



Integri

a Clear2Pay product

NFC Peer-to-Peer Device Test Suite

Integri End-to-End Level 1 Platform

Near Field Communication (NFC) is still a relatively young technology. It enables fast and secure short-distance data transfers between devices such as mobile phones, smart phones, PDAs, camera's,... just by bringing devices and tags close together.

The dawning of the NFC era opens up a whole new range of business opportunities: it's a technology with an enormous potential and the possibilities are endless. Commercial introduction of the technology will significantly simplify the way consumer devices interact with one another, helping people speed up connections, receive and share information and make fast and safe payments. However, the interconnectivity devices and tags need to be accurate and interoperable. To guarantee this, all NFC equipment needs to be compliant with the ruling NFC Forum specifications.

Clear2Pay's Integri Test Solutions are approved by the NFC Forum.

Our test tools are key for the validation of products based on NFC Forum specifications and enable to go-to-market fast with secure, interoperable and high quality solutions. The tools are to be used by official NFC Forum certification laboratories, and available for your debugging and in-house pre-certification needs.

Are you looking to introduce NFC? Clear2Pay has the expertise, trainings and test tools.

Your benefits

- **Essential:** validate your NFC devices based on NFC Forum specifications
- **Fast time-to-market:** prepare your NFC products now for official NFC Forum certification
- **Ultimate flexibility:** tools are built on proprietary Open Test Framework allowing to add tests or modify to your specific requirements
- **Robust:** field-proven technology used by renowned global companies such as MasterCard, Giesecke & Devrient, Gemalto, Visa,...
- **Trusted:** Integri Test Tools are built on +19 years of experience
- **Customer confidence:** enables to deliver the highest possible quality NFC products
- **Gain time:** automated test solutions
- **Prototyping options:** simulate specific situations and check the impacts
- **Durable solution:** updates provided until the first certified certification (if specifications change)

NFC Peer-to-Peer Device Test Suite - Product Features

This test tool covers all test cases defined for the 1st wave of certification related to the NFC Forum Digital Protocol Technical Specification.

NFC-A PoII

- P2P exchange and timings measurement
- Exchange with the minimum and the maximum Frame Delay Time
- Attribute Request (ATR_REQ), Deselect Request (DSL_REQ) and Release Request (RLS_REQ) Parameters
- DEP_REQ DID Parameter
- Response Timeout Extension
- Chaining
- PDU Handling rules
- Maximum and minimum payload size
- Timeout Errors with PSL_REQ, DEP_REQ and RTOX Response
- Timeout Errors with Transmission Error in response to Information PDU not indicating chaining



Clear2Pay is an
NFC Forum Partner



Out of the box testing



NFC-F Poll

- P2P exchange and timings measurement
- Exchange with the minimum and the maximum Frame Delay Time
- Attribute Request (ATR_REQ), Deselect Request (DSL_REQ) and Release Request (RLS_REQ) Parameters
- Parameter Selection Request (PSL_REQ) Parameters, and measurement timing with PSL_REQ command
- DEP_REQ DID Parameter
- Response Timeout Extension
- Chaining
- PDU Handling rules
- Maximum and minimum payload size
- Timeout Errors with PSL_REQ, DEP_REQ and RTOX Response
- Timeout Errors with Transmission Error in response to Information PDU not indicating chaining

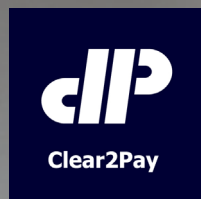
NFC-A Listen

- Basic NFC-A Exchange and Timings Measurement with different NFCID1 sizes
- Basic NFC-A Exchange with the minimum and longer Frame Delay Time with different NFCID1 sizes
- NFC-A Correct Installation with respect of the anticollision state machine with different NFCID1 sizes
- NFC-A Handling of RATS with different NFCID1 sizes
- NFC-A Installation with error
 - in the IDLE, READY_A, READY_A', READY_A" state
 - in the ACTIVE state with different NFCID1 sizes
 - in the SLEEP_A state following ACTIVE_A with different NFCID1 sizes
 - with error in the SLEEP_A state following Card Emulator 4A State with different NFCID1 sizes
- NFC-A Installation with polling and with Reset
- Transmission Error (CRC error)
- Protocol Errors (Attribute Request parameters, RTOX parameter and Payload length)

NFC-F Listen

- NFC-F Exchange Frame Format and Timings measurement during Installation
- NFC-F Installation with collision resolution (different TSN value)
- Exchange and timings measurement
- Attribute Request (ATR_RES), Parameter Selection Request (PSL_RES) and Data Exchange Protocol Request (DEP_RES) Parameter
- Deselect Request (DSL_REQ) and Release Request (RLS_RES) Parameters
- Parameter
- Chaining
- PDU Numbering and Handling rules
- Maximum and minimum payload size
- Reactivation Timing
- NFC-A Installation with polling and with Reset
- Transmission Error (CRC error)
- Protocol Errors (Attribute Request parameters, RTOX parameter and Payload length)

Product Family: Requires Integri open Test Platform (former INQ) Level 1 Contactless Card License
Requires MicroPross MP300 TCL2 Embedded Software and Card Reader



Integri is a product brand of Clear2Pay, an international financial technology company focused on delivering globally applicable solutions for secure, timely electronic payments. Clear2Pay employs over 600 staff.

Clear2Pay

Leuvensesteenweg 325/3
B-1932 Zaventem
Belgium
P: +32 2 717 69 00
F: +32 2 717 69 67
E: info@clear2pay.com
W: www.clear2pay.com
W: www.integri.com