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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 42756.2-2023

**Cards and security devices for personal identification -
Contactless proximity objects - Part 2: Radio frequency power
and signal interface**

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foreword

This document is in accordance with the provisions of GB/T 1:1-2020 "Guidelines for Standardization Work Part 1: Structure and Drafting Rules for Standardization Documents" drafting:

This document is part 2 of GB/T 42756 "Card and Identification Security Equipment Contactless Proximity Object": GB/T 42756

The following parts have been published:

- Part 1: Physical characteristics;
- Part 2: RF power and signal interface;
- Part 3: Initialization and anti-collision;
- Part 4: Transmission protocol:

This document is modified to adopt ISO /IEC 14443-2:2020 "Card and Identification Security Equipment Contactless Proximity Object Part 2

Sub: RF Power and Signal Interface":

The technical differences between this document and ISO /IEC 14443-2:2020 and their reasons are as follows:

- ISO /IEC 14443-1:2018 is replaced by GB/T 42756:1-2023 with normative references, the consistency between the two documents

The degree of stability is modified to adapt to the technical conditions of our country (see

6:2, 8:2:2:2):

--- Replaced ISO /IEC 14443-3:2018 with the normative reference document GB/T 42756:3-2023, one between the two documents

The degree of consistency is equivalent (see Chapter 2):

The following editorial changes have been made to this document:

---Incorporated the content of ISO /IEC 14443-2:2020/Amd1:2021, the outer margins of the terms involved are in vertical

Double lines (||) are marked (see Chapter 4, 6:3, Table 22, 9:1:2, 10:2);

---Incorporated the content of the corrigendum of ISO /IEC 14443-2:2020/Cor1:2021, the outer margins of the terms involved are marked with vertical

Straight double lines (||) are marked (see 8:1:3:3, 8:1:3:4, 9:1:3:2, 9:1:3:3);

---Added the normative reference document ISO /IEC 14443-4, because it is quoted in ISO /IEC 14443-2:2020/Amd1:2021

ISO /IEC 14443-4 (see 6:3):

---In ISO /IEC 14443-2:2020/Cor1:2021, Figure 29~Figure 30 in the original text is changed to Figure 11~Figure 12, so the original Figure 11~

Figure 28 corresponds to Figure 13 to Figure 30 of this document, and the corresponding references are revised at the same time (see Figure 11 to Figure 30, ISO /IEC 14443-4:

Figure 11~Figure 30 of:2018);

---In ISO /IEC 14443-2:2020/Cor1:2021, the title of 9:1:3:2 of the original text is changed to "bit rate 3fc/4 and 3fc/2

Bit representation and coding of ", add 9:1:3:3 "Bit representation and coding of bit rate fc and 2fc":

Please note that some contents of this document may refer to patents: The issuing agency of this document assumes no responsibility for identifying patents:

Introduction

Contactless card standards include ISO /IEC 10536 (tightly coupled card), GB/T 42756 (proximity card) and GB/T 22351 (proximity card)

card) and other types: These types of equipment are designed to operate at very close, close and long distances respectively from the associated coupling device:

GB/T 42756 "Card and Identity Recognition Security Equipment Contactless Proximity Object" stipulates that identification cards and identification cards in accordance with GB/T

14916

Comply with the technical requirements for flexible thin cards in GB/T 28177:1, and use these cards for information exchange: This technology provides standard card

Forms other than formats provide the possibility to approach type objects: In addition, it does not exclude the use of other technologies on the card, such as GB/T 42756:1 attached

Techniques in Record A:

GB/T 42756 consists of four parts:

--- Part 1: Physical properties: The purpose is to specify the physical characteristics of proximity objects:

--- Part 2: RF power and signal interface: The purpose is to specify the Proximity Coupling Device (PCD) and the Proximity Card or Object

(PICC) provides the characteristics of the field of energy and two-way communication:

--- Part 3: Initialization and anti-collision: The purpose is to specify requirements for contactless proximity object initialization and anti-collision:

--- Part 4: Transmission protocol: The purpose is to establish a half-duplex block transfer protocol required for a contactless environment and to specify activation and deactivation

A step of:

Card and ID Security Devices

Contactless Proximity Objects

Part 2: RF power and signal interface

1 Scope

This document specifies the field for providing energy and two-way communication between a proximity coupling device (PCD) and a proximity card or object (PICC):

characteristics: This document does not specify methods for generating coupling fields, nor does it specify methods for complying with regulations on electromagnetic radiation and human exposure:

This document is applicable to the design, production, application and testing of proximity cards and equipment:

2 Normative references

The contents of the following documents constitute the essential provisions of this

document through normative references in the text: Among them, dated references

For documents, only the version corresponding to the date is applicable to this document; for undated reference documents, the latest version (including all amendments) is applicable to

this document:

GB/T 42756:1-2023 Cards and identification security equipment Contactless proximity objects Part 1: Physical characteristics

(ISO /IEC 14443-1:2018, MOD)

GB/T 42756:3-2023 Cards and identification security devices Contactless proximity objects Part 3: Initialization and anti-collision

(SO/IEC 14443-3:2018, IDT)

ISO /IEC 10373-6 Test methods for cards and identification security devices - Part 6: Contactless proximity objects (Cardsand

ISO /IEC 14443-4 Cards and identification security devices Contactless proximity objects Part 4: Transmission protocol (Cardsand

TOCOL)

Note: GB/T 42756:4-2023 Cards and identification security equipment Contactless proximity objects Part 4: Transmission protocol (ISO /IEC 14443-4:

2018, IDT)

3 Terms and Definitions

The following terms and definitions apply to this document:

3:1

bit duration bitduration

Defines the duration of the logic level, at the end of which a new bit starts:

3:2

A phase shift of 180° results in phase shift keying of two possible phase states:

3:3

Modified Miller coding modifiedMiler

A method of bit encoding in which the logic level within the bit duration (3:1) is represented by the position of the pulse within the bit frame: