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**Identification cards - Integrated circuit cards - Part 3: Cards
with contacts - Electrical interface and transmission protocols
(English Translation)**

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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 3 of GB/T 16649. GB/T 16649 has been published in the following parts.

--- Identification cards - Integrated circuit cards with contacts - Part 1: Physical characteristics;

--- Identification cards Integrated circuit cards Part 2: Cards with contacts Dimensions and positions of contacts;

--- Identification cards Integrated circuit cards Part 3: Card electrical interface and transmission protocol with contacts;

--- Identification cards Integrated circuit cards Part 4: Structure, security and commands for exchange;

--- Identification cards Integrated circuit cards with contacts Part 5: National numbering system and registration procedures for application identifiers;

- Identification cards - Integrated circuit cards with contacts - Part 6: Inter-industry data elements;
- Identification cards with integrated circuit contacts Part 7: Inter-industry commands for the Structured Card Query Language (SCQL);
- Identification cards - Integrated circuit cards with contacts - Part 8: Inter-industry commands related to safety;
- Identification cards Integrated circuit cards Part 9: Commands for card management;
- Identification card integrated circuit card with contacts Part 10: Electrical signals and reset response of synchronization card;
- Identification cards Integrated circuit cards Part 11: Identity verification through biometric identification methods;
- Identification cards Integrated circuit cards Part 12: Cards with contacts-USB electrical interface and operating procedures;
- Identification cards Integrated circuit cards Part 13: Application management commands in a multi-application environment;
- Identification cards Integrated circuit cards Part 15: Application of cryptographic information.

This document replaces GB/T 16649.3-2006 "Identification cards - Integrated circuit cards with contacts - Part 3: Electrical signals and transmission protocols" Compared with GB/T 16649.3-2006, in addition to structural adjustments and editorial changes, the main technical changes are as follows.

- a) Deleted the terms and definitions "operation card" (see 3.1.2 of the 2006 edition) and "error detection code", "field" and "subfield" (see 9.2 of the 2006 edition);
- b) Added the terms and definitions "operating condition category", "process byte", "redundancy code" and "overshoot" (see Chapter 3);
- c) The term "receive ready block" is changed to "receive preparation block", "monitoring block" is changed to "management block", and "node address byte" is changed to "Node address byte", "destination node address byte" is changed to "destination node address", "source node address byte" is changed to "source Node Address" (see Chapter 3, 9.2 of the 2006 edition);
- d) The electrical characteristics of VPP have been deleted (see 4.3.6 of the 2006 edition);
- e) Deleted the description of programming parameters P and I (see 6.5.4 of the 2006 edition);
- f) Deleted the description of NULL bytes in process bytes (see 8.3.3.2 of the 2006 edition);