

[www.DayBreakSoftware.com](http://www.DayBreakSoftware.com)

# *Next Generation in EMV Card Testing*



**daySMART**   
**SOLUTIONS**

- **EMV Card Testing Tools**
- **EMV Consultancy**
- **EMV Training**



The essential EMV card qualification tool for inspecting and automatically validating EMV personalisation data.

All with a single click..

- Inspection and validation of EMV card profiles with automatic cross-references and checking against up to date EMV specifications.
- Automatically **validates all card data, certificates and issuer cryptograms**. Identifies any personalisation problems and checks the integrity of any interdependent data, with precise diagnosis of any faults found.
- Supports all **VSDC and MChip proprietary requirements**. Validation can be performed to EMV requirements, or the more stringent proprietary requirements of VSDC and MChip.
- Easy to use with no setup or knowledge of complicated script languages required. Suitable even for people unfamiliar with EMV Level 2 specifications, making it ideal for repetitive Quality Assurance, Certification and Production tasks.
- **Fully customisable XML-based reports**: generate your own report formats, easily input the XML test results to your database, or simply use one of the included comprehensive HTML reports.

The screenshot shows the DaySmart Inspector application window. The main area displays test results for a card profile, including fields like PKicc-Certificate Hash Result, PKicc-modulus, PKicc-exponent, and Signed Dynamic Application Data (9F4B). A 'Cardholder Verification' section shows CVM results and CVR rules. An 'Action Analysis' section shows issuer action codes (9F0D, 9F0E, 9F0F). A 'Card Validation' dialog box is overlaid on the screen, displaying a red 'X' icon and the message 'CARD NOT VALID' with '6 of 80 TESTS FAILED.' and an 'OK' button.

- **Build your own test scripts**: If your cards have proprietary regional requirements (those not already tested by the built-in EMV, MChip and VSDC tests), you may even create additional tests simply by specifying the test and validation conditions using a visual interface.

The 'Report' dialog box shows options for generating reports. It includes a 'Report Options' section with 'Report Type' set to 'HTML Report', 'Apply Custom Stylesheet', and 'Unformatted XML'. There are also checkboxes for 'View' and 'Save to File', and 'OK' and 'Cancel' buttons.

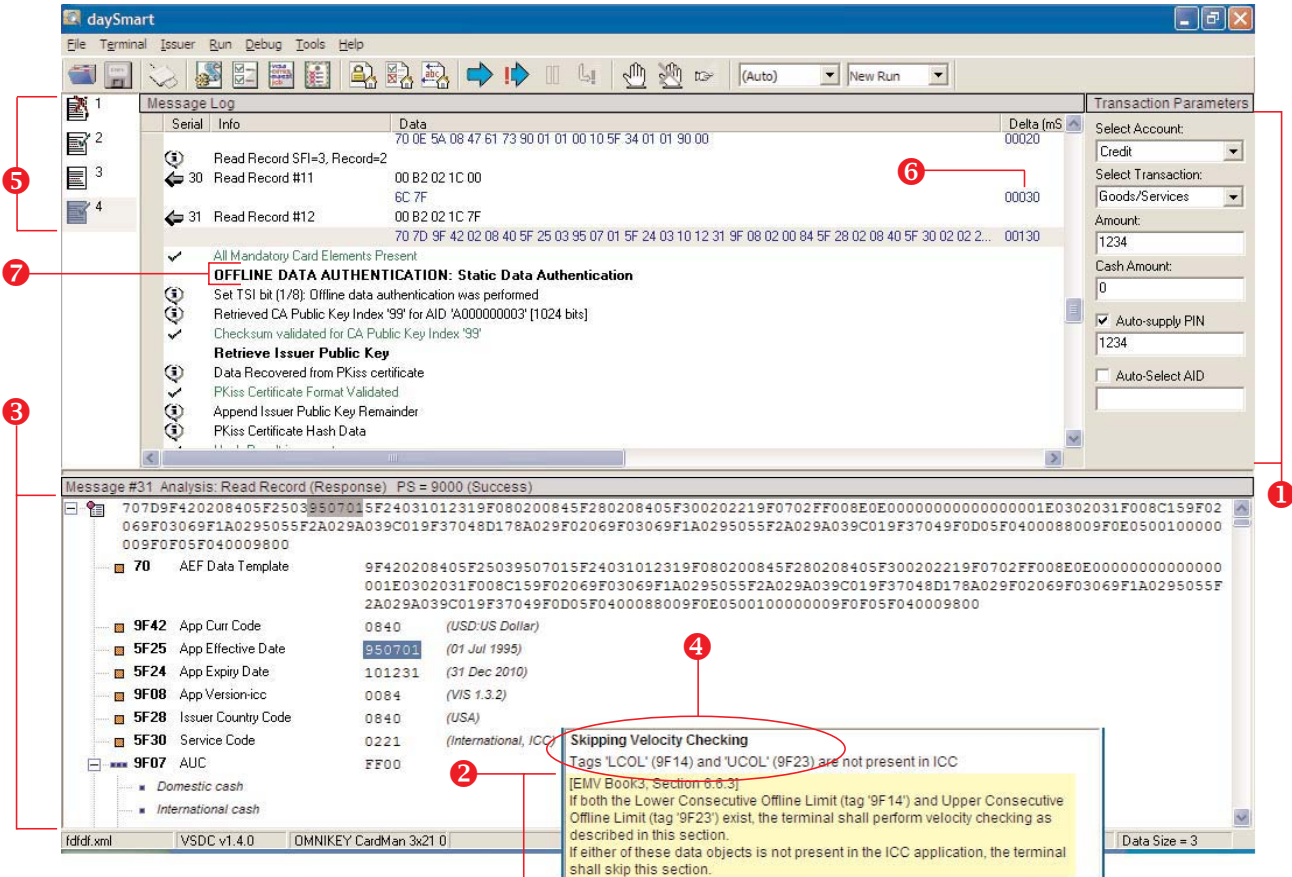
The 'Validation Rules' window shows a tree view of rules, including 'Action Analysis', 'Transaction Data', and 'MasterCard [MChip 4.0] Proprietary Data'. The 'Validation Rule' dialog box shows configuration options for a specific rule, including 'Tag', 'Name', 'Format', and 'Rule'.

