/07/2024	Document updated to indicate precisely which hardware is provided to the Test Laboratory ([PCD1.6]) Document updated to indicate the operating distance for each PT reader type ([PCD2.1]) Editorial changes
V3.2	07/10/2024	The version 2.5 has been added in the revision list.

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1 Scope

This document contains the Implementation Conformance Statement (ICS) for PT readers being submitted for STA Contactless Interface Certification for Public Transport products and is intended for vendors submitting a PT reader for certification.

Please note that ICS data with (*) will be published in the certification letter issued by the STA Certification Body.

2 Certification Stakeholders

a. Vendor

Vendor identification	
Company name:	Click here to enter text.
Main contact	
Contact name:	Click here to enter text.
Address:	Click here to enter text.
Telephone:	Click here to enter text.
Email address:	Click here to enter text.

b. Test Laboratory

Test Laboratory identification	
Company name:	Click here to enter text.
Main contact	
Contact name:	Click here to enter text.
Address:	Click here to enter text.
Telephone:	Click here to enter text.
Email address:	Click here to enter text.

c. Certification Body

Certification Body identification	
Company name:	Click here to enter text.
Main contact	
Contact name:	Click here to enter text.
Address:	Click here to enter text.
Telephone:	Click here to enter text.
Email address:	Click here to enter text.

3 ICS for PT Readers – PCD (information to publish)

This clause and the following set out the information that needs to be provided by the PT reader vendor when filing a product validation request.

In addition to the ICS describing the characteristics of the PT reader to be tested, the vendor shall also provide the test laboratory with any additional tools required to enable the tests to be executed.

This ICS references the technical characteristics for PCD defined in Clause 11.3 of ISO/IEC TS 24192-1:2021.

a. PCD Product Description

[PCD1] Administrative data

[PCD1.1] (*) Brand name: Click here to enter text.

[PCD1.2] (*) Trade name: Click here to enter text.

[PCD1.3a] (*) PCD Hardware version: Click here to enter text.

[PCD1.3b] (*) PCD Software version: Click here to enter text.

[PCD1.4] (*) Reference of the contactless reader: Click here to enter text.

[PCD1.4a] (*) Hardware version of the contactless reader: Click here to enter text.

[PCD1.4b] (*) Software version of the contactless reader: Click here to enter text.

[PCD1.5] (*) Reference of the antenna module (if not fully integrated): Click here to enter text.

[PCD1.6] (*) EMVCo Contactless Approval number (if applicable): Click here to enter text.

[PCD1.7] (*) Hardware provided to the Test Laboratory:

- ○ Reader module to be integrated in a final product
- ○ Part of the final product
- ○ Final product

More details about the provided hardware: Click here to enter text.

The PCD is based on a STA certified PCD (*): ○ Yes ○ No

If yes STA PCD certificate number (*): Click here to enter text.

If yes rationale to justify the delta-certification (*): Click here to enter text.

b. PCD General Technical Characteristics

[PCD2] General technical characteristics

[PCD2.1] (*) PT reader type:

- ○ IFM reader - up to 4 cm
- ○ Common reader - up to 2 cm
- ○ Limited reader - single position

[PCD2.2] (*) Transaction supported when more than one PICC in the field: ○ Yes ○ No

[PCD2.3] (*) Operational temperature range supported:

- ○ Class A
- ○ Class D

Range A:

[PCD2.6] (*) Reference of the PCD Zero Point – Range A (target ID marked on sample or photo or diagram):

Click here to enter text.

Range B:

[PCD2.9] (*) Reference of the PCD Zero Point – Range B (target ID-marked on sample or photo or diagram):

Click here to enter text.

c. PCD Supported Options

[PCD3] General supported options

[PCD3.1] (*) Other supported communication signal interface(s) or protocol(s): Click here to enter text.

[PCD4] Type A supported options

[PCD4.1] (*) PCD to PICC bit rates supported: ◉ fc/128 (~106 kbit/s)

Other: Click here to enter text.

[PCD4.2] (*) PICC to PCD bit rates supported: ◉ fc/128 (~106 kbit/s)

Other: Click here to enter text.

[PCD5] Type B supported options

[PCD5.1] (*) PCD to PICC bit rates supported: ◉ fc/128 (~106 kbit/s)

Other: Click here to enter text.

[PCD5.2] (*) PICC to PCD bit rates supported: ◉ fc/128 (~106 kbit/s)

Other: Click here to enter text.

d. PCD Test Parameters

[PCD6] Test parameters

[PCD6.2c] (*) PCD internal output buffer size (used for Maximum size of UT_APDU): Click here to enter text.

[PCD6.2d] (*) PCD internal input buffer size (used for Maximum size of response UT_APDU): Click here to enter text.

