



SLOVENSKI STANDARD

SIST EN 726-4:1998

01-junij-1998

Identification card systems - Telecommunications integrated circuit(s) cards and terminals - Part 4: Application independent card related terminal requirements

Identification card systems - Telecommunications integrated circuit(s) cards and terminals - Part 4: Application independent card related terminal requirements

Identifikationskartensysteme - Anforderungen an Chipkarten und Endgeräte für Telekommunikationszwecke - Teil 4: Applikationsunabhängige kartenbezogene Anforderungen an Endgeräte

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Systemes de cartes d'identification - Cartes a circuit intégré et terminaux pour les télécommunications - Partie 4: Spécifications de la partie carte des terminaux indépendantes des applications

Ta slovenski standard je istoveten z: EN 726-4:1994

ICS:

35.240.15	Identifikacijske kartice in sorodne naprave	Identification cards and related devices
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EUROPEAN STANDARD

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NORME EUROPÉENNE

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December 1994

ICS 33.120.00; 35.240.60

Descriptors: Telecommunications, IC cards, telecommunication terminals, specifications, characteristics

English version

**Identification card systems - Telecommunications
integrated circuit(s) cards and terminals - Part 4:
Application independent card related terminal
requirements**

Systèmes de cartes d'identification - Cartes à circuit intégré et terminaux pour les télécommunications - Partie 4: Spécifications de la partie carte des terminaux indépendantes des applications

Identifikationskartensysteme - Anforderungen an Chipkarten und Endgeräte für Telekommunikationszwecke - Teil 4: Applikationsunabhängige Kartenbezogene Anforderungen an Endgeräte

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Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

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CEN members are the national standards bodies of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

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1 Scope

Part 4 of EN 726 specifies the application independent card related characteristics of card terminals able to process cards complying with part 3 of EN 726. All common characteristics which are necessary for a standardized card use in the terminals are defined. This part of the standard does not preclude letting terminals accept and process cards complying with other standards.

The application-specific characteristics are not defined in this part of EN 726. They are defined and described in the relevant application requirements.

This part of EN 726 does not specify any internal realisation of a card-terminal. It describes:

- the requirements for the physical and environmental specifications on the card terminal, the electronic signals and transmission protocols;
- the application independent logical model, which should be used as a basic design of the logical structure of card specific requirements supported by the terminal;
- the description of the application independent functions and general scenarios to be used by most of the applications;
- the error handling.

2 Normative references

This part of EN 726 incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications listed hereafter. For dated references, subsequent amendments to, or revisions of any of these publications apply to this part of EN 726 only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 726-3	https://standards.iteh.ai/catalog/standards/sist/d7f7e5e9-17af-4ed2-96d2-d1ed92938eed/sist-en-726-4-1998 Identification card systems - Telecommunications integrated circuit(s) cards and terminals - Part 3 : Application independent card requirements.
EN 726-7	Identification card systems - Telecommunications integrated circuit(s) cards and terminals - Part 7 : Security module. ¹⁾
EN 27816-1 : 1989	Identification cards - Integrated circuit(s) cards with contacts - Part 1 : Physical characteristics.
EN 27816-2 : 1989	Identification cards - Integrated circuit(s) cards with contacts - Part 2 : Dimensions and location of the contacts.
EN 27816-3 : 1989	Identification cards - Integrated circuit(s) cards with contacts - Part 3 : Electronic signals and transmission protocols.
EN 27816-3 : 1992/A1 : 1993	Integrated circuit(s) cards with contacts - Part 3 : Electronic signals and transmission protocols - Amendment 1: Protocol type T=1, asynchronous half duplex block transmission protocol.
ISO/IEC 646 : 1991	Information technology - ISO 7-bit coded character set for information interchange.
CCITT Recommendation T.50 : 1988	International alphabet n° 5.

1) At present at the stage of draft.

Foreword

This European Standard was prepared by ETSI STC TE9 and adopted by CEN/TC 224 "Machine-readable cards, related device interfaces and operations", the secretariat of which is held by AFNOR.

This document was submitted to the formal vote and the result of the formal vote was positive.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 1995, and conflicting national standards shall be withdrawn at the latest by June 1995.

According to the CEN/CENELEC Internal Regulations, the following countries are bound to implement this European Standard :

Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

This European Standard consists of the following parts, under the general title "Identification card systems - Telecommunications integrated circuit(s) cards and terminals" :

- Part 1 : System overview ;
- Part 2 : Security framework ;
- Part 3 : Application independent card requirements ;
- Part 4 : Application independent card related terminal requirements ;
- Part 5 : Payment methods ;
- Part 6 : Telecommunication features ;
- Part 7 : Security module.

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3 Definitions, abbreviations and symbols

3.1 Definitions

For the purpose of this part of EN 726, the following definitions apply:

3.1.1 access conditions (AC) : A set of security attributes associated to a file in a card.

3.1.2 elementary file (EF) : A file containing AC, data or program. It can not be the parent of another file.

3.1.3 EF_{CHV} : An elementary file containing the card holder verification information.

3.1.4 EF_{DIR} : An elementary file at the Master File or Dedicated File level, which contains a directory of all or of part of available applications in the card.

3.1.5 EF_{ID} : An elementary file at the master file level containing the identification number of the card.

3.1.6 EF_{KEY} : An elementary file containing keys linked to the AC.

3.1.7 Interface device (IFD) : A terminal, communication device or machine to which the IC card is electrically connected during a session.

