

# COMPRION



## IT<sup>3</sup> Prove!

**HANDSET DEVELOPMENT AND  
PRE-CONFORMANCE TESTER**

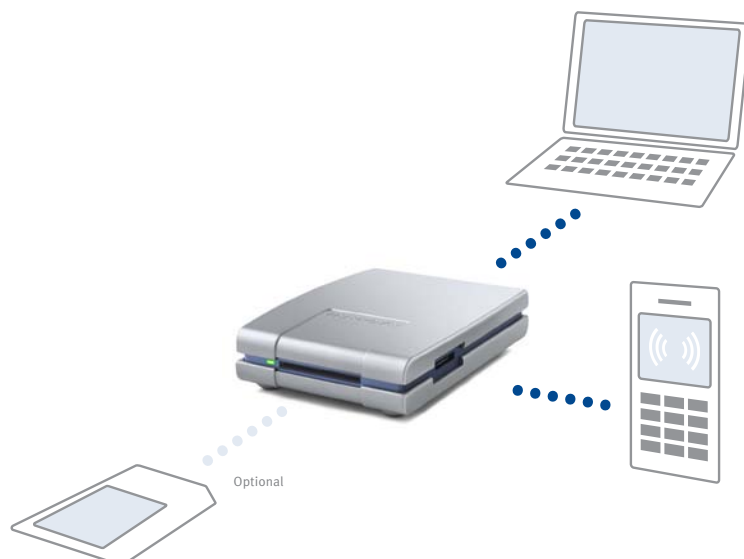
# COMPRION – IT<sup>3</sup> Prove!

IT<sup>3</sup> Prove! provides logical card simulation for testing the handset's Smart Card interface implementation. The innovative software offers a user-friendly GUI that allows IT<sup>3</sup> Prove! to operate in both simulation and record mode, to perform quick analysis of the recorded traces

and measurements, and to execute pre-defined tests. Based on the established GCF and PTCRB validated conformance platform IT<sup>3</sup> Platform, IT<sup>3</sup> Prove! supports all phases of development and pre-conformance testing up until the actual conformance test.

## IT<sup>3</sup> Prove! – Typical use cases

- Testing the (U)SIM interface protocol implementation
- Testing the (U)SIM toolkit implementation
- Simulation of borderline behaviour
- Testing the (U)SAT implementation
- Handset pre-conformance tests that are identical to the GCF and PTCRB validated system
- End-to-end testing
- Interoperability testing
- Testing in live networks
- Testing with a network simulator (with COMPRION SIMfony)
- Handset development
- Supporting handset-qualification



## Test Setup

IT<sup>3</sup> Prove! is connected to a host PC via USB and to a terminal via an adaptor cable (flex-adaptor). The PC controls the testing of the mobile device. The IT<sup>3</sup> Prove! hardware and software ensure the repeatability of all tests and measurements while using up-to-date test packages. Additionally, tracing under live conditions with real cards is supported while a “live” (U)SIM is inserted into the IT<sup>3</sup> Prove! unit.

# The Benefits

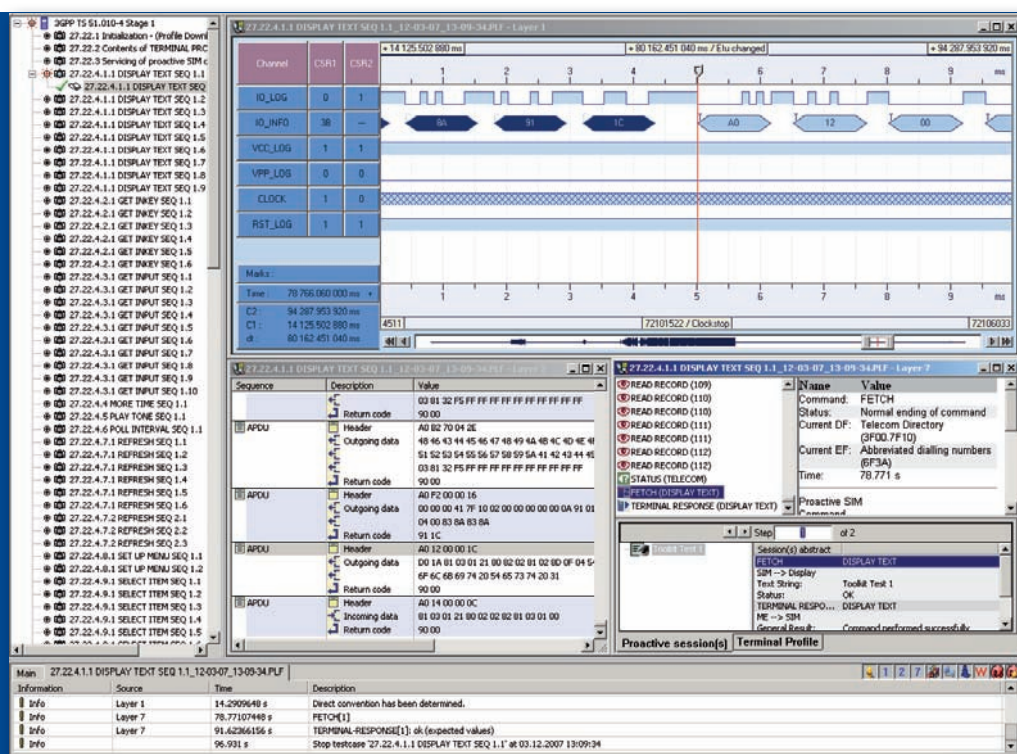
## Securing up-to-date software and sustainability

