SINGAPORE STANDARD

SS 372 : Part 1 : 2000

(ICS 35.240.15)

SPECIFICATION FOR

Identification cards – Integrated circuit(s) cards with contacts

Part 1 : Physical characteristics

Published by
Singapore Productivity and Standards Board
1 Science Park Drive
Singapore 118221

PSB
SINGAPORE

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ISBN 9971-67-825-X

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National Foreword

This Singapore Standard was prepared by the Smart Card Technical Committee under the direction of the Information Technology Standards Committee. It is a revision of SS 372 : Part 1 : 1994. This revised standard is a modified adoption of ISO/IEC 7816-1 : 1998 with deviation in Subclause 4.2.8 and inclusion of an additional characteristics. To facilitate identification, the affected text of the international standard which is to be changed is indicated by a left marginal bar adjacent to it. The modifications are specified below:

Subclause	Modification
4.2.8	*Replace* with the following subclause: For cards intended for use in an indoor environment, the card shall operate in an ambient temperature range between 0^{o} C and 50^{o} C. For cards intended for use in an outdoor environment, the card shall operate in an ambient temperature range between 0^{o}C and 85^{o}C. The card shall however be capable of withstanding up to 100^{o}C under storage conditions.
4.2.11	*Insert* an additional characteristic after Subclause 4.2.10 as follows: **Subclause 4.2.11 Humidity with condensation** The microchip module of the card should be able to function at 99% humidity with condensation.

The deviations are made to cater for the local tropical environment.

Attention is also drawn to the following:

1) Where the words 'International Standard' appear, they should be read as 'Singapore Standard'.

2) The comma has been used throughout as a decimal marker whereas in Singapore Standards, it is a practice to use a full point on the baseline as the decimal marker.

NOTE

1. Singapore Standards are subject to periodic review to keep abreast of technological changes and new technical developments. The revisions of Singapore Standards are announced through the issue of either amendment slips or revised editions.

2. Compliance with a Singapore Standard does not exempt users from legal obligations.

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. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

International Standard ISO/IEC 7816-1 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 17, *Identification cards and related devices*.

This first edition of ISO/IEC 7816-1 cancels and replaces the first edition of ISO 7816-1:1987, which has been technically revised.

ISO/IEC 7816 consists of the following parts, under the general title *Identification cards — Integrated circuit(s) cards with contacts*:

— *Part 1: Physical characteristics*

— *Part 2: Dimensions and location of the contacts*

— *Part 3: Electronic signals and transmission protocols*

— *Part 4: Interindustry commands for interchange*

— *Part 5: Numbering system and registration procedure for application identifiers*

— *Part 6: Interindustry data elements*

— *Part 7: Interindustry commands for structured card query language*

— *Part 8: Security related interindustry commands*

— *Part 10: Electronic signals and answer to reset for synchronous cards*

Identification cards — Integrated circuit(s) cards with contacts —

Part 1:
Physical characteristics

1 Scope

This part of ISO/IEC 7816 specifies the physical characteristics of integrated circuit(s) cards with contacts. It applies to identification cards of the ID-1 card type which may include embossing and/or a magnetic stripe as specified in ISO/IEC 7811-1 to ISO/IEC 7811-6.

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.

NOTE Other types of IC cards, formats or interfaces may be developed in the future which will call for additions to be made to this part of ISO/IEC 7816 or will result in the need for other International Standards to be prepared.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of ISO/IEC 7816. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of ISO/IEC 7816 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO/IEC 7810:1995, *Identification cards - Physical characteristics*.

ISO/IEC 7811-1:1995, *Identification cards - Recording technique - Part 1: Embossing*.

ISO/IEC 7811-2:1995, *Identification cards - Recording technique - Part 2: Magnetic stripe*.

ISO/IEC 7811-3:1995, *Identification cards - Recording technique - Part 3: Location of embossed characters on ID-1 cards*.

ISO/IEC 7811-4:1995, *Identification cards - Recording technique - Part 4: Location of read-only magnetic tracks - Tracks 1 and 2*.

ISO/IEC 7811-5:1995, *Identification cards - Recording technique - Part 5: Location of read-write magnetic track - Track 3*.

ISO/IEC 7811-6:1996, *Identification cards - Recording technique - Part 6: Magnetic stripe - High coercivity.*

ISO/IEC 7813:1995, *Identification cards - Financial transaction cards*.

ISO/IEC 10373:1993, *Identification cards - Test methods*.