



ATH Prima EMV™ Test Card Set

Version 3.00

March 2022

Powered by B2»

To view this document online,
scan QR Code below.



Disclaimer

Information provided in this document describes capabilities available at the time of developing and delivering this document and the associated test cards and information available from industry sources. This document is intended to be used as a guideline only and B2 Payment Solutions, Inc. and/or its affiliates accept no liability for any errors or omissions in this document and/or for any results of client's reliance thereon.

Copyright

© 2019 by B2 Payment Solutions, Inc. All rights reserved. All information and data contained herein and within the associated test cards is confidential and proprietary to B2 Payment Solutions. Such information shall not be disclosed, duplicated, reverse-engineered or used in part or in whole, for any purpose without prior written consent from B2 Payment Solutions, Inc. other than specific internal, non-commercial, non-assignable use in conjunction with the ATH Prima10 EMV™ Test Card Set (10 cards) only.

Attribution

EMV™ is a trademark owned by EMVCo LLC.

All trademarked symbols seen below are registered trademarks of their respective organizations: American Express Company, Diners Club International, Discover Financial Services, Mastercard International Incorporated and Visa Inc.



B2 Contact Information

www.b2ps.com

Canada
251 Consumers Road, Suite 1200, Toronto, ON M2J 4R3
Tel: 416.730.9827

U.S.A.
1615 S. Congress Avenue, Suite 103, Delray Beach, FL 33445
Tel: 470.233.7374

Revision History

Version	Date	Updated By	Revisions
1.00	May 21, 2019	B2PS	<ul style="list-style-type: none">• Initial document release
2.00	October 29, 2020	B2PS	<ul style="list-style-type: none">• TC05, TC06 – updated cardstock support; where applicable, “MasterCard”>“Mastercard”
3.00	March 31, 2022	B2PS	<ul style="list-style-type: none">• TC01, TC02 – Visa cards change Expiry Date to 24/12

1.10	Test Card 10 – Discover, DI, Eng, PRO, USD.....	43
1.10.1	Contact: CVM List - AID A0000001523010, Discover (EMV).....	43
1.10.2	Contact: Application Tag Data - AID A0000001523010, Discover (EMV).....	43
1.10.3	CTLS: CVM List - AID A0000001523010, Discover (D-PAS EMV Online)	45
1.10.4	CTLS: Application Tag Data - AID A0000001523010, Discover (D-PAS EMV online) ...	45
1.10.5	CTLS: CVM List - AID A0000001523010, Discover (D-PAS EMV Offline).....	47
1.10.6	CTLS: Application Tag Data - AID A0000001523010, Discover (D-PAS EMV Offline)...	47
Chapter 2 - ASCII Character Conversion Chart.....		51

CAUTION

Multiple consecutive incorrect PIN entry attempts may result in the card being blocked. This is known as being 'PIN Blocked'.
 If this occurs, it will no longer be possible to enter an Offline PIN which will cause all future transactions to be declined.

***** It is not possible to unblock a 'PIN Blocked' card *****

Chapter 1 - ATH Prima EMV Test Card Set Profiles

This Evertec ATH Prima EMV Test Card Set contains 10 cards with at least one card from each of the following card brands.



	Test Card 01	Test Card 02	Test Card 03
Brand	Visa	Visa	Mastercard
Type	Credit	Credit	Credit
AID(s)	A0000000031010	A0000000031010	-
PAN	4761 7310 0000 0043	4761 7310 0000 0043	5413 3300 8902 0029
Expiry Date	12/2024	12/2024	12/2025
Service Code	201	201	201
Interface	Contact, Contactless, MSR	Contact, Contactless, MSR	MSR
CVM (Contact) Default Condition: Terminal Supports CVM	Offline Enciphered PIN Offline Plaintext PIN Signature Online PIN No CVM required See card definition	Offline Plaintext PIN & Signature Online PIN (ATM) Offline Plaintext PIN Online PIN Signature No CVM required See card definition	- See card definition
Approval Amount	\$10.00	\$10.00	\$20.00
Issuer Country Code	630 – Puerto Rico	630 – Puerto Rico	-
Application Currency Code	840 – USD	840 – USD	-
Language(s)	'enes' – English, Spanish	'enes' – English, Spanish	'enes' – English, Spanish
Card Version	v3.x	v3.x	v2.x

	Test Card 04	Test Card 05	Test Card 06
Brand	Mastercard	Maestro	Mastercard
Type	Credit / Debit	Credit	Credit
AID(s)	A000000004101001 A000000004101002	A0000000043060	A0000000041010
PAN	5457 2100 8902 0012 5413 3300 8902 0045	67999 98900 00020 0044	5413 3300 8902 0011
Expiry Date	12/2025	12/2025	12/2025
Service Code	201	220	601
Interface	Contact, MSR	Contact, MSR	Contact, MSR
CVM (Contact) Default Condition: <i>Terminal Supports CVM</i>	Offline Plaintext PIN Online PIN Signature No CVM required Fail CVM Processing See card definition	Offline Plaintext PIN Online PIN See card definition	Offline Plaintext PIN Online PIN Signature No CVM required See card definition
Approval Amount	\$20.00	\$20.00	\$20.00
Issuer Country Code	630 – Puerto Rico	630 – Puerto Rico	630 – Puerto Rico
Application Currency Code	840 – USD	840 – USD	840 – USD
Language(s)	'enes' – English, Spanish	'enes' – English, Spanish	'enes' – English, Spanish
Card Version	v2.x	v3.x	v3.x

	Test Card 07	Test Card 08	Test Card 09
Brand	American Express	American Express	Diners
Type	Credit	Credit	Credit
AID(s)	A000000025010801 A000000000291010	A000000025010801 A000000000291010	A00000015230100 00000000000000001 A00000015230100 00000000000000002
PAN	3411 115972 42513	3742 450017 51006	6510 0000 0000 0224
Expiry Date	01/2024	01/2024	12/2023
Service Code	201	201	201
Interface	Contact, MSR	Contact, MSR	Contact, MSR
CVM (Contact) Default Condition: <i>Terminal Supports CVM</i>	Online PIN (ATM) Signature No CVM required Fail CVM Processing See card definition	Online PIN (ATM) Online PIN No CVM required Fail CVM Processing See card definition	Online PIN (ATM) Online PIN Signature No CVM required See card definition
Approval Amount	\$1.03	\$1.03	\$79.00
Issuer Country Code	630 – Puerto Rico	630 – Puerto Rico	840 - USA
Application Currency Code	840 – USD	840 – USD	840 – USD
Language(s)	'en' – English	'en' – English	'enesfr' – English, Spanish, French
Card Version	v2.x	v2.x	v2.x

	Test Card 10
Brand	Discover
Type	Credit
AID(s)	A0000001523010
PAN	6510 0000 0000 0208
Expiry Date	12/2023
Service Code	201
Interface	Contact, Contactless, MSR
CVM (Contact) Default Condition: <i>Terminal Supports CVM</i>	Online PIN Signature No CVM required See card definition
Approval Amount	\$79.00
Issuer Country Code	630 – Puerto Rico
Application Currency Code	840 – USD
Language(s)	'en' – English
Card Version	v2.x

1.1 Test Card 01 – Visa, DI, Eng/Spa, PRO, USD

A Dual Interface (Contact / Contactless) Visa credit card with Issuer Country Code of 'Puerto Rico' and Currency Code of 'USD'.

The recommended transaction amount to generate a host approval is \$10.00.

1.1.1 Contact: CVM List - AID A000000031010, Visa (EMV)

Cardholder Verification Method List ('0403 0103 1E03 0203 1F00')			
CVM	Verification Method	Conditions	If unsuccessful
1	Offline Enciphered PIN	Terminal supports CVM type	Fail
2	Offline Plaintext PIN	Terminal supports CVM type	Fail
3	Signature (paper)	Terminal supports CVM type	Fail
4	Online PIN	Terminal supports CVM type	Fail
5	No CVM required	Always	Fail

1.1.2 Contact: Application Tag Data - AID A000000031010, Visa (EMV)

Tag	Element name	Data	Card v3.x
50	Application Label	56 49 53 41 20 43 52 45 44 49 54 -	'VISA CREDIT'
57	Track 2 Equivalent Data	47 61 73 10 00 00 00 43 D2 41 22 01 13 03 13 06 00 00 0F	
5A	Application Primary Account Number (PAN)	47 61 73 10 00 00 00 43	
5F 20	Cardholder Name	41 54 48 20 50 52 49 4D 41 2F 54 65 73 74 20 43 61 72 64 20 30 31 20 20 20 20 - 'ATH PRIMA/Test Card 01	
5F 24	Application Expiration Date	24 12 31	
5F 25	Application Effective Date	xx xx xx *	
5F 28	Issuer Country Code	06 30 - PRO	
5F 2D	Language Preference	65 6E 65 73 - 'enes' (English,Spanish)	
5F 30	Service Code	02 01	
5F 34	Application PAN Sequence Number	01	
82	Application Interchange Profile [VIS]	3C 00 BYTE 1: b7 - Offline SDA NOT supported b6 - Offline DDA supported b5 - Cardholder verification supported b4 - Terminal risk mgmt to be performed b3 - Issuer authentication supported via EXTERNAL AUTH command b1 - Combined DDA / GEN AC NOT supported BYTE 2: b8 - Use for Visa NOT supported b7 - Is NOT a Mobile handset	
84	Dedicated File (DF) Name	A0 00 00 00 03 10 10	
8C	Card Risk Management Data Object List 1 (CDOL1)	9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04	
8D	Card Risk Management Data Object List 2 (CDOL2)	8A 02 9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04	
8E	Cardholder Verification Method (CVM) List	00 00 00 00 00 00 00 00 04 03 01 03 1E 03 02 03 1F 00	
8F	Certification Authority Public Key Index	92	

Tag	Element name	Data	Card v3.x
90	Issuer Public Key Certificate	04 D6 DC A7 7E 2D DF B5 60 0A 9D DE 4E A2 23 91 BF 4A F3 37 F2 FB 99 41 91 E0 39 70 74 D5 35 E8 AB D2 7F 43 90 6A DD D4 5F 01 54 01 98 EF 23 3C 9D 4C C8 98 AD 56 A9 56 A9 66 D7 38 58 55 86 68 13 F5 E9 29 FB 72 FA E5 E4 40 64 2E B1 EE A3 0D 80 C3 E6 D2 81 E0 E6 FB 51 6B 25 1D D7 5C 01 D5 9C 71 78 28 27 39 1F 89 D8 FF D9 E6 EA 30 2C BE 1B C9 86 BE A0 36 5C 36 F7 A6 DA 9F FD 80 F4 D0 FF 9E D8 9D D5 15 9A 5B 00 3C 78 6A 11 17 94 FD 93 92 3D 6C ED 15 4D 35 4E A7 F0 4E 4A 48 76 1A 74 D9 FC 18 48 48 F1 C6 33 CE 5A DF 54 96 35 BD	
92	Issuer Public Key Remainder	85 AA DF 04 3F AA 38 48 ED 86 9D 6E B3 D9 70 F4 AC 08 A9 74 74 27 88 42 C8 55 84 E3 4B 6F AC C0 72 07 BC 41	
94	Application File Locator (AFL)	10 01 01 00 10 02 05 01 B0 01 01 00	
9F 07	Application Usage Control	FF 00 BYTE 1: b8 - Domestic cash trans. valid b7 - Int'l cash transactions valid b6 - Domestic goods valid b5 - International goods valid b4 - Domestic services valid b3 - International services valid b2 - ATMs valid b1 - non-ATM terminals valid BYTE 2: b8 - Domestic cashback NOT allowed b7 - International cashback NOT allowed	
9F 08	Application Version Number [VIS]	00 96	
9F 0D	Issuer Action Code - Default	B8 50 AC 88 00	
9F 0E	Issuer Action Code - Denial	00 00 00 00 00	
9F 0F	Issuer Action Code - Online	B8 70 BC 98 00	
9F 10	Issuer Application Data [VSDC]	xx xx 0A xx xx xx xx *	
9F 11	Issuer Code Table Index	01	
9F 12	Application Preferred Name	56 69 73 61 20 43 72 65 64 69 74 - 'Visa Credit'	
9F 13	Last Online Application Transaction Counter (ATC) Register	xx xx *	
9F 17	Personal Identification Number (PIN) Try Counter	09	
9F 1F	Track 1 Discretionary Data	31 31 34 33 38 30 34 34 30 30 30 30 30 30 30 30 30 30 30 30 30 30 30 30	
9F 26	Application Cryptogram (AC)	xx xx xx xx xx xx xx xx *	
9F 27	Cryptogram Information Data (CID)	80	
9F 32	Issuer Public Key Exponent	03	
9F 36	Application Transaction Counter (ATC)	xx xx *	
9F 44	Application Currency Exponent	02	

