



“In a more connected world, citizen security needs, evolution of payment means and communication between people are constantly evolving.

## **Our mission**

Since 1986, Smartware is a key actor in the business of personalization and test of contact/contactless secure elements (Smartcard, NFC microSD, M2M).

Smartware is committed to support smartcard production leaders and smartcard equipment manufacturers for the development of their needs, whether technological, industrial, or geographical.

## **Our commitments**

### **Increased Performance**

Boost your production and increase your yields

### **Modular Solutions**

Cover all various models and technologies

### **Scalable Equipments**

Ready for memory capacity increase of your secure elements

### **Enhanced Security**

Preserve the security of sensitive data

### **Investment Protection**

Rationalize equipments, tools, and human resources

World leader  
Innovation

## They trust SMARTWARE

### CARD AND CHIP MANUFACTURERS

Austria Card  
Bundesdruckerei  
Eastcompeace  
Etisalat  
Gemalto/Thales  
Giesecke & Devrient  
Hengbao  
HID Global  
Infineon  
NXP  
Idemia  
Paragon ID  
Samsung  
ST Microelectronics  
Valid  
...

### EQUIPMENT MANUFACTURERS

Atlantic Zeiser  
Cardmatix  
Datacard Group  
Emperor  
ESIM  
IAI  
JinGuan  
Matica  
Mingsen  
Muehlbauer  
NBS Technologies  
Piotec  
Ruhlamat  
Youlian  
...

### TOOLS SUPPLIERS

Barnes  
Clear2Pay/Integri  
ELITT  
FIME  
Galitt  
JRC  
SRC  
...

### DISTRIBUTORS

Delon Technologies - RP China (Suzhou)  
Nipponen - Japan (Buzen - Fukuoka)



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Website: [www.smartware.fr](http://www.smartware.fr)

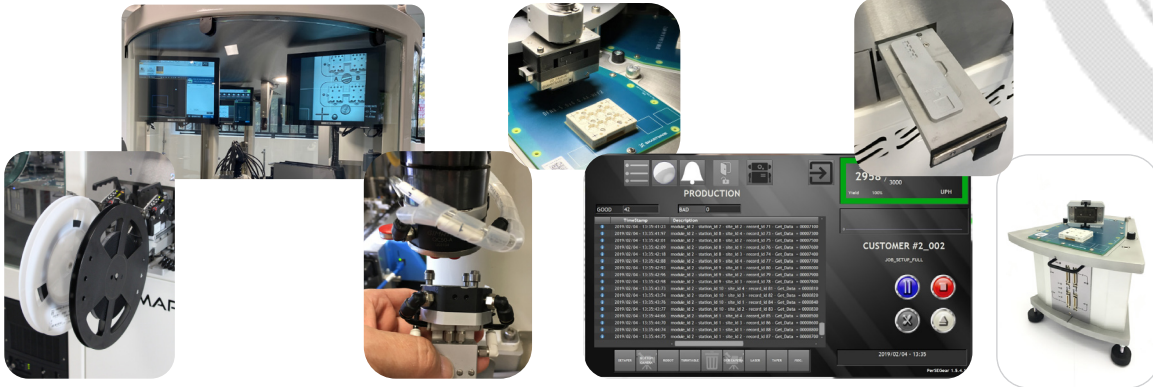
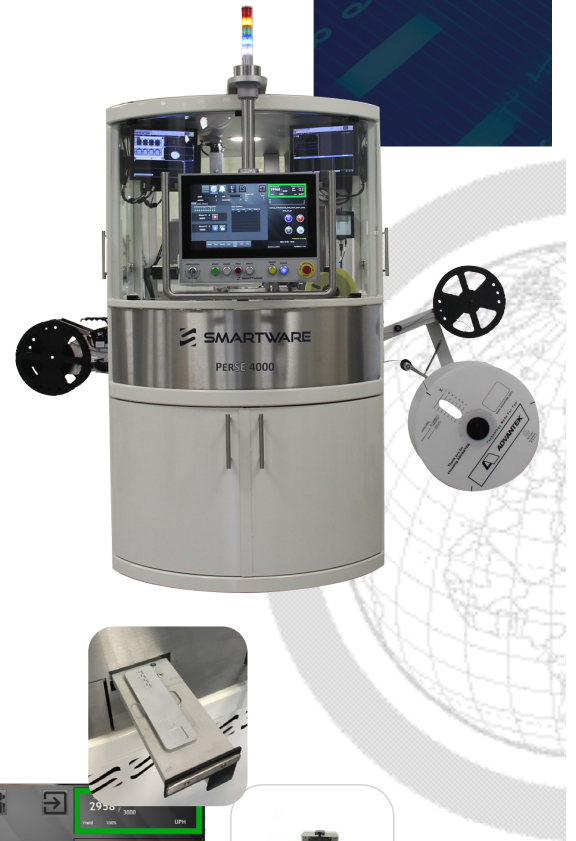


Availability  
Evolutivity

# PerSE Series

PerSE for Personalization of Secure Element is a modular Industrial Equipment capable of Electrically Testing/ Personalizing, Marking in sequence Embedded Secure Element (eSE), with large quantity of fixed and variable data.

Based on the use of 4-Axis Arm Robot and Innovative concept of Personalisation Turn Table which limits to the minimum, transportation of sensitive and fragile eSE parts during the all process flow



## Increased Performance

Higher Throughput / Higher Yield (4200 and 5500 UPH version available – up to 40 programming heads), boost your production and increase your yields

## Scalable Equipments

Cover all various models and technologies, scalable, compact, easy to operate and maintain

## PerSEGear™ software suite

An Open Software Architecture, PerseGear offers an user-friendly interface optimized for industrial and secure elements production.

