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

GB/T 30001.1-2013

**Information technology - Mobile payment based on radio
frequency - Part 1: Radio frequency interface**

信息技术 基于射频的移动支付 第1部分：射频接口

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Foreword

GB/T 30001 "Information technology based on radio frequency mobile payment" is divided into five parts.

--- Part 1. RF interface;

--- Part 2. card technology requirements;

--- Part 3. Technical Requirements;

--- Part 4. Card application management and security;

--- Part 5. RF interface test methods. This section GB/T 30001 Part 1. This section drafted in accordance with GB/T 1.1-2009 given rules. Please note that some of the content of this document may involve patents. Release mechanism of the present document does not assume responsibility for the identification of these patents. This part of the National Information Technology Standardization Technical Committee (SAC/TC28) and focal points. This section drafted by: China Electronics Standardization Institute, Xi'an Electric Jietong wireless network communications Co., Ltd., Beijing grip Qi Intelligent Technology Co., Ltd, China UnionPay Co., Ltd., Shanghai Fudan Microelectronics Group Co., Ltd., Wuhan Tianyu Information Industry Co., Ltd., Beijing Tongfang Microelectronics Co., Ltd., China Mobile Communications Corporation, China Telecom Corporation, the joint network through China Xin Holdings Limited. The main drafters of this section. Chai Hongfeng, Zhao Bo, Jin Qian, His Odes Yanguang Wen, Li Wei, Li Jie, Feng Jing, Li Wei Geng force, Gao Lin, Tan Ying, Liu Wenli, Zhang Guoqiang, Hu Yanan. IT RF-based mobile payment Part 1. Radio Frequency Interface

1 Scope

China's national standard for the radio frequency interface of mobile payment. It is Part 1 of

GB/T 30001 and specifies the radio frequency interface between a mobile payment device and a point of sale terminal - the physical and signal layer over which a phone held against a reader communicates with it. This is the layer everything else in mobile payment sits on, and it is where the technology's history is written. A contactless payment happens in a few hundred milliseconds while a person holds a phone near a terminal, at whatever angle and distance they choose, and the transaction has to complete before they move it away. The interface has to establish a field, power the device or be recognised by it, modulate data in both directions, and do all of that reliably across an enormous variety of handsets, cases, terminal antennas and physical situations - a phone against a metal turnstile, a card in a wallet with other cards, a terminal in a vehicle. It also has to interoperate: a Chinese phone must work on a Chinese terminal built by a different company five years earlier, and the interface is what guarantees that. The commercial stakes when this standard was written were considerable. Two radio approaches were competing in China for the mobile payment market - the 13.56 MHz interface used internationally, and a 2.4 GHz alternative promoted domestically - and the choice determined which terminals worked with which phones and which industry captured the market. Fixing the radio frequency interface nationally is what allowed a single payment ecosystem to form. Issued on 10 October 2013 and in force since 1 May 2014.

This section GB/T 30001 specifies the RF-based mobile payment system radio interface. This section applies to RF-based mobile payment system-related hardware and software design, production and testing.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein Member. For undated references, the latest edition (including any amendments) applies to this document. Between

GB/T 7421-2008 Information technology - Telecommunications and information exchange between high-level data link control (HDLC) procedures (ISO / IEC 13239.2002, IDT)

GB/T 16649.3 Identification cards contact IC cards - Part 3. Electronic signals and transmission protocol (

GB/T 16649.3- 2006, ISO / IEC 7816-3.1997, IDT)

GB/T 16649.4 Identification cards - Integrated circuit cards - Part 4. The structure for the exchange, security and command (GB/T 16649.4-2010, ISO / IEC 7816-4.2005, IDT)

GB/T 16649.5 Identification cards IC card contacts - Part 5. Application of the national numbering system identifier and registration regulations Cheng (GB/T 16649.5-2002, ISO / IEC 7816-5.1994, NEQ)

GB/T 28455-2012 Information security technology into a trusted third party entity

authentication and access architecture specification ISO / IEC 7816-

6 Identification cards - Integrated circuit cards - Part 6. for inter-exchange of data elements
(Identification cards-Integratedcircuitcards-Part 6. Interindustrydataelementsforinterchange)
ISO /

IEC 9798-3.1998/Amd.1.2010 Information technology - Security techniques - Entity authentication - Part 3. Using digital signatures Technical amendment mechanism 1
(Informationtechnology-Securitytechniques-Entityauthentication-Part 3.
Mechanismusingdigitalsignaturetechniques-Amendment1)

3 Terms, definitions and abbreviations, symbols

3.1 Terms and Definitions The following terms and definitions apply to this document.

3.1.1 RF-based mobile payment card RF-basedmobilepaymentcard A card-model contains the security unit (SE) and non-contact communication module (CLF), which by way of inductive coupling with the RF-based Mobile payment devices to communicate.

Note 1. SE refers to mobile terminals (mainly mobile phones) can be used to form part of the user's identification.

Note 2. CLF refers to mobile terminals (mainly mobile phones) part of the process for radio frequency signals.

Note 3. SE and CLF can be integrated on the same carrier, it can be isolated.

3.1.2 RF-based mobile payment device RF-basedmobilepaymentdevice Inductively coupled to RFMPC provide energy and control the exchange of data with the RFMPC read/write device.