Tag	Element name	Data	Card v3.x
9F 46	ICC Public Key Certificate	8C 30 F9 F0 DF 98 58 74 1E BE 22 B7 EF 1A 22 CD 7B BC 5E 4E 6C CA E1 22 D9 EF 9E 72 01 05 7C 11 E5 AB F1 8F F4 26 0B E7 92 07 95 06 55 34 FB 26 1B 82 E9 F0 BE 16 7C 47 3B A1 77 7A E4 55 10 BD 66 B8 B4 99 BB 41 33 6E 3E 83 DF D3 5C 37 BC 26 DB 3C 85 66 C5 49 CE 29 F5 65 E6 BE 0D 94 51 2E CE 5F 6D D8 46 80 19 61 0B 4F FF 9C E4 84 C4 17 E9 73 A3 9A 9D 41 7E 49 C7 BF 19 F5 42 AC B8 DA 51 97 36 F6 14 9B A7 D4 BE 13 2F 0C F7 8E B9 28 35 47 34 5A 3B 1F 2F 6D 77 C3 D9 09 D2 EC EB BC DC F2 54 47 B4 4F 24 57 B0 6C FC DE 96 AC 68 6F	
9F 47	ICC Public Key Exponent	03	
9F 49	Dynamic Data Authentication Data Object List (DDOL)	9F 37 04	
9F 4B	Signed Dynamic Application Data	1E 2C BB D5 AA 37 2F 69 18 21 43 63 83 F2 79 DF AD 73 31 2A D9 4D 0F 1B 8C E0 DA 07 22 03 C6 7A CF 1E 1C E7 77 9F 0F 2D 0B D7 B1 20 03 53 F1 50 C0 BE 85 4B 95 6A 42 07 A4 70 92 0F C9 B1 60 BA D2 47 51 7D 91 B3 52 03 A4 04 B5 7D 9B 69 53 E2 2A FA B7 14 B4 6E 13 C1 19 F6 92 BD 1D 18 C4 51 5B BE C5 FE BB 38 28 B7 10 34 EF 97 82 49 0A 6C	
9F 51	Application Currency Code [VSDC]	08 40 - USD	
9F 52	Application Default Action [VSDC VIS 1.5]	C0 30 00 00 00 00	
9F 53	Consecutive Transaction Limit (International) [VSDC]	03	
9F 54	Cumulative Total Transaction Amount Limit [VSDC]	00 00 00 02 00 00	
9F 56	Issuer Authentication Indicator [VSDC]	80	
9F 57	Issuer Country Code [VSDC]	06 30 - PRO	
9F 58	Consecutive Transaction Counter Limit [VSDC]	03	
9F 59	Consecutive Transaction Counter Upper Limit [VSDC]	07	
9F 5C	Cumulative Total Transaction Amount Upper Limit [VSDC]	00 00 00 04 00 00	
9F 5E	Consecutive Transaction International Upper Limit [VSDC]	07	
9F 68	Card Additional Processes [qVSDC VCPS 2.1]	4E 00 F0 00	
9F 72	Consecutive Transaction Limit (International-Country) [VSDC]	03	
BF 55	Contactless Counters Data Template	DF 11 01 02 DF 21 01 03 DF 31 01 07	
BF 56	Counters Data Template	DF 11 01 02 DF 21 01 03 DF 31 01 07	
BF 57	International Counters Data Template	DF 11 01 00 DF 21 01 03 DF 31 01 07 DF 51 01 05 DF 61 01 03	
BF 58	Amounts Data Template	DF 11 06 00 00 00 01 00 04 DF 21 06 00 00 00 02 00 00 DF 31 06 00 00 00 04 00 00	
BF 5B	Application Internal Data Template	DF 01 02 00 00	

* Tag value changes with card usage

1.1.3 CTLS: Application Tag data - AID A000000031010, Visa (qVSDC Online ODA)

Tag	Element name	Data	Card v3.x
50	Application Label	56 49 53 41 20 43 52 45 44 49 54 - 'VISA CREDIT'	
57	Track 2 Equivalent Data	47 61 73 10 00 00 00 43 D2 41 22 01 13 03 13 06 00 00 0F	
5A	Application Primary Account Number (PAN)	47 61 73 10 00 00 00 43	
5F 24	Application Expiration Date	24 12 31	
5F 2D	Language Preference	65 6E 65 73 - 'enes' (English,Spanish)	
5F 34	Application PAN Sequence Number	01	
82	Application Interchange Profile [VCPS]	20 00 BYTE 1: b7 - Offline SDA (online Auth) NOT supported b6 - Offline DDA supported BYTE 2: b8 - MSD NOT supported b7 - Is Mobile handset b6 - Is Contactless transaction	
84	Dedicated File (DF) Name	A0 00 00 00 03 10 10	
8F	Certification Authority Public Key Index	92	
90	Issuer Public Key Certificate	04 D6 DC A7 7E 2D DF B5 60 0A 9D DE 4E A2 23 91 BF 4A F3 37 F2 FB 99 41 91 E0 39 70 74 D5 35 E8 AB D2 7F 43 90 6A DD D4 5F 01 54 01 98 EF 23 3C 9D 4C C8 98 AD 56 A9 56 A9 66 D7 38 58 55 86 68 13 F5 E9 29 FB 72 FA E5 E4 40 64 2E B1 EE A3 0D 80 C3 E6 D2 81 E0 E6 FB 51 6B 25 1D D7 5C 01 D5 9C 71 78 28 27 39 1F 89 D8 FF D9 E6 EA 30 2C BE 1B C9 86 BE A0 36 5C 36 F7 A6 DA 9F FD 80 F4 D0 FF 9E D8 9D D5 15 9A 5B 00 3C 78 6A 11 17 94 FD 93 92 3D 6C ED 15 4D 35 4E A7 F0 4E 4A 48 76 1A 74 D9 FC 18 48 48 F1 C6 33 CE 5A DF 54 96 35 BD	
92	Issuer Public Key Remainder	85 AA DF 04 3F AA 38 48 ED 86 9D 6E B3 D9 70 F4 AC 08 A9 74 74 27 88 42 C8 55 84 E3 4B 6F AC C0 72 07 BC 41	
94	Application File Locator (AFL)	10 02 02 01 10 04 07 00	
9F 10	Issuer Application Data [VSDC]	xx xx 0A xx xx xx xx *	
9F 13	Last Online Application Transaction Counter (ATC) Register	xx xx *	
9F 17	Personal Identification Number (PIN) Try Counter	09	
9F 26	Application Cryptogram (AC)	xx xx xx xx xx xx xx xx *	
9F 27	Cryptogram Information Data (CID)	80	
9F 32	Issuer Public Key Exponent	03	
9F 36	Application Transaction Counter (ATC)	xx xx *	
9F 38	Processing Options Data Object List (PDOL)	9F 66 04 9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04	
9F 46	ICC Public Key Certificate	8C 30 F9 F0 DF 98 58 74 1E BE 22 B7 EF 1A 22 CD 7B BC 5E 4E 6C CA E1 22 D9 EF 9E 72 01 05 7C 11 E5 AB F1 8F F4 26 0B E7 92 07 95 06 55 34 FB 26 1B 82 E9 F0 BE 16 7C 47 3B A1 77 7A E4 55 10 BD 66 B8 B4 99 BB 41 33 6E 3E 83 DF D3 5C 37 BC 26 DB 3C 85 66 C5 49 CE 29 F5 65 E6 BE 0D 94 51 2E CE 5F 6D D8 46 80 19 61 0B 4F FF 9C E4 84 C4 17 E9 73 A3 9A 9D 41 7E 49 C7 BF 19 F5 42 AC B8 DA 51 97 36 F6	

		14 9B A7 D4 BE 13 2F 0C F7 8E B9 28 35 47 34 5A 3B 1F 2F 6D 77 C3 D9 09 D2 EC EB BC DC F2 54 47 B4 4F 24 57 B0 6C FC DE 96 AC 68 6F
9F 47	ICC Public Key Exponent	03
9F 4B	Signed Dynamic Application Data	B5 DD 06 51 E0 9D 03 4A 19 8B 72 F4 AD C3 88 C0 BF 46 7D 61 5B 81 32 FC 44 90 40 26 53 1C 15 C6 82 DE FA 5A 7A 24 43 D9 A0 25 AB 81 84 1E A5 45 B3 F1 22 9B 72 8D 01 10 67 C9 EB 00 2C BB FB 4B CA 2B A5 B4 D0 07 FF A2 84 EA 3F B5 40 90 15 95 5F 48 9B 86 36 99 F5 AB D9 5A A2 D5 BD E2 A7 2A 04 6B E2 F7 82 37 2E 2C D3 2F 56 78 42 FA F6 D0
9F 51	Application Currency Code [VSDC]	08 40 - USD
9F 52	Application Default Action [VSDC VIS 1.5]	C0 30 00 00 00 00
9F 53	Consecutive Transaction Limit (International) [VSDC]	03
9F 54	Cumulative Total Transaction Amount Limit [VSDC]	00 00 00 02 00 00
9F 56	Issuer Authentication Indicator [VSDC]	80
9F 57	Issuer Country Code [VSDC]	06 30 - PRO
9F 58	Consecutive Transaction Counter Limit [VSDC]	03
9F 59	Consecutive Transaction Counter Upper Limit [VSDC]	07
9F 5A	Application Program Identifier	31 08 40 08 40
9F 5C	Cumulative Total Transaction Amount Upper Limit [VSDC]	00 00 00 04 00 00
9F 5E	Consecutive Transaction International Upper Limit [VSDC]	07
9F 68	Card Additional Processes [qVSDC VCPS 2.1]	4E 00 F0 00
9F 69	Card Authentication Related Data [qVSDC]	01 39 A3 0C DD 38 00
9F 6C	Card Transaction Qualifiers [qVSDC VCPS 2.1]	38 00 BYTE 1: b8 - Domestic cash trans. NOT valid b7 - Int'l cash transactions NOT valid b6 - Domestic goods valid b5 - International goods valid b4 - Domestic services valid b3 - International services NOT valid b2 - ATMs NOT valid b1 - non-ATM terminals NOT valid BYTE 2: b8 - Domestic cashback NOT allowed b7 - International cashback NOT allowed
9F 6E	Form Factor Indicator [qVSDC]	20 70 00 00
9F 72	Consecutive Transaction Limit (International-Country) [VSDC]	03
BF 55	Contactless Counters Data Template	DF 11 01 02 DF 21 01 03 DF 31 01 07
BF 56	Counters Data Template	DF 11 01 01 DF 21 01 03 DF 31 01 07
BF 57	International Counters Data Template	DF 11 01 00 DF 21 01 03 DF 31 01 07 DF 51 01 04 DF 61 01 03
BF 58	Amounts Data Template	DF 11 06 00 00 00 01 00 04 DF 21 06 00 00 00 02 00 00 DF 31 06 00 00 00 04 00 00
BF 5B	Application Internal Data Template	DF 01 02 00 00

