

EMV Personalisation Validation Tool

Visa GPR PVT Module for Self-Certification

Speeds up Visa certification and reduces the high cost and delay associated with qualification failure

To achieve Visa certification Banks, Card Manufacturers, Personalisation Bureaus and Test Laboratories must ensure their cards comply with Visa's latest Global Personalisation Requirement (GPR) specifications. Obtaining Visa qualification can be a timely and costly process. To reduce the risks of failure, cards can be validated using the Visa GPR PVT Module from Barnes. Approved by Visa, it uses the same detailed and rigorous tests they use to perform qualification tests on cards.

The Visa GPR PVT Module is valid for all regions. However, Self-Certification is only available for the EU market at the moment. This means that once a "Pass" has been achieved, the test report (Visa EU CCRT Report) is sent to Visa EU as evidence that the card is compliant with the Visa Rules and matches the associated *Visa Personalization Assistant* (VPA) profile, instead of sending the physical card to Visa EU.

Solution Overview

The Visa GPR PVT Module complements the CPT3000v3CL Card Validation Test Tool, resulting in a Chip Compliance Reporting Tool (CCRT). The module runs as integrated scenarios on the CPT3000v3 platform and may co-exist with other modules such as Host Simulation (including HSM), which is required in order to carry out the script processing tests which form part of Visa Certification for Visa International and Asia Pacific regions. The overall PVT test result outcome (PASS or FAIL) is dependent on the outcome of the Template Checking (VPA), the Execution of GPR Test Cases, Execution of VE Addendum Test Cases and Execution of IDS Test Cases.

APPLICABILITY

Product :

- Visa Debit/Credit Electron
- PLUS
- DPA
- Interlink
- VPAY
- Prepaid
- Charge
- Visa Fleet
- IDS
- Multi-application

Programs :

- VSDC
- qVSDC
- MSD

Test Cases

- VISA GPR 3.0.x A&Cs v4.2
- Visa Europe Addendum v1.5
- Visa India IDS v1.0
- Visa US Addendum 2.1

Specifications:

- Visa Integrated Circuit Card Specification (VIS)
- VIS 1.4.1, VIS 1.5.x, VIS 1.6.x

- Visa Contactless Payment Specification (VCPS)
- VCPS 1.4.2, VCPS 2.0.1, VCPS 2.0.2, VCPS 2.1.x
- VCPS 2.2.x

- Visa Mobile Contactless Payment Specifications (VMCPS)
- VMCPS 1.4.x

- Visa Applet Versions: VSDC 2.7.1, 2.8.x & 2.9
- Visa Mobile Payment Application : VMPA 1.4.x

Dual Interface Cards



Pre-configured fixed GPR Scenarios already fully defined against Visa controlled test cases. Testing performed against VPA Output File or using Card Interrogation mode.

Instant Result Summary showing a PASS, or in the case of FAIL, the Error or Observation Codes and Comments on the Visa GPR PVT which caused the failure.

The screenshot displays the Barnes International software interface. On the left, there are radio buttons for 'VPA Output File' (selected) and 'Card Interrogation'. The main window shows 'GPR Auto Generated Test Selected Automatically' with a card image that has a 'FAIL' stamp. Below the card image is a 'Results Summary' section listing various error codes and their descriptions, such as 'BE OVMI List - The card responds to the VERIFY command with a SW1SW2 different from '9000''. On the right, a 'Contact ICS' dialog box is open, showing configuration options for 'Specification' (set to VIS 1.5.x), 'PSE Supported' (checked), and 'Offline Data Authentication' (set to None). At the bottom right, there is a 'Cancel' button.

Auto Downgraded errors feature for Visa EU



Tabs provide access to **Details Tree**, **Engineering Log** and **Test Report**. The detailed Results Tree and Engineering Log enable analysis and clear guidance for all levels of user.

THE BARNES ADVANTAGE

Barnes is the chosen test tool of Banks & Issuers, Card Manufacturers, Personalisation Bureaus and Test Laboratories worldwide.

Here are some reasons why:

BUSINESS AGILITY

Barnes test tools are easy to use by both technical and non-technical users, and speed up card development and payment scheme certification.

COST ELIMINATION

The high business costs and wasted resources of producing and issuing invalid cards are eliminated.

RISK REDUCTION

The reputational risk of issuing invalid EMV cards to end customers is reduced.

FUTURE PROOFED

Barnes works in partnership with all major payment schemes. As scheme rules evolve, Barnes rapidly makes updated test script packs available to customers via the Barnes website.

SERVICE EXCELLENCE

Our clients have every confidence that, whatever their test requirement, the Barnes team is always on-hand to deliver expert advice and fast support.

Details Tree

Summary	Details Tree	Engineering Log	Test Report	Batch Info
Chip	Proximity Payment Systems Environment			
	Partial Name Selection			
	Selecting Application A000000031010 - VSDC			
	Get Processing Options			
	PDOL			
	82 - Application Interchange Profile - 20 00			
	94 - Application File Locator - 18 01 01 01 10 01 03 00			
	57 - Track 2 Equivalent Data - 43 22 07 xx xx 81 38 D2 11 22 01 00			
	5F34 - Application PAN Sequence Number - 01			
	9F10 - Issuer Application Data - 06 01 0A 03 A0 00 00			
	Cryptogram Information Data - fDDA not performed(Visa)			
	Cryptogram Version No. - 0A			
	Derivation Key Index - 01			
	CVR A0 00 00			
	Cryptogram Version No. - Does not contain the value required by the			
	9F26 - Application Cryptogram - BD 3D EE 8D 18 C7 EC 1B			
	Incorrect Application Cryptogram(EMV)			
	Application Cryptogram BD3DEE8D18C7EC1B - Expected 5AA6B10			
	9F27 - Cryptogram Information Data - 80			
	9F36 - Application Transaction Counter - 0A 6A			
	9F6C - Card Transaction Qualifiers - 28 00			
	9F6E - Fom Factor Indicator - 20 70 00 00			
	Read Record 3 - 1			
	5F24 - Application Expiration Date - 211231			

