

MP300 MC1/MCL1

A price friendly and high quality production tool for dual interface components

- ◆ Provides interface for contact and contactless components
- ◆ Support of all the protocols that matter today²
- ◆ Support of all the protocols that matter today contact and contactless interfaces can be accessed simultaneously
- ◆

OVERVIEW :

The main features of the MP300 MC1/MCL1 are :

- Support of the ISO/IEC 7816-3 and –4 protocols
- Compatible with ISO/IEC 14443-3 and -4, ISO/IEC 15693, Mifare™, FeliCa™, Innovatron™ specifications
- Full implementation of the T=0, T=1 and T=CL protocols
- Support of numerous memory chips
- Endless possibilities of protocolary customisation
- Support of the fastest smartcards
- Compatible with wafers, micro-modules, smartcards, e-Passports, M2M components
- Fast hardware assisted data transmission mechanism, ensuring the maximum throughput for CPU and memory modules
- Open platform : integrate the MP300 MC1/MCL1 inside your own personalisation environment
- Compatible with the MVPi production machine interface

This production tester will typically be used in the following contexts

- OS loading, pre-personalisation, or personalisation of micro-modules and smartcards
- Personalisation of SIM, U-SIM, Mega-SIM, and banking cards

SPECIFICATIONS :

MP300 MC1 : Supported protocols

ISO/IEC 7816-3	
T=0 and T=1 protocols	100% implemented, managed by firmware
Hardware acceleration	Transmission and reception of characters managed by the MicroSmart technology
USB 2.0	
Available speeds	Low speed, full speed
Classes	ISO/IEC 7816-12, mass storage, custom protocols
SWP (ETSI TS 102 613 and TS 102 622)	
SWP transmission	Assisted by hardware
LLC layers support	ACT, CLT and S-HDLC realised by firmware

Evolvity	This tester can be upgraded to support future evolutions of the standard
MMC 4.1 / SD	
Data bits	1 and 4 data bits
File format	Can be implemented on demand
Low level commands	Available
Raw mode	
Gives the possibility to exchange frames without any protocolary encapsulation (all interfaces)	
Out of standards chip support	
Benefit from Micropross' experience in smart card programming	

MP300 MC1 : Programmable parameters

Physical parameters	
Voltages	
Vcc	0V to 6V
Vol	0V
Voh	1.65V to 5.5V
Vil	30% of Voh
Vih	70% of Voh
Frequency	
ISO 7816 and MMC/SD clock frequency	10kHz to 50MHz
ISO 7816 clock duty cycle	50%
Pin states	
All pins are independent from each other, and can be separately managed	
ISO 7816 communication parameters	
ETU width	From 1 to 4096 clock cycles (bit sampling adjustable)
BGT, initial ETU width	Adjustable in clock cycles
BWT, CWT, EGT, RGT, WWT	Adjustable in ETUs
Clock stop at high or low state	Adjustable
Clock stop tG and tH timings	Adjustable in clock cycles
Parity control	Can be forced to 0, 1, odd, even
Input parity error checking	Can be disabled
Pull-up resistor	4.7 Ω ; or 22k Ω ;
SWP communication parameters	
Available baudrates	212 kbps
SD current level detection level	Adjustable from 1nA to 1.1mA
Activation time, P2, P3 timings	Adjustable

MP300 MC1 : Available feature

Personalisation assisted by hardware
Do not lose a microsecond while sending data to the chip thanks to the hardware assisted data sending mechanism

MP300 MC1 : Memory extension

Possibility to extend the memory size available, by using a microSD card. This microSD card can also be used as reference memory, whose

MP300 MCL1 : Supported protocols

ISO IEC 14443-3 (proximity cards)	
Type A	Supported
Type B	Supported

Anticollision	Managed by firmware
T=CL protocol	Managed by firmware
Supported baudrates	106, 212, 424, 828 kbps Asymmetrical baudrates supported
B^v (Innovatron)	
Supported	
ISO/IEC 15693 (vicinity cards)	
Coding type	Manchester
Encoding modes	1 out of 4 1 out of 256
ISO 18000-3 Mode 1	
Supported	
Mifare TM	
Types supported	Classic Light Ultra Light Ultra Light C Many more
Encryption	Assisted by hardware
FeliCa TM (optional through a hardware add-on)	
Available baudrates	212 and 424 kbps
Scope of the FeliCa hardware option	Covers Test 1, Test 2, Issuance 0, Issuance 1, Issuance 2 (manufacturing, formatting, personalisation) Suitable for each step of the production of a FeliCa TM smartcard, including personalisation using Sony's proprietary protocol
Raw mode	
Gives the possibility to exchange frames without any protocolary encapsulation	
Out of standard chips	
Benefit from Micropross' experience in smartcard programming	

MP300 MCL1 : Programmable parameters

Physical parameters	
Field strength	Adjustable
Modulation index	From 0% to 100%(step : 1%)
Field rise time	0ms to 5ms (step 10µs)
Modulation rise and fall times	0µs to 10µs
Logical parameters	
Type A pause width	0 to 4.4µs
Frame waiting time	Adjustable in ETU
Type B framing (SOF, EGT, EOF, bit duration)	Adjustable in clock cycles
Communication speed	106, 212, 424, 848 kbps

MP300 MCL1 : SAM (Security access module) plug available

Three ISO 7816-3 compliant SIM chip readers are available on each MCL1 module (one per test head), in case security features are needed