* Tag value changes with card usage

1.1.4 CTLS: Application Tag data - AID A000000031010, Visa (qVSDC Offline)

Tag	Element name	Data	Card v3.x
50	Application Label	56 49 53 41 20 43 52 45 44 49 54 - 'VISA CREDIT'	
57	Track 2 Equivalent Data	47 61 73 10 00 00 00 43 D2 41 22 01 13 03 13 06 00 00 0F	
5A	Application Primary Account Number (PAN)	47 61 73 10 00 00 00 43	
5F 24	Application Expiration Date	24 12 31	
5F 2D	Language Preference	65 6E 65 73 - 'enes' (English,Spanish)	
5F 34	Application PAN Sequence Number	01	
82	Application Interchange Profile [VCPS]	20 00 BYTE 1: b7 - Offline SDA (online Auth) NOT supported b6 - Offline DDA supported BYTE 2: b8 - MSD NOT supported b7 - Is Mobile handset b6 - Is Contactless transaction	
84	Dedicated File (DF) Name	A0 00 00 00 03 10 10	
8F	Certification Authority Public Key Index	92	
90	Issuer Public Key Certificate	04 D6 DC A7 7E 2D DF B5 60 0A 9D DE 4E A2 23 91 BF 4A F3 37 F2 FB 99 41 91 E0 39 70 74 D5 35 E8 AB D2 7F 43 90 6A DD D4 5F 01 54 01 98 EF 23 3C 9D 4C C8 98 AD 56 A9 56 A9 66 D7 38 58 55 86 68 13 F5 E9 29 FB 72 FA E5 E4 40 64 2E B1 EE A3 0D 80 C3 E6 D2 81 E0 E6 FB 51 6B 25 1D D7 5C 01 D5 9C 71 78 28 27 39 1F 89 D8 FF D9 E6 EA 30 2C BE 1B C9 86 BE A0 36 5C 36 F7 A6 DA 9F FD 80 F4 D0 FF 9E D8 9D D5 15 9A 5B 00 3C 78 6A 11 17 94 FD 93 92 3D 6C ED 15 4D 35 4E A7 F0 4E 4A 48 76 1A 74 D9 FC 18 48 48 F1 C6 33 CE 5A DF 54 96 35 BD	
92	Issuer Public Key Remainder	85 AA DF 04 3F AA 38 48 ED 86 9D 6E B3 D9 70 F4 AC 08 A9 74 74 27 88 42 C8 55 84 E3 4B 6F AC C0 72 07 BC 41	
94	Application File Locator (AFL)	10 02 02 01 10 04 07 00	
9F 10	Issuer Application Data [VSDC]	xx xx 0A xx xx xx xx *	
9F 13	Last Online Application Transaction Counter (ATC) Register	xx xx *	
9F 17	Personal Identification Number (PIN) Try Counter	09	
9F 26	Application Cryptogram (AC)	xx xx xx xx xx xx xx xx *	
9F 27	Cryptogram Information Data (CID)	40	
9F 32	Issuer Public Key Exponent	03	
9F 36	Application Transaction Counter (ATC)	xx xx *	
9F 38	Processing Options Data Object List (PDOL)	9F 66 04 9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04	
9F 46	ICC Public Key Certificate	8C 30 F9 F0 DF 98 58 74 1E BE 22 B7 EF 1A 22 CD 7B BC 5E 4E 6C CA E1 22 D9 EF 9E 72 01 05 7C 11 E5 AB F1 8F F4 26 0B E7 92 07 95 06 55 34 FB 26 1B 82 E9 F0 BE 16 7C 47 3B A1 77 7A E4 55 10 BD 66 B8 B4 99 BB 41 33 6E 3E 83 DF D3 5C 37 BC 26 DB 3C 85 66 C5 49 CE 29 F5 65 E6 BE 0D 94 51 2E CE 5F 6D D8 46 80 19 61 0B 4F FF 9C	

		E4 84 C4 17 E9 73 A3 9A 9D 41 7E 49 C7 BF 19 F5 42 AC B8 DA 51 97 36 F6 14 9B A7 D4 BE 13 2F 0C F7 8E B9 28 35 47 34 5A 3B 1F 2F 6D 77 C3 D9 09 D2 EC EB BC DC F2 54 47 B4 4F 24 57 B0 6C FC DE 96 AC 68 6F
9F 47	ICC Public Key Exponent	03
9F 4B	Signed Dynamic Application Data	B5 B5 E9 BD E7 6E E7 F7 E8 BB 3C 78 29 43 A3 D7 F8 5F E9 9D E3 B0 54 79 68 C6 0D 54 A4 5E 7D 64 30 48 C4 AA 02 EA D0 6C E3 B1 65 D6 30 C9 6C 27 A4 AC 4D 31 AB 92 A1 82 67 EA 90 FD D1 68 4B D0 25 4F 02 10 B4 73 C1 F7 A3 BF F7 04 A5 AA 1D E7 62 94 E1 60 1E 82 99 E1 53 37 C8 21 EF 55 48 31 0E EB FE 57 02 05 91 E2 6C 48 6B 65 09 8A 3A 8F
9F 51	Application Currency Code [VSDC]	08 40 - USD
9F 52	Application Default Action [VSDC VIS 1.5]	C0 30 00 00 00 00
9F 53	Consecutive Transaction Limit (International) [VSDC]	03
9F 54	Cumulative Total Transaction Amount Limit [VSDC]	00 00 00 02 00 00
9F 56	Issuer Authentication Indicator [VSDC]	80
9F 57	Issuer Country Code [VSDC]	06 30 - PRO
9F 58	Consecutive Transaction Counter Limit [VSDC]	03
9F 59	Consecutive Transaction Counter Upper Limit [VSDC]	07
9F 5A	Application Program Identifier	31 08 40 08 40
9F 5C	Cumulative Total Transaction Amount Upper Limit [VSDC]	00 00 00 04 00 00
9F 5E	Consecutive Transaction International Upper Limit [VSDC]	07
9F 68	Card Additional Processes [qVSDC VCPS 2.1]	4E 00 F0 00
9F 69	Card Authentication Related Data [qVSDC]	01 71 EA 2B 8C 38 00
9F 6C	Card Transaction Qualifiers [qVSDC VCPS 2.1]	38 00 BYTE 1: b8 - Domestic cash trans. NOT valid b7 - Int'l cash transactions NOT valid b6 - Domestic goods valid b5 - International goods valid b4 - Domestic services valid b3 - International services NOT valid b2 - ATMs NOT valid b1 - non-ATM terminals NOT valid BYTE 2: b8 - Domestic cashback NOT allowed b7 - International cashback NOT allowed
9F 6E	Form Factor Indicator [qVSDC]	20 70 00 00
9F 72	Consecutive Transaction Limit (International-Country) [VSDC]	03
BF 55	Contactless Counters Data Template	DF 11 01 02 DF 21 01 03 DF 31 01 07
BF 56	Counters Data Template	DF 11 01 01 DF 21 01 03 DF 31 01 07
BF 57	International Counters Data Template	DF 11 01 00 DF 21 01 03 DF 31 01 07 DF 51 01 04 DF 61 01 03
BF 58	Amounts Data Template	DF 11 06 00 00 00 01 00 04 DF 21 06 00 00 00 02 00 00 DF 31 06 00 00 00

		04 00 00
BF 5B	Application Internal Data Template	DF 01 02 00 00

* Tag value changes with card usage

1.2 Test Card 02 – Visa, DI, Eng/Spa, PRO, USD

A Dual Interface (Contact / Contactless) Visa credit card with Issuer Country Code of 'Puerto Rico' and Currency Code of 'USD'.

The recommended transaction amount to generate a host approval is \$10.00.

1.2.1 Contact: CVM List - AID A000000031010, Visa (EMV)

Cardholder Verification Method List ('0303 0201 0103 0203 1E03 1F00')			
CVM	Verification Method	Conditions	If unsuccessful
1	Offline Plaintext PIN & Signature	Terminal supports CVM type	Fail
2	Online PIN	Unattended Cash	Fail
3	Offline Plaintext PIN	Terminal supports CVM type	Fail
4	Online PIN	Terminal supports CVM type	Fail
5	Signature (paper)	Terminal supports CVM type	Fail
6	No CVM required	Always	Always

1.2.2 Contact: Application Tag Data - AID A000000031010, Visa (EMV)

Tag	Element name	Data	Card v3.x
50	Application Label	56 49 53 41 20 43 52 45 44 49 54 - 'VISA CREDIT'	
57	Track 2 Equivalent Data	47 61 73 10 00 00 00 43 D2 41 22 01 13 03 13 06 00 00 0F	
5A	Application Primary Account Number (PAN)	47 61 73 10 00 00 00 43	
5F 20	Cardholder Name	41 54 48 20 50 52 49 4D 41 2F 54 65 73 74 20 43 61 72 64 20 30 32 20 20 20 - 'ATH PRIMA/Test Card 02'	
5F 24	Application Expiration Date	24 12 31	
5F 25	Application Effective Date	xx xx xx *	
5F 28	Issuer Country Code	06 30 - PRO	
5F 2D	Language Preference	65 6E 65 73 - 'enes' (English,Spanish)	
5F 30	Service Code	02 01	
5F 34	Application PAN Sequence Number	01	
82	Application Interchange Profile [VIS]	3C 00 BYTE 1: b7 - Offline SDA NOT supported b6 - Offline DDA supported b5 - Cardholder verification supported b4 - Terminal risk mgmt to be performed b3 - Issuer authentication supported via EXTERNAL AUTH command b1 - Combined DDA / GEN AC NOT supported BYTE 2: b8 - Use for Visa NOT supported b7 - Is NOT a Mobile handset	
84	Dedicated File (DF) Name	A0 00 00 00 03 10 10	
8C	Card Risk Management Data Object List 1 (CDOL1)	9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04	

Tag	Element name	Data	Card v3.x
8D	Card Risk Management Data Object List 2 (CDOL2)	8A 02 9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04	
8E	Cardholder Verification Method (CVM) List	00 00 00 00 00 00 00 00 03 03 02 01 01 03 02 03 1E 03 1F 00	
8F	Certification Authority Public Key Index	92	
90	Issuer Public Key Certificate	04 D6 DC A7 7E 2D DF B5 60 0A 9D DE 4E A2 23 91 BF 4A F3 37 F2 FB 99 41 91 E0 39 70 74 D5 35 E8 AB D2 7F 43 90 6A DD D4 5F 01 54 01 98 EF 23 3C 9D 4C C8 98 AD 56 A9 56 A9 66 D7 38 58 55 86 68 13 F5 E9 29 FB 72 FA E5 E4 40 64 2E B1 EE A3 0D 80 C3 E6 D2 81 E0 E6 FB 51 6B 25 1D D7 5C 01 D5 9C 71 78 28 27 39 1F 89 D8 FF D9 E6 EA 30 2C BE 1B C9 86 BE A0 36 5C 36 F7 A6 DA 9F FD 80 F4 D0 FF 9E D8 9D D5 15 9A 5B 00 3C 78 6A 11 17 94 FD 93 92 3D 6C ED 15 4D 35 4E A7 F0 4E 4A 48 76 1A 74 D9 FC 18 48 48 F1 C6 33 CE 5A DF 54 96 35 BD	
92	Issuer Public Key Remainder	85 AA DF 04 3F AA 38 48 ED 86 9D 6E B3 D9 70 F4 AC 08 A9 74 74 27 88 42 C8 55 84 E3 4B 6F AC C0 72 07 BC 41	
94	Application File Locator (AFL)	10 01 01 00 10 02 05 01 B0 01 01 00	
9F 07	Application Usage Control	FF 00 BYTE 1: b8 - Domestic cash trans. valid b7 - Int'l cash transactions valid b6 - Domestic goods valid b5 - International goods valid b4 - Domestic services valid b3 - International services valid b2 - ATMs valid b1 - non-ATM terminals valid BYTE 2: b8 - Domestic cashback NOT allowed b7 - International cashback NOT allowed	
9F 08	Application Version Number [VIS]	00 96	
9F 0D	Issuer Action Code - Default	B8 50 AC 88 00	
9F 0E	Issuer Action Code - Denial	00 00 00 00 00	
9F 0F	Issuer Action Code - Online	B8 70 BC 98 00	
9F 10	Issuer Application Data [VSDC]	xx xx 0A xx xx xx xx *	
9F 11	Issuer Code Table Index	01	
9F 12	Application Preferred Name	56 69 73 61 20 43 72 65 64 69 74 - 'Visa Credit'	
9F 13	Last Online Application Transaction Counter (ATC) Register	xx xx *	
9F 17	Personal Identification Number (PIN) Try Counter	09	
9F 1F	Track 1 Discretionary Data	31 31 34 33 38 30 34 34 30 30 30 30 30 30 30 30 30 30 30 30 30 30 30 30	
9F 26	Application Cryptogram (AC)	xx xx xx xx xx xx xx xx *	
9F 27	Cryptogram Information Data (CID)	80	
9F 32	Issuer Public Key Exponent	03	
9F 36	Application Transaction Counter (ATC)	xx xx *	
9F 44	Application Currency Exponent	02	