## Enhanced Security

Optical inspection and control of parts at each step

## Investment Protection

Rationalize equipments, tools, and human resources.

Possibility to mix and manage different types of programming plates on the same Turntable.



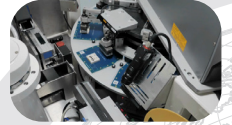
# PerSE series



## Optimized part Handling

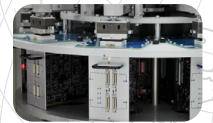
On PerSE system, secure elements are only transported 2 times during normal process flow System.

PerSE riskless process reduces part damaging and increases machine generat throughput.



## Electrical Parametric test and Personalization

Directly Integrated into the Turntable, just under each Programming Plate, Smartware's Testers (US-CMT2), allow various advanced parametric testing and personalization of Secure Element.



## Marking system

One station of the Turntable is dedicated for Laser Marking operation.

With KEYENCE Laser (hybrid, UV or Green) and its automatic working distance engraves with high resolution, all types of components, without impacting the throughput nor damaging



## Vision systems

With a permanent quality inspection, each vision system displays results and shows live capture.



## Sampling Station & Sorting Buffer

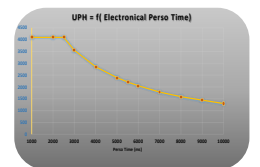
At any moment or automatically defined in Job Setup, the Operator can decide to select part(s) for manual sampling.

Sorting Buffer (JEDEC Tray Like) is used when respect of sequence is required in order to temporarily store eSE parts.



## Throughput

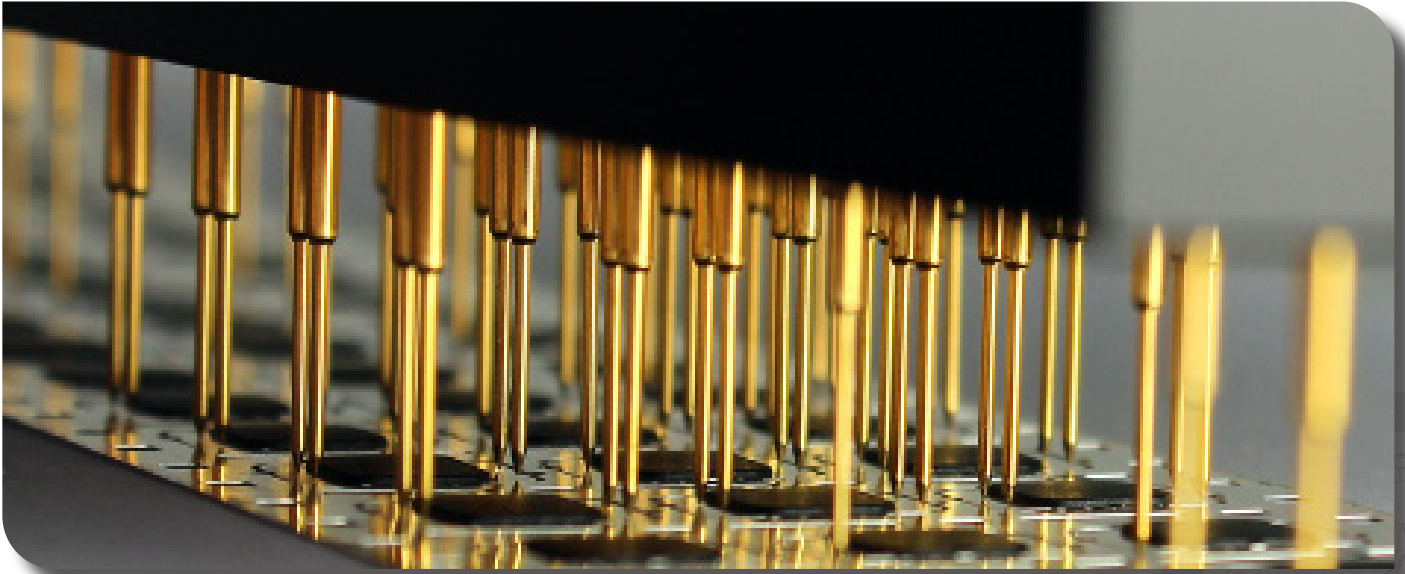
With up to 40 programming heads, a higher Throughput is ensured with a 4200 UPH for 22 seconds personalization time and 2 seconds verify after marking.



Be ready for the PerSE experience !

contact us at [sales@smartware.fr](mailto:sales@smartware.fr)  
[www.smartware.fr](http://www.smartware.fr)


# ULTRASMART™ SOLUTIONS FOR CARD AND CHIP MODULE TEST IN PRODUCTION ENVIRONMENT



Based on longterm relationship with silicon manufacturers, Smartware has developed a complete open and configurable product range dedicated to the test of card and chip module.


## Contact testing solution

## Contactless testing solution



**US-4TI: CMT 4 heads**

- Based on US-CORE V5 and 2x US-CMT2
- Test and personalization of card and module
- Robust design for industrial environment
- Special test & measure library for R&D usage



**US-4TP: CLT 4 heads**

- Based on US-CORE V5 and 2x US-CLT3
- Test and personalization of card and module
- Robust design for industrial environment
- Special test & measure library for R&D usage

## US-Rack 4U/48F

## US-Rack 5U/84F



- 5/10 slots
- Integrated GE switch
- Integrated 320W DC power
- Dimensions: (267mm x 176mm x 349mm)
- Weight: 4.8 kg



- 10/20 slots
- Integrated GE switch
- Integrated 640W DC power
- Dimensions: (447.6mm x 227.5mm x 435.3mm)
- Weight: 8.6 kg

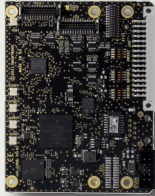
Rack Assembly	3U/8F	4U/48F Integrated GE Switch	5U/84F Integrated GE Switch
US-4TP: US-CLT3 4 heads	1 (4 heads P)	5 (20 heads P)	10 (40 heads P)
US-4TI: US-CMT2 4 heads	1 (4 heads I)	5 (20 heads I)	10 (40 heads I)

X: number of assembly (I: number of contact head, P: number of contactless head)

# ULTRASMART™ HARDWARE MODULES FOR CARD AND CHIP MODULE TEST IN PRODUCTION ENVIRONMENT

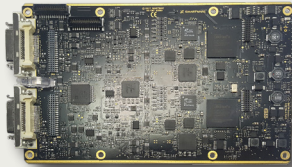
All our hardware modules are based on UltraSmart™ modular architecture proven platform that consistently demonstrates superior productivity and reliability.