To ensure ongoing high performance, we offer continuous software updates for all of our products, securing your technology investment well into the future. Our maintenance effort is based on the latest ETSI SCP, 3GPP and 3GPP2 standards specification and technology

advancement as well as customer feature requests. Due to our participation in a number of standardisation and regulation organisations, we actively shape the future of testing. We also offer start-up training, as well as refresher or special usage training.

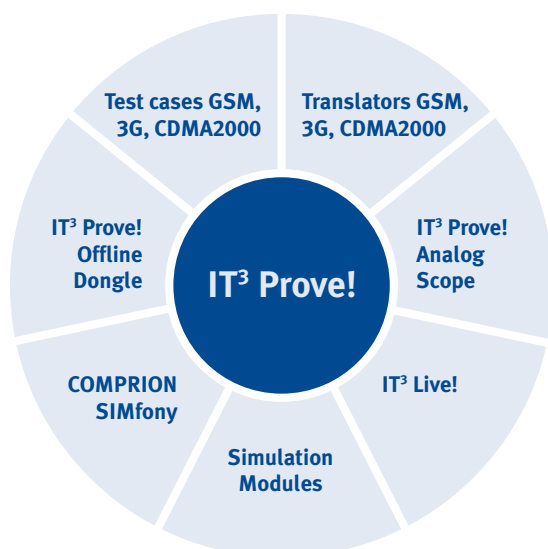
## Strong user-friendly GUI

Up to three different synchronised views for the physical, protocol and application layer give an in-depth view of the communication and activation of the ISO protocol. It is also possible to measure cycle times. The adjustable user-friendly interface allows customising the layer views according to your needs.



## Modular software

The software is modular and expandable, allowing you to access different features according to the changing nature of your testing needs.

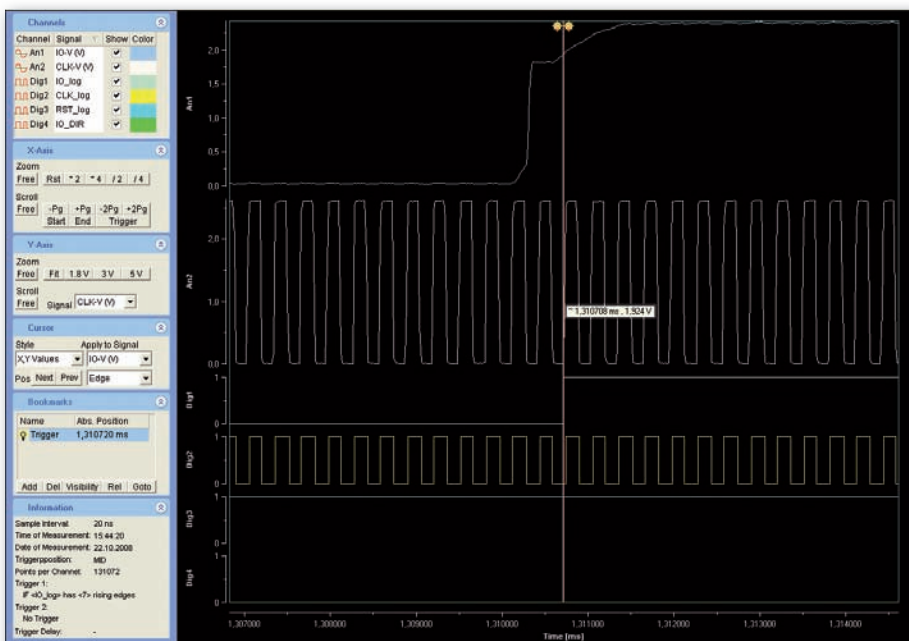


### Convenient test case management

Test cases in the project tree can be individually compiled and configured depending on your testing needs. The GUI displays a result overview of each selected test case as well as a final verdict of the test bench.

