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AMENDMENT 3
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**Identification cards — Test
methods —**

Part 6:
Proximity cards

AMENDMENT 3: PICC loading effect

Cartes d'identification — Méthodes d'essai —

Partie 6: Cartes de proximité

AMENDEMENT 3: Effet de charge PICC



Reference number
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The document was prepared by ISO/IEC JTC 1, *Information technology, SC 17, Cards and security devices for personal identification*.

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Identification cards — Test methods —

Part 6: Proximity cards

AMENDMENT 3: PICC loading effect

Page 18, 7.1

Replace Table 3 and NOTE with the following Table 3 and sentence:

Table 3 — Class parameters

Class	Reference PICC	V_{load}	$R2_{min}$	$R2_{max}$	Test PCD assembly
1	1	4,5 V	647 Ω	791 Ω	Test PCD assembly 1
2	2	4,5 V	1 030 Ω	1 260 Ω	Test PCD assembly 1
3	3	4,5 V	1 080 Ω	1 320 Ω	Test PCD assembly 1
4	4	4,5 V	990 Ω	1 210 Ω	Test PCD assembly 2
5	5	4,5 V	960 Ω	1 170 Ω	Test PCD assembly 2
6	6	4,5 V	700 Ω	900 Ω	Test PCD assembly 2

The PCD should be tested with a V_{load} of 6 V for Reference PICC 1 to ensure interoperability with PICCs compliant with the V_{load} requirement of ISO/IEC 10373-6:2016.

Page 19, 7.1.1.2.2

After step c) add:

d) For Reference PICC 1 repeat:

- 1) step b) with a DC voltage V_{load} of 6 V measured at connector CON3 instead of V_{load} as defined in Table 3, and
- 2) step c), where the DC voltage at CON3 shall exceed 5,3 V [corresponding to $H_{min} - 0,2$ A/m(rms)], instead of V_{load} as defined in Table 3.

Page 19, 7.1.1.3

Replace the whole paragraph with:

“The test report shall confirm the operating volume in which the DC voltage measured at CON3 for R2 or variable load resistor adjusted to H_{min} and H_{max} field strength fulfils the requirements defined in step d) of 7.1.1.2.1 and in step c) of 7.1.1.2.2.”

Page 28, 7.2.5.2

After step f) add:

If PICC “Class 1” parameters were used and if the field strength measured in step f) was not greater than H_{\min} , then the following alternative procedure may be used to measure the PICC loading effect:

— repeat steps b) to f) using Reference PICC 1 configured for a V_{load} of 6 V instead of the voltage defined in Table 3;

NOTE 1 The warning about R2 value is not applicable in this case.

— repeat the PICC transmission test defined in 7.2.1 with a field strength of $H_{\min} - 0,2$ A/m(rms) instead of H_{\min} , as defined in ISO/IEC 14443-2:2016, Table 2, using the $V_{\text{LMA, PICC}}$ limit defined for H_{\min} , as defined in ISO/IEC 14443-2:2016, Table 8;

— repeat the PICC EMD level and low EMD time test defined in 7.2.2 with a field strength of $H_{\min} - 0,2$ A/m(rms) instead of H_{\min} , as defined in ISO/IEC 14443-2:2016, Table 2, using the $V_{\text{E, PICC}}$ limit defined for H_{\min} , as defined in ISO/IEC 14443-2:2016, 10.2;

— repeat the PICC reception test defined in 7.2.3 with a field strength of $H_{\min} - 0,2$ A/m(rms) instead of H_{\min} , as defined in ISO/IEC 14443-2:2016, Table 2, using, for Type B PICC, the modulation index, m , defined for H_{\min} , as defined in ISO/IEC 14443-2:2016, 9.1.2.1.

NOTE 2 This alternative procedure checks that a slightly higher PICC loading effect is compensated by a slightly lower PICC minimum operating field strength.

Page 29, 7.2.5.3

Replace the whole subclause with:

If the alternative procedure has not been used, the test result is only PASS if the field strength measured in step f) is greater than H_{\min} , otherwise the test result is FAIL.

If the alternative procedure has been used, the test result is only PASS if the field strength measured in step f) is greater than H_{\min} (using Reference PICC 1 configured for a DC voltage V_{load} of 6 V) and if the PICC transmission test defined in 7.2.1, the PICC EMD level and low EMD time test defined in 7.2.2 and the PICC reception test defined in 7.2.3 are PASS with a field strength of $H_{\min} - 0,2$ A/m(rms) instead of H_{\min} , otherwise the test result is FAIL.

The test report shall give the value of the measured field strength and the V_{load} value used.