MP300 MCL1 : Communication parameters

USB 2.0

TCP/IP 10/100 Mbps

RS 232

MP300 MCL1 : Software development

Remote development (the code is executed from the PC)

Elements available
MPSDK .NET library available
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)

MP300 MCL1 : User Interface

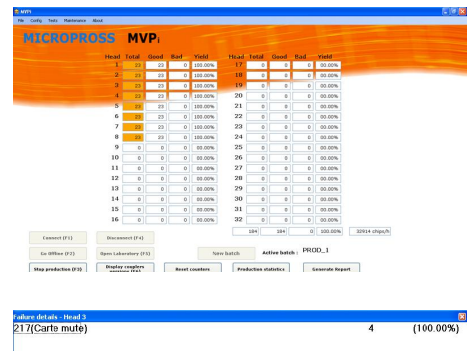
MPManager, MVPi

SOFTWARES :

The MP300 MC1/MCL1 can be accessed using several ways :

first, using the driver dll that we supply, which enables the user to access all functionalities of the MP300 MC1/MCL1 from any programming language that supports Dll
for users preferring to embed their code directly inside the MP300 MC1/MCL1, Micropross has designed the SORB interface, which completely encapsulates all programming tasks related to the management of embedded applications, and lets the user focus on the smartcard oriented code
finally, we can also supply our own user interface, MVPi, which elegantly conciliates convenience of use, high throughput and stability.

MVPi is able to handle up to 32 test heads at the same time, but upgrades are easily possible.



Head	Total	OK	FAIL	Rate	Head	Total	OK	FAIL	Rate
1	20	20	0	100.00%	17	0	0	0	0.00%
2	20	20	0	100.00%	18	0	0	0	0.00%
3	20	20	0	100.00%	19	0	0	0	0.00%
4	20	20	0	100.00%	20	0	0	0	0.00%
5	20	20	0	100.00%	21	0	0	0	0.00%
6	20	20	0	100.00%	22	0	0	0	0.00%
7	20	20	0	100.00%	23	0	0	0	0.00%
8	20	20	0	100.00%	24	0	0	0	0.00%
9	0	0	0	0.00%	25	0	0	0	0.00%
10	0	0	0	0.00%	26	0	0	0	0.00%
11	0	0	0	0.00%	27	0	0	0	0.00%
12	0	0	0	0.00%	28	0	0	0	0.00%
13	0	0	0	0.00%	29	0	0	0	0.00%
14	0	0	0	0.00%	30	0	0	0	0.00%
15	0	0	0	0.00%	31	0	0	0	0.00%
16	0	0	0	0.00%	32	0	0	0	0.00%
					221	240	0	100.00%	2024 09/24

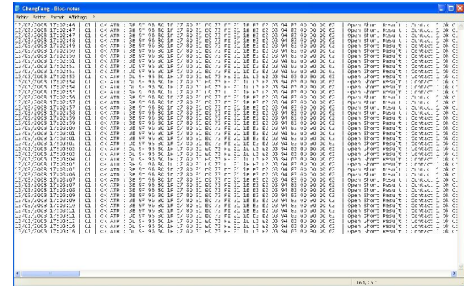
Value details - Head 3
 217 (Carte mute) 4 (100.00%)

Statistics are available, either separated by all test heads, or displayed for the whole system.

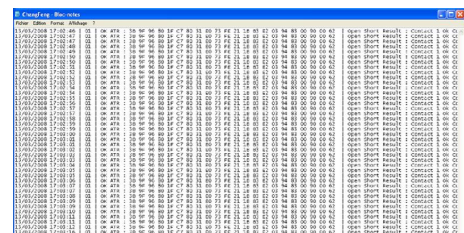
More statistics are available, showing the current test time, as well as the average one.

Details about production						
	Total	Good	Bad	Test time	Avg. test time	Test result
1	319	311	8	515	513	ATR : Card mute!!
2	319	311	8	515	513	ATR : Card mute!!
3	319	311	8	516	514	ATR : Card mute!!
4	319	311	8	515	512	ATR : Card mute!!
5	319	311	8	516	514	ATR : Card mute!!
6	319	311	8	516	513	ATR : Card mute!!
7	319	311	8	516	513	ATR : Card mute!!
8	319	311	8	516	513	ATR : Card mute!!
9						
10						

As smartcards are being produced, logfiles are also generated, that allow to keep track of the produced components. The content of this logfile is controlled by the user.



The MP300 MC1/MCL1 is Micropross's solution for industrials who are looking for high performance personalisation tools, for their dual interface products. One MP300 mother board, equipped with one MP300 MC1 module, and one MP300 MCL1 module, is able to personalise three different targets at the same time, all targets being processed independently from each other. The contact interface is taken care of by the MP300 MC1, which is a versatile next-gen contact smartcard personalisation coupler. Of course, pre-personalisation and OS loading tasks are supported. The contactless interface is dealt with by the MP300 MCL1, which is the most universal contactless production coupler in the industry today, thanks to its support of all the protocols that matter, including Sony's FeliCa technology. The combination of the MP300 MC1 and the MP300 MCL1 make the most price efficient, high performance, and versatile solution for the mass personalisation of dual interface smartcards.



ACCESSORIES :

Micropross supplies a complete range of accessories for the MP300 MC1/MCL1, that include :

- Various sizes of rack housing, who allow to protect the Micropross testers from any kind of danger
- Different types of antennas
- External smartcard readers
- Software for production machines (MVPi)
- FeliCa TM add-on, to open the production of FeliCa TM cards

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