INTERNATIONAL STANDARD

ISO/IEC 14443-3

Fourth edition
2018-07

AMENDMENT 1
2021-05

Cards and security devices for personal identification — Contactless proximity objects —

Part 3: Initialization and anticollision

AMENDMENT 1: Dynamic power level management

Cartes et dispositifs de sécurité pour l'identification personnelle — Objets sans contact de proximité —

Partie 3: Initialisation et anticollision

AMENDEMENT 1: Gestion dynamique de niveau de puissance

Reference number
ISO/IEC 14443-3:2018/Amd.1:2021(E)

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives or www.iec.ch/members_experts/refdocs).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents) or the IEC list of patent declarations received (see patents.iec.ch).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html. In the IEC, see www.iec.ch/understanding-standards.

This document was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 17, *Cards and security devices for personal identification*.

A list of all parts in the ISO/IEC 14443 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html and www.iec.ch/national-committees.

Cards and security devices for personal identification — Contactless proximity objects —

Part 3: Initialization and anticollision

AMENDMENT 1: Dynamic power level management

Page 3, Clause 4

Add the following symbols:

"H_{LP} minimum requested field strength"

"$H_{step,\,max}$ PCD maximum field strength step increase or step decrease"

"PLI_{ATQ} Power Level Indication in Answer to Request"

"t_{PL} guard time for PCD power level change"

Page 17, 6.5.2.1, Table 4

Replace Table 4 with the following table:

"

Table 4 — Coding of ATQA

MSB LSB

b16	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1
Each bit RFU		PLI_{ATQ}		Proprietary coding				UID size		RFU	Bit frame anticollision				

"

Page 18, 6.5.2.3

Add the following subclause after 6.5.2.2:

"

6.5.2.3 Coding of PLI_{ATQ}

The PICC may use PLI_{ATQ} to give a received power level indication to the PCD and PLI_{ATQ} shall be coded as specified in Table 7.

A PICC that codes:

— PLI_{ATQ} = (00)b does not provide any received power level indication;

— PLI_{ATQ} = (01)b indicates the received field strength is less than (H_{LP} + $H_{step,\ max}$) (see ISO/IEC 14443-2:2020/Amd 1);

— PLI_{ATQ} = (10)b does not provide any received power level indication and sets the value of the guard time t_{PL} to 5 ms;

— PLI_{ATQ} = (11)b indicates the received field strength is at least (H_{LP} + $H_{step,\ max}$); when receiving PLI_{ATQ} = (11)b, the PCD may decrease its field strength by one step only.

Table 7 — Coding of PLI_{ATQ}

PLI_{ATQ}	Power level indication	t_{PL}
(00)b	No indication for received field strength	Current t_{PL}
(01)b	Field strength is less than (H_{LP} + $H_{step,\ max}$)	Current t_{PL}
(10)b	No indication for received field strength	5 ms
(11)b	Field strength is at least (H_{LP} + $H_{step,\ max}$)	Current t_{PL}

After receiving the power level indication from the PICC, the PCD may change its magnetic field strength in accordance with the power level indication before sending the next command.

Such PCD:

— should not change its magnetic field strength when several PICCs are activated;

— may produce magnetic field strength steps which shall not exceed $H_{step,\ max}$ as defined in ISO/IEC 14443-2:2020/Amd 1:2021, 6.3;

— shall produce a stable magnetic field strength for at least t_{PL} between any consecutive two magnetic field strength steps and before sending start of communication or SOF;

— shall respect the most recent t_{PL} value indicated by the PICC, or the default t_{PL} value as long as no such indication was received.

After state transition from POWER-OFF state to IDLE state, the default value of the guard time t_{PL} is 300 µs and applies until another t_{PL} value is set by PLI_{ATQ}."

Renumber subsequent tables.

Page 37, 7.9.4, Figure 26

Replace Figure 26 with the following figure:

"

1st byte	2nd byte		3rd byte			4th byte (optional) Extended ATQB		
Bit_Rate_capability (8 bits)	Max_Frame_Size (4 bits)	Protocol_Type (4 bits)	FWI (4 bits)	ADC (2 bits)	FO (2 bits)	SFGI (4 bits)	PLI_{ATQ} (2 bits)	Each bit RFU (2 bits)

Figure 26 — Protocol Info format

"

Page 39, 7.9.4.7

Replace the first paragraph with the following text:

