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Identification cards — Test methods —

Part 3: Integrated circuit cards with contacts and related interface devices

Cartes d'identification — Méthodes d'essai —

Partie 3: Cartes à circuit(s) intégré(s) à contacts et dispositifs d'interface assimilés

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Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

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For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by ISO/IEC JTC 1, *Information technology*, SC 17, *Cards and personal identification*.

This third edition cancels and replaces the second edition (ISO/IEC 10373-3:2010), which has been technically revised. It also incorporates the Technical Corrigendum ISO/IEC 10373-3:2010/Cor 1:2013.

The main changes compared to the previous edition are as follows:

— editorial clarification of scenario 6 (6.3.6.2.3 in the previous edition) with addition of supported PCB values;

— miscellaneous editorial improvement on e.g. symbols, notes and references.

A list of all the parts in the ISO 10373 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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Identification cards — Test methods —

Part 3: Integrated circuit cards with contacts and related interface devices

1 Scope

This document defines test methods for characteristics of integrated circuit cards with contacts and related interface devices according to the definition given in ISO/IEC 7816-3. Each test method is cross-referenced to one or more base standards, which can be ISO/IEC 7810 that defines the information storage technologies employed in identification card applications.

NOTE Criteria for acceptability do not form part of this document but can be found in the International Standards mentioned above.

This document defines test methods which are specific to integrated circuit technology with contacts. ISO/IEC 10373-1 defines test methods which are common to one or more card technologies and other parts of the ISO/IEC 10373 series define other technology-specific tests.

Test methods defined in this document are intended to be performed separately and independently. A given card is not required to pass through all the tests sequentially. The test methods defined in this document are based on ISO/IEC 7816-3.

Conformance of cards and IFDs determined using the test methods defined in this document does not preclude failures in the field. Reliability testing is outside the scope of this document.

This document does not define any test to establish the complete functioning of integrated circuit cards. The test methods require only that the minimum functionality be verified. The minimum functionality is defined as follows.

— Any integrated circuit present in the card continues to show an Answer to Reset response which conforms to the base standard.

— Any contacts associated with any integrated circuit present in the card continue to show electrical resistance which conforms to the base standard.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

ISO/IEC 7816-3:2006, *Identification cards — Integrated circuit cards — Part 3: Cards with contacts — Electrical interface and transmission protocols*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

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— IEC Electropedia: available at http://www.electropedia.org/

3.1
card
integrated circuit card with contacts

3.2
DUT
device under test
card (3.1) or *IFD* (3.4) that is subject to testing

3.3
etu-factor
parameters negotiable by protocol and parameters selection (PPS), described in ISO/IEC 7816-3:2006, 6.3.1

3.4
IFD
interface device related to integrated circuit cards with contacts as defined in ISO/IEC 7816-3

3.5
normal use
use as an identification card, involving equipment processes appropriate to the card technology and storage as a personal document between equipment processes

[SOURCE: ISO/IEC 7810:2003, 4.4]

3.6
test method
method for testing characteristics of identification cards and related interface devices for the purpose of confirming their compliance with International Standards

3.7
test scenario
defined typical protocol and application specific communication to be used with the *test methods* (3.6) defined in this document

3.8
typical protocol and application specific communication
communication between a *DUT* (3.2) and the corresponding test-apparatus based on the protocol and application implemented in the *DUT* (3.2) and representing its *normal use* (3.5)

4 General items applicable to the test methods

4.1 Test environment

Unless otherwise specified, testing of physical, electrical and logical characteristics shall take place in an environment of a temperature 23 °C ± 3 °C, of a relative humidity 40 % to 60 %.

4.2 Pre-conditioning

Where pre-conditioning is required by the test method, the identification cards to be tested shall be conditioned to the test environment for a period of 24 h before testing unless otherwise specified.

4.3 Selection of test methods

Tests shall be applied as required to test the attributes of the card defined by the relevant base standard (see 4.8).

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