Engineering Log

Summary	Details Tree	Engineering Log	Test Report	Batch Information
CPLC				
<send> (005)	80 CA 9F 7F 00			
<rcv> (047)	9F 7F 2A 40 90 77 94 19 81 22 02 01 00 62 61 07 D5 C5 4F 01 09 10 02 62 61 41 93 62 61 41 94 62 61 00 00 C1 14 11 45 30 63 03 00 00 00 90 00			
Select PSE 1PAY.SYS.DDF01				
<send> (020)	00 A4 04 00 0E 31 50 41 59 2E 53 59 53 2E 44 44 46 30 31 00			
<rcv> (034)	6F 1E 84 0E 31 50 41 59 2E 53 59 53 2E 44 44 46 30 31 A5 0C 88 01 01 9F 11 01 01 5F 2D 02 65 6E 90 00 84 - DF Name - 31 50 41 59 2E 53 59 53 2E 44 44 46 A5 - FCI Proprietary Template 88 - SFI of Directory Elementary File - 01 9F11 - Issuer Code Table Index - 01 5F2D - Language Preference - en			
Read Directory - 1, 1				
<send> (005)	00 B2 01 0C 00			
<rcv> (045)	70 29 61 27 4F 07 A0 00 00 00 03 10 10 50 0B 56 49 53 41 20 43 52 45 44 49 54 9F 12 0B 56 49 53 41 20 43 52 45 44 49 54 87 01 01 90 00			
61 - Application Template				
4F - Application Identifier - A0 00 00 00 03 10 10				
50 - Application Label - VISA CREDIT				
9F11 - Application Preferred Name - "VISA CREDIT"				
87 - Application Priority Indicator - 01				
Read Directory - 1, 2				

A full **Test Report** detailing the tests carried out and more in-depth detail on the errors, observations and warnings, plus the ICS selection used and a list of all the tests performed. Tool Test Report has a direct hyperlink to the exact test.

Contact A000000031010 : Errors
Please see below the errors identified during testing. These errors will need to be corrected.
DE.12.001.00 5F20 Cardholder Name - To ensure if Cardholder Name is present, its length and format
DE.42.001.00 9F1F Track 1 Discretionary Data - To ensure that, if present, Track 1 Discretionary Data is in the correct format
MS.1.001.00 To ensure the Track 1 is present and formatted correctly
Contact A000000031010 : Warnings The following items are not actually errors but are likely to cause problems in the field.
DE.64.002.00 9F56 Issuer Authentication Indicator - To ensure that the Issuer Authentication Indicator (tag '9F56') is not personalized if card is online-only.
SH.3.002.00 9F52 Application Default Action - To ensure Application Default Action (tag '9F52') is the recommended value
Contact A000000031010 : Observations This section outlines observations made on the card personalisation settings. These are for risk teams, to evaluate whether changes should be made to the card.
DE.2.003.00 9F42 Application Currency Code - To check that the Application Currency Code (tag '9F42') is present when it is not required (if Cardholder Verification Method List conditions do not apply to amount checks)

Tests Performed			
Contact A000000031010 GPR	Test ID	Result	Pass/Fail
Listed below are the test cases allocated for this branch. For details of errors, warnings and observations, see a Test cases marked "N/A" were not performed because they were not applicable to this instance.	CV.2.001.00	Pass	Pass
	CV.2.004.00	Pass	Pass
	CV.7.001.00	N/A	N/A
	DA.1.001.00	Pass	Pass
	DA.4.001.00	N/A	N/A
	DA.7.001.00	N/A	N/A
	DA.11.001.00	N/A	N/A
	DE.2.003.00	Observation	Pass
	DE.3.001.00	Pass	Pass
	DE.4.002.00	Pass	Pass
	DE.6.001.00	Pass	Pass
	DE.6.002.02	N/A	Pass
	DE.6.003.01	N/A	N/A
	DE.8.001.00	N/A	Pass
	DE.9.002.01	Pass	N/A
	DE.11.002.00	Pass	N/A
	DE.11.002.03	N/A	Pass
	DE.13.002.00	N/A	Pass
DE.17.001.00	Pass	Pass	
DE.17.004.00	Pass	N/A	
DE.20.003.00	N/A	N/A	

VPA Data Comparison

Contact A000000031010 - VSDC - 100000562.v1

Tag	Description	Personalized Value	Expected Value	Validation Result
9F52	Application Default Action	C3380000	82081000*	Fail
82	Application Interchange Profile	1C00	1800	Fail
50	Application Label	VISA CREDIT	VISA CREDIT	Pass
87	Application Priority Indicator	01	01	Pass
9FD7	Application Usage Control	FF00	FF00	Pass
9F5D	Available Offline Spending Amount	not personalized	01	Fail
8C	CDOL 1	9F02069F03069F1A0295055F2A029A039C019F3704	9F02069F03069F1A0295055F2A029A039C019F3704	Pass
8D	CDOL 2	8A029F02069F03069F1A0295055F2A029A039C019F3704	8A029F02069F03069F1A0295055F2A029A039C019F3704910A	Fail
8E	CVM List	000000000000000020142031E031F00	000000000000000020101031E031F02	Fail
DF21:BF56	Consecutive Transaction Counter Limit 1	not personalized	05	Fail

VPA Data Comparison