### Input and output files are importable and exportable

IT<sup>3</sup> Prove! has an open interface to corresponding test systems and databases and allows data import from other COMPRION test devices.



### Integrated oscilloscope

The Analog Scope function is a valuable add-on to IT<sup>3</sup> Prove! allowing detailed recording and visualisation of the analogue signals measured. For example in the event of card or terminal hardware errors, a multi-level, complex trigger logic enables signal recording to enhance the user's abilities for analysing and resolving these errors.

# Technical Specifications



## CAPABILITIES

### Terminal Testing/Smart Card Simulation

#### according to ISO/IEC 7816 1-4

- Protocol parameters adjustable
- Error simulation
- Voltage measurements:
  - 0-6 V, resolution approx. 6 mV
  - Resolution: 20 ns
- Speed: max 8 clock cycles/etu at 5 MHz
- Measurement in time and etu
- Supported protocols: T=0 and T=1

### Monitoring and analysis of data flow

#### (physical, protocol and application layer)

- Layer visualisation synchronised
- Translation of application specific data for GSM/3G/CDMA/WiBro
- Full support of (U)SIM Application Toolkit
- Provides a structured view of the terminal profile

## MISCELLANEOUS

- Supported Smart Card voltage: 1.2 V – 5 V
- Input contacts (CLK, RST, I/O)
  - Voltage range 0...6 V
  - Impedance: min. 5 MΩ, max. 30 pF
- Firmware configurable via USB interface
- Open C++ API for analyser development
- Remote control interface

## DIMENSIONS

- W x D x H: 185 x 125 x 40 mm
- Weight: 0.9 kg

## HOST REQUIREMENTS\*

- Supported OS: WIN 2000, XP
- USB Interface: min. USB 1.1, USB 2.0 recommended (for use with IT<sup>3</sup> Live! 2 USB ports required)
- RAM: min. 512 MB
- Hard disc: min. 50 MB
- Processor operating frequency: min. 1 GHz

\* Host is not part of the delivery

CE/FCC approval class A: This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

## OPTIONS

### Simulation Modules

- GSM SIM (3GPP TS 51.011)
- 3G UICC/USIM (ETSI TS 102 221/3GPP 31.102)
- GSM SAT (3GPP TS 51.014)
- 3G USAT (3GPP 31.111)
- CDMA2000 R-UIM (3GPP2 C.S0023-0)
- CDMA2000 CCAT (3GPP2 C.S0035-0 v1.0)

### Test suites GSM

- 3GPP TS 51.010-1
- 3GPP TS 51.010-4 SAT Rel.99 Stage 1 and 2

### Test suites 3G

- ETSI TS 102 230
- 3GPP TS 31.121
- 3GPP TS 31.124 Stage 1 – 3 (USAT)

### Test suites CDMA2000

- 3GPP2 C.S0048-0 (digital and air access)

### Translators for application-specific data

- GSM (incl. SAT Monitor)
- 3G/UMTS (incl. USAT Monitor)
- CDMA2000 (incl. CCAT Monitor)

### IT<sup>3</sup> Prove! Offline Dongle

- Dongle for offline viewing

### IT<sup>3</sup> Prove! Analog Scope

- Integrated oscilloscope functionality for detailed electrical measurement and analysis

### IT<sup>3</sup> Live!

- Simulation of test cases in live network

### COMPRION SIMfony

- System for combined handset testing with integrated air interface functionality

## SCOPE OF DELIVERY

- IT<sup>3</sup> Prove!
- IT<sup>3</sup> Prove! Software (CD-ROM)
- Flex Adaptor Types A-D (terminal connectors)
- PlugIn SIM Adapter (PISA)
- USB cable
- AC mains adaptor for DC power supply 12 V, 1 A



# COMPRION – Test systems for all interfaces

Technology	Supported interfaces	Terminal Testing	Card Testing	Monitoring/ Interoperability
Contact	ISO/IEC 7816	IT³ Platform 		IT³ Move! 
		IT³ Prove! 		
		COMPRION SIMfony - IT³ Platform - IT³ Prove! - Additional equipment	ICC Spectro 	
	ISO/IEC 7816 ETSI TS 102 613 (SWP) ETSI TS 102 622 (HCI) ETSI TS 102 600 (USB)	Prove 2 * 	Spectro 2 	Move 2 
Contactless	ISO/IEC 14443	CLT One * 		CLT Move 

\* Coming soon

## COMPRION GmbH

Technologiepark 11  
33100 Paderborn  
Germany

Phone: +49 (0) 5251 / 699 86 0  
Fax: +49 (0) 5251 / 699 86 99  
E-mail: [info@comprion.com](mailto:info@comprion.com)  
[www.comprion.com](http://www.comprion.com)

© COMPRION GmbH

Printed in Germany, October 2008

