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Identification cards — Recording technique —

Part 7:

Magnetic stripe — High coercivity, high density

Cartes d'identification — Technique d'enregistrement —

Partie 7: Bandeau magnétique — Haute coercitivité, haute densité



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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. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of the joint technical committee is to prepare International Standards. 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 document may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

ISO/IEC 7811-7 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 17, *Cards and personal identification*.

ISO/IEC 7811 consists of the following parts, under the general title *Identification cards — Recording technique*:

- *Part 1: Embossing*
- *Part 2: Magnetic stripe — Low coercivity*
- *Part 6: Magnetic stripe — High coercivity*
- *Part 7: Magnetic stripe — High coercivity, high density*

Introduction

This edition is new and was prepared by JTC 1/SC 17/WG1 *Physical characteristics and test methods for ID cards*. Portions of this International Standard are identical to ISO/IEC 7811-2 and ISO/IEC 7811-6, however the user is encouraged to review the entire International Standard. The major differences between this International Standard and ISO/IEC 7811-2 and ISO/IEC 7811-6 are listed below.

1. The bit density has increased from 8,27 bits/mm (track 1,3) and 2,95 bits/mm (track 2) to 40 bits/mm for all tracks which results in 234 bytes of user data per track for an ID-1 size card.
2. The encoding technique referred to as MFM is used in place of F2F. This change doubles the data storage density for the same minimum transition spacing with only a small reduction in the self-clocking ability.
3. The 3 tracks have been replaced by 6 tracks that are approximately half the width so that they occupy the same space on the card. These are located so that readers designed to read the high density tracks will also be able to read cards conforming to ISO/IEC 7811-2 and ISO/IEC 7811-6.
4. Data is distributed in frames with synchronisation characters to aid in error recovery, and there is a CRC for each frame and a track CRC. Data recorded on each track is independent from other tracks (error detection and correction for each track is on the same track), even though it may be only part of the message on the card.
5. Error detection and correction is included using a shortened Reed-Solomon code. The amount of error correction is fixed for all card sizes.
6. The magnetic stripe area extends completely to the left and right edge of the card.
7. In Table 1, test density values have changed, the resolution requirement has changed from 0,7 to 0,8, the test for Waveform has been deleted, and Overwrite has been added to the requirements.
8. The maximum coercivity in Table D.1 of informative Annex D has been changed from 335 kA/m (4200 Oe) to 250 kA/m (3125 Oe).

Notes in this International Standard are only used for giving additional information intended to assist in the understanding or use of the standard and do not contain provisions or requirements to which it is necessary to conform in order to be able to claim compliance with this standard.