Tag	Element name	Data	Card v3.x
9F 46	ICC Public Key Certificate	8C 30 F9 F0 DF 98 58 74 1E BE 22 B7 EF 1A 22 CD 7B BC 5E 4E 6C CA E1 22 D9 EF 9E 72 01 05 7C 11 E5 AB F1 8F F4 26 0B E7 92 07 95 06 55 34 FB 26 1B 82 E9 F0 BE 16 7C 47 3B A1 77 7A E4 55 10 BD 66 B8 B4 99 BB 41 33 6E 3E 83 DF D3 5C 37 BC 26 DB 3C 85 66 C5 49 CE 29 F5 65 E6 BE 0D 94 51 2E CE 5F 6D D8 46 80 19 61 0B 4F FF 9C E4 84 C4 17 E9 73 A3 9A 9D 41 7E 49 C7 BF 19 F5 42 AC B8 DA 51 97 36 F6 14 9B A7 D4 BE 13 2F 0C F7 8E B9 28 35 47 34 5A 3B 1F 2F 6D 77 C3 D9 09 D2 EC EB BC DC F2 54 47 B4 4F 24 57 B0 6C FC DE 96 AC 68 6F	
9F 47	ICC Public Key Exponent	03	
9F 49	Dynamic Data Authentication Data Object List (DDOL)	9F 37 04	
9F 4B	Signed Dynamic Application Data	1E 2C BB D5 AA 37 2F 69 18 21 43 63 83 F2 79 DF AD 73 31 2A D9 4D 0F 1B 8C E0 DA 07 22 03 C6 7A CF 1E 1C E7 77 9F 0F 2D 0B D7 B1 20 03 53 F1 50 C0 BE 85 4B 95 6A 42 07 A4 70 92 0F C9 B1 60 BA D2 47 51 7D 91 B3 52 03 A4 04 B5 7D 9B 69 53 E2 2A FA B7 14 B4 6E 13 C1 19 F6 92 BD 1D 18 C4 51 5B BE C5 FE BB 38 28 B7 10 34 EF 97 82 49 0A 6C	
9F 51	Application Currency Code [VSDC]	08 40 - USD	
9F 52	Application Default Action [VSDC VIS 1.5]	C0 30 00 00 00 00	
9F 53	Consecutive Transaction Limit (International) [VSDC]	03	
9F 54	Cumulative Total Transaction Amount Limit [VSDC]	00 00 00 02 00 00	
9F 56	Issuer Authentication Indicator [VSDC]	80	
9F 57	Issuer Country Code [VSDC]	06 30 - PRO	
9F 58	Consecutive Transaction Counter Limit [VSDC]	03	
9F 59	Consecutive Transaction Counter Upper Limit [VSDC]	07	
9F 5C	Cumulative Total Transaction Amount Upper Limit [VSDC]	00 00 00 04 00 00	
9F 5E	Consecutive Transaction International Upper Limit [VSDC]	07	
9F 68	Card Additional Processes [qVSDC VCPS 2.1]	4E 00 F0 00	
9F 72	Consecutive Transaction Limit (International-Country) [VSDC]	03	
BF 55	Contactless Counters Data Template	DF 11 01 02 DF 21 01 03 DF 31 01 07	
BF 56	Counters Data Template	DF 11 01 02 DF 21 01 03 DF 31 01 07	
BF 57	International Counters Data Template	DF 11 01 00 DF 21 01 03 DF 31 01 07 DF 51 01 05 DF 61 01 03	
BF 58	Amounts Data Template	DF 11 06 00 00 00 01 00 04 DF 21 06 00 00 00 02 00 00 DF 31 06 00 00 00 04 00 00	
BF 5B	Application Internal Data Template	DF 01 02 00 00	

* Tag value changes with card usage

1.2.3 CTLS: Application Tag data - AID A000000031010, Visa (qVSDC Online ODA)

Tag	Element name	Data	Card v3.x
50	Application Label	56 49 53 41 20 43 52 45 44 49 54 - 'VISA CREDIT'	
57	Track 2 Equivalent Data	47 61 73 10 00 00 00 43 D2 41 22 01 13 03 13 06 00 00 0F	
5A	Application Primary Account Number (PAN)	47 61 73 10 00 00 00 43	
5F 24	Application Expiration Date	24 12 31	
5F 2D	Language Preference	65 6E 65 73 - 'enes' (English,Spanish)	
5F 34	Application PAN Sequence Number	01	
82	Application Interchange Profile [VCPS]	20 00 BYTE 1: b7 - Offline SDA (online Auth) NOT supported b6 - Offline DDA supported BYTE 2: b8 - MSD NOT supported b7 - Is Mobile handset b6 - Is Contactless transaction	
84	Dedicated File (DF) Name	A0 00 00 00 03 10 10	
8F	Certification Authority Public Key Index	92	
90	Issuer Public Key Certificate	04 D6 DC A7 7E 2D DF B5 60 0A 9D DE 4E A2 23 91 BF 4A F3 37 F2 FB 99 41 91 E0 39 70 74 D5 35 E8 AB D2 7F 43 90 6A DD D4 5F 01 54 01 98 EF 23 3C 9D 4C C8 98 AD 56 A9 56 A9 66 D7 38 58 55 86 68 13 F5 E9 29 FB 72 FA E5 E4 40 64 2E B1 EE A3 0D 80 C3 E6 D2 81 E0 E6 FB 51 6B 25 1D D7 5C 01 D5 9C 71 78 28 27 39 1F 89 D8 FF D9 E6 EA 30 2C BE 1B C9 86 BE A0 36 5C 36 F7 A6 DA 9F FD 80 F4 D0 FF 9E D8 9D D5 15 9A 5B 00 3C 78 6A 11 17 94 FD 93 92 3D 6C ED 15 4D 35 4E A7 F0 4E 4A 48 76 1A 74 D9 FC 18 48 48 F1 C6 33 CE 5A DF 54 96 35 BD	
92	Issuer Public Key Remainder	85 AA DF 04 3F AA 38 48 ED 86 9D 6E B3 D9 70 F4 AC 08 A9 74 74 27 88 42 C8 55 84 E3 4B 6F AC C0 72 07 BC 41	
94	Application File Locator (AFL)	10 02 02 01 10 04 07 00	
9F 10	Issuer Application Data [VSDC]	xx xx 0A xx xx xx xx *	
9F 13	Last Online Application Transaction Counter (ATC) Register	xx xx *	
9F 17	Personal Identification Number (PIN) Try Counter	09	
9F 26	Application Cryptogram (AC)	xx xx xx xx xx xx xx xx *	
9F 27	Cryptogram Information Data (CID)	80	
9F 32	Issuer Public Key Exponent	03	
9F 36	Application Transaction Counter (ATC)	xx xx *	
9F 38	Processing Options Data Object List (PDOL)	9F 66 04 9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04	
9F 46	ICC Public Key Certificate	8C 30 F9 F0 DF 98 58 74 1E BE 22 B7 EF 1A 22 CD 7B BC 5E 4E 6C CA E1 22 D9 EF 9E 72 01 05 7C 11 E5 AB F1 8F F4 26 0B E7 92 07 95 06 55 34 FB 26 1B 82 E9 F0 BE 16 7C 47 3B A1 77 7A E4 55 10 BD 66 B8 B4 99 BB 41 33 6E 3E 83 DF D3 5C 37 BC 26 DB 3C 85 66 C5 49 CE 29 F5 65 E6 BE 0D 94 51 2E CE 5F 6D D8 46 80 19 61 0B 4F FF 9C E4 84 C4 17 E9 73 A3 9A 9D 41 7E 49 C7 BF 19 F5 42 AC B8 DA 51 97 36 F6	

		14 9B A7 D4 BE 13 2F 0C F7 8E B9 28 35 47 34 5A 3B 1F 2F 6D 77 C3 D9 09 D2 EC EB BC DC F2 54 47 B4 4F 24 57 B0 6C FC DE 96 AC 68 6F
9F 47	ICC Public Key Exponent	03
9F 4B	Signed Dynamic Application Data	69 B9 64 36 72 F1 0C 7A 31 C1 87 CE E8 D8 98 0C FC 0D 67 54 CB 15 70 5F 47 B9 93 53 FB 94 B0 67 EE 82 BD AD 68 A3 31 0B 26 A6 12 EB 2D 12 45 B9 9B DC E3 3B 2F 58 EB DD 47 5E D1 02 80 57 FF 3B ED 10 EB F1 93 80 24 23 EB 3D 5A 2B C3 C2 A5 0A 58 F0 F0 8D BD E6 41 7E 2A 6F 96 58 D1 5F 1F 19 51 65 88 9B 2B 9F 9E A5 62 D0 03 AD 98 EF 9A F8
9F 51	Application Currency Code [VSDC]	08 40 - USD
9F 52	Application Default Action [VSDC VIS 1.5]	C0 30 00 00 00 00
9F 53	Consecutive Transaction Limit (International) [VSDC]	03
9F 54	Cumulative Total Transaction Amount Limit [VSDC]	00 00 00 02 00 00
9F 56	Issuer Authentication Indicator [VSDC]	80
9F 57	Issuer Country Code [VSDC]	06 30 - PRO
9F 58	Consecutive Transaction Counter Limit [VSDC]	03
9F 59	Consecutive Transaction Counter Upper Limit [VSDC]	07
9F 5A	Application Program Identifier	31 08 40 08 40
9F 5C	Cumulative Total Transaction Amount Upper Limit [VSDC]	00 00 00 04 00 00
9F 5E	Consecutive Transaction International Upper Limit [VSDC]	07
9F 68	Card Additional Processes [qVSDC VCPS 2.1]	4E 00 F0 00
9F 69	Card Authentication Related Data [qVSDC]	01 19 BB 77 D6 38 00
9F 6C	Card Transaction Qualifiers [qVSDC VCPS 2.1]	38 00 BYTE 1: b8 - Domestic cash trans. NOT valid b7 - Int'l cash transactions NOT valid b6 - Domestic goods valid b5 - International goods valid b4 - Domestic services valid b3 - International services NOT valid b2 - ATMs NOT valid b1 - non-ATM terminals NOT valid BYTE 2: b8 - Domestic cashback NOT allowed b7 - International cashback NOT allowed
9F 6E	Form Factor Indicator [qVSDC]	20 70 00 00
9F 72	Consecutive Transaction Limit (International-Country) [VSDC]	03
BF 55	Contactless Counters Data Template	DF 11 01 02 DF 21 01 03 DF 31 01 07
BF 56	Counters Data Template	DF 11 01 01 DF 21 01 03 DF 31 01 07
BF 57	International Counters Data Template	DF 11 01 00 DF 21 01 03 DF 31 01 07 DF 51 01 04 DF 61 01 03
BF 58	Amounts Data Template	DF 11 06 00 00 00 01 00 04 DF 21 06 00 00 00 02 00 00 DF 31 06 00 00 00 04 00 00
BF 5B	Application Internal Data Template	DF 01 02 00 00

