

MP300 TCL1

Laboratory Range

The laboratory solution for contactless device characterization



- ✓ Contactless smart cards reader and tester for laboratory
- ✓ Numerous adjustable parameters
- ✓ Support of ISO 14443 A/B, Innovatron, Mifare™ (classic, light, ultralight), FeliCa™, ISO 15693 (Vicinity), ISO 18000-3 Mode 1
- ✓ Trace visualization & analysis
- ✓ Resonance frequency and chip impedance measurements

MP300 TCL1 Overview

Designed to satisfy the need of experts in chip design and smartcard validation, the MP300 TCL1 is the ideal tool for your laboratory.

Highly customizable, this device offers you a flexible solution to validate your contactless smart cards and their applications. The sequencer function allows a perfect repeatability of test scenarios. The embedded spy function will allow you to understand the transactions between your smartcard and the itself. Moreover, you will benefit from the resonance frequency and the chip impedance measurement to make your characterization even more accurate.

Driven by the powerful MPScope software suite, the MP300 TCL1 is the tool you need to speed up your chip development and characterization.

MP300 TCL1

Technical specifications

■ Protocols

ISO/IEC 14443-3 Type A/B (proximity)

Firmware managed anticollision, T=CL protocol handling

Innovatron

ISO/IEC 15693 (vicinity)

ISO 18000-3 Mode 1

Mifare™

Support of Mifare Classic, Light, Ultra-light

Felica™ 212/424 kbits/s

Polling, read and write features. Security management add-on available on demand

Raw mode

Gives the possibility to exchange frames without any protocolary encapsulation

Support of out of standard chips

Benefit from Micropross' experience in smartcard programming

■ Programmable parameters

Physical parameters

Field strength
Modulation index (0 to 100% step 1%)
Field rise time (from 0 to 5ms step 10us)
Carrier frequency (from 12.56 MHz to 14.56 MHz step 100 Hz)
Modulation rise and fall times (from 0 to 10us)

Timings

Type A pause width (0 to 4.4 us)
Frame waiting time (set in ETU)
Type B framing: SOF, EGT, EOF, and each bit duration, independantly programmable in clock cycles (74us)
Communication speed: 106kbit/s, 212kbit/s, 424 kbit/s, 848 kbit/s
TR2 timing (with sequencer)

■ Spy feature

Visualisation of the exchanges with MPScope Viewer (file format available upon request)

Resolution: 20ns

Visualisation of carrier/sub carrier detection, sequences, characters, phase changes, I/O direction and much more

■ Sequencer

Have the total control over the timings surrounding your test scenario using the sequencer

■ Others

Communication

USB 2.0

TCP/IP 10/100 Mbits/s

Development

Development in C,C++, VB, Java, .NET environments

■ Tests

Automatic testing

Send type A command, wait, send type B command and receive answer (for type B cards)

Send type B command, wait, sent type A command and receive answer (for type A cards)

Switch on field, wait, send request command (A or B), receive answer

Send request, wait, send request, receive the answer

Antitearing

PICC reset characterization

Check minimum FDT (frame delay time)

Response time measurement (FDT, TR0, TR1)

Sending out of standard frames

Sending misformed blocks (wrong number of bits)

Retro modulation ratio measurement

Distance simulation testing

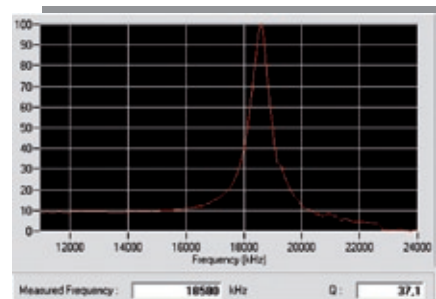
Separated RX channel allowing communication using a RF amplifier

■ Physical measurement

Chip impedance (done at 13.56MHz)

Resonance frequency and Q factor (done from 11MHz to 24 MHz)

Example of resonance frequency measurement done with our MPScope user interface :



■ Communicates with and tests :

Wafers

Micro-module

e-Passport

RFID tags (13.56MHz)

Inlays

Prelaminates

Smartcards

■ Our service

We provide you not only an useful product but also an efficient technical support and our experience. Micropross is at your disposal for any user requirement.

Micropross is an ISO 9001 V 2000 certified company.