COMPRION

EMVCo PCD Analog Test Solutions

EMVCo QUALIFIED

Wave to Pay

With the increase of smartphones and wearables like smart watches or rings for contactless payments new requirements have to be addressed by terminal manufacturers. The design and shape of payment terminals is getting more and more tailored to specific payment scenarios for example, supporting an enhanced dialog with customers using further displays or even unattended self –service environments. As a result, testing needs to reflect new market requirements.

Furthermore EMVCo has mandated automation for testing of the physical interface using robots for accurate positioning. Test laboratories have to invest into test solutions fulfilling these new standards. Therefore COMPRION has introduced testing of payment terminals by extending the existing robot solutions for EMVCo and NFC Forum conformance testing. Thus, laboratories can add the test bench software as well as the corresponding accessories to their existing robot system to expand their offer of type approval services.

For laboratories investing into the complete solution a short setup and ramp up phase as well as the flexibility to re-use it for Mobile /Card Type Approval according to EMVCo or for NFC Forum and GCF /PTCRB testing make it a future proof invest.

Purpose

- Terminal Type Approval Contactless Level 1

Highlights

- Automated and qualified robot positioning system
- Proven high accuracy
- Leveraging on the existing solution
- Fast ramp up
- Simple, but exact teach-in of terminals (PUT)
- Ergonomic test solution adjustable to individual needs with comfortable peripherals
- "Live logs" test case results during test execution

Specification

CAPABILITIES

- Automated test case execution with mandatory measurements, traces and repetitions
- Automated, EMVCo compliant test report
- Fully integrated robot
- Camera assisted teach-in procedures
- Step by step guidance

- Analog Scope
  - Automated EMVCo measurements of all signals
  - Comfortably visualized results allowing for zooming in and out, stepping and adding individual cursors
  - Integrated screen shot function

TEST BENCH

- UT^3 EMVCo PCD L1 Analog Test Bench

GENERAL FEATURES

Parameter & Measurement	Uncertainty
V_{OV}	± 2 %
Carrier frequency	± 100 Hz
Load modulation (V_{PP})	± 10 % with a minimum of 1 mV
Type A timing (t_1, t_2, t_3, t_4, t_5)	± 2/fc
Type A ringing levels	± 0.5 % of V_1
Type A overshoots	± 0.5 % of V_1
Bit rate (PICC Load Modulation)	± 0.5 %
Type B modulation index	± 0.5 %
Type B rise and fall times	± 2/fc
Type B overshoots and undershoots	± 1 % of (V_1-V_2)
Type B bit coding $t_{PCD,S,1}, t_{PCD,S,2}, t_{PCD,E, EGTPCD}$	± 2/fc

Parameter & Signal Generation	Uncertainty
$V_{S,OV}$	± 2 %
Carrier frequency	± 100 Hz
Load modulation (V_{S1}, V_{S2})	± 1 mV
Bit rate (PICC Load Modulation)	± 0.2 %
Type B PICC bit coding set-up ($t_{PICC,S,1} t_{PICC,S,2}, t_{PICC,E, EGTPICC}$)	± 2/fc
Type B PICC TR0, TR1, t_{FSOFF}	± 2/fc
$FDT_{A,PICC}$	± 1/fc
Parameter & Environment	**Uncertainty**
Positioning (z, r)	± 1 mm
Positioning (ϕ, θ)	± 0.1 rad
Temperature	± 1°C
Humidity	± 3 %

SCOPE OF DELIVERY

Hardware
- Safety cell with lighting
- Robust industry robot (Kawasaki RS003N)
- UT^3 Platform
- Comfortable peripherals (flat screen, keyboard, holder with plastic support plate)
- EMVCo Basic Analog Accessory Package
- EMVCo PCD Analog Accessory Package

Software
- Device Test Center
- Analog Scope
- Contactless (NFC) Simulation (analog)

Documentation
- Binder with all certificates and technical information

TESTED TRUSTED