50	Application Label	56 49 53 41 20 43 52 45 44 49 54
----	-------------------	----------------------------------

* Tag value changes with card usage

1.2.4 CTLS: Application Tag data - AID A000000031010, Visa (qVSDC Offline)

Tag	Element name	Data	Card v3.x
50	Application Label	56 49 53 41 20 43 52 45 44 49 54	- 'VISA CREDIT'
57	Track 2 Equivalent Data	47 61 73 10 00 00 00 43 D2 41 22 01 13 03 13 06 00 00 0F	
5A	Application Primary Account Number (PAN)	47 61 73 10 00 00 00 43	
5F 24	Application Expiration Date	24 12 31	
5F 2D	Language Preference	65 6E 65 73	- 'enes' (English,Spanish)
5F 34	Application PAN Sequence Number	01	
82	Application Interchange Profile [VCPS]	20 00 BYTE 1: b7 - Offline SDA (online Auth) NOT supported b6 - Offline DDA supported BYTE 2: b8 - MSD NOT supported b7 - Is Mobile handset b6 - Is Contactless transaction	
84	Dedicated File (DF) Name	A0 00 00 00 03 10 10	
8F	Certification Authority Public Key Index	92	
90	Issuer Public Key Certificate	04 D6 DC A7 7E 2D DF B5 60 0A 9D DE 4E A2 23 91 BF 4A F3 37 F2 FB 99 41 91 E0 39 70 74 D5 35 E8 AB D2 7F 43 90 6A DD D4 5F 01 54 01 98 EF 23 3C 9D 4C C8 98 AD 56 A9 56 A9 66 D7 38 58 55 86 68 13 F5 E9 29 FB 72 FA E5 E4 40 64 2E B1 EE A3 0D 80 C3 E6 D2 81 E0 E6 FB 51 6B 25 1D D7 5C 01 D5 9C 71 78 28 27 39 1F 89 D8 FF D9 E6 EA 30 2C BE 1B C9 86 BE A0 36 5C 36 F7 A6 DA 9F FD 80 F4 D0 FF 9E D8 9D D5 15 9A 5B 00 3C 78 6A 11 17 94 FD 93 92 3D 6C ED 15 4D 35 4E A7 F0 4E 4A 48 76 1A 74 D9 FC 18 48 48 F1 C6 33 CE 5A DF 54 96 35 BD	
92	Issuer Public Key Remainder	85 AA DF 04 3F AA 38 48 ED 86 9D 6E B3 D9 70 F4 AC 08 A9 74 74 27 88 42 C8 55 84 E3 4B 6F AC C0 72 07 BC 41	
94	Application File Locator (AFL)	10 02 02 01 10 04 07 00	
9F 10	Issuer Application Data [VSDC]	xx xx 0A xx xx xx xx *	
9F 13	Last Online Application Transaction Counter (ATC) Register	xx xx *	
9F 17	Personal Identification Number (PIN) Try Counter	09	
9F 26	Application Cryptogram (AC)	xx xx xx xx xx xx xx xx *	
9F 27	Cryptogram Information Data (CID)	40	
9F 32	Issuer Public Key Exponent	03	
9F 36	Application Transaction Counter (ATC)	xx xx *	
9F 38	Processing Options Data Object List (PDOL)	9F 66 04 9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04	
9F 46	ICC Public Key Certificate	8C 30 F9 F0 DF 98 58 74 1E BE 22 B7 EF 1A 22 CD 7B BC 5E 4E 6C CA E1 22 D9 EF 9E 72 01 05 7C 11 E5 AB F1 8F F4 26 0B E7 92 07 95 06 55 34 FB 26 1B 82 E9 F0 BE 16 7C 47 3B A1 77 7A E4 55 10 BD 66 B8 B4 99 BB 41 33 6E 3E 83 DF D3 5C 37 BC 26 DB 3C 85 66	

		C5 49 CE 29 F5 65 E6 BE 0D 94 51 2E CE 5F 6D D8 46 80 19 61 0B 4F FF 9C E4 84 C4 17 E9 73 A3 9A 9D 41 7E 49 C7 BF 19 F5 42 AC B8 DA 51 97 36 F6 14 9B A7 D4 BE 13 2F 0C F7 8E B9 28 35 47 34 5A 3B 1F 2F 6D 77 C3 D9 09 D2 EC EB BC DC F2 54 47 B4 4F 24 57 B0 6C FC DE 96 AC 68 6F
9F 47	ICC Public Key Exponent	03
9F 4B	Signed Dynamic Application Data	1B EC E8 80 6A 50 90 DE 6C B7 A9 0E EC B4 1E 00 7C 60 F8 DC 75 1D 13 B4 43 A8 BB 26 EF ED C1 79 32 0E C4 7C A8 06 98 58 71 9C 9C 9D D4 5D 9F E0 63 24 3A 5A A7 F7 AE CF C0 C1 1B 02 AC B1 5D B1 3C FF A7 78 66 3C 92 91 06 75 FD E7 8B 65 DE 8F 0B A8 5F E3 BF 96 0A 63 C8 94 7B 0E 1B 2F 29 3E 91 DB D0 E4 E1 FC 79 F2 75 16 25 09 E1 18 33 76
9F 51	Application Currency Code [VSDC]	08 40 - USD
9F 52	Application Default Action [VSDC VIS 1.5]	C0 30 00 00 00 00
9F 53	Consecutive Transaction Limit (International) [VSDC]	03
9F 54	Cumulative Total Transaction Amount Limit [VSDC]	00 00 00 02 00 00
9F 56	Issuer Authentication Indicator [VSDC]	80
9F 57	Issuer Country Code [VSDC]	06 30 - PRO
9F 58	Consecutive Transaction Counter Limit [VSDC]	03
9F 59	Consecutive Transaction Counter Upper Limit [VSDC]	07
9F 5A	Application Program Identifier	31 08 40 08 40
9F 5C	Cumulative Total Transaction Amount Upper Limit [VSDC]	00 00 00 04 00 00
9F 5E	Consecutive Transaction International Upper Limit [VSDC]	07
9F 68	Card Additional Processes [qVSDC VCPS 2.1]	4E 00 F0 00
9F 69	Card Authentication Related Data [qVSDC]	01 58 00 1B 32 38 00
9F 6C	Card Transaction Qualifiers [qVSDC VCPS 2.1]	38 00 BYTE 1: b8 - Domestic cash trans. NOT valid b7 - Int'l cash transactions NOT valid b6 - Domestic goods valid b5 - International goods valid b4 - Domestic services valid b3 - International services NOT valid b2 - ATMs NOT valid b1 - non-ATM terminals NOT valid BYTE 2: b8 - Domestic cashback NOT allowed b7 - International cashback NOT allowed
9F 6E	Form Factor Indicator [qVSDC]	20 70 00 00
9F 72	Consecutive Transaction Limit (International-Country) [VSDC]	03
BF 55	Contactless Counters Data Template	DF 11 01 02 DF 21 01 03 DF 31 01 07
BF 56	Counters Data Template	DF 11 01 01 DF 21 01 03 DF 31 01 07
BF 57	International Counters Data Template	DF 11 01 00 DF 21 01 03 DF 31 01 07 DF 51 01 04 DF 61 01 03

BF 58	Amounts Data Template	DF 11 06 00 00 00 01 00 04 DF 21 06 00 00 00 02 00 00 DF 31 06 00 00 00 04 00 00
BF 5B	Application Internal Data Template	DF 01 02 00 00

* Tag value changes with card usage

1.3 Test Card 03 – Mastercard, Technical Fallback Card

This card has a chip image printed on the card but it does not contain an actual chip.

When inserted, a chip error will be detected.

This should trigger Technical Fallback processing and the transaction should continue as a magstripe Technical Fallback transaction.

The recommended transaction amount to generate a host approval is \$20.00.

1.4 Test Card 04 – Mastercard, CO, 2-AID, Eng/Spa, PRO, USD

A Contact-only Mastercard credit / debit card with 2 AIDs, with Issuer Country Code of 'Puerto Rico' and Currency Code of 'USD'.

The recommended transaction amount to generate a host approval is \$20.00.

1.4.1 Contact: CVM List - AID A00000004101001, Mastercard (EMV)

Cardholder Verification Method List ('4103 4203 1E03 1F00 0000')			
CVM	Verification Method	Conditions	If unsuccessful
1	Offline Plaintext PIN	Terminal supports CVM type	Next CVM
2	Online PIN	Terminal supports CVM type	Next CVM
3	Signature (paper)	Terminal supports CVM type	Fail
4	No CVM required	Always	Fail
5	Fail CVM Processing	Always	Fail

1.4.2 Contact: Application Tag Data - AID A00000004101001, Mastercard (EMV)

Tag	Element name	Data	Card v2.x
42	Issuer Identification Number (IIN)	54 57 21	
50	Application Label	4D 41 53 54 45 52 43 41 52 44 20 44 45 42 49 54 - 'MASTERCARD DEBIT'	
57	Track 2 Equivalent Data	54 57 21 00 89 02 00 12 D2 51 22 01 14 83 59 49 00 0F	
5A	Application Primary Account Number (PAN)	54 57 21 00 89 02 00 12	
5F 20	Cardholder Name	41 54 48 20 50 52 49 4D 41 2F 54 65 73 74 20 43 61 72 64 20 30 34 20 20 20 20 - 'ATH PRIMA/Test Card 04'	
5F 24	Application Expiration Date	25 12 31	
5F 25	Application Effective Date	xx xx xx *	
5F 28	Issuer Country Code	06 30 - PRO	
5F 2D	Language Preference	65 6E 65 73 - 'enes' (English,Spanish)	
5F 34	Application PAN Sequence Number	03	
5F 55	Issuer Country Code (alpha2 format)	50 52 - 'PR'	

Tag	Element name	Data	Card v2.x
82	Application Interchange Profile	18 00 BYTE 1: b7 - Offline SDA NOT supported b6 - Offline DDA NOT supported b5 - Cardholder verification supported b4 - Terminal risk mgmt to be performed b3 - Issuer authentication NOT supported using External Auth command b2 - On device Cardholder verification NOT supported b1 - Combined DDA / GEN AC NOT supported BYTE 2: b8 - EMV mode NOT supported	
84	Dedicated File (DF) Name	A0 00 00 00 04 10 10 01	
87	Application Priority Indicator	01	
8C	Card Risk Management Data Object List 1 (CDOL1)	9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04 9F 35 01 9F 45 02 9F 4C 08 9F 34 03 9F 21 03 9F 7C 14	
8D	Card Risk Management Data Object List 2 (CDOL2)	91 0A 8A 02 95 05 9F 37 04 9F 4C 08	
8E	Cardholder Verification Method (CVM) List	00 00 00 00 00 00 00 00 41 03 42 03 1E 03 1F 00 00 00	
94	Application File Locator (AFL)	08 01 01 00 08 03 03 00	
94	Application File Locator (AFL)	08 01 01 00 08 03 03 00	
9F 07	Application Usage Control	FF C0 BYTE 1: b8 - Domestic cash trans. valid b7 - Int'l cash transactions valid b6 - Domestic goods valid b5 - International goods valid b4 - Domestic services valid b3 - International services valid b2 - ATMs valid b1 - non-ATM terminals valid BYTE 2: b8 - Domestic cashback allowed b7 - International cashback allowed	
9F 08	Application Version Number	00 02	
9F 0D	Issuer Action Code - Default	FC 50 A0 00 00	
9F 0E	Issuer Action Code - Denial	00 00 00 00 00	
9F 0F	Issuer Action Code - Online	F8 70 A4 98 00	
9F 10	Issuer Application Data [M/Chip Advance]	xx 10 xx xx xx xx xx xx xx xx xx xx xx xx xx xx xx xx *	
9F 11	Issuer Code Table Index	01	
9F 12	Application Preferred Name	4D 61 73 74 65 72 63 61 72 64 20 44 65 62 69 74 - 'Mastercard Debit'	
9F 14	Counter 1 Lower Limit [Mastercard]	00	
9F 17	Personal Identification Number (PIN) Try Counter	09	
9F 23	Counter 1 Upper Limit [Mastercard]	00	
9F 26	Application Cryptogram (AC)	xx xx xx xx xx xx xx xx *	
9F 27	Cryptogram Information Data (CID)	80	
9F 36	Application Transaction Counter (ATC)	xx xx *	
9F 42	Application Currency Code	08 40 - USD	
9F 4A	Static Data Authentication Tag List	82	
9F 4D	Transaction Log Entry	0B 0A	
9F 4F	Transaction Log Format	9F 27 01 9F 02 06 5F 2A 02 9A 03 9F 36 02 9F 52 06 DF 3E 01 9F 21 03 9F 7C 14	