## US-CORE V5 - CPU Board



- 32bit 240 MHz processor
- 256MB SDRAM for applications and data
- 8MB Flash memory for OS and resident applications
- Ethernet 100 Mbps (UDP & TCP/IP)
- RS-232
- Support up to 2 test-dedicated daughter boards

## US-CMT2 - 2 contact testing interfaces

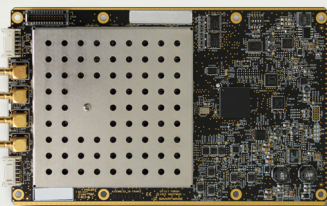


- FPGA-based contact interfaces
- ISO 7816 (T=0 and T=1)
- Memory chips (SLExxxx, ATxx, ST13xx)
- Adjustable communication parameters (Frequency, ETU, Timings...)

### Parametric test features

- Open Short & Leakage Test on all contacts
- Static and dynamic power consumption (FIMV, FVMI)
- C7 level monitoring
- Special Test & Measurement library (Tearing generation, accurate timing measurement...)

## US-CLT3 - 2 contactless testing interface



- FPGA-based fully digital contactless interface
- ISO 14443 A/B up to 3.4 Mbps (VHBR)
- ISO 15693
- Mifare™, Mifare+™
- FeliCa™
- Adjustable signal and communication parameters (Carrier amplitude, Modulation index...)

### Parametric testing features

- Resonance frequency and quality factor measurement
- Chip input capacitor measurement
- Antenna coil inductance measurement
- Retro modulation voltage measurement
- Static power consumption (FIMV, FVMI)

# ULTRASMART™ RACK ENCLOSURE

Smartware provides a complete range of rack enclosure for desktop application or industrial production environment. Robust, reliable and easy to integrate, each model integrates a fan-cooling system and Gigabit Ethernet Switch (4U/5U models).

## US-Rack 3U/8F



- 1/2 slot(s)
- Board 220mm only
- External 60W DC power
- 140 x 63 x 255 mm
- Weight: 1.0 kg

## US-Rack 6U/16F



- 8 slots
- Board 160mm only
- External 180W DC power
- 197 x 113 x 284 mm
- Weight: 1.9 kg

## US-Rack 4U/48F



- 5/10 slots
- Integrated GE switch
- Integrated 320W DC power
- 267 x 176 x 349 mm
- Weight: 4.8 kg

## US-Rack 5U/84F



- 10/20 slots
- Integrated GE switch
- Integrated 640W DC power
- 447.6 x 227.5 x 435.3 mm
- Weight: 8.6 kg

## US-Rack capacity

		US-Rack	3U/8F	4U/48F	5U/84F
		Assemblies	No integrated GE Switch	Integrated GE Switch	Integrated GE Switch
Production		USN1se-1M	Up to 2 heads I+P	Up to 10 heads I+P	Up to 20 heads I+P
		USN1se	Up to 2 heads I+P	Up to 10 heads I+P	Up to 20 heads I+P
		USN3se	Up to 6 heads I+P	Up to 30 heads I+P	Up to 60 heads I+P
		US-4I_RJ	Up to 8 heads I	Up to 40 heads I	Up to 80 heads I
		US-4P_SMB	Up to 8 heads P	Up to 40 heads P	Up to 80 heads P
		US-4P4I	Up to 4 heads I+P	Up to 20 heads I+P	Up to 40 heads I+P
		US-8I_RJ	Up to 8 heads I	Up to 40 heads I	Up to 80 heads I
		US-4SAM	Up to 4 slots I	Up to 20 slots I	Up to 40 slots I
Test		US-4TP	Up to 4 heads P	Up to 20 heads P	Up to 40 heads P
		US-4TI	Up to 4 heads I	Up to 20 heads I	Up to 40 heads I


X: number of assemblies (I: number of contact heads, P: number of contactless heads)



# ULTRASMART™ SOLUTIONS FOR CARD AND MODULE PRODUCTION

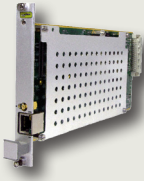
The Smartware's longterm relationship with silicon manufacturers and equipment providers is a guarantee that all our smartcard personalization solutions fulfil chip card manufacturing requirements in term of personalization speed, production yield and versatile communication interfaces.