- You may generate comprehensive **HTML reports** for each test run, or customise your own report formats using XML.

**A fully configurable virtual EMV terminal simulator with an integrated issuer host module:**

- Viewing of all functional level data and interaction between cards and an independent EMV terminal benchmark, supporting development and testing of both EMV smart cards and EMV terminals.
- Wizards to create and simulate any EMV terminal on your PC such as EFTPOS, ATM and Vending Machines. Default terminal profiles can be quickly modified to reflect the exact specifications of the target terminal, including CA Public keys and supported application list.

- Specifically designed for ease of use as well as having a powerful capability in expert problem diagnosis and transaction data analysis. Includes a user-friendly, intuitive user interface, while providing exceptionally powerful features and comprehensive EMV data element analysis.
- Integrated EMV host to simulate full on-line transactions: Analyse the on-line behaviour of your EMV smart card and terminal communicating with the host. Provides the entire range of issuer authentication, ARQC / ARPC cryptogram generation methods and EMV issuer scripts.



1 Run any EMV transaction using the fully configurable virtual terminal and examine card / terminal behaviour.

! **A unique tool that delivers the safest way to ensure the interoperability of your card with any terminal.**

2 Each step of a transaction is automatically interpreted and cross-referenced to the corresponding sections of EMV specifications. An invaluable learning tool and a great time saver for experienced users.

3 Automatic 'live' parsing and interpretation of all command and responses, all displayed in a user-friendly hierarchical structure of EMV 'tags' (even down to bit level data such as TVR, IAC's and TAC's). All tags are analysed for correct format and value.

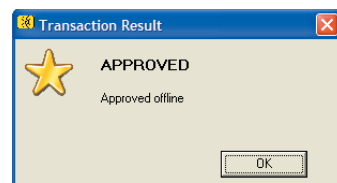
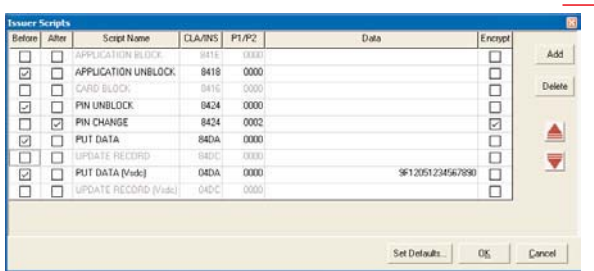
4 'Live' on-screen alerts (informative, warning or error) for suspect or invalid transaction steps - an extremely powerful feature automatically identifying card personalisation or terminal incompatibility issues.

