

MP300 SC1 (spy+smartcard simulation)

A cutting edge ISO/IEC 7816-3, SWP and USB 2.0 protocol analyser and smartcard emulator

- ◆ Ideal CLF tester
- ◆ Protocol analysis and spy of ISO/IEC 7816, SWP and USB 2.0 protocols
- ◆ Emulation of ISO/IEC 7816 and SWP smartcards
- ◆ Electrical measurement features



OVERVIEW :

This tester will typically be used in the following contexts :

- Protocolary analysis of a handset or a banking terminal
- On-site debugging sessions
- Characterisation of a CLF, or of a smartcard reader

The main features of the MP300 SC1 are :

- Protocol analysis of exchanges happening following the ISO/IEC 7816-3 and -4, SWP/S-HDLC/HCI, and USB 2.0 protocols
- Compatible with ETSI TS 102 613 and TS 102 622 specifications
- Automatic detection of baudrate changes
- Detailed graphical representation of the spied exchanges
- Non intrusive data acquisition probe
- All protocols can be spied simultaneously
- Possibility to perform physical measurement (current and voltage oscilloscope-like display)
- Evolvutivity into a smartcard emulator (ISO/IEC 7816-3 and –4 and SWP)
- Numerous possibilities of protocolary testing (response times, wrong CRC, parity errors)
- Physical customisation of the emulated smartcard
- Wide range of probes available, to cover all types of handsets, as well as traditional ID1 smartcards
- Backwards compatibility with the Star 3150
- Open platform : integrate the MP300 SC1 inside your own test platform
- Supplied with the MPManager software suite, enabling the complete control of the tester without any programming knowledge
- Possibility to synchronise this tool with a MP300 TCL2 or SCL1, for the analysis of a complete NFC or dual interface transaction

SPECIFICATIONS :

Supported protocols

Protocol analysis mode

ISO/IEC 7816-3

T=0 and T=1 protocols	100% implemented
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Block level spy	Available
SWP (ETSI TS 102 613 and TS 102 622)	
Baudrate supported	From 49kbps to 1.9Mbps
Block level spy	Available
LLC level spy (S_HDLC, ACT, CLT)	Available
HCI	Available
Synchronous chips (memory chips)	
Implemented	
Example of supported chips	Eurochip T2G SLE 4442 SLE 4407 AT24CXX
USB 2.0	
Supported speeds	Low speed, full speed
Smartcard emulation mode	
ISO/IEC 7816-3	
T=0 and T=1 protocol	100% implemented by firmware
Custom protocol emulation	Available
SWP (ETSI TS 102 613 and TS 102 622)	
Baudrate supported	From 49kbps to 1.9Mbps
Block level spy	Available
LLC level spy (S_HDLC, ACT, CLT)	Available

Programmable parameters

Protocol analysis mode	
ISO/IEC 7816-3	
I/O direction detection threshold	
SWP (ETSI TS 102 613 and TS 102 622)	
SWP S2 channel current threshold	
Smartcard emulation mode	
ISO/IEC 7816-3	
Guard time	Defined in ETUs
Smartcard response time	Defined in ETUs
SWP (ETSI TS 102 613 and TS 102 622)	
Current values on SWP S2 signal (high and low states)	From 1nA to 2mA
Smartcard response time	

Spy feature

Accuracy	20ns
Signals displayed	Signals C1, C2, C3, C4, C6, C7, C8 SWP S1, SWP S2 Trigger in Trigger out
Protocols supported	ISO/IEC 7816-3, SWP, USB 2.0 (simultaneous spy possible without accuracy damage)

Type of events displayed	Logical state change Characters Modification of baudrate Clock frequency detection Analog representation of the signals I/O direction
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Available tests

Electrical measurement (available for all versions)	
Possibility to execute simultaneous voltage and current measurement to characterise both the terminal and the smartcard	
Number of samples	512000 (unlimited for Vcc)
Contacts available	C1, C6, C7
Perturbations (smartcard emulation mode)	
ISO/IEC 7816	
Sending out of standard blocks (wrong CRC, wrong data length, ...)	
Sending characters with parity error	
Simulating reception of parity errors	
Modifying the guardtime on the fly	
SWP (ETSI TS 102 613 and TS 102 622)	
Sending out of standard blocks	
Removal of bit stuffing	
Card response time	
Master resume time measurement	

Triggers

The MP300 SC1 offers triggers, to synchronise or to be synchronised by external laboratory devices (oscilloscopes,...)
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Physical information

Weight	1.98 kg
Dimensions	Width : 150mm Height : 78mm Depth : 270mm

Communication parameters

USB 2.0
TCP/IP 10/100 Mbps
RS 232

Software development

Remote development (the code is executed from the PC)	
Elements available	MPSDK .NET library available on demand Communication Dll supplied
Supported programming languages	C, C++, VB, Java, .NET Any language that supports Dll
Embedded development (the code is executed directly by the MP300)	
Recommended cross compiler	Windriver compiler (preferred version : 4.4b)

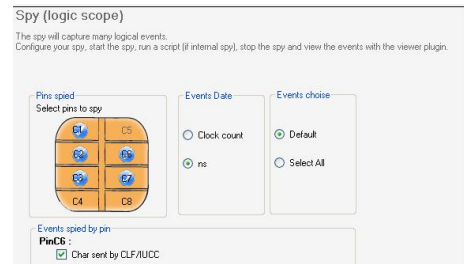
User Interface

MPManager

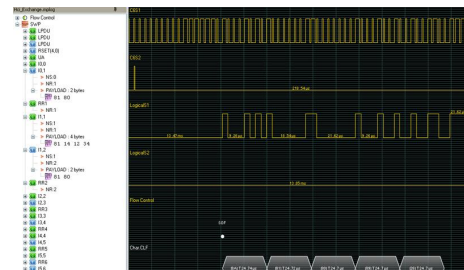
SOFTWARES :

The MP300 SC1 is supplied with the MPManager software, whose aim, is to open all of the tester's functionalities, accessible just with mouse clicks.

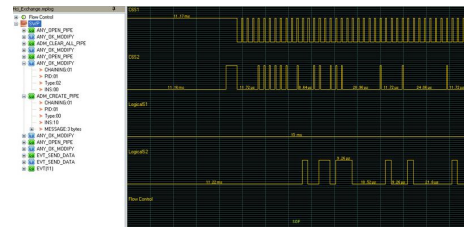
First, the user just needs to select the information he is interested in.
The choice is available contact per contact.



Starting the spy is just as simple as clicking a button. At the end of the session, the viewer is available.



Different levels of analysis are available.



The MP300 SC1 also allows you to perform physical measurement when trapping an exchange



ACCESSORIES :

Micropross supplies a complete range of accessories for the MP300 SC1 that include:

- A SIM to ISO converter
- Numerous shapes of probes, to use this tester with different types of contact smartcard readers and handsets
- A probe to enable spying sessions between a smartcard and an external reader
- A probe for oscilloscope connection

We also supply packages to extend the warranty of the tester. Please ask us for the maintenance contracts available.

