

# ULTRASMART™ SOLUTIONS FOR R&D AND LABORATORY

X-Core T Series, NANO Box and US-CMT/US-CLT products are the perfect solution for R&D and laboratory departments to test contact/contactless card, chip card module and terminal.

## X-Core T Series



- Contact reader (ISO 7816 T=0 and T=1)
- Contactless reader (ISO 14443 A/B, ISO 15693)
- Data acquisition on byte or bit level (see CARD TM description for more information)
- Contact emulator (see ECOM description for more information)
- Contactless emulator (see ECOMP description for more information)
- Contactless SPY (see ULTRA SPY description for more information)

## NANO Box



- Contact reader (ISO 7816 T=0 and T=1)
- Contactless reader (ISO 14443 A/B, Mifare+™)
- SD/MMC x1/x4 bit / 50MHz + hardware duplication
- Contact emulator (see ECOM description for more information)
- Open/Short test on all contacts

## US-CMT Assembly



- Based on US-CORE V5 and US-CMT
- Test and personalization of contact card and module
- Data acquisition on byte or bit level (see CARD TM description for more information)
- Open Short & Leakage Test on all contacts
- Static and dynamic power consumption (FIMV, FVMI)
- C7 level monitoring

## US-CLT Assembly



- Based on US-CORE V5 and US-CLT
- Test and personalization of contactless card and module
- Data acquisition on byte or bit level (see CARD TM description for more information)
- Resonance frequency and quality factor measurement
- Chip input capacitor measurement
- Antenna coil inductance measurement
- Retro modulation voltage measurement
- Static power consumption (FIMV, FVMI)

# ULTRASMART™ DRIVERS AND ACCESSORIES FOR CARD AND READER TESTING

## CARD TM - Test & Measure library



- Test & Measurement functionalities for contact and contactless UltraSmart testers
- Event generation, time measurement or data acquisition during card communications
- Embedded test cases to process specific communication scenarios.
- Possibility to synchronize communication between a contact and a contactless interface

## ECOM - Contact Emulator



- Require ISO 7816 contact probe
- Emulation of ISO 7816-3 T=0 and T=1 contact smartcard
- Use terminal clock signal
- User defined cold and warm ATR
- Automatic Waiting Time eXtension Management

## ECOMP - Contactless Emulator



- Require ISO 14443 contactless probe
- Emulation of ISO 14443-3/4 A/B contactless smartcard
- RF carrier field detection
- User defined protocol parameters: ATS, WUP, FWT, ...
- Automatic Waiting Time eXtension Management
- Advanced functionalities (optional): Single bit collision generation on ATQA answer, full bitwise collision generation on ANTICOLLISION command, interface the emulator at APDU level, configuration of the PICC to PCD Frame Delay Time up to FWT max

## ULTRA SPY - Contactless SPY



- Reader RF carrier field detection
- Envelope signal modulation acquisition
- Bit and byte decoding
- Typical frame event timings (SOF, SOC, EOF, TR1, SYNC...) in µs or clock count
- Advanced software triggering to capture specific communication exchanges

	CARD TM	ECOM	ECOMP	ULTRA SPY
X-CORE T	YES	YES	YES	YES
NANO Box	n.a.	YES	n.a.	n.a.
US-CLT Assy	YES	n.a.	n.a.	n.a.
US-CMT Assy	YES	n.a.	n.a.	n.a.



# SMARTWARE