INTERNATIONAL STANDARD

ISO/IEC 7813

Fifth edition
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Identification cards — Financial transaction cards

Cartes d'identification — Cartes de transactions financières

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

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.

Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

International Standard ISO/IEC 7813 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 17, *Identification cards and related devices.*

This fifth edition cancels and replaces the fourth edition (ISO/IEC 7813:1995), which has been technically revised.

Introduction

This International Standard is one of a series of standards describing the parameters for identification cards and the use of such cards for international interchange.

This International Standard addresses the structure and data content of financial transaction cards.

Identification cards — Financial transaction cards

1 Scope

This International Standard specifies the physical characteristics, data structure and data content of ID-1 type cards used in financial transactions. It takes into consideration both human and machine aspects and states minimum requirements of conformity. It references layout, recording techniques, numbering systems, registration procedures, but not security requirements.

ISO/IEC 10373 specifies the test procedures used to check cards against the parameters specified in this International Standard.

2 Conformance

A financial transaction card is in conformance with this International Standard if it meets all mandatory requirements specified herein.

A prerequisite for conformance with this International Standard is conformance with ISO 4909, ISO/IEC 7810, ISO/IEC 7811, ISO/IEC 7812, ISO/IEC 7816 - parts 1 to 6, ISO 9992, ISO/IEC 10536, ISO/IEC 14443 and ISO/IEC 15693, where appropriate.

3 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard 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 4909:2000, *Bank cards — Magnetic stripe data content for track 3.*

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

ISO/IEC 7811 (all parts), *Identification cards — Recording technique.*

ISO/IEC 7812 (all parts), *Identification cards — Identification of issuers.*

ISO/IEC 7816 (parts 1 - 6), *Identification cards — Integrated circuit(s) cards with contacts.*

ISO 9992 (all parts), *Financial transaction cards — Messages between the integrated circuit card and the card accepting device.*

ISO/IEC 10373: (all parts), *Identification cards — Test methods.*

ISO/IEC 10536 (all parts), *Identification cards — Contactless integrated circuit(s) cards.*

ISO/IEC 14443 (all parts), *Identification cards — Contactless integrated circuit(s) cards — Proximity cards.*

ISO/IEC 15693 (all parts), *Identification cards — Contactless integrated circuit(s) cards — Vicinity cards.*

4 Terms and definitions

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

4.1
automated teller machine
ATM
unattended electronic device that requires a customer verification method such as a card and personal identification number (PIN) to perform basic bank teller functions such as accepting deposits, cash withdrawal, account transfers, loan payments and balance enquiries

4.2
cash disbursement
action of withdrawing cash with a financial transaction card, either as a cash withdrawal at an ATM, a cash advance or as a cashback transaction at the Point Of Sale

4.3
financial transaction card
card which contains issuer and cardholder information used to facilitate financial transactions by providing the necessary data for processing such transactions

4.4
goods and services
range of financial transactions excluding cash disbursements

4.5
personal identification number
PIN
code or password the cardholder possesses for verification of identity

4.6
PIN pad
device on which the cardholder inputs their personal identification number

4.7
service code
three digit numeric value used to indicate the issuer's transaction acceptance parameters for the card

5 Abbreviated terms

For the purposes of this International Standard, the following abbreviations apply.

IIN	Issuer Identification Number
PAN	Primary Account Number
PIN	Personal Identification Number

6 Physical characteristics

The physical characteristics shall conform to those specified for card type ID-1 as defined in ISO/IEC 7810.

7 Embossed characters

The requirements for embossed characters shall be as specified in ISO/IEC 7811.

The embossed characters shall be on the front of the card, which is on the opposite side of the card from that with the magnetic stripe, (when present).

7.1 Embossing of expiration date

When this field is embossed, it shall be in the format of the two digit representation of the month (MM) followed by the last two digits of the Year (YY). Separator character(s) shall be used to segregate the fields, for example MM/YY or MM-YY.

8 Magnetic stripe

If present, the High Coercivity or Low Coercivity magnetic stripe shall be located on the back of the card as specified in the appropriate part of ISO/IEC 7811.

If present, the High Coercivity or Low Coercivity magnetic media and encoding techniques shall be as specified in the appropriate part of ISO/IEC 7811.

9 Integrated circuit with contacts

An integrated circuit card shall conform to ISO/IEC 7810 and ISO/IEC 7816, parts 1 to 6.

10 Integrated circuit without contacts

An integrated circuit card without contacts shall conform to ISO/IEC 7810 and ISO/IEC 10536, ISO/IEC 14443 or ISO/IEC 15693 as applicable.

11 Magnetic stripe structure and information content

11.1 Track 1 structure and information content

11.1.1 Structure A

Reserved for proprietary use of card issuer.

