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Identification cards — Contactless integrated circuit(s) cards - Proximity cards — Part 4: Transmission protocol

Cartes d'identification — Cartes à circuit(s) intégré(s) - cartes de proximité — Partie 4: Protocol de transmission

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Foreword

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

Identification cards — Contactless integrated circuit(s) cards - Proximity cards — Part 4: Transmission protocol

Amendment 1: Exchange of additional parameters

Page 15 of ISO/IEC 14443-4:2008, 7.1.1.1

Replace the 3rd dash with:

"S-block used to exchange control information between the PCD and the PICC. Three different types of S-blocks are defined:

1) "Waiting time extension" containing a 1 byte long INF field,

2) "DESELECT" containing no INF field,

3) "PARAMETERS" containing a n-byte long INF field with 0 ≤ n < [256 – 4] .The support of this type of block is optional for PCDs and PICCs."

Replace the last paragraph with:

"A PICC or PCD setting b6 <> 0 of an I-block is not compliant with this standard. A PICC or PCD setting b2 <> 1 of an R-block is not compliant with this standard. A PICC or PCD setting b1 <> 0 of an S-block is not compliant with this standard." A PICC or PCD not supporting S(PARAMETERS) and setting b2 <> 1 of an S-b-block is not compliant with this standard.

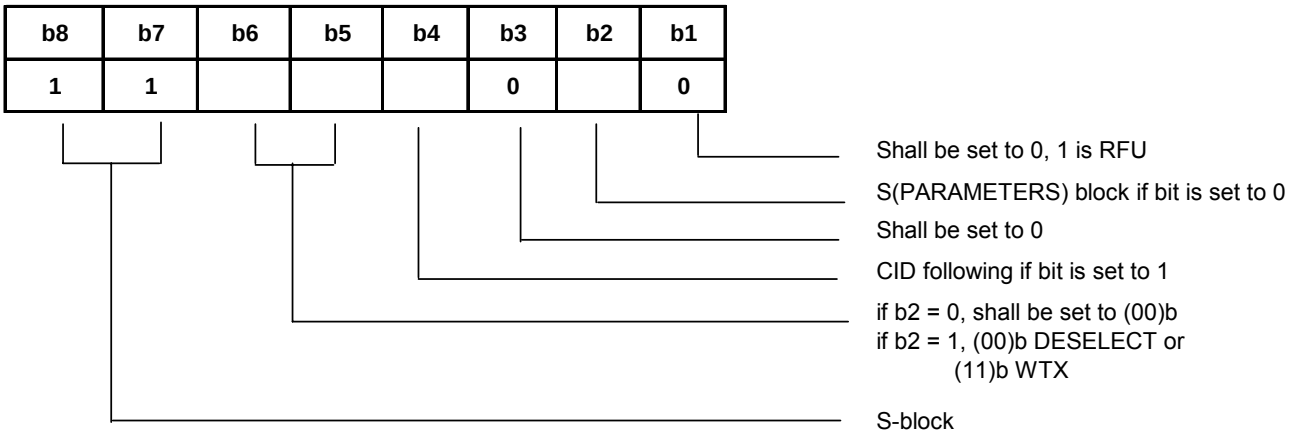


Figure 17 — Coding of S-block PCB

Page 18 of ISO/IEC 14443-4:2008, 7.2

Replace the 2nd paragraph with:

FWT is calculated by the following formula:

$$FWT = (256 \times 16 / fc) \times 2^{FWI}$$

where the value of FWI has the range from 0 to 14 and the value of 15 is RFU.

The default value of FWI is 4 (which gives a FWT value of ~ 4,8 ms) in the two following cases:

— for Type A, if TB(1) is omitted,

— for S(PARAMETERS) and S(DESELECT) blocks.

Page 20 of ISO/IEC 14443-4:2008, 7.5

Create a new 7.5.1 and renumber all subsequent subclauses:

"7.5.1 S(PARAMETERS) blocks

After the activation sequence, the PCD may send at any time a first S(PARAMETERS) block to check if S(PARAMETERS) blocks are supported by the PICC.

This first PCD S(PARAMETERS) block and the PICC answer (if the PICC supports S(PARAMETERS) blocks) may contain information indicating the support of different application protocol types and/or other communication parameters.

The INF field description is defined in annex D.

Page 22 of ISO/IEC 14443-4:2008, 7.5.4.2

Replace rule 4 with:

Rule 4. When an invalid block is received or a FWT time-out occurs, an R(NAK) block shall be sent (except in the case of PICC chaining or S(DESELECT) or S(PARAMETERS)).

Replace rule 8 with:

Rule 8. If the S(DESELECT) request is not answered by an error-free S(DESELECT) response the S(DESELECT) request may be re-transmitted or the PICC may be ignored.

