ISO/IEC 23917:2023-12 (E)

Telecommu nications and information exchange between systems - Near Field Communication Interface and Protocol 1 (NFCIP-1) - Protocol test methods

Contents

Page

Foreword ..... **v**

1 Scope **1**

2 Normative references **1**

3 Terms and definitions **1**

4 Symbols and abbreviated terms **2**

5 Notational conventions **4**
5.1 Representation of numbers 4
5.2 Names 4
5.3 Test report 4

6 Conformance **4**

7 Apparatus for testing **4**
7.1 General 4
7.2 Generating the I/O character timing in reception mode 4
7.3 Measuring and monitoring the RF I/O protocol 4
7.4 Test scenario and report 5
7.5 RFU bits 6
7.6 General rules 6

8 Target test methods **6**
8.1 General 6
8.2 Apparatus for testing the Target (Target-test-apparatus) 6
8.3 List of protocol test methods related to ISO/IEC 18092 6
8.4 Activation in Passive communication mode at f_c/128 7
8.4.1 SDD for transport protocol activation 7
8.5 Activation in Passive communication mode at f_c/64 and f_c/32 8
8.5.1 Activation time 8
8.5.2 Frame format 8
8.5.3 SDD timing 9
8.5.4 SDD for transport protocol activation 9
8.6 Activation in Active communication mode 10
8.6.1 RFCA 10
8.7 Logical operation of the Target Transport Protocol 11
8.7.1 Handling of ATR_REQ 11
8.7.2 Handling of PSL_REQ 12
8.7.3 Handling of DEP_REQ Information PDUs 13
8.7.4 Handling of DEP_REQ Information PDUs with chaining Initiator to Target and Target to Initiator 15
8.7.5 Handling of DEP_REQ supervisory PDUs with timeout bit set to ONE 17
8.7.6 Handling of DEP_REQ supervisory PDUs with timeout bit set to ZERO 19
8.7.7 Handling of DSL_REQ 20
8.7.8 Handling of RLS_REQ 21
8.7.9 Handling of WUP_REQ (Active communication mode only) 22

9 Initiator test methods **23**
9.1 Apparatus for testing the Initiator (Initiator-test-apparatus) 23
9.1.1 Initiator-test-apparatus concept 23
9.1.2 Protocol activation procedure for Passive communication mode at f_c/128 24

9.1.3 Protocol activation procedures for Passive communication mode at $f_c/64$ and $f_c/32$ 24
9.1.4 Protocol activation procedures for Active communication mode 24
9.2 List of protocol test methods for Initiators 24
9.3 Activation in Passive communication mode at $f_c/128$ 26
9.3.1 Initial RFCA 26
9.3.2 SDD for transport protocol activation 26
9.4 Activation in Passive communication mode at $f_c/64$ and $f_c/32$ 27
9.4.1 Initial RFCA 27
9.4.2 Frame format 27
9.4.3 SDD for transport protocol activation 28
9.5 Activation in Active communication mode 28
9.5.1 Initial RFCA 28
9.5.2 Response RFCA with time jitter n=0 29
9.6 Logical operation of the Transport Protocol 29
9.6.1 Handling of ATR_RES 29
9.6.2 Handling of PSL_RES 30
9.6.3 Handling of DEP_RES Information PDUs 31
9.6.4 Handling of DEP_RES Information PDUs with chaining Initiator to Target and Target to Initiator 32
9.6.5 Handling of DEP_RES supervisory PDUs with timeout bit set to ONE 35
9.6.6 Handling of DEP_RES supervisory PDUs with timeout bit set to ZERO 36
9.6.7 Handling of DSL_RES 37
9.6.8 Handling of RLS_RES 38
9.6.9 Handling of WUP_RES (Active communication mode only) 39
Annex A (normative) **Test report template for Target tests** **41**
Annex B (normative) **Test report template for Initiator tests** **45**