11.1.2 Structure B

Table 1 — Track 1 structure

Symbol	Description	Character code/No. of characters
STX	Start sentinel	%
FC	Format code	B
PAN	Primary Account Number see 11.1.2.2)	up to 19 digits
FS	Separator	^
NM	Name (see 11.1.2.3) surname surname separator first name or initial space when required (see 11.1.2.4) middle name or initial period (when followed by title) title (when used)	2 to 26 characters / space .
FS	Separator	^
ED	Expiration date (see 11.1.2.5)	four digits or ^
SC	Service code (see 11.1.2.6)	three digits or ^
DD	Discretionary data	balance of characters
ETX	End sentinel	?
LRC	Longitudinal redundancy check (see ISO/IEC 7811-2)	1 character
	Maximum record length	79 alphanumeric characters

11.1.2.1 Character codes

Character codes are based on a 7 bit modified ASCII format and are described in the appropriate section of the High Coercivity and Low Coercivity magnetic stripe parts of ISO/IEC 7811. Identical codes are used in each part of ISO/IEC 7811.

11.1.2.2 PAN

The Primary Account Number (PAN) is comprised of a six digit Issuer Identification Number (IIN), a variable length (maximum 12 digits) individual account number and a check digit and is as defined in ISO/IEC 7812-1. ISO/IEC 7812-2 describes the application and registration procedures for IINs.

11.1.2.3 Name

Minimum encoded data shall be a single alpha character (as surname) and the surname separator.

11.1.2.4 Space

The space character is required to separate the logical elements of the name field other than the surname. The separator terminating the name field should be encoded following the last logical element of the name field. If only the surname is encoded, the Field Separator (FS) will follow the surname separator.

11.1.2.5 Expiration date

Format YYMM, where 'YY' represents the last two digits of the year and 'MM' is the numeric representation of the month.

11.1.2.6 Service code

The service code is a numeric field with three sub-fields represented by individual digits.

It is used to indicate the issuer's acceptance criteria for magnetic stripe transactions and whether a related integrated circuit supporting the equivalent application as identified by the magnetic stripe or embossing is present on the card.

Each field is identified by its position (position 1, 2 and 3) and operates independently, allowing judgements on its separate functions. Terminals and other card accepting devices act on each field individually (see Table 3).

11.2 Track 2 structure and information content

Table 2 — Track 2 structure

Symbol	Description	Character code/No. of characters
STX	Start sentinel	;
PAN	Primary Account Number (see 11.1.2.2)	up to 19 digits
FS	Separator	=
ED	Expiration date (see 11.1.2.5)	four digits or =
SC	Service code (see 11.1.2.6)	three digits or =
DD	Discretionary data	balance of available digits
ETX	End sentinel	?
LRC	Longitudinal redundancy check (see ISO/IEC 7811-2)	one digit
	Maximum record length	40 numeric digits

11.2.1 Character codes

Character codes are based on a 5 bit modified ASCII format and are described in the appropriate section of the High Coercivity and Low Coercivity magnetic stripe parts of ISO/IEC 7811. Identical codes are used in each part of ISO/IEC 7811.

Table 3 — Service code assignments

Values	Position 1		Position 2	Position 3	
	Interchange	Technology	Authorization processing	Range of services	PIN requirements
0	—	—	Normal [e]	No restrictions	PIN required
1	International [a]	—	—	No restrictions	—
2	International [a]	Integrated circuit cards [b]	By issuer [f]	Goods and services only [g]	—
3	—	—	—	ATM only [h]	PIN required
4	—	—	By issuer [f] unless explicit bilateral agreement applies	Cash only	—
5	National [c]	—	—	Goods and services only [g]	PIN required
6	National [c]	Integrated circuit cards [b]	—	No restrictions	Prompt for PIN if PIN pad present [i]
7	Private [d]	—	—	Goods and services only [g]	Prompt for PIN if PIN pad present [i]
8	—	—	—	—	—
9	Test	—	—	—	—

NOTE All undefined values are reserved for future ISO use.

[a] Position 1, values 1 and 2 are available for international interchange.

[b] Position 1, values 2 and 6 indicate that the card contains an integrated circuit and that the financial transaction should be processed from the integrated circuit, if feasible.

[c] Position 1, values 5 and 6 are available for interchange only in the country of issue, although specific bilateral agreements may override this restriction.

[d] Position 1, value 7 is not available for general interchange, although specific bilateral agreements may override this restriction.

[e] Position 2, value 0 requires that transactions are authorized according to the requirements specified in the merchant agreement and/or the card scheme's established rules governing acceptance at the particular point of sale.

[f] Position 2, values 2 and 4 require that transactions are processed online and approved by the issuer or the issuer's processing agent.

[g] Position 3, values 2, 5 and 7. See 4.4.

[h] Position 3, value 3. See 4.1.

[i] Position 3, values 6 and 7 require merchants to follow the rules in their merchant agreements and/or the card scheme's established rules if the PIN pad is inoperable, or in the case where the PIN prompt was given but the PIN was not supplied by the cardholder.

11.3 Track 3 structure and information content

The structure and information content of track 3 shall be as defined in ISO 4909.

12 Integrated circuit structure and information content

The structure and general information content of an integrated circuit card is defined in ISO/IEC 7816. Further financial information content for integrated circuit cards is defined in ISO 9992-2.