Tag	Element name	Data	Card v2.x
9F 6E	Third Party Data [Mastercard]	06 30 00 00 30 30 00	
9F 7E	Application Life Cycle Data [Mastercard]	04 10 0B 14 00 01 00 00 50 17 79 00 A0 00 00 00 04 10 10 00 00 00 00 00 00 00 00 00 00 96 00 97 02 00 5A 5A 00 00 00 00 00 00 00 00 00 00 00 00	
C3	Card Issuer Action Code (Contact) - Decline [M/Chip Advance]	00 00 00	
C4	Card Issuer Action Code (Contact) - Default [M/Chip Advance]	00 00 00	
C5	Card Issuer Action Code (Contact) - Online [M/Chip Advance]	00 00 00	
C6	PIN Try Limit [M/Chip Advance]	09	
C7	CDOL1 Related Data Length [Mastercard]	42	
C8	CRM Country Code [Mastercard]	06 30 - PRO	
C9	Accumulator 1 Currency Code [Mastercard]	08 40 - USD	
CA	Accumulator 1 Lower Limit [Mastercard]	00 00 00 00 00 00	
CB	Accumulator 1 Upper Limit [Mastercard]	00 00 00 00 00 00	
CD	Card Issuer Action Code (Contactless) - Default [M/Chip Advance]	00 00 00	
CE	Card Issuer Action Code (Contactless) - Online [M/Chip Advance]	00 00 00	
CF	Card Issuer Action Code (Contactless) - Decline [M/Chip Advance]	00 00 00	
D1	Accumulator 1 Currency Conversion Table [Mastercard]	08 40 00 00 00 08 40 00 00 00 08 40 00 00 00 08 40 00 00 00 08 40 00 00 00	
D3	Additional Check Table [Mastercard]	00 00 00 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF	
D5	Application Control [M/Chip Advance]	84 00 80 00 C6 02	
D6	Default ARPC Response Code [M/Chip Advance]	00 10	
D7	Application Control [M/Chip Advance]	00 00 00 00 00 00	
D9	Application File Locator (Contactless)		
DE	Log Data Table [M/Chip Advance]	00 00 00 00 00 00 00 00 00	
DF 02	Security Limits Status (Contact) [M/Chip Advance]	00	
DF 11	Accumulator 1 Control (Contact) [M/Chip Advance]	C1	
DF 12	Accumulator 1 Control (Contactless) [M/Chip Advance]	00	
DF 14	Accumulator 2 Control (Contact) [M/Chip Advance]	00	
DF 15	Accumulator 2 Control (Contactless) [M/Chip Advance]	00	
DF 16	Accumulator 2 Currency Code [Mastercard]	08 40 - USD	
DF 17	Accumulator 2 Currency Conversion Table [Mastercard]	08 40 00 00 00 08 40 00 00 00 08 40 00 00 00 08 40 00 00 00 08 40 00 00 00	
DF 18	Accumulator 2 Lower Limit [Mastercard]	00 00 00 00 00 00	
DF 19	Accumulator 2 Upper Limit [Mastercard]	00 00 00 00 00 00	
DF 1A	Counter 1 Control (Contact) [M/Chip Advance]	C1	
DF 1B	Counter 1 Control (Contactless) [M/Chip Advance]	00	

Tag	Element name	Data	Card v2.x
DF 1D	Counter 2 Control (Contact) [M/Chip Advance]	00	
DF 1E	Counter 2 Control (Contactless) [M/Chip Advance]	00	
DF 1F	Counter 2 Lower Limit [Mastercard]	00	
DF 21	Counter 2 Upper Limit [Mastercard]	00	
DF 22	MTA CVM (Contact) [M/Chip Advance]	00 00 00 00 00 00	
DF 23	MTA CVM (Contactless) [M/Chip Advance]	00 00 00 00 00 00	
DF 24	MTA Currency Code [M/Chip Advance]	08 40 - USD	
DF 25	MTA NoCVM (Contact) [M/Chip Advance]	00 00 00 00 00 00	
DF 26	MTA NoCVM (Contactless) [M/Chip Advance]	00 00 00 00 00 00	
DF 27	Number Of Days Offline Limit [M/Chip Advance]	00 00	
DF 28	Accumulator 1 CVR Dependency Data (Contact) [M/Chip Advance]	00 00 00	
DF 29	Accumulator 1 CVR Dependency Data (Contactless) [M/Chip Advance]	00 00 00	
DF 2A	Accumulator 2 CVR Dependency Data (Contact) [M/Chip Advance]	00 00 00	
DF 2B	Accumulator 2 CVR Dependency Data (Contactless) [M/Chip Advance]	00 00 00	
DF 2C	Counter 1 CVR Dependency Data (Contact) [M/Chip Advance]	00 00 00	
DF 2D	Counter 1 CVR Dependency Data (Contactless) [M/Chip Advance]	00 00 00	
DF 2E	Counter 2 CVR Dependency Data (Contact) [M/Chip Advance]	00 00 00	
DF 2F	Counter 2 CVR Dependency Data (Contactless) [M/Chip Advance]	00 00 00	
DF 30	Interface Enabling Switch [M/Chip Advance]	01	
DF 35	Security Limits Status (Contactless) [M/Chip Advance]	00	
DF 37	Security Limits Status Common [M/Chip Advance]	00	
DF 3C	CVR Issuer Discretionary Data (Contact) [M/Chip Advance]	00	
DF 3D	CVR Issuer Discretionary Data (Contactless) [M/Chip Advance]	00	
DF 3F	Read Record Filter (Contact) [M/Chip Advance]	00	
DF 40	Read Record Filter (Contactless) [M/Chip Advance]		
DF 41	DS Management Control [M/Chip Advance]	20	

* Tag value changes with card usage

1.4.3 Contact: CVM List - AID A00000004101002, Mastercard (EMV)

Cardholder Verification Method List ('4103 4203 1E03 1F00 0000')			
CVM	Verification Method	Conditions	If unsuccessful
1	Offline Plaintext PIN	Terminal supports CVM type	Next CVM
2	Online PIN	Terminal supports CVM type	Next CVM

3	Signature (paper)	Terminal supports CVM type	Fail
4	No CVM required	Always	Fail
5	Fail CVM Processing	Always	Fail

1.4.4 Contact: Application Tag Data - AID A00000004101002, Mastercard (EMV)

Tag	Element name	Data	Card v2.x
50	Application Label	4D 41 53 54 45 52 43 41 52 44 20 20 20 20 20 - 'MASTERCARD'	
57	Track 2 Equivalent Data	54 13 33 00 89 02 00 45 D2 51 22 01 14 83 59 49 00 0F	
5A	Application Primary Account Number (PAN)	54 13 33 00 89 02 00 45	
5F 20	Cardholder Name	41 54 48 20 50 52 49 4D 41 2F 54 65 73 74 20 43 61 72 64 20 30 34 20 20 20 20 - 'ATH PRIMA/Test Card 04'	
5F 24	Application Expiration Date	25 12 31	
5F 25	Application Effective Date	xx xx xx *	
5F 28	Issuer Country Code	06 30 - PRO	
5F 2D	Language Preference	65 6E 65 73 - 'enes' (English,Spanish)	
5F 30	Service Code	02 01	
5F 34	Application PAN Sequence Number	03	
82	Application Interchange Profile	18 00 BYTE 1: b7 - Offline SDA NOT supported b6 - Offline DDA NOT supported b5 - Cardholder verification supported b4 - Terminal risk mgmt to be performed b3 - Issuer authentication NOT supported using External Auth command b2 - On device Cardholder verification NOT supported b1 - Combined DDA / GEN AC NOT supported BYTE 2: b8 - EMV mode NOT supported	
84	Dedicated File (DF) Name	A0 00 00 00 04 10 10 02	
87	Application Priority Indicator	02	
8C	Card Risk Management Data Object List 1 (CDOL1)	9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04 9F 35 01 9F 45 02 9F 4C 08 9F 34 03 9F 21 03 9F 7C 14	
8D	Card Risk Management Data Object List 2 (CDOL2)	91 0A 8A 02 95 05 9F 37 04 9F 4C 08	
8E	Cardholder Verification Method (CVM) List	00 00 00 00 00 00 00 00 00 41 03 42 03 1E 03 1F 00 00 00	
94	Application File Locator (AFL)	08 01 01 00 10 01 02 00	
94	Application File Locator (AFL)	08 01 01 00 10 01 02 00	
9F 07	Application Usage Control	FF C0 BYTE 1: b8 - Domestic cash trans. valid b7 - Int'l cash transactions valid b6 - Domestic goods valid b5 - International goods valid b4 - Domestic services valid b3 - International services valid b2 - ATMs valid b1 - non-ATM terminals valid BYTE 2: b8 - Domestic cashback allowed b7 - International cashback allowed	
9F 08	Application Version Number	00 02	

Tag	Element name	Data	Card v2.x
9F 0D	Issuer Action Code - Default	FC 50 A0 00 00	
9F 0E	Issuer Action Code - Denial	00 00 00 00 00	
9F 0F	Issuer Action Code - Online	F8 70 A4 98 00	
9F 10	Issuer Application Data [M/Chip Advance]	xx 10 xx xx xx xx xx xx xx xx xx xx xx xx xx xx xx xx *	
9F 11	Issuer Code Table Index	01	
9F 12	Application Preferred Name	4D 61 73 74 65 72 63 61 72 64 20 20 20 20 20 20 - 'Mastercard'	
9F 14	Counter 1 Lower Limit [Mastercard]	00	
9F 17	Personal Identification Number (PIN) Try Counter	09	
9F 23	Counter 1 Upper Limit [Mastercard]	00	
9F 26	Application Cryptogram (AC)	xx xx xx xx xx xx xx xx *	
9F 27	Cryptogram Information Data (CID)	80	
9F 36	Application Transaction Counter (ATC)	xx xx *	
9F 42	Application Currency Code	08 40 - USD	
9F 4D	Transaction Log Entry	0B 0A	
9F 4F	Transaction Log Format	9F 27 01 9F 02 06 5F 2A 02 9A 03 9F 36 02 9F 52 06 DF 3E 01 9F 21 03 9F 7C 14	
9F 7E	Application Life Cycle Data [Mastercard]	04 10 0B 14 00 01 00 00 50 17 79 00 A0 00 00 00 04 10 10 17 05 23 00 00 00 00 00 00 00 96 00 97 02 00 5A 5A 00 00 00 00 00 00 00 00 00 00 00 00	
C3	Card Issuer Action Code (Contact) - Decline [M/Chip Advance]	00 00 00	
C4	Card Issuer Action Code (Contact) - Default [M/Chip Advance]	00 00 00	
C5	Card Issuer Action Code (Contact) - Online [M/Chip Advance]	00 00 00	
C6	PIN Try Limit [M/Chip Advance]	09	
C7	CDOL1 Related Data Length [Mastercard]	42	
C8	CRM Country Code [Mastercard]	06 30 - PRO	
C9	Accumulator 1 Currency Code [Mastercard]	08 40 - USD	
CA	Accumulator 1 Lower Limit [Mastercard]	00 00 00 00 00 00	
CB	Accumulator 1 Upper Limit [Mastercard]	00 00 00 00 00 00	
CD	Card Issuer Action Code (Contactless) - Default [M/Chip Advance]	00 00 00	
CE	Card Issuer Action Code (Contactless) - Online [M/Chip Advance]	00 00 00	
CF	Card Issuer Action Code (Contactless) - Decline [M/Chip Advance]	00 00 00	
D1	Accumulator 1 Currency Conversion Table [Mastercard]	08 40 00 00 00 08 40 00 00 00 08 40 00 00 00 08 40 00 00 00 08 40 00 00 00	
D3	Additional Check Table [Mastercard]	00 00 00 FF FF FF FF FF FF FF FF FF FF FF FF FF FF	
D5	Application Control [M/Chip Advance]	84 00 80 00 C6 02	
D6	Default ARPC Response Code [M/Chip Advance]	00 10	
D7	Application Control [M/Chip Advance]	00 00 00 00 00 00	
D9	Application File Locator (Contactless)		
DE	Log Data Table [M/Chip Advance]	00 00 00 00 00 00 00 00 00 00	
DF 02	Security Limits Status (Contact) [M/Chip Advance]	00	

