

INQ[®] Level 1 Platform

Terminal-to-Smartcard Protocol Testing

Out of the box testing



Integri provides an extensive range of testing solutions for payment, ticketing and mobile applications, based on its INQ[®] Open Platform. The Level 1 Platform collects together all the appropriate tools and simulators for testing the Level 1 interface protocol between terminals and contact/contactless smartcards.

Level 1 Testing

Smartcard specifications and standards can cover different aspects of the card including the physical and mechanical characteristics, and the communication and functional protocols. **The smartcard to terminal interface is application independent** and is typically based on international standards such as ISO/IEC 7816-3, ISO/IEC 14443-2 and -3, and the EMV specifications – commonly known as the Level 1 specification.

The INQ® Level 1 Platform is designed for testing the Level 1 compliance of the smartcard / terminal interface.

Several different configurations are possible:

- **Terminal test configuration:** testing of contact and contactless terminals
- **Smartcard test configuration:** testing of contact (planned) and contactless smartcards
- **Logger configuration:** capture and analysis of card-to-terminal communication

Level 1 Terminal Test Configuration



In this configuration, the INQ® Level 1 Platform is connected over a probe and inverse card reader to the terminal under test and simulates the contact or contactless card. The tool can:

- Replay any previously captured sequence at signal level for non-regression testing allowing a tester to capture data from a working / certified terminal and check the behavior of the updated terminal afterwards
- Automatically report any significant discrepancy between the terminal's expected and actual behavior
- Check if the interface conforms to the standard, even for different smartcard behavior at bit and signal level (in conjunction with additional protocol analyzer)
- Be used by different labs as an official Type Approval Tool
- Test before certification, cutting costs and time-to-market

The pre-recorded reference scenarios include data for various smartcard parameters and can simulate both normal and error situations. This is a key strength of the platform, allowing you to test how the terminal reacts to faults. The platform is therefore an indispensable tool for the development, debugging and certification of the smartcard communication driver of terminals.

The Level 1 script editor feature even allows you to modify captured scenarios or create new ones from scratch.

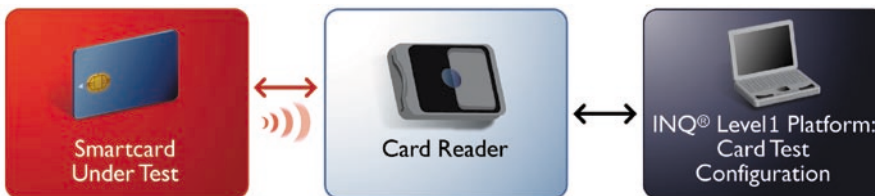
Off-the-Shelf Test Suites

Off-the-Shelf Test Suites are available to test the de facto contact and contactless smartcard-to-terminal communication standards. Please ask your Integri representative for more details.

Benefits

- The same platform can be used for testing Level 1 terminals and smartcards, for both contact and contactless technology
- The tools are being used by a number of official test labs and can therefore be considered the reference tool
- Increases quality, as the tool gives you the opportunity to test how terminals and smartcards react in faulty situations
- Indispensable for development, debugging and certification for Level 1 compliance
- Results in important cost savings by testing in-house before going for official certification
- Can be used in conjunction with the End-to-End Payment or Mobile Platform, which tests Level 2 (application level) compliance of smartcards and terminals

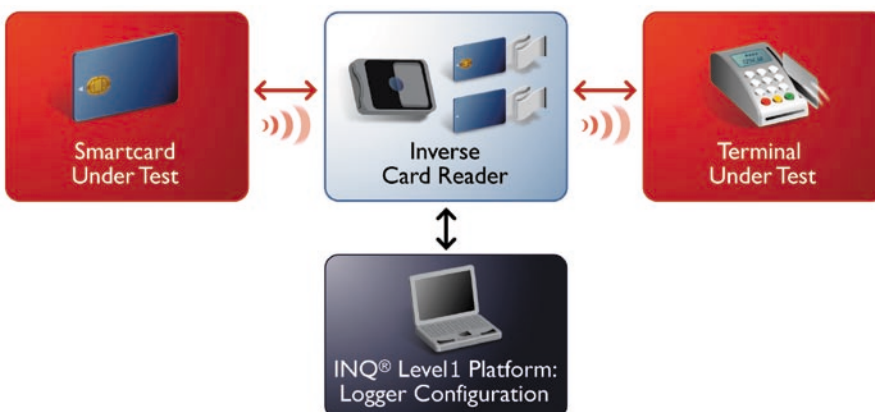
Level 1 Card Test Configuration



In this configuration, the INQ® Level 1 Platform is used to test the smartcard and thus replaces the terminal. The card under test is connected to the tool, using advanced card reader hardware. Again, the tool can replay pre-recorded scenarios and analyze the card's behavior.

Level 1 Logger Configuration

Finally, the Logger Configuration inserts the INQ® Level 1 Platform between the physical terminal and the smartcard. The tool captures the communication flow between the smartcard and the terminal. The resulting data can be represented at different levels (bit, byte, APDU or application) and traces can be exported as text files. Using the protocol analyzer feature, deviations from the appropriate standards can be detected automatically.



Out of the box
testing



Testing and Test Tools... out of the box testing

Specializing in simple-to-use test tools and services for payment, smartcard and mobile applications, Integri offers an approach that's 'As easy as it looks'. It's the key to achieving overall project quality on schedule and within budget. The Integri tools are based on the INQ® Open Platform. INQ® can easily be customized or adapted to your specific needs.

Integri offers also a number of dedicated platforms for specific applications:

INQ® End-to-End Payment Platform

To test the different units of a payment system (card, terminal, acquirer, network and issuer).

INQ® End-to-End Mobile Platform

To test handsets, SIM cards and mobile applications in the 3GPP world.

INQ® Stress Platform

To test host behavior under heavy stress and load conditions.

INQ® Level 1 Platform

To test the level 1 protocols between contact and contactless smartcard and terminal.

More information on www.integri.com or mail us info@integri.com



a Clear2Pay company

Integri is a wholly owned, autonomous business unit of Clear2Pay, an international financial technology company focused on delivering globally applicable solutions for secure, timely electronic payments. Clear2Pay operates from 13 international offices and currently employs over 400 staff.

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