



**Integri**

a Clear2Pay company

# INQ® Open Platform

## Smartcard Terminal Logger

### Description

When confronted with debugging, testing, quality control or fault analysis of a smartcard or terminal application, the smartcard-to-terminal interface plays an important role. Without proper tools, the message flow on this interface is difficult to analyze. Indeed, no user interface and in most cases, even no system logging is available. The Integri Smartcard-to-Terminal Logger provides you a powerful and flexible tool to enable the visualization of this interface.

Integri's Smartcard-to-Terminal Logger runs on top of any INQ platform and captures the communication flow between a smartcard (SIM, EMV, ...) and terminal (payment terminal, GSM or UMTS handset, etc). The tool comes with a probe that is inserted between card reader and smartcard.

The probe is connected to the Micropross hardware adapters to sample signals (Vcc, RST, I/O) at a sampling frequency of 20 MHz. Full details of the captured transport-level data can be viewed at the transition / bit, byte and packet levels.

The raw message data can be further treated according to application-specific formats such as EMV, GSM or UMTS. C-APDUs and R-APDUs are parsed into component fields and sub-fields, and then checked for format errors. Proactive commands and responses (e.g. for 2G/3G SIM toolkit applications) can also be automatically extracted.


This product enables:

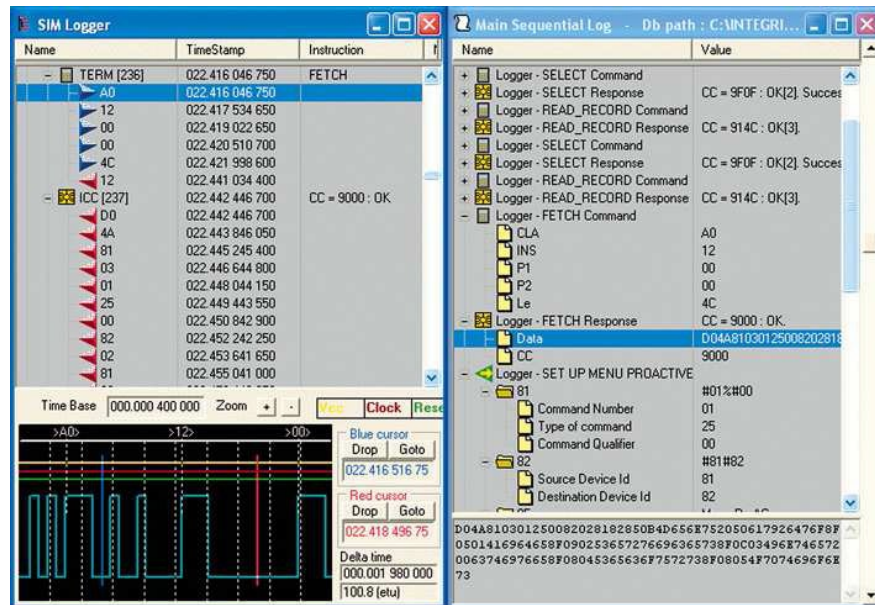
- The capture and analysis of various exchanges at transport or application level
- The study of any incompatibilities between the smartcard and terminal interface
- Automatic detection of deviations from the ISO 7816-3, ISO 7816-4 or EMV level 1 standards using the protocol analyzer module

### Highlights

- 50 ns sampling period
- Enables full detail tracking of completed transactions from bit to APDU level
- Time delays between two mobile cursors computed in ms or etus
- Traces can be exported as text files
- Can synchronize individual hardware adapter clocks
- No customization needed
- Open tool that can be easily extended with protocol analyzer and L1 player modules

**Out of the box testing**





## Technical Specifications

This utility has been developed in accordance with:

- ISO/IEC 7816-3: information technology – Identification cards – Integrated circuit cards with contacts – part 3: electronic signals and transmission protocols
- Digital cellular telecommunications system (Phase 2+); Specification of the Subscriber Identity Module – Mobile Equipment (SIM-ME) interface
- Digital cellular telecommunications system (Phase 2+); Specification of the SIM Application Toolkit for the Subscriber Identity Module – Mobile Equipment (SIM-ME) interface
- Universal Mobile Telecommunications System (UMTS); UICC-terminal interface – physical and logical characteristics
- EMV 2000 Integrated Circuit card – specifications for payment systems
- All necessary format and APDU definitions are included.

## Product Family

Can run on any INQ platform.

Requires Micropross STAR 3150 hardware adapter

Different smartcard probes available, including ID-1 and ID-000

[www.integri.com](http://www.integri.com)



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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.

### Integri headquarters

Leuvensesteenweg 325/3  
B-1932 Zaventem  
Belgium  
P: +32 2 717 69 00  
F: +32 2 717 69 67  
E: [info@integri.com](mailto:info@integri.com)  
W: [www.integri.com](http://www.integri.com)