

Collis SmartLink Box



Powerful dedicated hardware for testing Smart Cards and Terminals

SmartLink Box

With the SmartLink Box, you have powerful dedicated hardware for testing smart cards and terminals, such as payment terminals and mobile equipment. It can be used for testing, analysing, intercepting, and modifying communication signals exchanged between a smart card and a terminal. Additionally, it can be used as a smart card simulator or as a superior card reader with no restrictions on voltage and frequency.

Modes of Operation

The SmartLink Box has four fundamental modes of operation: the analyser mode, the card simulator mode, the interceptor mode, and the card reader mode. In the last mode, the SmartLink Box only communicates with a card (for smart card testing). The other modes are for testing a terminal on its ISO 7816 smart card interface.

Business Application

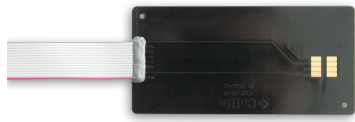
The SmartLink Box can be used in various business environments, such as:

- ◆ EMV payment schemes for testing EMV credit cards and payment terminals (VSDC, M/Chip, J/Smart)
- ◆ Telecom industries for testing SIM (GSM/3G) cards and mobile equipment
- ◆ Transport environments for testing Digital Tachograph Cards and Vehicle Units
- ◆ Every other ISO 7816 card/terminal combination



Front of Collis SmartLink Box

Features and Specifications



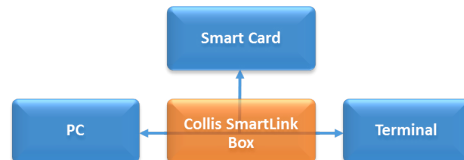
Probe to be used in combination with the SmartLink Box



EMV Card

Analyser mode

The Analyser mode or 'Spy mode' is the default operation mode of the SmartLink Box. It can be used for tracing and analysing information exchange between smart card and terminal.



In this mode, the SmartLink Box operates transparently. It is connected to a terminal with a smart card probe (or paddle). Via this probe, the SmartLink Box monitors the data and all signals (vcc, clock signal, rst, and i/o) that are exchanged between the smart card and the terminal (without interference).

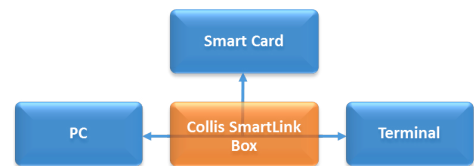
Data is sent through the usb/rs-232 port to a pc, and can be analysed with software applications on the pc, e.g. the Conclusion Test Platform. The electronic signals can be monitored and analysed (for instance with an oscilloscope) by making use of the high impedance connectors (smb) on the front of the SmartLink Box.

For performance testing of terminals and smart cards, the SmartLink Box is able to place timestamps on data messages received from the card or the terminal. The resolution of these timestamps is 100 μ s.

Interceptor mode

The Interceptor mode configuration is almost identical to the Analyser mode, with the exception that the SmartLink Box intercepts the i/o signals between the smart card and the terminal.

Data from a terminal or card is received and sent to the pc, but it is no longer simultaneously transferred to the card or terminal respectively. This enables the user to intercept and modify the data using a software application on the pc, e.g. the Conclusion Test Platform.



In other words, the user has full control on the data transferred between the card and the terminal. The Interceptor mode can be used for instance for sim (gsm/ 3g) card readers and smart cards.

Card Simulator mode

In the Card simulator mode it is possible to operate without a smart card, turning the SmartLink Box into a card simulator. The full functional behaviour of any smart card can be simulated on the pc.



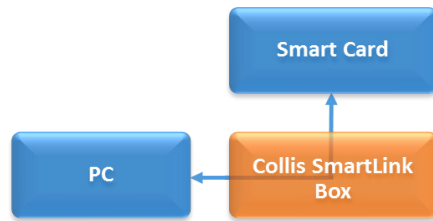
The PC can be connected to a terminal by using the SmartLink Box with the smart card probe. As a result, a terminal can be tested on all kinds of smart card configurations, card responses, and status words. The Card simulator mode can be used for instance for emv (VSDC, M/Chip, J/Smart) terminals, card readers, and smart cards.



Terminal

Card reader mode

In Card reader mode, the SmartLink Box behaves like an intelligent smart card reader. It will supply the vcc, clk, and rst signals to the smart card. Via software on a PC, for example the Conclusion Test Platform, it is possible to send messages to the smart card and to receive the responses from the smart card.



A great advantage of using the SmartLink Box as a card reader is that the user can set the vcc voltage, clk frequency, and bit rate over a wide range.

No voltage and frequency restriction

The SmartLink Box is an advanced tool that facilitates the hardware interface between software applications on the PC, and a smart card or terminal. It provides information on several parameters, such as supply voltage, clock frequency, and communication speed (bit rate).

As mentioned before, the major advantage of the SmartLink Box in the Card reader mode is the possibility to set the vcc voltage and clk frequency over a wide range. Hence, by using the SmartLink Box as a card reader you will experience no more restrictions on voltage and frequency.

vcc voltage	
Supported vcc range	2 - 6.3 V
Measurement of vcc voltage	Yes (steps: 100 mV; accuracy ±2%)
Possibility to set vcc voltage	Yes (steps: 100 mV; accuracy ±2%)
clk frequency	
Supported clk frequency	dc > 30 MHz
Generated frequency in Card reader mode	500 kHz - 24 MHz in 1 kHz steps
Support for clk stop	Yes
Support for clk frequency change	Yes
Communication parameters	
Support for bit rate change	Yes
Supported bit rate	Continuous; determined by clk frequency and f/d
Communication speed between the SmartLink Box and PC	for RS-232: 115200 bps for USB: 115200, 230400 and 460800 bps
Maximum message length	890 bytes
Per-byte indication of Parity errors	Yes
Other	
Field-upgradable firmware	Yes
Possibility to place timestamps on data message	Yes (resolution: 100 µs)

Product Range

- ◆ **Collis SmartLink Box**
Ref Code: SLB-P1

Additional Products

- ◆ **Collis Test Manager**
Ref Code: CTM-P1
- ◆ **Collis Card Spy**
Ref Code: C-Spy-P1
- ◆ **Collis Card Simulator**
Ref Code: C-Sim-P1
- ◆ **Collis Brand Test Tool**
Ref Code: C-BTT-P1
- ◆ **Collis EMV Personalisation Validation Tool**
Ref Code: C-PVT-P1
- ◆ **Collis Card Image Editor**
Ref Code: CCIE-P1

Additional Services

- ◆ **Brand Testing Services**
- ◆ **MasterCard TIP Formal Approval Services (FAS)**
- ◆ **EMV Training**



Contact

The Collis and Aspects portfolio of test tools are developed by UL Transaction Security.

For sales enquiries, please contact us at info@ul-ts.com, visit www.ul-ts.com, or contact a UL Licensed Reseller.