



Test Tools

UL EMV Personalization Validation Tool

Who is it for?

UL EMV Personalization Validation Tool (UL EMV PVT) is the most thorough and comprehensive test tool for Issuers, Card Personalization Bureaus and Card Manufacturers that want to validate the personalization of their contact/contactless payment cards and mobile payment applications.

Why do you need it?

UL EMV PVT assists you in testing your EMV payment products according to mandatory card personalization regulations from the major payment associations.

With just one click of a button, you can store, validate, retrieve, and examine all personalization data of EMV smart card applications such as chip, magnetic stripe, embossing data, asymmetric keys and PIN.

With UL EMV PVT, you easily check the correctness of the personalization of any EMV card application according to the latest (test) specifications from EMVCo, MasterCard, Visa, JCB, Discover, Union Pay and others.

What is inside?

The Explorer functionality lets you view all personalization data on your EMV Card and provides detailed explanation.

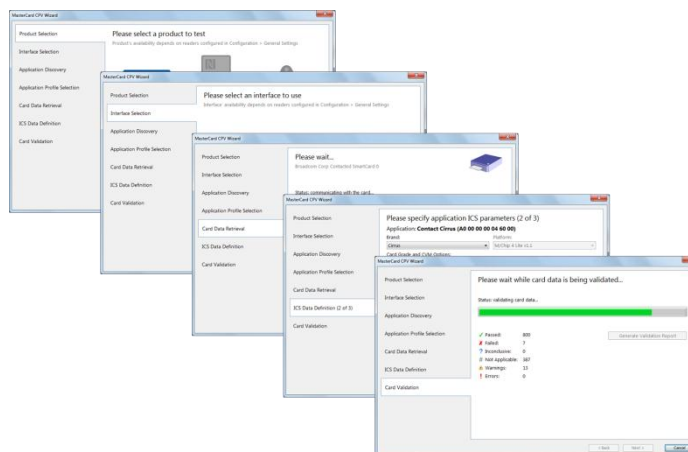
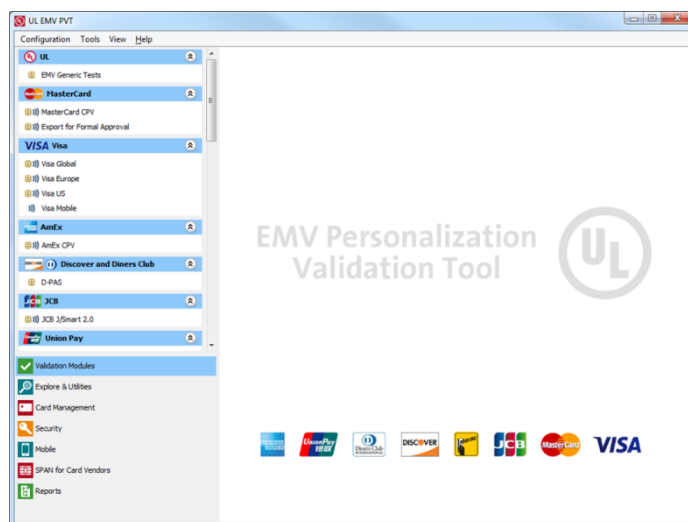
The Validation functionality checks the correctness of your card application personalization and provides full, readable reports including explanations of errors and observations found. UL EMV PVT validates card personalization profiles for all major payment schemes:

- MasterCard CPV
- Visa
- JCB
- Discover & Diners Club
- American Express
- UnionPay

The tool has been developed in close cooperation with VISA, MasterCard and JCB. It is officially confirmed and used by Visa and JCB. It is also the first tool officially qualified as a MasterCard Card Personalization Validation (CPV) Testing Tool to prepare the formal certification.

Special modules available are:

- Card Management Module
- Mobile Module
- Security Module
- Domestic validation modules, e.g. Interac, Cabal, MEPS, SPAN



Key benefits

- Fully covered and up-to-date with relevant test specifications
- User guidance by easy-to-follow Wizard support
- Supporting MasterCard CPV, Visa payWave, JCB J/Smart, Discover, Diners, UnionPay and more
- Browse through all EMV data elements with explanation
- Utilities to check mobile payment parameters for Secure Element and Cloud-based payment products
- Simplifying quality control in personalization



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Specifications

Validation modules available:

- MasterCard validation module (CPV including Maestro, Cirrus, *PayPass* and CAP)
- VISA validation module (incl. Credit, Debit, DPA, VPAY, payWave for EU and Visa Global Test Specification for other regions)
- JCB validation module (incl. J/Smart, J/Speedy)
- Discover and Diners validation module
- American Express validation module
- UnionPay validation module
- Domestic validation modules: Interac Flash, Cabal, MEPS

UL EMV PVT supports validation of card profiles generated using MasterCard's M/Chip Advance Profile Generator.

UL EMV PVT's **Explore & Utilities** includes:

- EMV payment application explorer
- EMV Generic and Template Checking

The optional **Card Management module** includes:

- Issuer Script commands (e.g. Unblock PIN, Put Data)
- Offline and online transaction execution

The optional **Security module** includes:

- AC, MAC, ENC keys check using HSM coupling for production keys
- Offline Data Authentication (SDA /DDA/CDA)
- MasterCard *PayPass*[™] / Visa payWave checksum and cryptogram checking (dCVV /CVC3)
- CVV / CVC checking

The optional **Mobile module** includes:

- Cryptogram check for Cloud-based Payments
- Secure element application analysis:
 - Contactless Registry Status utilities
 - PPSE utilities

Hardware

- PC/SC Contact and Contactless Chip Reader
- MagTek Intellistripe 350 Card Reader (for reading both MagStripe and chip)

Technical Support

To ensure that you can effectively use the tool and gain the maximum benefits, UL offers for tools a Service Contract that gives you access to our Technical Support services. Our experienced technical team is available to provide support, advice and guidance.

The following services are covered

- New releases
- Helpdesk support
- Bug fixes
- Instant hardware replacement

You can access these services through the service portal at www.ul-ts.com.

Test specifications supported:

UL EMV PVT is continuously kept up to date with the latest test specifications from the payment schemes. If the test specification you are looking for is not listed here yet, the UL EMV PVT's latest release may very well cover it already.

- UL - Generic tests specified by UL
 - EMV Generic Test Specification, v2.7 based on EMV Integrated Circuit Card Specifications for Payment Systems, version 4.3, November 2011
- MasterCard
 - MasterCard CPV: Personalization Validation Tool Requirements v8.1
- Visa
 - Visa US: U.S. Personalization Validation Requirements, v1.0, January 2014
 - Visa Europe: Visa Europe Addendum to GPR, v1.2
 - Visa Global: Visa Global Test Suite v2.1.1
- JCB
 - JCB J/Smart 2.0: JCB J/Smart Test Cases for Contact ver. 0.2, JCB J/Smart Test Cases for Contactless ver. 0.2
- Discover
 - D-PAS Chip Card Personalization Validation Rules, Version 1.0, March 2010
- American Express - Tests specified by UL
 - American Express Test Specification, v1.0
- UnionPay - Tests specified by UL
 - UnionPay Test Specification, v1.0

Security and Audit Logging:

- Data Security Configuration options, including: PAN Masking in test suites, Do not store Card Images
- User Access Control: PVT Administrator and PVT Users
- Generate Audit Log option: the tool logs all tests performed in a separate CSV-formatted file for the purpose of tracing your test run history