भारतीय मानक
Indian Standard

IS 14202 (Part 2) : 2014
ISO/IEC 7816-2 : 2007

पहचान कार्ड्स — एकीकृत परिपथ कार्ड्स

भाग 2 सम्पर्क सहित कार्ड्स — सम्पर्कों का विस्तार और अवस्थिति

(दूसरा पुनरीक्षण)

Identification Cards — Integrated Circuit Cards

Part 2 Cards with Contacts — Dimensions and Location of the Contacts

(Second Revision)

ICS 35.240.15

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NATIONAL FOREWORD

This Indian Standard (Part 2) (Second Revision) which is identical with ISO/IEC 7816-2 : 2007 'Identification cards — Integrated circuit cards — Part 2: Cards with contacts — Dimensions and location of the contacts 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 1 Cards with contacts — Physical characteristics
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 7816-2 : 1988. The standard was first revised in 2003 based on ISO/IEC 7816-2 : 1999. This standard is now again being revised to align it with the latest version ISO/IEC 7816-2 : 2007.

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 certain International Standards for which Indian Standards also exist. The corresponding Indian Standards which are to be substituted in their respective places are listed below along with their degree of equivalence for the editions indicated:

International Standard	*Corresponding Indian Standard*	*Degree of Equivalence*
ISO/IEC 7810 : 2003 Identification cards — Physical characteristics	IS 14172 : 1994 Identification cards — Physical characteristics	Identical with ISO/IEC 7810 : 1985
ISO/IEC 7816-3 : 2006 Identification cards — Integrated circuit cards — Part 3: Cards with contacts — Electrical interface and transmission protocols	IS 14202 (Part 3) : 2014 Identification cards — Integrated circuit cards: Part 3 Electrical interface and transmission protocols	Identical

(*Continued on third cover*)

Indian Standard

IDENTIFICATION CARDS — INTEGRATED CIRCUIT CARDS

PART 2 CARDS WITH CONTACTS — DIMENSIONS AND LOCATION OF THE CONTACTS

(Second Revision)

1 Scope

This part of ISO/IEC 7816 specifies the dimensions and locations for each of the contacts on an integrated circuit card of an ID-1 card type. It also provides information on the way to identify which standards define the use of the contacts.

This part of ISO/IEC 7816 is to be used in conjunction with ISO/IEC 7816-1.

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 7810:2003, *Identification cards — Physical characteristics*

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

ISO/IEC 7816-10:1999, *Identification cards — Integrated circuit(s) cards with contacts — Part 10: Electronic signals and answer to reset for synchronous cards*

ISO/IEC 7816-12:2005, *Identification cards — Integrated circuit cards — Part 12: Cards with contacts — USB electrical interface and operating procedures*

ISO/IEC 10373-3:2001, *Identification cards — Tests methods — Part 3: Integrated circuit(s) cards with contacts and related interface devices*

3 Dimensions of the contacts

The shape and the surface of the conductive zones which include each contact are not defined in this part of ISO/IEC 7816.

Each contact shall have a minimum rectangular surface area not less than the dimensions specified in Figure 1.

This part of ISO/IEC 7816 does not define the maximum dimensions or shape of the contacts except for the requirement that each contact shall be electrically isolated from the other contacts.

Dimensions in millimetres

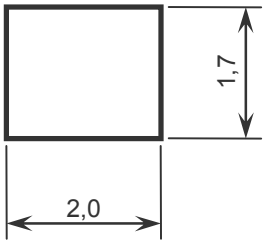

Figure 1 — Minimum dimensions of the contacts

4 Number and location of the contacts

This part of ISO/IEC 7816 defines eight contacts, referred to as C1 to C8.

The minimum rectangular surface area of the contacts is located as shown in Figure 2.

The contacts shall be located on the front of the card (see Clause 5). The dimensions are referenced to the left and upper edges of the front surface of the card as defined in ISO/IEC 7810.

See ISO/IEC 10373-3 for the test method.

Each numbered contact shall be assigned as specified in ISO/IEC 7816-3, ISO/IEC 7816-10 and ISO/IEC 7816-12.