## US<sup>nano</sup> based products




**USN1se-1M**

- Dual interface perso coupler
- Personalize telecom, banking and ID card
- Personalize contact and contactless module
- Personalize SWP NFC μSD
- Ultra-compact design




**USN1se**

- Dual interface perso coupler
- Personalize telecom, banking and ID card
- Personalize contact and contactless module
- Design for Smartware racks
- Solution to upgrade PowerFACET in Datacard MPR3000 machine




**USN3se**

- 3 Dual interface perso couplers
- Personalize telecom, banking and ID card
- Personalize contact and contactless module
- Design for Smartware racks



**MX3se-3I3P**


- 3 Dual interface perso couplers
- Personalize telecom, banking and ID card
- Dedicated to Datacard/MX smartcard module



**MX6se-6I**


- 6 contact interface perso couplers
- Personalize telecom, banking and ID card
- Dedicated to Datacard/MX smartcard module

## US-CORE based products



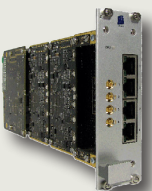
**US-4I\_RJ**

- Based on 1xUS-CORE V5 and 2xUS-ICC2
- 4 contact heads with basic parametric testing feature
- Cost-effective solution for telecom and chip card module personalization



**US-4P**

- Based on 1xUS-CORE V5 and 2xUS-PICC2
- 4 contactless heads
- Inlay and contactless chip card module personalization




**US-4P4I**

- Based on 1xUS-CORE V5, 2xUS-PICC2, and 2xUS-ICC2
- 4 contact/contactless heads
- Personalization of dual interface card and chip card module



**US-4SAM**

- Based on 1xUS-CORE V5 and 2xUS-ICC2
- 4 contact SAM slots for secured personalization solution



**OEM assembly**

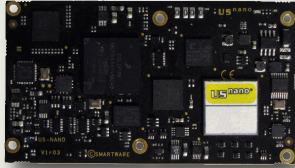
- Based on 1xUS-CORE V5, US-ICC2 and US-PICC2
- Customized assembly to fit all requirements



# ULTRASMART™ HARDWARE MODULES FOR CARD AND CHIP PRODUCTION

All our hardware modules are based on modular architecture UltraSmart™ proven platform that consistently demonstrate superior productivity and reliability.

## US<sup>nano</sup> all-in-one module



- 32bit 240 MHz processor
- 64 MB SDRAM for applications and data
- 8 MB Flash memory for OS and resident applications
- Ethernet 100 Mbps (UDP & TCP/IP)

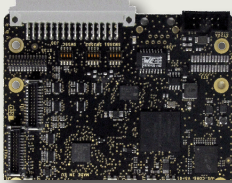
### Contact interface

- ISO 7816 (T=0 and T=1)
- SWP/SHDLC up to 1.6 Mbps
- SD/MMC x1/x4 bit / 50MHz + hardware duplication
- Memory chips (SLExxxx, ATxx)
- Open/Short test on all contacts
- Adjustable parameters (Vcc, Frequency, ETU, S2 threshold, Timings)

### Contactless interface

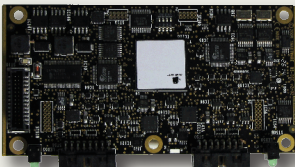
- ISO 14443 A/B up to 848 kbps, ISO 15693 (for USNse model only)
- Mifare™, Mifare+™, FeliCa™
- Possibility to personalize chip card contactless module in contact

## US-CORE V5 - CPU Board



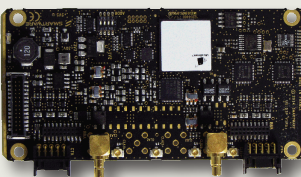
- 32bit 240 MHz processor
- 256MB SDRAM for applications and data
- 8MB Flash memory for OS and resident applications
- Ethernet 100 Mbps (UDP & TCP/IP)
- RS-232
- Support up to 4 production-dedicated daughter boards

## US-ICC2 - 2 contact interfaces



- FPGA-based contact interfaces
- ISO 7816 (T=0 and T=1)
- SWP/SHDLC up to 1.6 Mbps
- Memory chips (SLExxxx, ATxx)
- Open/Short test on all contacts
- Adjustable parameters (Vcc, Frequency, ETU, S2 threshold, Timings)
- Integrated Electrostatic discharge suppressors

## US-PICC2 - 2 contactless interfaces + 2 simplified contact interfaces



### Contactless interfaces

- FPGA-based contactless interfaces
- VHBR ready, ISO 14443 A/B
- ISO 15693, Mifare™, Mifare+™, FeliCa™
- Programmable RF field amplitude, RF demultiplexer

### Contact interfaces

- ISO 7816 (T=0 and T=1), Memory chips (SLExxxx, ATxx)



# SMARTWARE

# USN1se / USN2se / USN3se

## The second evolution of the US<sup>nano</sup>

### More power, more flexibility

Smartware present the second generation of US<sup>nano</sup>-based products.

USN1se (1 combi head), USN2se (2 combi heads), and USN3se (3 combi heads) are designed to address all combi card whatever is the chip manufacturer or the antenna technology.

The boosted RF front-end and the FPGA-based combi interface coupled with a powerful CPU are the fastest and reliable solution to personalize all the cards and all the chip card modules.

### Overview

The USN1se/USN2se/USN3se are complete solutions for the personalization of contact/contactless card and chip card modules. They are designed to fit into Smartware rack housing no matter the number of personalization heads required.

The USN1se/USN2se/USN3se are FCC certified which is mandatory for RF equipment to be used in United States. The USN1se/USN2se/USN3se are also CE certified.

### Protect your investment

The USN1se/USN2se/USN3se follow the “Pay for what you use” SMARTWARE’s concept: Buy today one model and activate other functionalities later.