Tag	Element name	Data	Card v2.x
DF 11	Accumulator 1 Control (Contact) [M/Chip Advance]	c1	
DF 12	Accumulator 1 Control (Contactless) [M/Chip Advance]	00	
DF 14	Accumulator 2 Control (Contact) [M/Chip Advance]	00	
DF 15	Accumulator 2 Control (Contactless) [M/Chip Advance]	00	
DF 16	Accumulator 2 Currency Code [Mastercard]	08 40 - USD	
DF 17	Accumulator 2 Currency Conversion Table [Mastercard]	08 40 00 00 00 08 40 00 00 00 08 40 00 00 00 08 40 00 00 00 08 40 00 00 00	
DF 18	Accumulator 2 Lower Limit [Mastercard]	00 00 00 00 00 00	
DF 19	Accumulator 2 Upper Limit [Mastercard]	00 00 00 00 00 00	
DF 1A	Counter 1 Control (Contact) [M/Chip Advance]	c1	
DF 1B	Counter 1 Control (Contactless) [M/Chip Advance]	00	
DF 1D	Counter 2 Control (Contact) [M/Chip Advance]	00	
DF 1E	Counter 2 Control (Contactless) [M/Chip Advance]	00	
DF 1F	Counter 2 Lower Limit [Mastercard]	00	
DF 21	Counter 2 Upper Limit [Mastercard]	00	
DF 22	MTA CVM (Contact) [M/Chip Advance]	00 00 00 00 00 00	
DF 23	MTA CVM (Contactless) [M/Chip Advance]	00 00 00 00 00 00	
DF 24	MTA Currency Code [M/Chip Advance]	08 40 - USD	
DF 25	MTA NoCVM (Contact) [M/Chip Advance]	00 00 00 00 00 00	
DF 26	MTA NoCVM (Contactless) [M/Chip Advance]	00 00 00 00 00 00	
DF 27	Number Of Days Offline Limit [M/Chip Advance]	00 00	
DF 28	Accumulator 1 CVR Dependency Data (Contact) [M/Chip Advance]	00 00 00	
DF 29	Accumulator 1 CVR Dependency Data (Contactless) [M/Chip Advance]	00 00 00	
DF 2A	Accumulator 2 CVR Dependency Data (Contact) [M/Chip Advance]	00 00 00	
DF 2B	Accumulator 2 CVR Dependency Data (Contactless) [M/Chip Advance]	00 00 00	
DF 2C	Counter 1 CVR Dependency Data (Contact) [M/Chip Advance]	00 00 00	
DF 2D	Counter 1 CVR Dependency Data (Contactless) [M/Chip Advance]	00 00 00	
DF 2E	Counter 2 CVR Dependency Data (Contact) [M/Chip Advance]	00 00 00	
DF 2F	Counter 2 CVR Dependency Data (Contactless) [M/Chip Advance]	00 00 00	
DF 30	Interface Enabling Switch [M/Chip Advance]	01	
DF 35	Security Limits Status (Contactless) [M/Chip Advance]	00	
DF 37	Security Limits Status Common [M/Chip Advance]	00	

Tag	Element name	Data	Card v2.x
DF 3C	CVR Issuer Discretionary Data (Contact) [M/Chip Advance]	00	
DF 3D	CVR Issuer Discretionary Data (Contactless) [M/Chip Advance]	00	
DF 3F	Read Record Filter (Contact) [M/Chip Advance]	00	
DF 40	Read Record Filter (Contactless) [M/Chip Advance]		
DF 41	DS Management Control [M/Chip Advance]	20	

* Tag value changes with card usage

1.5 Test Card 05 – Maestro, CO, Eng/Spa, PRO, USD

A Contact-only Maestro credit card with Issuer Country Code of 'Puerto Rico' and Currency Code of 'USD'.

The recommended transaction amount to generate a host approval is \$20.00.

1.5.1 Contact: CVM List - AID A000000043060, Maestro (EMV)

Cardholder Verification Method List ('4103 4203')			
CVM	Verification Method	Conditions	If unsuccessful
1	Offline Plaintext PIN	Terminal supports CVM type	Next CVM
2	Online PIN	Terminal supports CVM type	Next CVM

1.5.2 Contact: Application Tag Data - AID A000000043060, Maestro (EMV)

Tag	Element name	Data	Card v3.x
50	Application Label	4D 41 45 53 54 52 4F	'MAESTRO'
57	Track 2 Equivalent Data	67 99 99 89 00 00 02 00 04 4D 25 12 22 00 83 55 06 06 0F	
5A	Application Primary Account Number (PAN)	67 99 99 89 00 00 02 00 04 4F	
5F 20	Cardholder Name	41 54 48 20 50 52 49 4D 41 2F 54 65 73 74 20 43 61 72 64 20 30 35 20 20 20	'ATH PRIMA/Test Card 05'
5F 24	Application Expiration Date	25 12 31	
5F 25	Application Effective Date	xx xx xx *	
5F 28	Issuer Country Code	06 30	PRO
5F 2D	Language Preference	65 6E 65 73	'enes' (English,Spanish)
5F 30	Service Code	02 20	
5F 34	Application PAN Sequence Number	01	
82	Application Interchange Profile [M/Chip, PayPass]	18 00 BYTE 1: b7 - Offline SDA NOT supported b6 - Offline DDA NOT supported b5 - Cardholder verification supported b4 - Terminal risk mgmt to be performed b3 - Issuer authentication NOT supported via EXTERNAL AUTH command b2 - On device Cardholder verification NOT supported b1 - Combined DDA / GEN AC NOT supported BYTE 2: b8 - Mag Stripe profile [PayPass] ONLY supported	

Tag	Element name	Data	Card v3.x
84	Dedicated File (DF) Name	A0 00 00 00 04 30 60	
87	Application Priority Indicator	01	
8C	Card Risk Management Data Object List 1 (CDOL1)	9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04 9F 35 01 9F 45 02 9F 4C 08 9F 34 03	
8D	Card Risk Management Data Object List 2 (CDOL2)	91 0A 8A 02 95 05 9F 37 04 9F 4C 08	
8E	Cardholder Verification Method (CVM) List	00 00 00 00 00 00 00 00 41 03 42 03	
8F	Certification Authority Public Key Index	FA	
90	Issuer Public Key Certificate	8B ED 68 CB 5E 81 B7 6E F8 A9 F6 FF 38 16 8D 72 8F 11 A1 60 F7 8A 48 56 2F 54 4D 0B A4 28 26 C3 59 89 B4 33 3F AC 96 FF 7E FB 34 F3 4F D3 F8 15 A2 BC 0B 2B 8B AF D8 4F D9 9B 26 C9 6B 7B 35 E2 B0 80 F1 66 4A 48 1B 98 0F B6 C4 14 05 79 6A 0B 9D 5C 9C DE 2E F3 66 8E BD 05 57 D7 28 DB 3A 0A BC 4F 87 80 3C F2 81 80 79 5C E3 3A 37 7E 39 7A A8 A7 12 51 D8 8E 2B 09 2E 28 7B B7 80 86 5C 6A B9 FA 89 1F 85 B2 68 D2 15 A4 3C 2A 77 C3 C1 D9	
92	Issuer Public Key Remainder	D3 52 41 07	
94	Application File Locator (AFL)	08 02 04 01 18 01 01 00 20 01 01 00	
9F 07	Application Usage Control	3F 00 BYTE 1: b8 - Domestic cash trans. NOT valid b7 - Int'l cash transactions NOT valid b6 - Domestic goods valid b5 - International goods valid b4 - Domestic services valid b3 - International services valid b2 - ATMs valid b1 - non-ATM terminals valid BYTE 2: b8 - Domestic cashback NOT allowed b7 - International cashback NOT allowed	
9F 08	Application Version Number	00 02	
9F 0D	Issuer Action Code - Default	FC 50 A0 00 00	
9F 0E	Issuer Action Code - Denial	FF FF FF FF FF	
9F 0F	Issuer Action Code - Online	F8 70 A4 98 00	
9F 10	Issuer Application Data [M/Chip 4]	xx 10 xx xx xx xx xx xx xx xx xx xx xx xx xx xx xx xx *	
9F 11	Issuer Code Table Index	01	
9F 12	Application Preferred Name	4D 61 65 73 74 72 6F - 'Maestro'	
9F 14	Lower Consecutive Offline Limit	00	
9F 17	Personal Identification Number (PIN) Try Counter	09	
9F 1F	Track 1 Discretionary Data	30 38 33 35 35 30 36 30 36 30 30 30 30 30 30 30 30 30 30 30 30 30 30 30	
9F 23	Upper Consecutive Offline Limit	00	
9F 26	Application Cryptogram (AC)	xx xx xx xx xx xx xx xx *	
9F 27	Cryptogram Information Data (CID)	00	
9F 32	Issuer Public Key Exponent	03	
9F 36	Application Transaction Counter (ATC)	xx xx *	
9F 42	Application Currency Code	08 40 - USD	
9F 44	Application Currency Exponent	02	

Tag	Element name	Data	Card v3.x
9F 46	ICC Public Key Certificate	7F 3A 04 80 B5 C6 A9 BB 64 41 3D 1C 12 40 E2 DC 0C 68 A6 05 05 E6 94 4B 63 00 BD 57 79 49 47 24 7F C5 00 A1 CF 25 C7 1C 75 C8 79 01 58 F0 AB 27 E0 66 0E B2 8D BB D1 36 4F FF E6 4F E4 16 7B D8 09 A8 7D 74 F4 67 F5 E0 26 3F E1 C3 A8 4D CE 78 05 12 CB 93 9F 27 A4 AD DC 71 99 29 79 45 25 03 CC 10 A6 93 70 2C DC 3C D2 AC 70 E9 0E F1 53 75	
9F 47	ICC Public Key Exponent	03	
9F 48	ICC Public Key Remainder	0C F0 CE 08 10 17 0B 68 DD AE E4 00 95 2D 14 C6 1E EA 2F CD 58 26 18 E5 23 F5 4D EA D5 5C C9 E4 C9 C7 AA 0F AD 95 5E F7 06 45	
9F 49	Dynamic Data Authentication Data Object List (DDOL)	9F 37 04	
9F 4A	Static Data Authentication Tag List	82	
9F 4D	Transaction Log Entry	0B 0A	
9F 4F	Transaction Log Format	9F 27 01 9F 02 06 5F 2A 02 9A 03 9F 36 02 9F 52 06	
9F 6E	Third Party Data [Mastercard]	06 30 00 00 30 30 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	
9F 7E	Application Life Cycle Data [Mastercard]	03 10 0C 12 00 09 00 00 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF 00 04 00 00 02 60 00 00 38 4A 02 11 50 35 43 44 30 37 32 20	
C3	Card Issuer Action Code - Decline [Mastercard]	00 00 00	
C4	Card Issuer Action Code - Default [Mastercard]	00 00 00	
C5	Card Issuer Action Code - Online [Mastercard]	00 00 00	
C6	Counters [Mastercard]	00 02 00 00 00 00 00 00 00 00	
C7	CDOL1 Related Data Length [Mastercard]	2B	
C8	CRM Country Code [Mastercard]	06 30 - PRO	
C9	CRM Currency Code [M/Chip4]	08 40 - USD	
CA	Lower Cumulative Offline Transaction Amount [M/Chip]	00 00 00 00 00 00	
CB	Upper Cumulative Offline Transaction Amount [M/Chip]	00 00 00 00 00 00	
D1	Currency Conversion Table [M/Chip]	08 40 00 01 00 08 40 00 01 00 08 40 00 01 00 08 40 00 01 00 08 40 00 01 00	
D3	Additional Check Table [Mastercard]	00 00 00 FF FF FF FF FF FF FF FF FF FF FF FF FF FF	
D5	Application Control [M/Chip]	CC 00	
D6	Default ARPC Response Code [M/Chip4]	00 12	
DF 02	Security Limits Status [Mastercard]	00	

* Tag value changes with card usage

1.6 Test Card 06 – Mastercard, CO, Eng/Spa, PRO, USD

A Contact-only Mastercard credit card with Issuer Country Code of 'Puerto Rico' and Currency Code of 'USD'.