Unused contact areas shall be either non-conductive or electrically isolated from any other contact area in order to avoid potential short circuit in interface devices.

It is recommended that electrical isolation is provided according to Annex B.

The usage of all contacts is assigned by ISO/IEC JTC 1/SC 17. Further information about the usage of these contacts is given in the documents that are referenced in Table A.1. Any use of contacts should not induce any damage on integrated circuit cards or interface devices.

Dimensions in millimetres

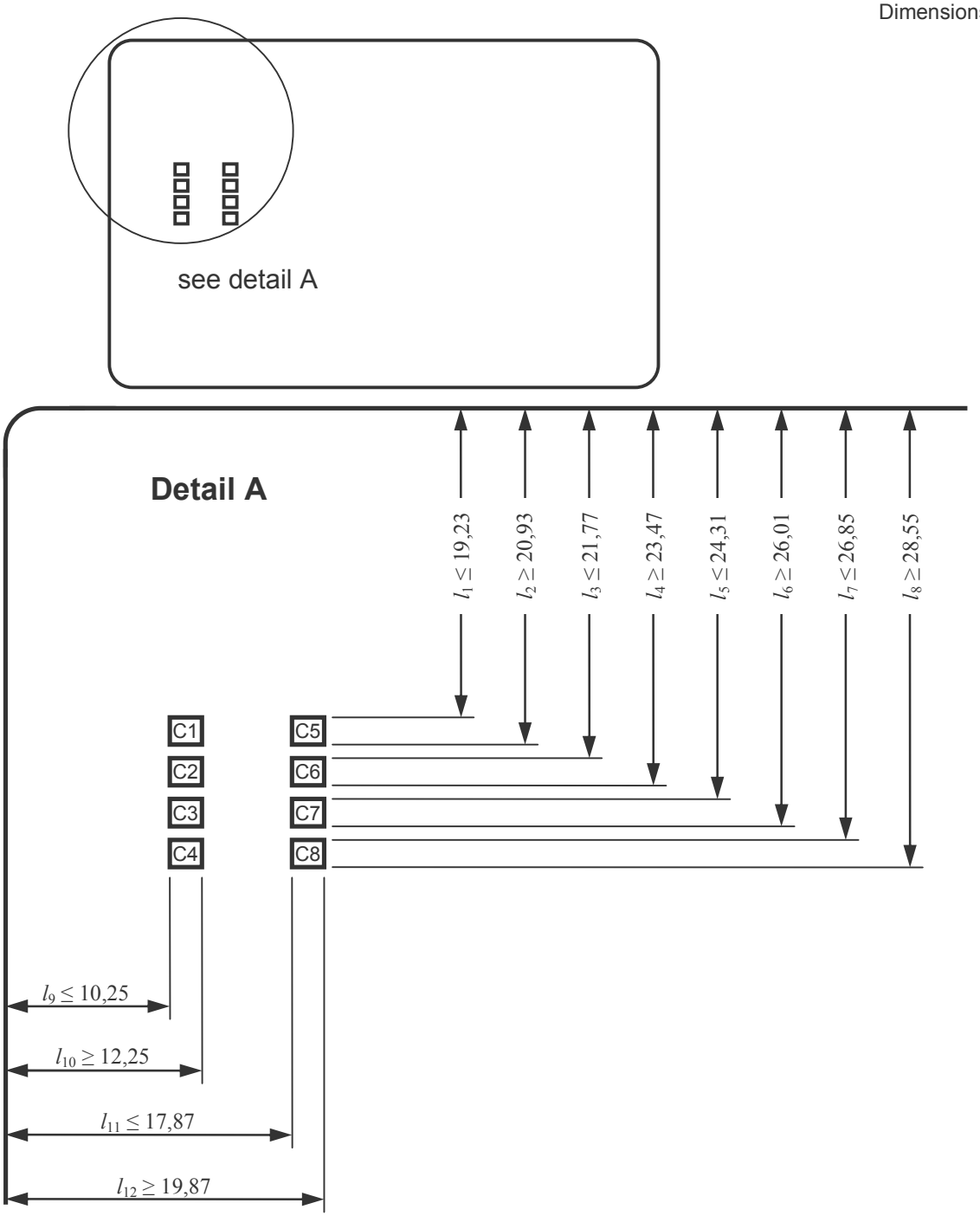

Figure 2 — Location of the contacts

5 Location of contacts relative to other technologies

Figure 3 shows the relative locations of the technologies. Embossing (ISO/IEC 7811-1), when present, shall be located on the same side as the contacts. Magnetic stripe (ISO/IEC 7811-2 and ISO/IEC 7811-6), when present, shall be located on the opposite side to the contacts (see ISO/IEC 7810).

