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**Identification cards — Optical memory  
cards — Linear recording method —**

**Part 2:**

Dimensions and location of the accessible  
optical area

ISO/IEC 11694-2:1995

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*Cartes d'identification — Cartes à mémoire optique — Méthode  
d'enregistrement linéaire —*

*Partie 2: Dimensions et emplacement de la zone optique accessible*

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Printed in Switzerland

## 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 the national bodies for voting. Publication as an International Standard requires approval by at least 75% of the national bodies casting a vote.

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International Standard ISO/IEC 11694-2 was prepared by Joint Technical Committee ISO/IEC JTC 1, Information technology, Subcommittee SC 17, Identification cards and related devices.

ISO/IEC 11694 consists of the following parts, under the general title *Identification cards - Optical memory cards - Linear recording method*:

- Part 1: *Physical characteristics*
- Part 2: *Dimensions and location of the accessible optical area*
- Part 3: *Optical properties and characteristics*
- Part 4: *Logical data structures*

Annex A forms an integral part of this part of ISO/IEC 11694.

## Introduction

This part of ISO/IEC 11694 is one of a series of standards describing the parameters for optical memory cards and the use of such cards for the storage and interchange of digital data.

The standards recognize the existence of different methods for recording and reading information on optical memory cards, the characteristics of which are specific to the recording method employed. In general, these different recording methods will not be compatible with each other. Therefore, the standards are structured to accommodate the inclusion of existing and future recording methods in a consistent manner.

This part of ISO/IEC 11694 is specific to optical memory cards using the linear recording method. Characteristics which apply to other specific recording methods shall be found in separate standards documents.

This part of ISO/IEC 11694 defines the dimensions and location of the accessible optical area and the extent of compliance with, addition to, and/or deviation from the relevant base document, ISO/IEC 11693.

The user's attention is called to the possibility that compliance with this part of ISO/IEC 11694 may require use of an invention covered by patent rights and/or other material covered by copyrights. By publication of this part of ISO/IEC 11694, no position is taken with respect to the validity of this claim or of any patent rights or copyrights in connection therewith.

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# Identification cards - Optical memory cards - Linear recording method -

## Part 2:

### Dimensions and location of the accessible optical area

#### 1 Scope

This part of ISO/IEC 11694 defines the dimensions and location of the accessible optical area of optical memory cards using the linear recording method.

#### 2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO/IEC 11694. At the time of publication the editions indicated were valid. All standards are subject to revision and parties to agreements based on this part of ISO/IEC 11694 are encouraged to investigate the possibility of applying the most recent edition of the standards indicated below. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO/IEC 7810: —<sup>1)</sup>, *Identification cards - Physical characteristics*.

ISO/IEC 11693:1994, *Identification cards - Optical memory cards - General characteristics*.

ISO/IEC 11694-4: —<sup>2)</sup>, *Identification cards - Optical memory cards - Linear recording method - Part 4: Logical data structures*.

#### 3 Definitions

For the purposes of this part of ISO/IEC 11694, the definitions given in ISO/IEC 11693 and the following definitions apply:

1) To be published. (Revision of ISO 7810:1985)

2) To be published.

**3.1 pulse position modulation (PPM):** An encoding method where binary data is conveyed by the presence, or absence, of a mark at a given position. One mark defines one data transition.

**3.2 pulse width modulation (PWM):** An encoding method where binary data is conveyed by the position of the edges of a mark. One mark defines two data transitions.

**3.3 reference edges:** The lower horizontal edge and the left vertical edge of the card as shown in figure 1. Refer to the annex for alternative reference edges when optical memory cards contain embossing.

**3.4 reference track:** The first track located nearest the reference edges of the card as shown in figure 1.

#### 4 Dimensions and location

This part of ISO/IEC 11694 applies to cards containing only one accessible optical area.

##### 4.1 Accessible optical area

The dimensions and location of the accessible optical area shall be as shown in figure 1.

##### 4.2 Dimension C

Dimension *C* as shown in figure 1 is not fixed by this part of ISO/IEC 11694 but shall be left to each industry user group to specify for those applications requiring interchange. Dimension *C* shall never be less than 9,5 mm nor greater than 49,2 mm. Optional card layouts are described in annex A.

