

ISO/IEC 18092:2004-04 (E)

Information technology - Telecommunications and information exchange between systems - Near Field Communication - Interface and Protocol (NFCIP-1)

Contents		Page
Foreword		v
Introduction		vi
1	Scope	1
2	Conformance	1
3	Normative references	1
4	Terms and definitions	1
5	Conventions and notations	4
5.1	Representation of numbers	4
5.2	Names	4
6	Acronyms	4
7	General	5
8	RF field	6
8.1	Passive Communication Mode	6
8.2	Active Communication Mode	6
8.3	External RF field threshold value	6
9	RF Signal Interface	6
9.1	Bit duration	6
9.2	Active communication mode	7
9.2.1	106 kbps	7
9.2.2	212 kbps and 424 kbps	9
9.3	Passive communication mode	10
9.3.1	106 kbps Initiator to Target	10
9.3.2	106 kbps Target to Initiator	11
9.3.3	212 kbps and 424 kbps Initiator to Target	11
9.3.4	212 kbps and 424 kbps Target to Initiator	12
10	General Protocol flow	12
11	Initialization	13
11.1	RF Collision Avoidance	13
11.1.1	Initial RF Collision Avoidance	13
11.1.2	Response RF Collision Avoidance	15
11.2	Passive communication mode	16
11.2.1	Initialisation and Single Device Detection at 106 kbps	16
11.2.2	Initialisation and SDD at 212 kbps and 424 kbps	29
11.3	Active communication mode	32
11.3.1	Initialisation at 106, 212, and 424 kbps	32
11.3.2	Active communication mode RF Collision Avoidance	32
12	Transport Protocol	33
12.1	Transport Data	33

12.2	Passive communication mode Activation flow	34
12.3	Active communication mode Activation flow	34
12.4	Commands	37
12.5	Activation of the protocol	37
12.5.1	Attribute Request and Response Commands	37
12.5.2	Wakeup Request and Response Commands	43
12.5.3	Parameter Selection Request and Response Commands	45
12.6	Data Exchange Protocol	48
12.6.1	Data Exchange Protocol Request and Response	48
12.6.2	Response timeout extension	51
12.6.3	Attention - Target present	52
12.6.4	Protocol operation	52
12.6.5	Multi Activation	52
12.6.6	More information (Chaining)	53
12.7	Deactivation of the protocol	53
12.7.1	Deselect Request and Response command	54
12.7.2	Release Request and Response commands	55
Annex A (normative) CRC calculation		57
A.1	CRC for Active and Passive communication mode at 106 kbps	57
A.2	Example of CRC calculation at 106 kbps	57
A.3	CRC for Active and Passive communication mode at 212 kbps and 424 kbps	58
A.4	Example of CRC calculation at 212 kbps and 424 kbps	58