

ISO/IEC 18092:2023-12 (E)

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

Contents	Page
Foreword	v
Introduction	vi
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Symbols and abbreviated terms	3
5 Conventions and notations	6
5.1 Representation of numbers	6
5.2 Names	6
6 Conformance	6
7 General	6
8 RF field	6
8.1 Values	6
8.2 Passive communication mode	7
8.3 Active communication mode	7
8.4 External RF field detection	7
9 RF signal interface	7
9.1 General	7
9.2 Bit duration	7
9.3 Active communication mode	8
9.3.1 General	8
9.3.2 Requirements for $f_c/128$	8
9.3.3 Requirements for $f_c/64$ and $f_c/32$	8
9.4 Passive communication mode	9
9.4.1 Requirements for $f_c/128$	9
9.4.2 Requirements for $f_c/64$ and $f_c/32$	10
10 General Protocol flow	10
11 Initialisation	11
11.1 General	11
11.2 RFCA	12
11.2.1 General	12
11.2.2 Initial RFCA	12
11.2.3 RFCA	13
11.3 Passive communication mode	14
11.3.1 Initialisation and SDD for $f_c/128$	14
11.3.2 Initialisation and SDD for $f_c/64$ and $f_c/32$	14
11.4 Active communication mode	17
11.4.1 Initialisation	17
11.4.2 Active communication mode RFCA	17
12 Transport protocol	18
12.1 General	18
12.2 Transport Data	18
12.3 Passive communication mode Activation flow	19
12.4 Active communication mode Activation flow	20
12.5 Commands	22

12.6	Activation of the protocol	23
12.6.1	Attribute Request and Response Commands	23
12.6.2	Wakeup Request and Response Commands	29
12.6.3	Parameter Selection Request and Response Commands	31
12.7	Data Exchange Protocol	33
12.7.1	Data Exchange Protocol Request and Response	33
12.7.2	Response timeout extension	38
12.7.3	Attention — Target present	38
12.7.4	Protocol operation	38
12.7.5	Multi-Activation	38
12.7.6	More information (Chaining)	39
12.8	Deactivation of the protocol	39
12.8.1	General	39
12.8.2	Deselect Request and Response command	40
12.8.3	Release Request and Response commands	41
Annex A (normative) CRC calculation		43
Annex B (informative) SAK		45
Bibliography		46