**4.3 Dimension X**

When using PWM, dimension X shall be 3,0 mm maximum. When using PPM, dimension X shall be 1,0 mm maximum. See figure 1 and ISO/IEC 11694-4 annex A or annex B.

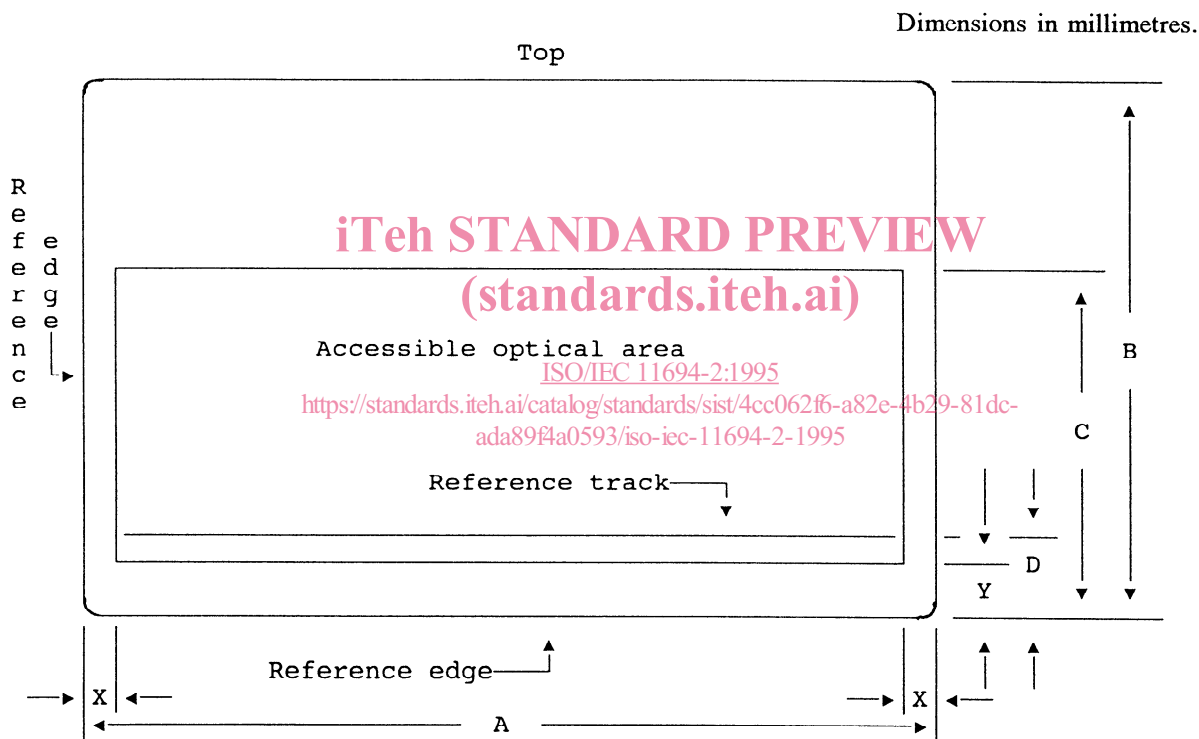
**4.4 Dimension Y**

Dimension Y, as shown in figure 1, shall be less than

dimension D by at least 1,0 mm. When using PWM, dimension Y shall be 4,5 mm maximum. See ISO/IEC 11694-4 annex A.

**4.5 Skew**

The skew of the reference track relative to the bottom edge of the card shall be less than or equal to 0,2°. See figure 1.



NOTE - Drawing not to scale.

A = 85,47 to 85,72 (ISO/IEC 7810)  
 B = 53,92 to 54,03 (ISO/IEC 7810)  
 C = see 4.2

D = 5,8 ± 0,7  
 X = see 4.3  
 Y = see 4.4

**Figure 1 - Dimensions and location of the accessible optical area**

## Annex A (normative) Optional card layouts

### A.1 Scope

Annex A of this part of ISO/IEC 11694 provides information concerning the dimensions and locations of the accessible optical area of optical memory cards using the linear recording method which may contain in addition to the accessible optical area, a magnetic stripe, signature panel, integrated circuit (IC) chip with contacts, and/or embossing.