4 ICS for PT Readers – PCD (information not to publish)

a. PCD Product Description

Additional information concerning product description: Click here to enter text.

b. PCD General Technical Characteristics

[PCD2] General technical characteristics

[PCD2.4] PT reader with a continuous polling cycle: ○ Yes ○ No

If no, precise event triggering polling cycle activation: Click here to enter text.

[PCD2.5] Antenna diagram and position on the PT reader under test:

Click here to enter text.

Range A:

[PCD2.7] Orientation of the Z-axis – Range A (photo or diagram):

Click here to enter text.

[PCD2.8] Positions and orientations of the X-axis and Y-axis of the Reference PICC above PCD Zero Point – Range A (photo or diagram):

Click here to enter text.

Range B:

[PCD2.10] Orientation of the Z-axis – Range B (photo or diagram):

Click here to enter text.

[PCD2.11] Positions and orientations of the X-axis and Y-axis of the Reference PICC above PCD Zero Point – Range B (photo or diagram):

Click here to enter text.

Additional information concerning technical characteristics: Click here to enter text.

c. PCD Supported Options

[PCD3] General supported options

The communication signal interfaces supported by the PT reader under test shall compulsorily be Type A and Type B. The only declaration shall be the option to indicate whether other communication signal interfaces or protocols on top of Type A and Type B are also supported.

[PCD3.2] Frames with error correction support: ○ Yes ○ No

[PCD4] Type A supported options

[PCD4.3] FSDI: Click here to enter text.

[PCD4.4] CID support: ○ Yes ○ No

[PCD4.5] NAD support: ○ Yes ○ No

[PCD4.6] S(PARAMETERS) support: ○ Yes ○ No

[PCD5] Type B supported options

[PCD5.3] Maximum Frame Size Code in ATTRIB: Click here to enter text.

[PCD5.4] Extended ATQB support: ○ Yes ○ No

[PCD5.5] "Minimum TR0" field of Param1 (2 bits) in ATTRIB: Click here to enter text.

[PCD5.6] "Minimum TR1" field of Param1 (2 bits) in ATTRIB: Click here to enter text.

[PCD5.7] "EOF/SOF" field of Param1 (2 bits) in ATTRIB: Click here to enter text.

[PCD5.8] CID support: ○ Yes ○ No

[PCD5.9] NAD support: ○ Yes ○ No

[PCD5.10] S(PARAMETERS) support: ○ Yes ○ No

Additional information concerning supported options: Click here to enter text.

d. PCD Test Parameters

[PCD6] Test parameters

[PCD6.1a] UT_TEST_COMMAND1 APDU definition (hexadecimal value): Click here to enter text.

[PCD6.1b] UT_TEST_COMMAND1 Answer to ADPU definition (hexadecimal value): Click here to enter text.

[PCD6.2a] UT_TEST_COMMAND2 APDU definition (hexadecimal value): Click here to enter text.

[PCD6.2b] UT_TEST_COMMAND2 Answer to ADPU definition (hexadecimal value): Click here to enter text.

NOTE UT_TEST_COMMAND2 is set in accordance to [PCD6.2c] in order to test all the supported FSC / Maximum Frame Size values. Additionally, if loopback interface for PT reader testing is used, UT_TEST_COMMAND2 is also set in accordance to [PCD6.2d].

[PCD7] Proprietary test parameters

[PCD7.1] PROPRIETARY_COMMAND APDU(s) definition(s) (hexadecimal value): Click here to enter text.

[PCD7.2] PROPRIETARY_COMMAND Answer to ADPU(s) definition(s) (hexadecimal value): Click here to enter text.

Additional information concerning test parameters: Click here to enter text.

NOTE Usages of UT_TEST_COMMAND1 and UT_TEST_COMMAND2 for PCD tests are defined in ISO/IEC 10373-6.

When the support of non-ISO/IEC 14443-4 protocol initiated by ISO/IEC 14443-3 polling commands is indicated in [PCD3.1] and when the PT reader may give priority to applications using such non-ISO/IEC 14443-4 protocol compared to applications using ISO/IEC 14443-4 protocol, in order to perform the testing of [Rdr7], the vendor shall describe:

— in [PCD7.1], the non-ISO/IEC 14443 command(s) used to select an application using a non-ISO/IEC 14443-4 protocol initiated by ISO/IEC 14443-3 polling commands,

— in [PCD7.2], the expected response(s) to these commands:

a) compliant with the non-ISO/IEC 14443-4 protocol;

b) indicating that no suitable application is available.

5 Status of the ICS

Status:	To be validated

ICS number[1]: Click here to enter text.

Date of validation by the Certification Body: Click here to select a date.

Signature of the Certification Body's representative:

- **END OF DOCUMENT** -

[1] For Certification Body use