3.1.8 master file (MF) : The mandatory unique file representing the root of the file structure and containing AC and allocated memory. It may be the parent of elementary files and/or dedicated files.

3.1.9 nibble : Half a byte. The most significant nibble of a byte consists of bits $b_8b_7b_6b_5$ and the least significant of bits $b_4b_3b_2b_1$.

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3.2 Abbreviations

For the purpose of this part of EN 726, the following abbreviations apply :

AC	Access conditions	https://standards.iteh.ai/catalog/standards/sist/d7f7e5e9-17af-4ed2-96d2-d1ed92938eed/sist-en-726-4-1998
ATR	Answer-to-reset	
BCD	Binary Coded Decimal	
CHV	Card Holder Verification	
FFS	For further study	
IC	Integrated circuit	
IFD	Interface device	
ME	Mobile equipment or portable battery operated equipment	
MF	Master file	
SM	Security Module	
PIN	Personal Identification Number	

3.3 Symbols

For the purpose of this part of EN 726, the following symbols apply :

V_{CC}	Supply voltage
V_{PP}	Program voltage

4 Physical requirements for the card terminal

4.1 Mechanical interface between the IFD and the IC card

The mechanical interface between the integrated circuit card (IC card) and the interface device (IFD) shall be in accordance with EN 27816-1:1989 and EN 27816-2:1989.

If the IFD accepts ID-1 cards with embossing, then the embossing shall be on the same side as the contacts. If the IFD supports IC cards combined with a magnetic stripe, the magnetic tracks shall always be on the opposite side of the contacts.

4.2 Contacting of the IC card

No short circuit or damage to the card or IFD shall take place when inserting or removing the card, even when it is pulled out with a speed < 1 m/s. Activation and deactivation of the contacts shall be in accordance with EN 27816-3:1989 and ISO/IEC 7816-3:1989/AM 1:1992.

No short circuit between any contacting elements in the terminal shall prevent normal operation of the terminal when removed.

The shape and the material of the contacting elements shall be such that no damage to the card is caused by them when applied to it.

The contact force of the contacting elements shall be large enough to ensure contact, even in extreme environmental conditions (e.g. shocks or vibrations) which can be application dependent.

However, under no circumstances shall the contact force be greater than 0,5 N per contact.

The shape of the contacts and the way of contacting shall be done in such a way that even polluted cards are contacted properly.

4.3 User / terminal interface

The method of inserting the card shall be by the short side first, where the contacts are situated, preferably with the contacts upwards. Therefore, for public terminals, a clear and unambiguous indication shall be given to the user to indicate the correct orientation for inserting the card.

The card shall always be accessible to the user.

Physical removal of the card at any time however, shall not leave the applications in the terminal in an invalid or unknown logical state.

NOTE : During write operations on the card, especially in the case of management operations, a clear indication shall be given to the user, not to remove his card from the terminal.

4.4 Magnetic stripe card reader

A combination with a magnetic stripe card reader function is optional.

4.5 Card holder verification module

If required, a card holder verification module can be integrated in the terminal. This module shall allow the user to proof his/her identity by entering his/her Card Holder Verification number (CHV) and/or biometric information.

In case of a CHV-entry, the CHV may be entered on the keypad/keyboard of the card terminal or by means of a separate and secure PIN-pad.

Depending on the application, the CHV-entry may be numerical or alphanumeric. For telecommunication applications the CHV-data shall be coded in accordance with CCITT Recommendation T.50 or ISO/IEC 646:1991. If alphanumeric CHV-entry has to be performed, only terminals with a keyboard shall be used. In case of numerical CHV-entry, both keyboard and keypad (up to 12 numerical pushbuttons) can be used.

For public terminals the terminal shall be designed so that CHV entry cannot be easily observed.

The plain text CHV shall never leave the terminal, except when it is presented to the card.

4.6 Acceptance of memory cards

Terminals accepting memory cards are not excluded by this standard.

5 Electronic signals and transmission protocols

The electronic signals and asynchronous transmission protocols between the IFD and the IC card shall be in accordance with EN 27816-3:1992 and ISO/IEC 7816-3:1989/AM 1:1992. IC cards conforming to this standard shall not be damaged.

The following, additional, requirements shall be applied in order to have simplified terminals and to ensure a proper operation in mobile equipment or portable battery operated equipment (ME) except for the supply current which is to be used in stationary equipment as well.

5.1 Supported transmission types

For the IFD, two types of transmission shall be considered :

- the asynchronous transmission, used by the IC cards, with the possibility of having cards with an internal or external clock ;
- the synchronous transmission used by the memory cards.

Therefore, the IFD shall support the different types of reset behaviour for the cards using asynchronous transmission (see EN 27816-3:1992 clause 5 and subclause 6.1).

The IFD may support the reset procedure for the cards using synchronous transmission (see EN 27816-3:1992 clause 5 and subclause 6.2). If the IFD supports synchronous cards, the conditions for an asynchronous IC card shall be applied first.

5.2 Supply voltage V_{CC}

According to the value given in EN 27816-3:1992 and ISO/IEC 7816-3:1989/AM 1:1992 except for mobile equipment where the supply voltage V_{CC} shall be $5\text{ V} \pm 10\%$.

5.3 Supply current

The terminal shall be able to supply at least 20 mA to the IC card. In portable battery operated equipment, the supply current shall be at least 10 mA.