भारतीय मानक
Indian Standard

IS 14202 (Part 1) : 2014
ISO/IEC 7816-1 : 2011

पहचान कार्ड्स — एकीकृत परिपथ कार्ड्स

भाग 1 सम्पर्क सहित कार्ड्स — भौतिक लक्ष्य

(दूसरा पुनरीक्षण)

Identification Cards — Integrated Circuit Cards

Part 1 Cards with Contacts — Physical Characteristics

(Second Revision)

ICS 35.240.15

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Price Group 2

Computer Hardware, Peripherals and Identification Cards Sectional Committee, LITD 16

NATIONAL FOREWORD

This Indian Standard (Part 1) (Second Revision) which is identical with ISO/IEC 7816-1 : 2011 'Identification cards — Integrated circuit cards — Part 1: Cards with contacts — Physical characteristics' issued by the International Organization for Standardization (ISO) and International Electrotechnical Commission (IEC) jointly was adopted by the Bureau of Indian Standards on the recommendations of the Computer Hardware, Peripherals and Identification Cards Sectional Committee and approval of the Electronics and Information Technology Division Council.

This standard is one of the parts of a series of standards on 'Identification cards — Integrated circuit cards'. The other parts in this series are:

Part 2 Cards with contacts — Dimensions and location of the contacts
Part 3 Electrical interface and transmission protocols
Part 4 Organization security and commands for interchange
Part 5 Registration of application providers
Part 6 Interindustry data elements for interchange
Part 7 Interindustry commands for Structured Card Query Language (SCQL)
Part 8 Commands for security operations
Part 9 Commands for card management
Part 10 Electronic signals and answer to reset for synchronous cards
Part 11 Personal verification through biometric methods
Part 12 USB electrical interface and operating procedures
Part 13 Commands for application management in a multi-application environment

This standard was first published in 1995, identical to ISO/IEC 7816-1 : 1987. This standard was first revised in 2003 based on ISO/IEC 7816-1 : 1998. This standard is now again being revised to align it with the latest version of ISO/IEC 7816-1 : 2011.

The text of IEC Standard has been approved as suitable for publication as an Indian Standard without deviations. Certain conventions are, however, not identical to those used in Indian Standards. Attention is particularly drawn to the following:

a) Wherever the words 'International Standard' appear referring to this standard, they should be read as 'Indian Standard'.
b) Comma (,) has been used as a decimal marker while in Indian Standards, the current practice is to use a point (.) as the decimal marker.

In this adopted standard, reference appears to the following International Standard for which Indian Standard also exists. The corresponding Indian Standard which is to be substituted in its place is listed below along with its degree of equivalence for the edition indicated:

International Standard	*Corresponding Indian Standard*	*Degree of Equivalence*
ISO/IEC 7810 Identification cards — Physical characteristics	IS 14172 : 1994 Identification cards — Physical characteristics	Identical with ISO/IEC 7810 : 1985

The technical committee has reviewed the provisions of the following International Standard referred in this adopted standard and has decided that it is acceptable for use in conjunction with this standard:

International Standard	*Title*
ISO/IEC 10373-1	Identification cards — Test methods — Part 1: General characteristics

(*Continued on third cover*)

Indian Standard

IDENTIFICATION CARDS — INTEGRATED CIRCUIT CARDS

PART 1 CARDS WITH CONTACTS — PHYSICAL CHARACTERISTICS

(Second Revision)

1 Scope

This part of ISO/IEC 7816 specifies the physical characteristics of integrated circuit cards with contacts. It applies to identification cards of the ID-1 card type, which can include embossing and/or a magnetic stripe and/or tactile identifier mark as specified in ISO/IEC 7811. Test methods are specified in ISO/IEC 10373-1.

This part of ISO/IEC 7816 applies to cards which have a physical interface with electrical contacts. It does not, however, define the nature, number and position of the integrated circuits in the cards.

2 Normative references

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.

ISO/IEC 7810, *Identification cards — Physical characteristics*

ISO/IEC 10373-1, *Identification cards — Test methods — Part 1: General characteristics*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 7810, ISO/IEC 10373-1 and the following apply.

3.1
integrated circuit
IC
electronic component designed to perform processing and/or memory functions

3.2
contact
conducting element ensuring galvanic continuity between integrated circuit and the external interfacing equipment

3.3
damaged
not testably functional as defined in ISO/IEC 10373-1

4 Physical characteristics

4.1 General

An ID-1 card shall fulfil the physical requirements given in 4.2 to 4.5 after the insertion of an IC into the card body.

4.2 Surface profile of contacts

No point of the entire IC contact surface shall be higher than 0,10 mm above or lower than 0,10 mm below the adjacent surface of the card.

A card issuer may require more stringent tolerances in accordance with its sector or its application-specific requirements.

WARNING — For cards which are printed after embedding, problems can be encountered when contacts are above the adjacent surface of the card.

4.3 Mechanical strength (of a card and contacts)

The card should resist damage to its surface and to any components contained in it and should remain intact during normal use, storage and handling.

Each contact surface and contact area (entire galvanic surface) shall not be damaged by a working pressure equivalent to a steel ball of diameter 1 mm applying a force of 1,5 N.

4.4 Electrical resistance (of contacts)

The contact resistance of a card connector assembly should be sufficiently low to enable a good contact between card and reader contacts.

When a d.c. current of any value between 50 μA and 100 mA is applied, the surface resistance between any two points on the same contact pad shall not exceed 0,5 Ω at a distance of 1,5 mm between contact points. The contact pad area is defined in ISO/IEC 7816-2.

4.5 Electromagnetic interference (between magnetic stripe and integrated circuit)

If the card carries a magnetic stripe, the IC card shall not be damaged, malfunction or be altered after reading, writing or erasing of the magnetic stripe. Conversely, the writing or reading of the IC shall not cause a malfunction of the magnetic stripe or its associated reading, writing or handling mechanisms.

Bibliography

[1] ISO/IEC 7811-1:2002, *Identification cards — Recording technique — Part 1: Embossing*

[2] ISO/IEC 7811-2:2001, *Identification cards — Recording technique — Part 2: Magnetic stripe — Low coercivity*

[3] ISO/IEC 7811-6:2008, *Identification cards — Recording technique — Part 6: Magnetic stripe — High coercivity*

[4] ISO/IEC 7811-7:2004, *Identification cards — Recording technique — Part 7: Magnetic stripe — High coercivity, high density*

[5] ISO/IEC 7811-8:2008, *Identification cards — Recording technique — Part 8: Magnetic stripe — Coercivity of 51,7 kA/m (650 Oe)*

[6] ISO/IEC 7811-9:2008, *Identification cards — Recording technique — Part 9: Tactile identifier mark*

[7] ISO/IEC 7813:2006, *Information technology — Identification cards — Financial transaction cards*

[8] ISO/IEC 7816-2, *Identification cards — Integrated circuit cards — Part 2: Cards with contacts — Dimensions and location of the contacts*

(*Continued from second cover*)

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Bureau of Indian Standards

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Review of Indian Standards

Amendments are issued to standards as the need arises on the basis of comments. Standards are also reviewed periodically; a standard along with amendments is reaffirmed when such review indicates that no changes are needed; if the review indicates that changes are needed, it is taken up for revision. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition by referring to the latest issue of 'BIS Catalogue' and 'Standards: Monthly Additions'.

This Indian Standard has been developed from Doc No.: LITD 16 (3252).

Amendments Issued Since Publication

Amendment No.	Date of Issue	Text Affected

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