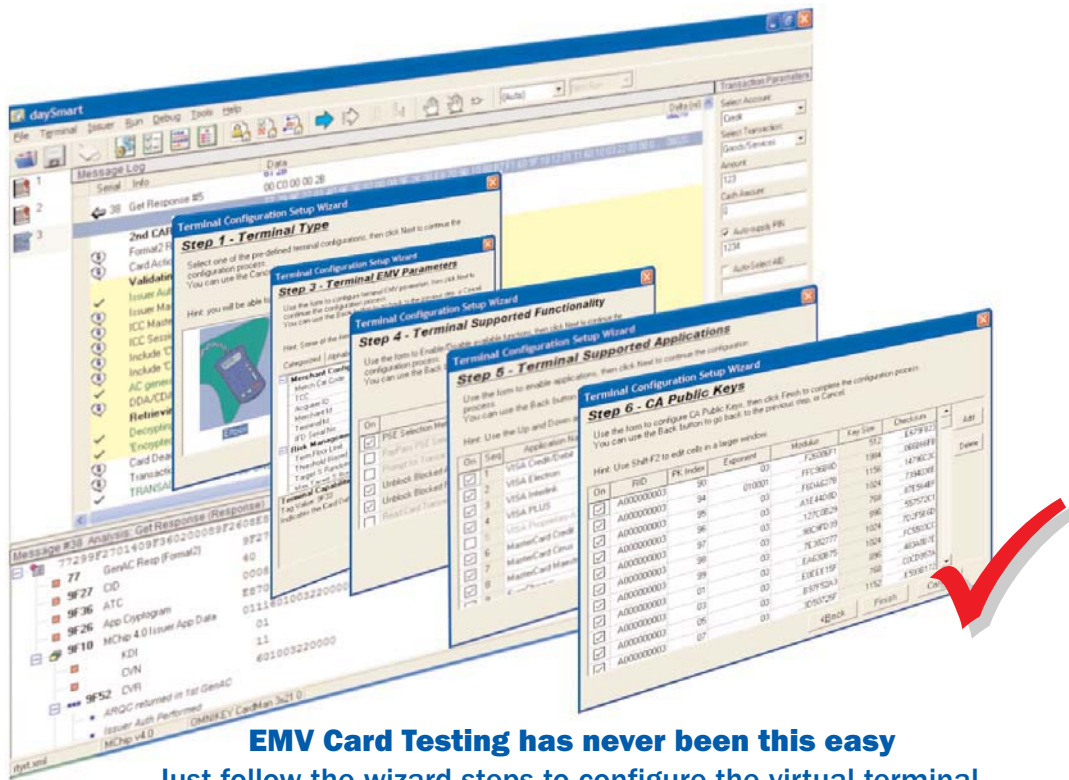
5 Save entire transaction logs for future reference This enables, for example, quick confirmation of the full integrity of a modified EMV application, as well as analysis of results in the physical absence of hardware.

6 All card/terminal communications are time-stamped, allowing users to evaluate card timing performance for individual commands.

7 Display of static and dynamic data authentication with offline PIN verification using the correct cryptographic processes - supports all offline authentication methods (SDA, DDA and Combined DDA) using RSA keys up to 2048 bits.

8 Full-featured issuer host simulator, supporting issuer script and issuer cryptogram generation.





**EMV Card Testing has never been this easy**  
 Just follow the wizard steps to configure the virtual terminal,  
 and you're ready to test your card in 2 minutes...



- **Visa (VSDC), MasterCard (MChip 4.0 and 2.1), and PayPass:** test with a single-click
- **Easy to use:** Intuitive user friendly interface that requires no setup or knowledge of complicated script languages.
- **Integrated issuer host simulator:** supports validation and generation of all issuer cryptograms (EMV2000, MChip, VSDC), and issuer script generation.
- **Customisable XML-based reports:** generate your own report formats, easily input the XML test results to your database, or simply use one of the included comprehensive HTML reports.
- **EMV specification references:** a unique feature that explains every step of a transaction with cross-references to EMV specifications, makes Benchmark an invaluable tool for training and consultancy, or simply learning EMV.
- **Precise diagnostics:** Identifies any personalisation problems and checks the integrity of any interdependent data, with a precise description of any faults found.
- **Motorised hybrid reader** available as an option for validation of smartcard and magnetic track data correlation.
- **Fully-automated certification test scripts for regional requirements (such as SAMA SPAN)** ensures guaranteed results during certification.
- **24/7 Support** covering not only daySmart but also general EMV consultancy.

“ **The most user-friendly and comprehensive test tool in the market, offering exceptional return on your investment** ,,”

## About DayBreak

DayBreak Software, backed by over 10 years of specialist EMV expertise, is one of the leading EMV technology companies in the world. We have an excellent track record in providing software development and consultancy services to major card application providers, card issuers, terminal vendors and certification centres, with clients in Asia, Middle East, Australia, Europe and Canada.

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