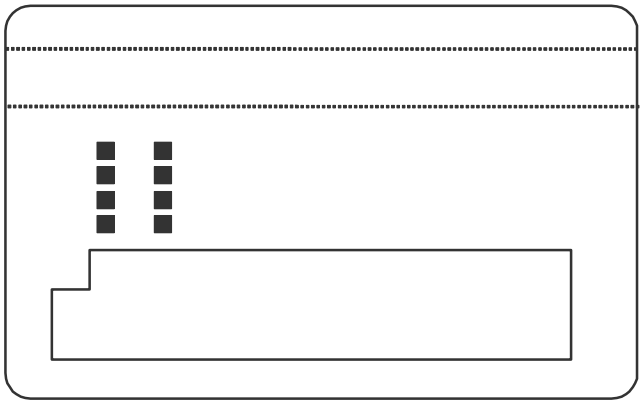

Figure 3 — Front side of the card

Annex A
(informative)

Usage of the contacts

The following table shows in which part of ISO/IEC 7816 the corresponding contact is assigned.

Table A.1 — ISO/IEC 7816 part defining assignment

Contact no.	ISO/IEC 7816-3	ISO/IEC 7816-10	ISO/IEC 7816-12
C1	X	X	X
C2	X	X	
C3	X	X	
C4		X	X
C5	X	X	X
C6	X		
C7	X	X	
C8			X

Annex B
(informative)

Location of possible conductive zones

Up to 1990, a transitional position of the contact was defined in ISO/IEC 7816-2. As a result, terminals were deployed which accept cards with contacts in either position. The purpose of this annex is to highlight this fact and allow manufacturers (essentially card manufacturers) to take this into account. In this respect, the electrical isolation of zones Z*x* (*x* = 1…8) should be provided.

