

# Spy Times

## APDU Logger and Analyzer

Spy Times board connects to both a host PC via USB and a terminal via a flex adaptor. The UICC is directly inserted into the Spy Times hardware.

Spy Times traces the communication between a handset and a UICC based on ISO 7816 standard and ensures the interoperability between the two entities.

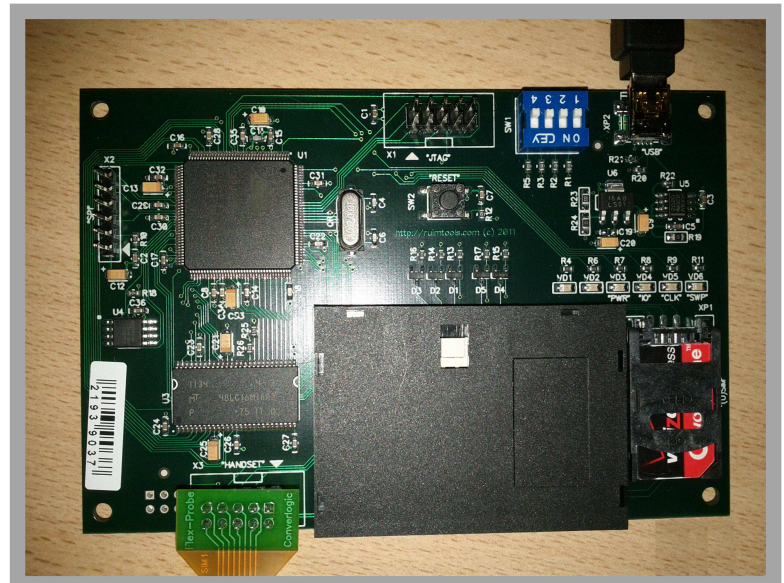
The recorded bits and bytes are translated into a comprehensible content and are displayed in a user-friendly way.

Spy Times Agent software interprets and analyzes APDU commands and responses.

Supported technologies: GSM, CDMA, USIM applications and command sets

## Spy Tymes – Typical use cases

- Interoperability testing between different devices, components and applications
- Quality assurance: detecting communication errors before the launch of your product or during product development
- Handset/Smart Card development
- Field testing: detecting interoperability problems and malfunctions in the field
- End-to-end application testing
- Drive tests



## Overview

- Tracing communication between a terminal and a Smart Card according to ISO/IEC 7816 1-4
- Supported Smart Card Applications: SIM, USIM, ISIM, R-UIM, SAT, USAT, CCAT + Multi application
- Technologies: GSM, 3G/UMTS/W-CDMA/TD-SCDMA, CDMA2000
- Records, displays and analyses communication in different layer views (e.g. physical, protocol and application layer)
- Translation of commands and data fields depending on the corresponding application
- An inter-layer synchronization permits all layer views to focus always on the same associated item
- Simplifies data analysis for T=0 and T=1 with timing measurements and search functions (e.g. for signal edges, bytes, byte patterns, error conditions, APDUs, commands)

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# Technical Specifications

## General Features

- Supported Smart Card voltage: 1.2 V / 1.8 V / 3 V / 5 V
- Supported ISO protocols: T=0 and T=1
- Supported technologies: GSM, W-CDMA, CDMA2000, TD-SCDMA
- Firmware can be downloaded from Internet and updated via USB
- Input contacts (CLK, RST, I/O)
- Voltage range: 0...6 V, resolution ca 6 mV
- Impedance: min 5 M $\Omega$ , max. 30 pF
- Time measurement performance:
  - Resolution: 20 ns
  - Speed: max 8 clock cycles/etu at 10 MHz
  - Measurement units: etu, second
- Trigger out: connection between Analog Scope and external oscilloscope (1 V signal level at 50  $\Omega$ )
- *Integrated 50 MHz digital storage oscilloscope*

## Capabilities

- Monitoring between terminal and Smart Card
- According to ISO/IEC 7816 1-4
- Display and analysis of communication on physical, protocol, and application layer in separate views
- Generation of comprehensive reports
- Synchronization between layer views
- Provides a structured view of the terminal profile
- Various on-the-fly protocol checks

## Spy Times Agent

- Stand alone viewing software for log files traced with Spy Times board

## Scope of Delivery

- Green Spy board
- Green Spy Agent software (CD-ROM)
- Flex Adaptors type A-D (terminal connectors)
- Plug-In SIM Adaptor
- USB 2.0 cable type A-B



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