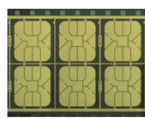
### Features

- Supported protocols: ISO 7816-3, SWP/SHDL Memory Card, ISO 14443, ISO 15693, MIFARE Plus™, FeliCa™
- Personalization of contact/contactless chip card module
- Open/Short & Continuity test for smartcards and contact modules
- 50Ω RF output impedance
- FCC/CE certified
- 100% software compatible with existing applications
- Same size/connectors as previous USN assemblies

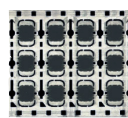
### Addressed market



dual interface card



dual interface module



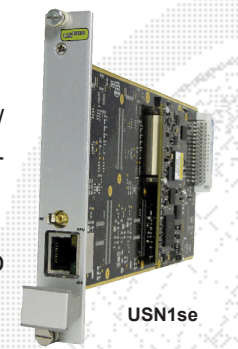
contactless module



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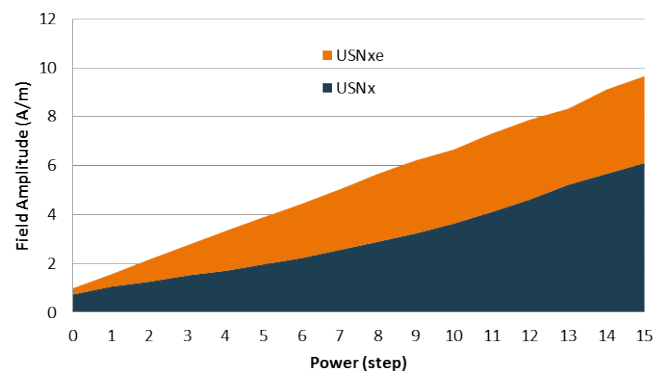


USN3se



USN1se

Unloaded field amplitude on T50 antenna



# SMARTWARE

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www.smartware.fr

# US-NANO Box second evolution

## More power in one box

Smartware presents the second evolution of the US<sup>nano</sup>-based products. The US-NANO Box second evolution which embeds one USN1se-1M is an ultra-compact design combined with the power of multimedia communication interfaces.

The boosted RF front-end and the FPGA-based combi interface coupled with a powerful CPU are the fastest and reliable solution to personalize all the contact and contactless cards and also standard microSD or contactless NFC microSD.



## Overview

The US-NANO Box second evolution is a complete desktop solution for the personalization of contact/contactless card, chip card module and NFC microSD.

The US-NANO Box evolution also provides parametric testing features for both contact smartcard and microSD.

It can be used as desktop equipment or SDK to develop applications for USN1se/USN2se/USN3se.

## Protect your investment

The US-NANO Box second evolution follows the “Pay for what you use” SMARTWARE’s concept: Buy today one model and activate other functionalities later.

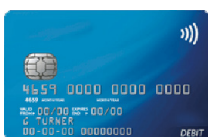
## Features

- Supported protocols: ISO 7816-3, SWP/SHDLC, SD 2.0, Memory Card, ISO 14443, ISO 15693, MIFARE Plus™, FeliCa™
- Personalization of contact/contactless chip card module
- Open/Short & Continuity test for smartcard and SD card
- 100% software compatible with existing application
- 50Ω RF output impedance

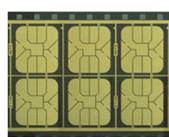


US-NANO Box second evolution with the MSC 3 slots contact coupler and the T73 antenna

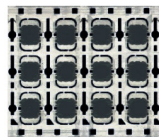
## Addressed market



dual interface card



dual interface module



contactless module



SWP NFC microSD



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# MX3se-3I3P & MX6se-6I

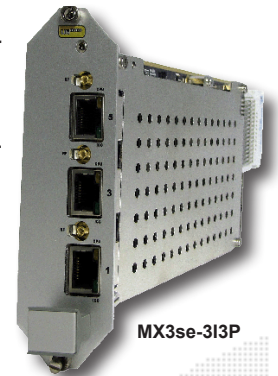
## The second evolution of the US<sup>nano</sup> for Datacard MX System

### More power, more flexibility

Smartware has released the second evolution of the US<sup>nano</sup>-based products for Datacard MX Card Issuance System.

The MX3se-3I3P (3 combi heads) is designed to address all combi cards whatever are the chip manufacturer or the antenna technology.

The boosted RF front-end and the FPGA-based combi interface coupled with a powerful CPU are the fastest and more reliable solution to personalize all the cards.



MX3se-3I3P

### Overview

The MX3se-3I3P is a complete solution for the personalization of contact/contactless cards. It is specially designed to fit into Datacard MX smartcard module.

The MX3se-3I3P is FCC certified which is mandatory for RF equipment to be used in United States. It is also CE certified.

The MX6se-6I (6 contact heads) is available with same functionalities as MX6e-6I.



MX6se-6I

### Protect your investment

The MX3se-3I3P and MX6se-6I follow the "Pay for what you use" SMARTWARE's concept: Buy today one model and activate more functionalities later.

### Features

- Supported protocols: ISO 7816-3/4 up to 20MHz, SWP, Memory Card, ISO 14443 A/B up to 848 kbps, ISO 15693, MIFARE Plus™, FeliCa™
- Open/Short & Continuity test for smartcards
- 50Ω RF output impedance
- FCC/CE certified
- 100% software compatible with existing application
- Same size and same connectors as previous MX3e/MX6e products

### Addressed market



dual interface card



Datacard MX6100



# SMARTWARE CQM SOLUTIONS

## Electromagnetic and RF communication tests before shipping cards to personalization service

Tests requested by



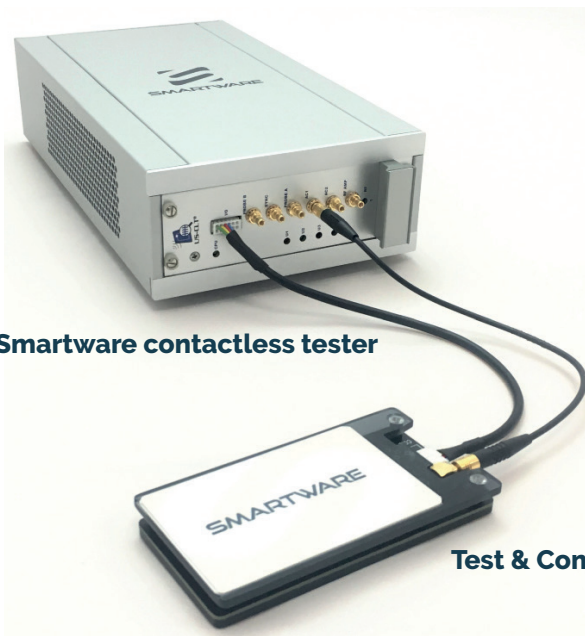
Financial card producers have to prove to Mastercard or Visa that, for each issued banking card, it has successfully completed a series of tests including those related to chip card quality.