### A.2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this annex. At the time of publication the editions indicated were valid. All standards are subject to revision and parties to agreements based on this annex are encouraged to investigate the possibility of applying the most recent editions of the standards listed below. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO/IEC 7811-2:<sup>3)</sup>, *Identification cards - Recording technique - Part 2: Magnetic stripe.*

ISO/IEC 7811-3: –<sup>4)</sup>, *Identification cards - Recording technique - Part 3: Location of embossed characters on ID-1 cards.*

ISO/IEC 7811-4: –<sup>5)</sup> *Identification cards - Recording technique - Part 4: Location of read-only magnetic tracks - Tracks 1 and 2.*

ISO/IEC 7811-5: –<sup>6)</sup> *Identification cards - Recording technique - Part 5: Location of read-write magnetic track - Track 3.*

ISO 7816-2:1988, *Identification cards - Integrated circuit(s) cards with contacts - Part 2: Dimensions and location of contacts.*

### A.3 Accessible optical area

The dimensions in figure 1 apply to figures A.1 and A.2.

NOTE - For reference the accessible optical area is typically located on the side of the card opposite the magnetic stripe.

#### A.3.1 Accessible optical area - no embossing

When combined with an IC chip with contacts, magnetic stripe and/or signature panel, the accessible optical area shall be located as shown in figure A.1.

#### A.3.2 Accessible optical area - no IC chip

When combined with a magnetic stripe, signature panel and/or embossing, the accessible optical area is rotated 180° relative to figure 1 as shown in figure A.2.

NOTE - The dimensions in figure 1 still apply relative to the new location of the reference edges.

### A.4 Magnetic stripe

The location of the magnetic stripe shall comply with ISO/IEC 7811-2, ISO/IEC 7811-4, and ISO/IEC 7811-5 and shall typically be located on the side of the card opposite the accessible optical area shown in figures 1, A.1 and A.2. In the case of figures 1 and A.1, the magnetic stripe could be placed on either side of the card as long as the accessible optical area is not compromised.

3) To be published. (Revision of ISO 7811-2:1985)

4) To be published. (Revision of ISO 7811-3:1985)

5) To be published. (Revision of ISO 7811-4:1985)

6) To be published. (Revision of ISO 7811-5:1985)

**A.5 Signature panel**

The signature panel shall be located on the side of the card opposite the accessible optical area shown in figures 1, A.1 and A.2 and shall comply with the surface distortion characteristics outlined in ISO 7810. The edges of the signature panel shall be located no closer than 20,0 mm, nor further than 30,0 mm, from the top edge of the card.

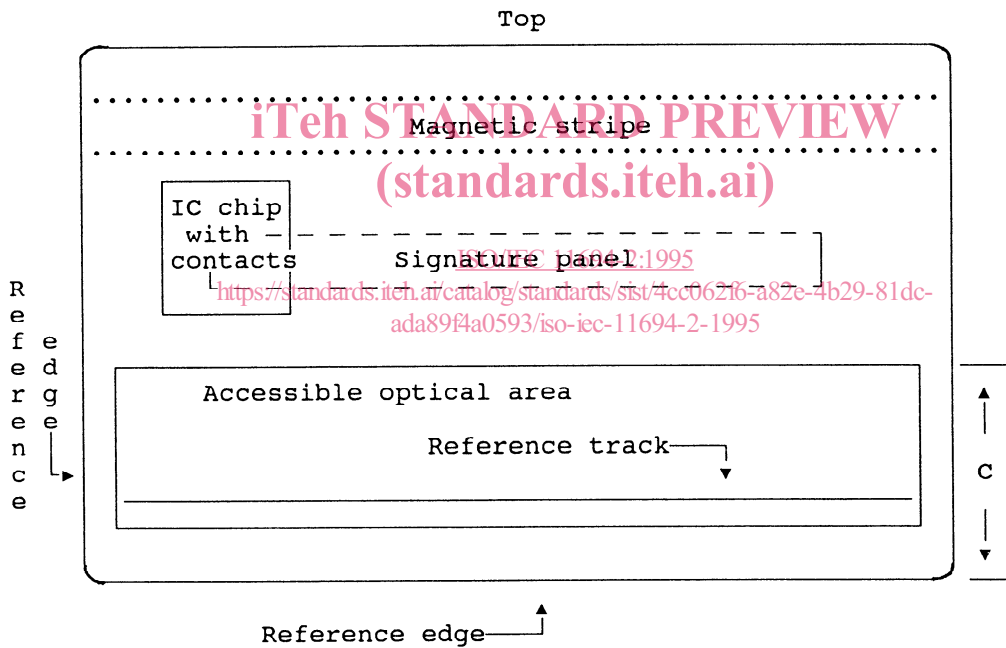
**A.6 IC chip with contacts**

The location of an IC chip with contacts shall comply with ISO 7816-2 and shall typically be located on the

