Solve Interoperability Problems in NFC Use Cases

Whether mobile payments at the POS or access control in public transport or buildings: Wherever NFC technology is used, errors can happen. Readers and devices may not function properly when interacting. In order to solve these communication problems in the field, COMPRION has developed TraceCase, a mobile trace tool that comes with a powerful software. It supports debugging in the best possible way and enables you to offer your customers a smooth user experience.

Field Tracing

The easy setup and handling allow you to start tracing instantly. TraceCase records contactless communication discreetly and reliably at the NFC terminal during daily business – without unsettling vendors or customers. Once collected, the payment transaction data can be transferred to the technical lab via email or cloud. With TraceCase Viewer, the recorded data can be analyzed in-house or by a third party. Since not only digital but also analog signals are displayed and analyzed, errors on all layers can be recognized and corrected quickly.

Automated Testing

TraceCase Toolbox provides a command-line interface for remote operation of TraceCase. This helps to automate testing of NFC-enabled devices both in-house and by third parties.

Key Features & Benefits

- As small as a deck of cards:
  - Ideal for discreet tracing in the field
  - Captures real transaction problems without disrupting daily business

- Controlled by smartphone app:
  - Easily operated even by untrained staff
  - Location, date & time are clearly assigned to data
  - Online data transfer to customer lab
  - Free-of-charge software updates

- Visualization and analysis software for analog and digital signals:
  - Allows identification of technical issues
  - User friendly analysis of recorded payment sessions on application level

- Command line based control interface with TraceCase Toolbox:
  - Integration in your existing test automation

Who Is It For?

- Application developers, consultants & test engineers at:
  - Manufacturers of mobile devices and chipsets
  - Manufacturers of POS terminals and ATMs
  - Test houses

- Providers of test services and solutions in the areas of:
  - Mobile payment
  - Access control
  - Public transport
  - Automotive
  - Internet of Things (IoT)
The basic functions of the test device (start trace, stop trace) can be controlled by a button on the device itself. The comprehensive control however is provided by the TraceCase app running on a smartphone.

- EMVCo translator
- Trace quality analyzer
- Export frame algorithms as .csv file
- Integrated PDF reporting
- Available for Android and iOS

Timing Information
- start, stop, duration and delay time

Add meta data
- Pictures
- Date & GPS coordinates
- Text information

Features

TRACECASE APP

Analog Scope trigger config
Measure field strength & capture data
Look into recorded data on APDU and frame level
Sort & filter sessions by results

Share and import sessions via email or cloud storage services

Comprehensive triggers
View protocols on APDU and frame level
Sort & filter sessions by trace quality analyzer results
Features

TRACECASE TOOLBOX

TraceCase Toolbox is an optionally available command-line remote control interface for TraceCase, which offers a smooth integration in your existing test automation providing:

- Remote control functions
  - Start tracing
  - Stop tracing
  - Downloading trace file
- Data conversion of proprietary TraceCase format into
  - XML format
  - PDF format

TRACECASE VIEWER

Digital

- Dedicated views translate and display the respective commands and payload in clear text
  - Physical Layer view
  - Frame Layer view
  - APDU Layer view
  - Application Layer view (NDEF)
  - Summary view
- Evaluation of time dependencies between signals and commands
- Troubleshooting by search functions and powerful filters
- MIFARE translators
- EMVCo translators

Analog

- Visualization of the envelope signal
- Signal and frequency analysis
- Quick measurements:
  - Modulation index
  - Waveform characteristics
  - Frequency spectrum
  - Fall/rise times
  - Peak-to-peak
  - Top/bottom
  - Duty cycles
  - Overshoot, undershoot
  - Low level, mid level, high level
## Specification

### FEATURES

**Supported Protocols**
- ISO/IEC 14443 A/B
- ISO/IEC 18092
- NFC Forum A/B, Felica
- NFC-V (based on ISO/IEC 15693)

**Supported Tag Types**
- NFC Forum Type 1, 2, 3, 4 A/B, 5 Tags

**Interfaces**
- 1x MCX (antenna connector)
- 1x Micro-USB (for battery recharge only)
- Wi-Fi (for communication with smartphone)
  IEEE802.11 b/g/n; 2.4 GHz

**User Interface**
- 1 multifunctional button
- 1 LED (indicating device status)
- TraceCase app for configuration and operation
- TraceCase Viewer software
  (incl. Analog Scope Compact)
- TraceCase Toolbox (API, optional)
  command-line remote control interface

**Recording Length**
- Analog: 0.6 ... 20 s (depending on sample rate)
- Digital: 2 Mbit communication data
- Envelope sample rate: up to 13.56 MHz

### TRACECASE VIEWER REQUIREMENTS

- Processor operating frequency: min. 2 GHz
- RAM: min. 1 GB, Hard disc: min. 200 MB
- Supported OS: Windows 8.1, 10

### TRACECASE APP REQUIREMENTS

- Android 7.0 or higher
- iOS 10.2 or higher

**Technical Data**
- ca. 94 x 58 x 14 mm
- Weight: ca. 75 g
- Power supply: up to 6 hours
  (Replaceable standard battery: 3.7 V, 1.1 Ah)

**SCOPE OF DELIVERY**
- TraceCase
- Li-Ion battery
- Micro-USB cable
- Antenna-M-Type 04/05
- TraceCase Viewer
- TraceCase app (via Google Play/App Store)

### TRACECASE FIT

TraceCase is available as TraceCase fit – a tailor-made test solution hidden in a smartphone case for iPhone 7, iPhone 8/Pro, iPhone X, iPhone XS, and Samsung S8.