
**Identification cards — Contactless
integrated circuit cards — Proximity
cards**

**Part 4:
Transmission protocol**

**AMENDMENT 3: Bit rates of $3fc/4$, fc , $3fc/2$
and $2fc$ from PCD to PICC**

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

Partie 4: Protocole de transmission

*AMENDEMENT 3: Débits binaires de $3fc/4$, fc , $3fc/2$ et $2fc$ de PCD vers
PICC*

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ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

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Foreword

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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.

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Amendment 3 to ISO/IEC 14443-4:2008 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 17, *Cards and personal identification*.

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Part 4: Transmission protocol

AMENDMENT 3: Bit rates of $3fc/4$, fc , $3fc/2$ and $2fc$ from PCD to PICC

Clause 9

Add the following below Figure 24:

"For bit rates of $3fc/4$, fc , $3fc/2$ and $2fc$ see Annex D."

After Annex C

Add the following Annex D:

"

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Annex D
(normative)

Bit rates of $3fc/4$, fc , $3fc/2$ and $2fc$ from PCD to PICC

D.1 Function tags identifier definition

The information field shall contain tags and values as defined in Table D.1.

Table D.1 — Function tags identifier definition

Tag (Hex)	Description	Length (Hex)	Value		
'A1'	Bit rates Request	'0'	—		
'A2'	Bit rates Indication	L	Tag (Hex)	Length (Hex)	Value
			'80'	'02'	supported bit rates from PCD to PICC 1 st byte is specified in Figure 23 2 nd byte is specified in Figure D.1
			'81'	'02'	supported bit rates from PICC to PCD 1 st byte is specified in Figure 23 2 nd byte is RFU
			'82'	'01'	supported framing options PICC to PCD (see Figure 24) ^a
'A3'	Bit rates Activation	L	Tag (Hex)	Length (Hex)	Value
			'83'	'02'	selected bit rate from PCD to PICC ^b 1 st byte is specified in Figure 23 2 nd byte is specified in Figure D.1
			'84'	'02'	selected bit rate from PICC to PCD ^b 1 st byte is specified in Figure 23 2 nd byte is RFU
			'85'	'01'	selected framing options PICC to PCD (see Figure 24) ^{a,c}
'A4'	Bit rates Acknowledgement	'0'	—		

^a shall be omitted for Type A PICCs

^b The PCD shall set only one bit. The PCD shall not activate simultaneously a bit rate higher than $fc/16$ for PCD to PICC communication and a bit rate of $fc/128$ for PICC to PCD communication in Type A.

^c The PCD shall not set both b1 (start bit and stop bit suppression) and b2 (SOF and EOF suppression).

When the PCD sets b1 (start bit and stop bit suppression):

- The PICC shall use a SOF low time of 10 etu and a SOF high time of 2 etu.
- The PICC shall use an EOF low time of 10 etu.
- The PICC shall apply no character separation.