MasterCard specifies in the document CQM (Card Quality Management) some requirements in order to ensure the quality of the product during the manufacturing phases.

Smartware offers solutions for desktop usage and for milling/implanting machine ensuring a complete coverage of required tests related to electromagnetic characteristics and RF functional tests:

- Resonance frequency
- Q factor
- ATS & Reading Current

### SmartQC CQM Software for Resonance frequency Q factor measurement, and Reading Current



Smartware contactless tester

Test & Communication antenna



### Smartware contactless tester specifications

Communication contactless interface for both chip card module and contactless card

- ISO 14443-3/4 type A/B up to 848 Kbps, ISO 15693
- Proprietary format: Mifare™, Mifare+™, FeliCa™, I-Code™
- Envelope data acquisition and timing measurement (optional)

Parametric tests for CQM test

- Resonance frequency & Q Factor from 150ms to 1.8s depending of the measurement ranges
- ATS & Reading Current



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www.smartware.fr

# US-4P & US-4P4I

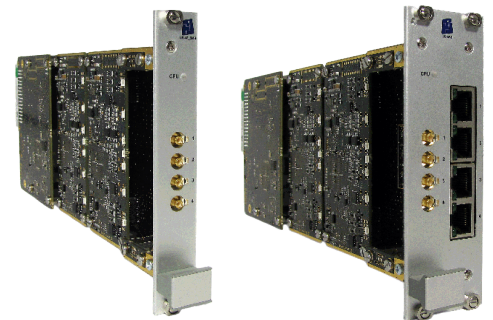
## US-PICC2 based assemblies for card, module, and inlay production

### More power than before and even more

Smartware is pleased to introduce assemblies based on the new US-PICC2 board.

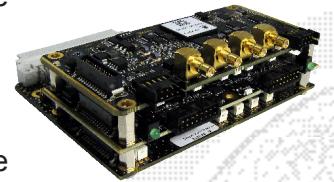
The US-4P\_SMB (4 contactless heads) and US-4P4I (4 combi heads) are designed to address all contactless cards whatever is the chip manufacturer or the antenna technology.

The multiple functionalities of the US-4P\_SMB and the US-4P4I allow the personalization of contactless/combi cards & chip card modules, and also the personalization of rfid inlays while ensuring performance, reliability and flexibility.



US-4P\_SMB  
4 contactless heads assy

US-4P4I  
4 combi heads assy  
(with US-ICC2)



US-PICC2 with US-ICC2 in  
OEM integration

### Overview

The US-4P\_SMB is an assembly using two US-PICC2 boards coupled with the powerful US-CORE V5. This product provides four 50Ω contactless interfaces.

The US-4P4I is an assembly using two US-PICC2, two US-ICC2 and one US-CORE V5. This product provides four combi interfaces.

Both products have been designed to be mounted into Smartware rack housings.

Same assemblies are available for OEM integration to fit into all manufacturing equipment.

### Protect your investment

The US-4P\_SMB and the US-4P4I assemblies follows the “Pay for what you use” SMARTWARE’s concept: Buy today one model and activate other functionalities later.

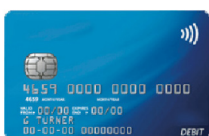
### US-PICC2 Features

- Supported protocols: ISO 14443, VHBR, ISO 15693, MIFARE™, MIFARE Plus™, FeliCa™
- Personalization of contactless chip card module
- 50Ω RF output impedance
- Adjustable RF output power
- RF demultiplexer 1:2 for each interface
- Same size as US-PICC V1

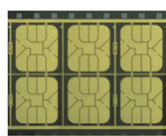
### US-ICC2 Features

- Supported protocols: ISO 7816, SWP/SHDL, Memory cards
- Personalization of contact chip card module
- Contact voltage up to 5.5Volts
- Adjustable communication up to 20MHz
- Open/Short test
- Same size as US-PICC2

### Addressed market



dual interface card



dual interface module



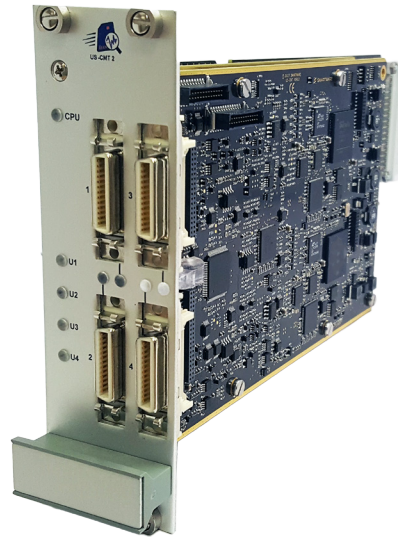
contactless module



rfid inlay



# US-CMT2: Contact tester for smartcards, modules and secure elements



## Overview

Smartware presents the evolution of the US-CMT based products. The US-CMT2 is a polyvalent contact tester.

Combined with an US-Core v5 motherboard, it's the fastest and more reliable solution to test and personalize all the contact cards, modules, SD cards and secure elements.

It's easy to integrate in machines for test in production. It can also be used as a desktop equipment for R&D and laboratories.

