
**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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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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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.