If the S(PARAMETERS) request is not answered by an error-free S(PARAMETERS) response the S(PARAMETERS) request may be re-transmitted.

After Annex C of ISO/IEC 14443-4:2008,

Add a new annex D "Coding of S(PARAMETERS) blocks"

Annex D
(Informative)

Coding of S(PARAMETERS) blocks

D.1 Tags definition

Data Objects defined in this Annex comply with the BER-TLV encoding rules for the contextual class according to ISO/IEC 7816-4

Tags (Hex)	Description	Value see Table D2
’A0’	VHDR (Very High Data rate)	Command
’A1’	P2P (Peer to Peer)	Command
’A2’	SECURE LAYER	Command
’A3’ to ’A8’	RFU	NA
’A9’	REQUEST TO DECLARE	NA

Table D1: Protocol supported definition

Tags (Hex)	Description	Value see Table D3
’AA’	Activation Command	Parameter A
’AB’	Deactivation Command	Parameter B
’AC’	Unknown command	Parameter C
’AD’	Declaration/Version Command	Parameter D
’AE’	Rejected Command	Parameter E
’AF’ to ’B9’	RFU	NA

Table D2: Commands definition

Tags (Hex)	Description	Value
’BA’	Parameter A	TBD define in the corresponding standard related to the selected mode
’BB’	Parameter B	TBD define in the corresponding standard related to the selected mode
’BC’	Parameter C	TBD define in the corresponding standard related to the selected mode
’84’	Parameter D	TBD define in the corresponding standard related to the selected mode
’BD’ to ’BF’	RFU	NA

Table D3: Parameter definition

D.2 Implementation example

Peer to Peer mode declaration/ activation using S-Bloc (PARAMETERS) Tags

P2P mode supported = ’A1’

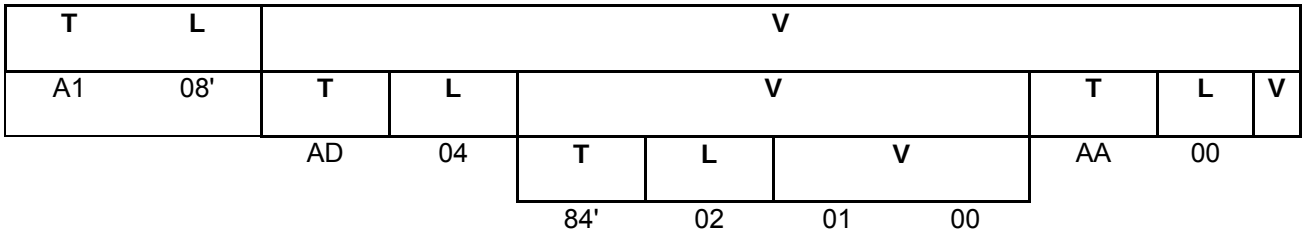
Declaration / version Command = ‘AD’

Version = ‘84’ (Primitive OctetString) , e.g.: major version = ‘01’, minor version ‘00’

Activation Command = ‘AA ‘

No Parameter

TLV construction:



D.2.1 Scenario example

A paragraph.

Transition	PCD		PICC
S-block (PARAMETERS)/ request for PICC capabilities	S(A900)	⟶	
P2P mode Version 01 00 is supported by PICC		⟵	S(A108AD0484020100AA00)
S-block (PARAMETER)/ Declare P2P support and activate	S(A108AD0484020100AA00)	⟶	
Accepted by PICC		⟵	S(A108AD0484020100AA00)

Table 1 — Scenario D.1

Transition	PCD	PICC
S-block (PARAMETER)/ request for PICC capabilities + Declare P2P support	X(A90AA108AD0484020100AA00) ⟶	
Accepted by PICC	⟵	X(A108AD0484020100AA00)

Table 2 — Scenario D.2

Transition	PCD	PICC
S-block P2P Declaration/ activation request	X(A108AD0484020100AA00) ⟶	
	⟵	X(A102AE00)
Rejected by PICC	⟵	X(A102AE00)

Table 3 — Scenario D.3

Comment	PCD	Transition	PICC	Comment
PCD Send a REQUEST TO DECLARE TAG using S(PARAMETERS) block : discovery phase	S(PARAMETERS, REQ TO DECLARE)	⟶		
		⟵	S(PARAMETERS, P2P support,)	
PCD SEND P2P PARAMETERS to the PICC + ACTIVATE	S(PARAMETERS, DECLARE, ACTIVATE)	⟶		
		⟵	S(PARAMETERS,ACTIVATE)	P2P ACCEPTED BY PICC
PCD DEACTIVATE P2P mode	S(PARAMETER,P2P DEACTIVATE)	⟶		
		⟵	S(P2P,ACK)	PICC go back to previous mode

Table 4 — Scenario D.4