## Protect your investment

The US-CMT2 follows the "Pay for what you use" SMARTWARE concept: buy today one model and activate more functionalities later.

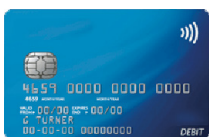
## Supported protocols

- ISO 7816-3
- SWP/SHDL
- Memory cards
- I<sup>2</sup>C
- SPI
- SD
- USB

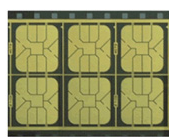
## Testing features

- Open/Short test
- Consumption and leakage currents
- Drivability test
- Current & Voltage measurement
- Tearing simulation
- Time measurement
- Parity errors generation

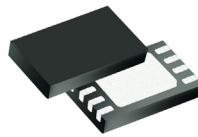
## Addressed market



contact card



contact module



Secure Element



SWP NFC microSD



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[www.smartware.fr](http://www.smartware.fr)

# MX-Nano Dual Interface

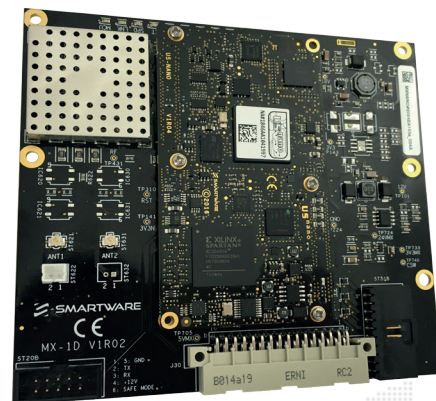
## The evolution of the MX-CORE for Datacard MX System

### More power, more flexibility

Get performance and versatility with the MX-Nano coupler: an ultra-compact design combined with the power of multimedia communication interfaces.

The MX-Nano is designed based on UltraSmart™ proven platform that consistently demonstrate superior productivity and reliability.

The MX-Nano is ideal for issuers of any market who wish to profit of latest technologies and top performance while having a reliable and flexible equipment.



### Overview

The MX-Nano is a complete solution for the personalization of contact and contactless card. With the same size as an MX-CORE, it is specially designed to fit into Datacard MX smartcard module.

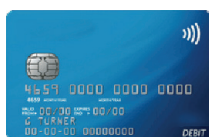
### Protect your investment

The MX-Nano follows the "Pay for what you use" SMARTWARE's concept: Buy today one model of MX-Nano and activate other functionalities later.

### Features

- ISO 7816-3/4 up to 20MHz, SWP, Memory Card
- ISO 14443-3/4 type A/B up to 848 Kbps, ISO 15693
- Proprietary format: Mifare™, Mifare+™, FeliCa™, I•Code™
- Continuity test
- 100% software compatible with existing application
- Same size and same connectors as previous MX-Core version Contact or Contactless

### Addressed market



contact interface card



Datacard MX System  
(with Toaster rack)



# SMARTWARE

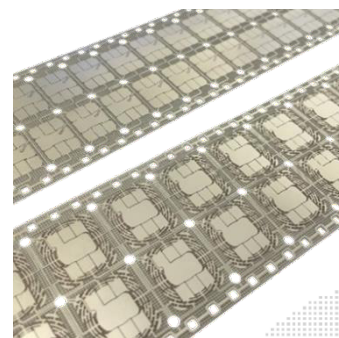


New

# Coil on Module Test Solution

## For

# Module Handler



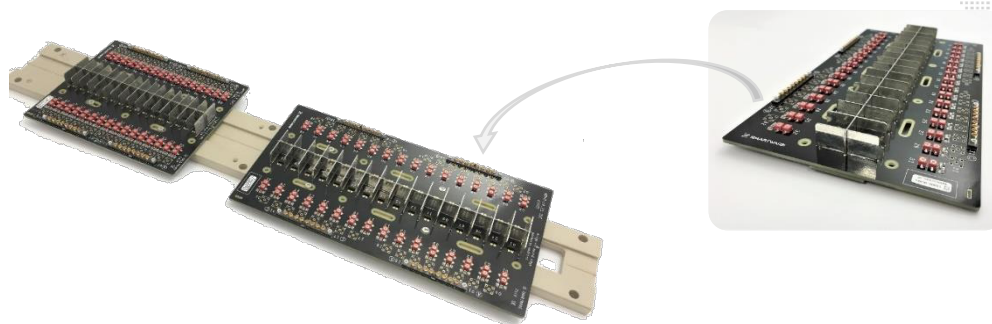
Coil on Module chip technology is growingly popular for dual interface card production.

Connected to the US-CLT Smartware Contactless tester, the Coil On Module Testing solution allows Functional Test and (Pre)Personalization, O.S. Loading of the CoM Chip Module directly on the Module Tape Handler.

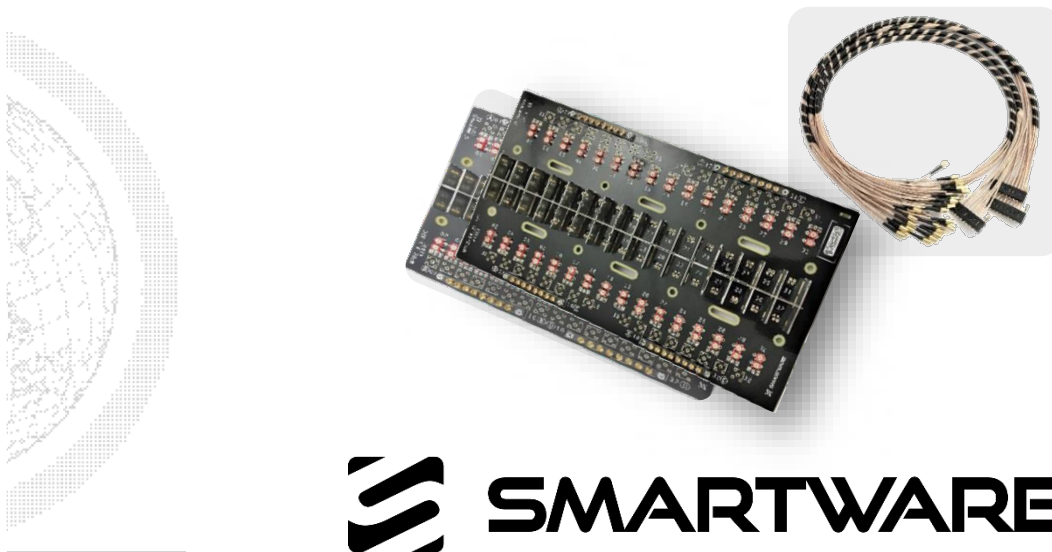
Up to 32 Coil on Module chips can be tested in parallel during one machine cycle.

