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Identification cards — Contactless integrated circuit cards — Proximity cards —

Part 4: Transmission protocol

Cartes d'identification — Cartes à circuit(s) intégré(s) sans contact — Cartes de proximité —

Partie 4: Protocole de transmission

Reference number
ISO/IEC 14443-4:2008(E)

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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.

ISO/IEC 14443-4 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 17, *Cards and personal identification*.

This second edition cancels and replaces the first edition (ISO/IEC 14443-4:2001). It also incorporates the Amendment ISO/IEC 14443-4:2001/Amd.1:2006.

ISO/IEC 14443 consists of the following parts, under the general title *Identification cards — Contactless integrated circuit cards — Proximity cards*:

— *Part 1: Physical characteristics*

— *Part 2: Radio frequency power and signal interface*

— *Part 3: Initialization and anticollision*

— *Part 4: Transmission protocol*

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Introduction

ISO/IEC 14443 is one of a series of International Standards describing the parameters for identification cards as defined in ISO/IEC 7810, and the use of such cards for international interchange.

The protocol as defined in this part of ISO/IEC 14443 is capable of transferring the application protocol data units as defined in ISO/IEC 7816-4. Thus, application protocol data units may be mapped as defined in ISO/IEC 7816-4 and application selection may be used as defined ISO/IEC 7816-5.

ISO/IEC 14443 is intended to allow operation of proximity cards in the presence of other contactless cards conforming to ISO/IEC 10536 and ISO/IEC 15693 and Near Field Communication (NFC) devices conforming to ISO/IEC 18092 and ISO/IEC 21481.

The International Organization for Standardization (ISO) and International Electrotechnical Commission (IEC) draw attention to the fact that it is claimed that compliance with this document may involve the use of patents.

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JP 2129209, JP 2561051, JP 2981517 Contactless Responding Unit	OMRON Intellectual Property Department Law & Intellectual Property H.Q. 20, Igadera Shimokaiinji Nagaokakyo City Kyoto 617-8510 Japan
Patent EP 0 492 569 B1 A system and method for the non-contact transmission of data	ON-TRACK INNOVATIONS Z.H.R. Industrial Zone P O Box 32 Rosh-Pina 12000 Israel

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US Patent No. 4, 661,691	JOHN W HALPERN C/O Vincent M DeLuca Rothwell, Figg, Ernst & Kurz, p.c. 555 Thirteenth Street, N.W. Suite 701 East Tower Washington, D.C. 20004
WO 89 05549 A	MAGELLAN CORPORATION 8717 Research Drive Irvine CA 92618 USA

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Identification cards — Contactless integrated circuit cards — Proximity cards —

Part 4: Transmission protocol

1 Scope

This part of ISO/IEC 14443 specifies a half-duplex block transmission protocol featuring the special needs of a contactless environment and defines the activation and deactivation sequence of the protocol.

This part of ISO/IEC 14443 is intended to be used in conjunction with other parts of ISO/IEC 14443 and is applicable to proximity cards or objects of Type A and Type B.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 7816-3, *Identification cards — Integrated circuit cards — Part 3: Cards with contacts — Electrical interface and transmission protocols*

ISO/IEC 7816-4, *Identification cards — Integrated circuit cards — Part 4: Organization, security and commands for interchange*

ISO/IEC 14443-2, *Identification cards — Contactless integrated circuit cards — Proximity cards — Part 2: Radio frequency power and signal interface*

ISO/IEC 14443-3, *Identification cards — Contactless integrated circuit cards — Proximity cards — Part 3: Initialization and anticollision*

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