

# SmartCard Technologies

As a leading and independent full service provider for SmartCard, RFID and NFC related solutions, CTC advanced's worldwide operating SmartCard Technologies Competence Center offers a wide range of services to implement the type approval process for mobile payment applications, ICC cards, wearables and terminals.

## TEST SCHEMES & ACCREDITATIONS

### ePAYMENT

#### Banking, Mobile Payment & mPOS Solutions

- EMVCo
- American Express
- Discover
- Mastercard
- Visa
- DK - Die Deutsche Kreditwirtschaft

### eHEALTH

#### Electronic Health Cards

- gematik

### eIDENTIFICATION

#### ePassport, (German) eID

- BSI TR-03105
- ISO/IEC 18745-2

### eTICKETING

- VDV-KA
- CEN/TS 16794
- BSI TR-03150

### BIOMETRICS

- Mastercard (mobile devices)
- Visa (terminal)

### COMPLIANCE TESTING FOR CONTACTLESS TECHNOLOGIES

- ISO/IEC 14443

### STANDARDISATION ACTIVITIES

- Member of NFC Forum
- Member of EMVCo Technical Associates
- Member of DIN
- Member of NEXO

## TESTING SERVICES

- Type Approval and Compliance Testing
- Pretest / Debug Testing
- Consultancy

### RFID

Whether RFID technology is used for ePassport, Contactless or NFC applications, CTC advanced supports customers in setting and evolving the performance, ensuring that products meet the expectations for regulatory, quality, health, environmental and safety standards for almost any market around the world.

### NFC

Near Field Communication (NFC) is an extension of the existing SmartCard standards (contactless/RFID), that combines the interface of a smartcard and a reader into a single device. CTC advanced is a NFC Forum Test Lab and active member in several NFC Forum working groups (Compliance Program WG, Test Mode Taskforce, Testing WG, RF Testing Taskforce). Our Lab offers different test services for NFC devices:

- NFC Forum Accredited Test Lab
- Qualification tests of NFC devices based on ISO/IEC 14443

## SUPPLEMENTARY TESTING SERVICES

CTC advanced offers complementary testing and certification services for your terminal and its interfaces:

- EMC, Electrical Safety, Health
- Environmental Impact Assessment
- DECT, LTE/UMTS/GSM, Bluetooth®, Wi-Fi®
- Network Access
- International Type Approval



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As a holder of various accreditations for both contact and contactless applications CTC advanced offers consulting, testing and certification services for Banking Applications, Mobile Payment and mPOS solutions including analog test bench, protocol and application testing.

## EMVCO

CTC advanced is accredited by EMVCo to perform Type Approval Testing on:

### Terminals

- EMVCo Contact Terminal Level 1 and 2
- EMVCo Contactless Terminal Level 1
- EMVCo Contactless Product Terminal (Level 2)
- EMVCo Terminal ESD Evaluation

### Cards / Wearables

- EMVCo Contact Card Level 1
- EMVCo Contactless Card Level 1
- EMVCo CCD & CPA Card

### Mobile

- EMVCo Mobile Level 1 (Phase II)
- PPSE/AAUI

## VISA

CTC advanced is accredited by Visa to perform Type Approval Testing on:

### Terminals

- Visa contactless device and reader (MSC, qVSDC, VOQOS and CrossTesting)
- Fleet
- Biometrics Terminal Specification

### Cards / Wearables

- VSDC functional testing (incl. Level 1)
- Contactless testing (VCPS)
- Contact testing (VIS)
- Dual interface testing

### Mobile

- Visa Mobile Payment (incl. HCE)
- Visa Mobile Payment Application (VMPA incl. UICC/SE)

## DK – DIE DEUTSCHE KREDITWIRTSCHAFT

CTC advanced is accredited by DK to perform Type Approval Testing on:

- Electronic Cash Terminals and Network Components
- GeldKarte
- Secoder
- Payment Network Host Systems
- German ATM System (GA 2015)
- DC-POS 3.0 / TA 7.2

## MASTERCARD

CTC advanced is accredited by Mastercard to perform Type Approval Testing on:

### Terminals

- Acceptance Devices (Contactless Terminal Level 2)

### Cards/Wearables

- M/Chip Card
- Contact, contactless and dual interface testing

### Mobile

- M/Chip Mobile
- Mastercard Cloud Based Payments (MCBP)
- Mastercard Mobile Payment (incl. HCE / SE)
- Mastercard Mobile Payment Application (MPA)
- Mastercard Biometric Functional Testing

### Formal Approval Service Provider

CTC advanced is accredited by Mastercard to act as a Formal Service Provider for:

- M-TIP / GICC-TIP
- CPV

## AMERICAN EXPRESS (AMEX)

CTC advanced is accredited by AMEX to perform Type Approval Testing on:

### Terminals

- Expresspay Terminal Level 2 contactless

### Cards / Wearables

- Level 1 Contact and Contactless (ID1)
- Card Functional (AEIPS and XPAY)

### Mobile

- Level 1 Mobile Handset (UICC and HCE)
- Mobile Functional

## DISCOVER

CTC advanced is accredited by Discover to perform Type Approval Testing on:

### Terminals

- Contactless D-PAS Terminal Application
- Contactless D-PAS Terminal Cross Testing

### Cards / Wearables

- Contact D-PAS Card Application
- Contactless D-PAS Card Application
- Contactless D-PAS Card Application Cross Testing

### Mobile

- Mobile D-PAS Card Application (SE)