Dimensions in millimetres

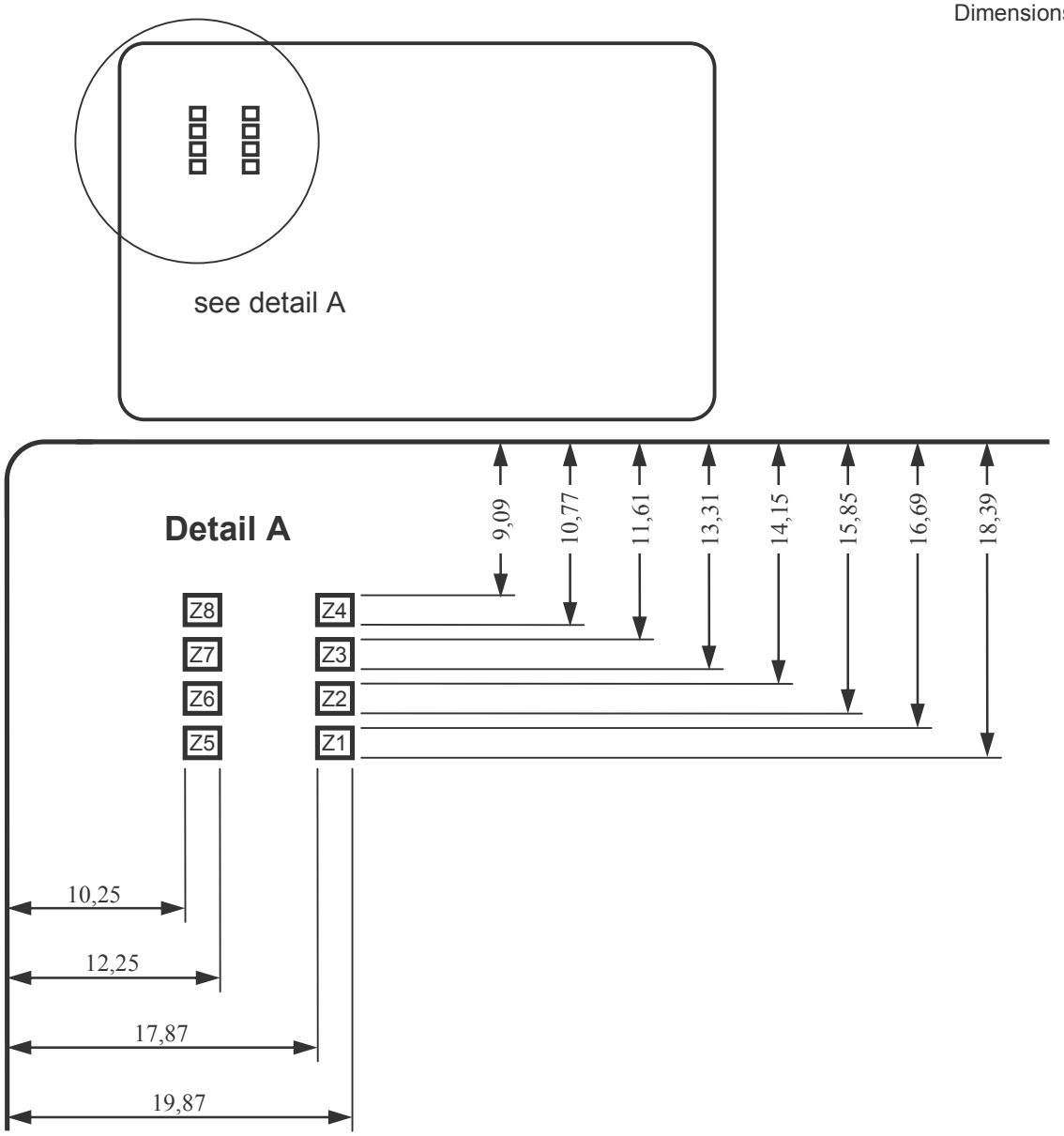

Figure B.1 — Location of possible conductive zones

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 7811-6:2001, *Identification cards — Recording technique — Part 2: Magnetic stripe — High coercivity*

[4] ISO/IEC 7816-1:1998, *Identification cards — Integrated circuit(s) cards with contacts — Part 1: Physical characteristics*

[5] ISO/IEC 7816-1:1998/Amd.1:2003, *Identification cards — Integrated circuit(s) cards with contacts — Part 1: Physical characteristics — Amendment 1: Maximum height of the IC contact surface*

[6] Universal Serial Bus Revision 2.0 Specification, April 27, 2000

(*Continued from second cover*)

International Standard	*Corresponding Indian Standard*	*Degree of Equivalence*
ISO/IEC 7816-10 : 1999 Identification cards — Integrated circuit(s) cards with contacts — Part 10: Electronic signals and answer to reset for synchronous cards	IS 14202 (Part 10) : 2014 Identification cards: Integrated circuit cards: Part 10 Electronic signals and answer to reset for synchronous cards	Identical
ISO/IEC 7816-12 : 2005 Identification cards — Integrated circuit cards — Part 12: Cards with contacts — USB electrical interface and operating procedures	IS 14202 (Part 12) : 2014 Identification cards — Integrated circuit cards : Part 12 Cards with contacts — USB Electrical interface and operating procedures	do

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 10373-3 : 2001	Identification cards — Tests methods — Part 3: Integrated circuit(s) cards with contacts and related interface devices

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.

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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 (3253).

Amendments Issued Since Publication

Amendment No.	Date of Issue	Text Affected

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