same side as the accessible optical area, the side opposite the magnetic stripe, as shown in figure A.1. However, in the case of figure A.1, an IC chip with contacts could be placed on either side of the card.

**A.7 Embossing**

The location of embossing shall comply with ISO/IEC 7811-3 and shall be located on the same side as the accessible optical area, the side opposite the magnetic stripe, as shown in figure A.2

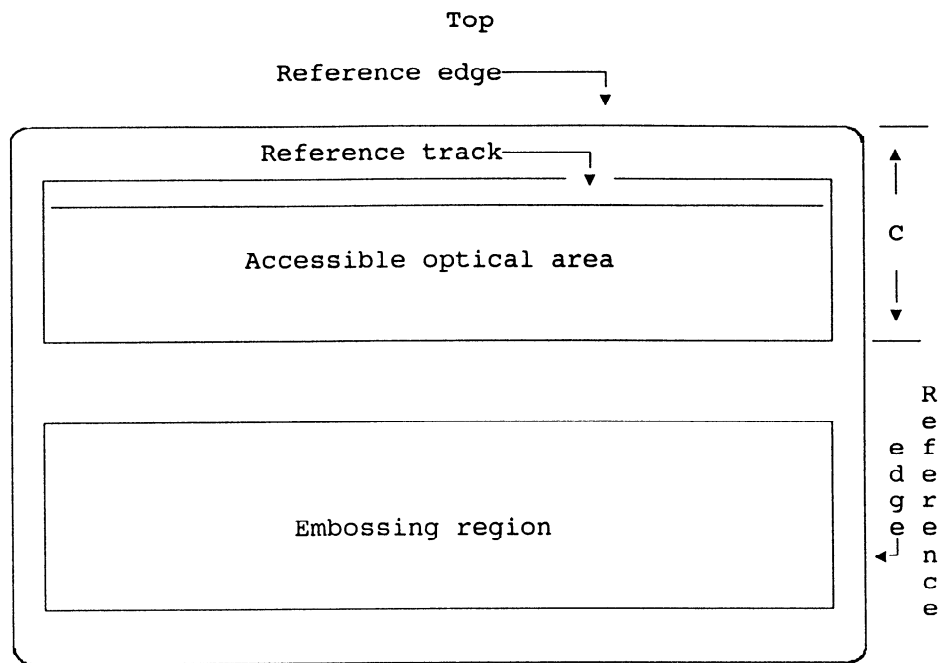


**NOTES**

- 1 Drawing not to scale.
- 2 Refer to figure 1 for dimensions relative to the accessible optical area.
- 3 Refer to ISO/IEC 7811-2, ISO/IEC 7811-4, ISO/IEC 7811-5 for dimensions relative to the magnetic stripe.
- 4 Refer to ISO 7816-2 for dimensions relative to the IC chip.
- 5 Refer to table A.1 for dimension C.

**Figure A.1 - Accessible optical area - no embossing**





NOTES

- 1 Drawing not to scale.
- 2 Refer to figure 1 for dimensions relative to the accessible optical area.
- 3 Magnetic stripe and signature panel may be located as shown in figure A.1.
- 4 Refer to ISO/IEC 7811-3 for dimensions relative to the embossing region.
- 5 Refer to table A.1 for dimension C.

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**Figure A.2 - Accessible optical area - no IC chip**

**Table A.1 - Examples of existing card layouts**

C = 38,40 mm	Applications requiring moderate data storage capacity, no IC chip or embossing.
C = 19,40 mm	Applications using magnetic stripe, IC chip, embossing, and/or signature panel.
C = 48,50 mm	Applications requiring maximum data storage capacity, no IC chip or embossing.