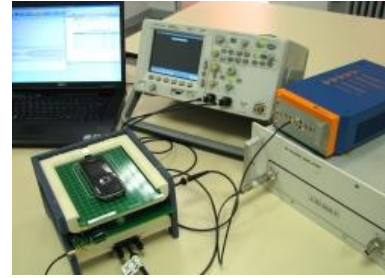


Universal Contactless Bench

A cutting edge apparel for NFC and contactless object testing

- ◆ Tool to perform ISO/IEC 10373-6, ICAO and NFC tests
- ◆ Supplied with a complete set of antennas and accessories
- ◆ Sturdy support
- ◆ Execution of smartcard, e-Passport and NFC target testing performed using an automatised software



OVERVIEW :

The main features of the Universal contactless bench are :

- Ideal tool to perform RF testing based on the proximity technology
- Completely implements the recommendations of the ISO/IEC 10373-6, ICAO, and ECMA 356 (NFC) specifications
- Presence of an automation software, allowing automatic performing of smartcards, e-Passports and NFC devices testing
- Compatible with NFC Forum defined test cases
- Complete toolset, allowing to perform each tests described inside the specifications
- Performs smartcard/tag as well as reader testing
- Uses an oscilloscope and a RF amplifier
- Operates with the MP300 TCL1 and MP300 TCL2
- Generation of comprehensives test reports
- Supplied with all necessary accessories (antennas, coils, references)

This tool will typically be used in the following contexts :

- Interoperability testing
- RF characterisation of a tag, e-Passport, smartcard, or NFC device
- RF characterisation of a reader

SPECIFICATIONS :

Included components

Test PCD antenna (106 kbps and higher data rates)
Calibration setup board
Two sense coils
Calibration coil
Reference PICC
Sense coil balance board
Reference PICC / reference e-Passport for load modulation test
Loaded reference PICC

High impedance probes
CD containing the user manual
Automatization software, with step by step guidance on how to conduct the testing

Supported tests for smartcards, e-Passports and NFC devices

Load modulation measurement
Frame timings measurement
Verify the ability of an e-Passport or a PICC to receive PCD commands
Alternative magnetic field test
Stability test

Supported tests for smartcards and e-Passports readers, and NFC initiators

Ability of a PCD to power a PICC/e-Passport/NFC device
Minimum load modulation signal from the PICC/e-Passport/NFC device detection
Qualification of the PCD operating volume
Timings measurement
Waveform measurement

Test environment tuning

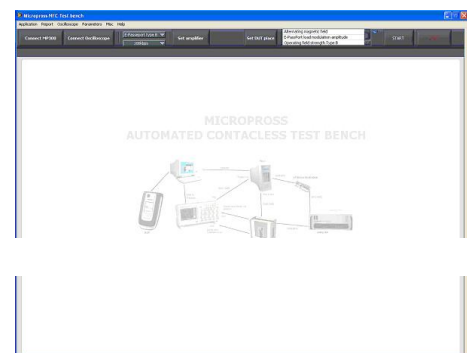
Magnetic field measurement
Antenna tuning
Symetry checking

Conditions of use

A digital sampling oscilloscope and a RF amplifier are needed.
Please ask your nearest Micropross representative for more information

SOFTWARES :

The Universal contactless bench is supplied with an automation software, which allows to perform all target oriented tests in a completely automated manner.



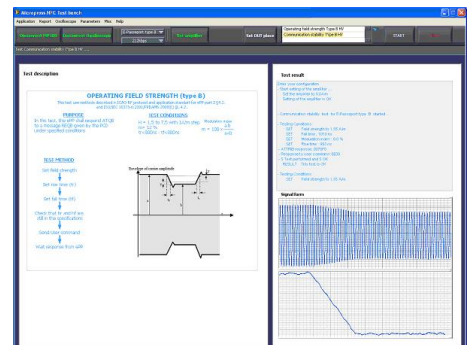
This software is available in three different versions :

- ISO 10373-6
- ICAO
- ECMA 356

Depending on which version is selected, the list of available tests will be different. Implemented tests cover 106.212, 424 and 848 (ISO 10373-6 and ICAO only) kbps. The default software covers the lowest baudrate, and an option can be purchased from Micropross, to unlock all other baudrates. The automated software helps positioning the device under test in the initial setup phase.



Once the initial setup phase and the selection of the tests is done, the automation software will drive the oscilloscope, the MP300 tester, and the RF amplifier, to perform tests in an automatic manner. Information on the result is given on the fly.



Once all tests are over, a test report is generated, informing the user on what went wrong during testing.

TEST CONDITIONS

Date: 21/05/2009 11:20
Software version: 1.0.0
Operator: Joo

Product identifier	39123
Type	E-Flanquet type B
Company	Micropross

Average Temperature: 28.5°C
Balance Adjustment: Not performed

Measurement instruments:
Oscilloscope Agilent MSO 8032, reference CSC C3... last calibration 05/09
Remark: B-Parquet remark

ICAO Communication stability - 20121

Field Strength (ΔA)	Rise Time (μs)	Fall Time (ns)	Inductance Index (%)	Number of successful tests
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Conditions C (P, D)	1104	1002	11:14	0
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ACCESSORIES :

Micropross supplies with the Universal Contactless Bench all necessary accessories to perform all tests th

Those accessories include antennas, measurement probes, coils, references PICCs. In order to avoid the hassle of searching for the right measurement devices, Micropross can also provide RF amplifiers and oscilloscopes, thus ensuring you of a perfect compatibility and ability to perform all tests. It is also possible for our team of software engineers to implement your own oscilloscope, in case it would not be already supported. Please ask Micropross for more information