

American National Standard

INCITS/ISO/IEC 7811-2:2001[R2011]

(ISO/IEC 7811-2:2001, IDT)

*Identification cards -- Recording technique --
Part 2: Magnetic stripe -- Low coercivity*

Developed by



Where IT all begins



INCITS/ISO/IEC 7811-2:2001[R2011]

PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

Adopted by INCITS (InterNational Committee for Information Technology Standards) as an American National Standard.

Date of ANSI Approval: 12/21/2011

Published by American National Standards Institute,
25 West 43rd Street, New York, New York 10036

Copyright 2011 by Information Technology Industry Council
(ITI). All rights reserved.

These materials are subject to copyright claims of International Standardization Organization (ISO), International Electrotechnical Commission (IEC), American National Standards Institute (ANSI), and Information Technology Industry Council (ITI). Not for resale. No part of this publication may be reproduced in any form, including an electronic retrieval system, without the prior written permission of ITI. All requests pertaining to this standard should be submitted to ITI, 1101 K Street NW, Suite 610, Washington DC 20005.
Printed in the United States of America

Third edition
2001-02-01

Identification cards — Recording technique —

Part 2: Magnetic stripe — Low coercivity

*Cartes d'identification — Technique d'enregistrement —
Partie 2: Raie magnétique — Faible coercitivité*

Reference number
ISO/IEC 7811-2:2001(E)



This is a preview of "INCITS/ISO/IEC 7811-...". [Click here to purchase the full version from the ANSI store.](#)

PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

© ISO/IEC 2001

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.ch
Web www.iso.ch

Printed in Switzerland

This is a preview of "INCITS/ISO/IEC 7811-...". Click here to purchase the full version from the ANSI store.

Contents

1 Scope	1
2 Conformance	1
3 Normative references	1
4 Terms and definitions	2
5 Physical characteristics of the identification card	3
5.1 Magnetic stripe area warpage	3
5.2 Surface distortions	3
6 Physical characteristics of the magnetic stripe	4
6.1 Height and surface profile of the magnetic stripe area	4
6.1.1 Surface profile of the magnetic stripe area	5
6.1.2 Height of the magnetic stripe area	6
6.2 Surface roughness	7
6.3 Adhesion of stripe to card	7
6.4 Wear of magnetic stripe from read/write head	7
6.5 Resistance to chemicals	7
7 Performance characteristics for the magnetic material	7
7.1 General	7
7.2 Testing and operating environment	7
7.3 Signal amplitude requirements for magnetic media	7
8 Encoding technique	9
9 Encoding specification, general	10
9.1 Angle of recording	10
9.2 Nominal bit density	11
9.3 Signal amplitude requirements for tracks 1, 2 and 3	11
9.4 Bit configuration	11
9.5 Direction of recording	11
9.6 Leading and trailing zeroes	11
10 Encoding specifications	12

This is a preview of "INCITS/ISO/IEC 7811-...". [Click here to purchase the full version from the ANSI store.](#)

10.1 Alphanumeric track, track 1	12
10.1.1 Average bit density	12
10.1.2 Flux transition spacing variation.....	12
10.1.3 Coded character set	13
10.1.4 Maximum number of characters for ID-1 type card.....	14
10.2 Numeric track, Track 2	15
10.2.1 Average bit density	15
10.2.2 Flux transition spacing variation.....	15
10.2.3 Coded character set	15
10.2.4 Maximum number of characters for ID-1 type card.....	16
10.3 Numeric track, Track 3	16
10.3.1 Average bit density	16
10.3.2 Flux transition spacing variation.....	16
10.3.3 Coded character set	16
10.3.4 Maximum number of characters for ID-1 type card.....	17
11 Error detection	17
11.1 Parity	17
11.2 Longitudinal redundancy check (LRC).....	17
12 Location of encoded tracks	18
Annex A (informative) Read compatibility of magnetic stripes (ISO/IEC 7811-2 and ISO/IEC 7811-6).....	19
Annex B (normative) Signal amplitude measurements.....	20
Annex C (informative) Magnetic stripe abrasivity	21

This is a preview of "INCITS/ISO/IEC 7811-...". [Click here to purchase the full version from the ANSI store.](#)

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 part of ISO/IEC 7811 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 7811-2 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 17, *Identification cards and related devices*.

This third edition of ISO/IEC 7811-2 cancels and replaces ISO/IEC 7811-2:1995, ISO/IEC 7811-4:1995 and ISO/IEC 7811-5:1995. The user is encouraged to review the entire standard for revisions and updates. The major changes made during this revision are listed below.

1. The requirements given in ISO/IEC 7811-4:1995 and ISO/IEC 7811-5:1995 are included in this edition of ISO/IEC 7811-2.
2. Wherever possible the same definitions, criteria and test methods have been used for both Part 2 and Part 6.
3. Revised the bandpass filter requirements for the test method.

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*

Annex B forms a normative part of this part of ISO/IEC 7811. Annexes A and C are for information only.