Smartware's 32 positions CoM Testing Plate doesn't require deep Module Handler modification or upgrade.

The CoM Testing Plate just have to be fixed on the top of the 35mm tape path of none metallic guiding rail.



Both 9.5 or 14.25 mm Smartware Coil On Module testing plate are available



# Contactless Test Solution

## RF communication tests

### before shipping cards to Personalisation Service



Tests Requested by

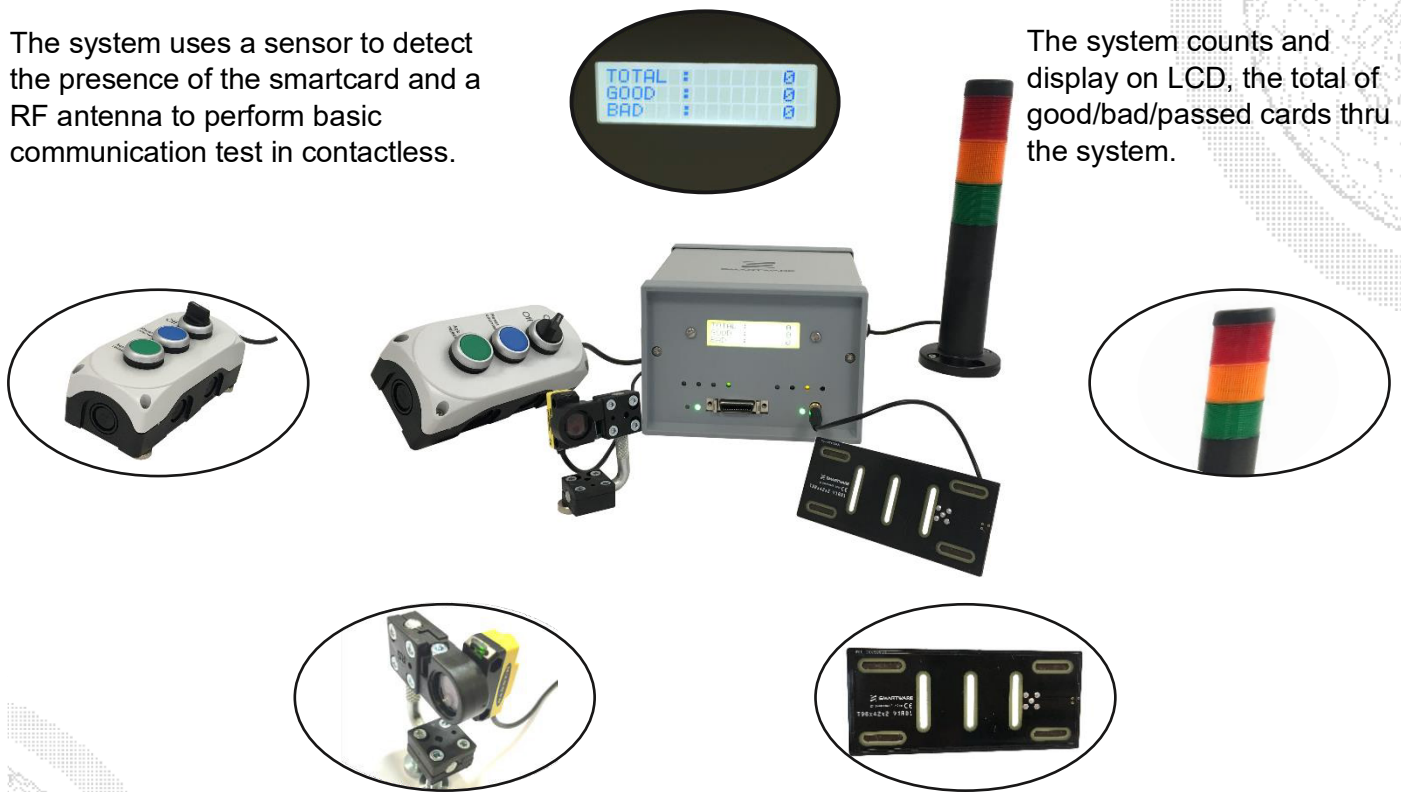
Financial card producers have to prove to Mastercard or Visa that for each issued banking card they have successfully completed a series of tests including those related to chip card quality.

MasterCard specifies in the document CQM (Card Quality Management) the requirements to ensure the quality of the product during the manufacturing phases.

The Contactless Test Solution is a standalone system which is able to test on fly contactless smartcard in personalization machine.

The system uses a sensor to detect the presence of the smartcard and a RF antenna to perform basic communication test in contactless.

The system counts and display on LCD, the total of good/bad/passed cards thru the system.



- ISO 14443 A/B reader with counters screen display
- Laser sensor
- Lights signal
- Remote control for light signal and reset counters
- Contactless antenna

 **SMARTWARE**