The recommended transaction amount to generate a host approval is \$20.00

1.6.1 Contact: CVM List - AID A000000041010, Mastercard (EMV)

Cardholder Verification Method List ('4103 4203 1E03 1F00')			
CVM	Verification Method	Conditions	If unsuccessful
1	Offline Plaintext PIN	Terminal supports CVM type	Next CVM
2	Online PIN	Terminal supports CVM type	Next CVM
3	Signature (paper)	Terminal supports CVM type	Fail
4	No CVM required	Always	Fail

1.6.2 Contact: Application Tag Data - AID A000000041010, Mastercard (EMV)

Tag	Element name	Data	Card v3.x
50	Application Label	4D 41 53 54 45 52 43 41 52 44 - 'MASTERCARD'	
57	Track 2 Equivalent Data	54 13 33 00 89 02 00 11 D2 51 26 01 07 93 60 80 50 00 0F	
5A	Application Primary Account Number (PAN)	54 13 33 00 89 02 00 11	
5F 20	Cardholder Name	41 54 48 20 50 52 49 4D 41 2F 54 65 73 74 20 43 61 72 64 20 30 36 20 20 20 20 - 'ATH PRIMA/Test Card 06'	
5F 24	Application Expiration Date	25 12 31	
5F 25	Application Effective Date	xx xx xx *	
5F 28	Issuer Country Code	06 30 - PRO	
5F 2D	Language Preference	65 6E 65 73 - 'enes' (English,Spanish)	
5F 30	Service Code	06 01	
5F 34	Application PAN Sequence Number	03	
82	Application Interchange Profile [M/Chip, PayPass]	30 00 BYTE 1: b7 - Offline SDA NOT supported b6 - Offline DDA supported b5 - Cardholder verification supported b4 - Terminal risk mgmt NOT to be performed b3 - Issuer authentication NOT supported via EXTERNAL AUTH command b1 - Combined DDA / GEN AC NOT supported BYTE 2: b8 - EMV Contactless NOT supported	
84	Dedicated File (DF) Name	A0 00 00 00 04 10 10	
87	Application Priority Indicator	01	
8C	Card Risk Management Data Object List 1 (CDOL1)	9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04 9F 35 01 9F 45 02 9F 4C 08 9F 34 03 9B 02	
8D	Card Risk Management Data Object List 2 (CDOL2)	91 0A 8A 02 95 05 9B 02	
8E	Cardholder Verification Method (CVM) List	00 00 00 00 00 00 00 00 41 03 42 03 1E 03 1F 00	
8F	Certification Authority Public Key Index	FA	

Tag	Element name	Data	Card v3.x
90	Issuer Public Key Certificate	18 89 B9 97 E6 FC E8 4B 4A E7 AB 87 43 1C BD B3 DF 8C 1D 5A 55 A7 F6 0D 29 59 AF 3A 51 04 E7 58 83 17 ED 74 08 66 68 CF 1A 05 47 84 F7 49 3C 6D 74 7F A7 96 EC 14 D3 33 A6 8E C7 E0 08 62 95 9A 0B D0 F0 48 20 80 B7 1A C1 B7 62 5B 1B 8B 1F 35 A6 69 19 99 BA 78 F5 92 E2 3F 95 E9 96 09 D1 08 CF 1C 0E 30 8A 8B F6 4F BD E8 37 D3 CE 13 8A 50 DC 50 AF 4B 41 EE 53 D9 8A 11 B6 A8 1D DD 44 CC 43 0C 1E F3 BB 9D 1D 75 A0 2F AA 9C 81 4A FC 58	
92	Issuer Public Key Remainder	D3 52 41 07	
94	Application File Locator (AFL)	08 02 04 01 18 01 01 00 20 01 01 00	
9F 07	Application Usage Control	FF 00 BYTE 1: b8 - Domestic cash trans. valid b7 - Int'l cash transactions valid b6 - Domestic goods valid b5 - International goods valid b4 - Domestic services valid b3 - International services valid b2 - ATMs valid b1 - non-ATM terminals valid BYTE 2: b8 - Domestic cashback NOT allowed b7 - International cashback NOT allowed	
9F 08	Application Version Number	00 02	
9F 0D	Issuer Action Code - Default	FC 50 A0 00 00	
9F 0E	Issuer Action Code - Denial	00 00 00 00 00	
9F 0F	Issuer Action Code - Online	F8 70 A4 98 00	
9F 10	Issuer Application Data [M/Chip 4]	xx 10 xx xx xx xx xx xx xx xx xx xx xx xx xx xx xx xx *	
9F 11	Issuer Code Table Index	01	
9F 12	Application Preferred Name	4D 61 73 74 65 72 63 61 72 64 - 'Mastercard'	
9F 14	Lower Consecutive Offline Limit	FF	
9F 17	Personal Identification Number (PIN) Try Counter	09	
9F 1F	Track 1 Discretionary Data	30 37 39 33 36 30 38 30 35 30 30 30 30 30 30 30 30 30 30 30 30 30 30 30	
9F 23	Upper Consecutive Offline Limit	00	
9F 26	Application Cryptogram (AC)	xx xx xx xx xx xx xx xx *	
9F 27	Cryptogram Information Data (CID)	80	
9F 32	Issuer Public Key Exponent	03	
9F 36	Application Transaction Counter (ATC)	xx xx *	
9F 42	Application Currency Code	08 40 - USD	
9F 44	Application Currency Exponent	02	
9F 46	ICC Public Key Certificate	37 A8 11 AB 31 33 4A 7F 4E EB 3E 5F 34 BE 06 F9 5D 54 B5 02 F5 D9 3A 62 CF 5B 8A EC 0B C7 81 DC 3E 0C D2 BB BB 45 99 B9 F4 70 D3 20 E1 B1 3E 76 65 6D 99 34 42 8F CC 84 BD 11 03 54 C3 C4 71 7A 5C 12 38 04 37 D0 94 0F A4 DE 2D 14 DB 2F 61 14 A0 5D 7F 28 BF 58 EB 84 8A 83 44 07 97 07 64 8B 9A B8 D5 1D 0F D0 33 B6 78 F5 A7 D9 03 EA D6 8F	
9F 47	ICC Public Key Exponent	03	

Tag	Element name	Data	Card v3.x
9F 48	ICC Public Key Remainder	CD 2A EA 12 B5 9F B7 2A FC EA E4 4A 81 D4 68 C1 10 4B 5C 88 23 48 93 49 4A 76 CD 81 1C BF BC 71 11 E4 79 3B 1D C3 8F 28 5C 97	
9F 49	Dynamic Data Authentication Data Object List (DDOL)	9F 37 04	
9F 4A	Static Data Authentication Tag List	82	
9F 4B	Signed Dynamic Application Data	29 B3 D8 92 2B BD 99 CE 9A 84 14 2F B6 DA 4A BB 5B 1E C9 D3 7E D5 D7 53 26 4A 02 C8 0A 8E 80 C4 92 26 F9 15 DC 6B 39 9D 49 7C C8 33 EC D7 D7 44 10 07 14 ED 88 4C 67 5E FD 4A 7D CF 73 35 53 3E 32 50 BB 7C E7 91 BD A6 5E 71 29 21 DB D6 09 C8 B2 F9 D1 87 53 E3 68 04 24 06 40 12 95 73 B6 03 49 AF C2 13 6B E6 50 BF B3 43 E6 3C 06 E6 59 26	
9F 4D	Transaction Log Entry	0B 0A	
9F 4F	Transaction Log Format	9F 27 01 9F 02 06 5F 2A 02 9A 03 9F 36 02 9F 52 06	
9F 6E	Third Party Data [Mastercard]	06 30 00 00 30 30 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	
9F 7E	Application Life Cycle Data [Mastercard]	03 10 0C 12 00 09 00 00 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF 00 04 00 00 02 60 00 00 38 4A 02 11 50 35 43 44 30 37 32 20	
C3	Card Issuer Action Code - Decline [Mastercard]	00 00 00	
C4	Card Issuer Action Code - Default [Mastercard]	00 00 00	
C5	Card Issuer Action Code - Online [Mastercard]	00 00 00	
C6	Counters [Mastercard]	00 03 00 00 00 00 00 00 00 00	
C7	CDOL1 Related Data Length [Mastercard]	2D	
C8	CRM Country Code [Mastercard]	06 30 - PRO	
C9	CRM Currency Code [M/Chip4]	08 40 – USD	
CA	Lower Cumulative Offline Transaction Amount [M/Chip]	99 99 99 99 99 99	
CB	Upper Cumulative Offline Transaction Amount [M/Chip]	99 99 99 99 99 99	
D1	Currency Conversion Table [M/Chip]	08 40 00 01 00 08 40 00 01 00 08 40 00 01 00 08 40 00 01 00 08 40 00 01 00	
D3	Additional Check Table [Mastercard]	00 00 00 FF FF FF FF FF FF FF FF FF FF FF FF FF FF	
D5	Application Control [M/Chip]	C4 00	
D6	Default ARPC Response Code [M/Chip4]	00 00	
DF 02	Security Limits Status [Mastercard]	00	

* Tag value changes with card usage

1.7 Test Card 07 – Amex, CO, 2-AID, Eng, PRO, USD

A Contact-only Amex credit card with Issuer Country Code of 'PRO' and Currency Code of 'USD'.

The recommended transaction amount to generate a host approval is \$1.03.

1.7.1 Contact: CVM List - AID A00000025010801, Amex (EMV)

Cardholder Verification Method List ('4201 5E03 5F03 0000')			
CVM	Verification Method	Conditions	If unsuccessful
1	Online PIN	Unattended Cash	Next CVM
2	Signature (paper)	Terminal supports CVM type	Next CVM
3	No CVM required	Terminal supports CVM type	Next CVM
4	Fail CVM Processing	Always	Fail

1.7.2 Contact: Application Tag Data, AID A00000025010801, Amex (EMV)

Tag	Element name	Data	Card v2.x
50	Application Label	41 4D 45 52 49 43 41 4E 20 45 58 50 52 45 53 53 - 'AMERICAN EXPRESS'	
57	Track 2 Equivalent Data	34 11 11 59 72 42 51 3D 24 01 20 11 50 21 23 45 00 00 0F	
5A	Application Primary Account Number (PAN)	34 11 11 59 72 42 51 3F	
5F 20	Cardholder Name	41 54 48 20 50 52 49 4D 41 2F 54 65 73 74 20 43 61 72 64 20 30 37 20 20 20 20 - 'ATH PRIMA/Test Card 07'	
5F 24	Application Expiration Date	24 01 31	
5F 25	Application Effective Date	xx xx xx *	
5F 28	Issuer Country Code	06 30 - PRO	
5F 2D	Language Preference	65 6E - 'en' (English)	
5F 30	Service Code	02 01	
5F 34	Application PAN Sequence Number	00	
82	Application Interchange Profile	1C 00 BYTE 1: b7 - Offline SDA NOT supported b6 - Offline DDA NOT supported b5 - Cardholder verification supported b4 - Terminal risk mgmt to be performed b3 - Issuer authentication supported b1 - Combined DDA / GEN AC NOT supported BYTE 2: b8 - EMV Contactless NOT supported	
84	Dedicated File (DF) Name	A0 00 00 00 25 01 08 01	
87	Application Priority Indicator	01	
8C	Card Risk Management Data Object List 1 (CDOL1)	9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04	
8D	Card Risk Management Data Object List 2 (CDOL2)	8A 02 9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04	
8E	Cardholder Verification Method (CVM) List	00 00 00 00 00 00 00 00 42 01 5E 03 5F 03 00 00	
94	Application File Locator (AFL)	08 01 01 00 08 02 03 01	

Tag	Element name	Data	Card v2.x
9F 07	Application Usage Control	FF 00 BYTE 1: b8 - Domestic cash trans. valid b7 - Int'l cash transactions valid b6 - Domestic goods valid b5 - International goods valid b4 - Domestic services valid b3 - International services valid b2 - ATMs valid b1 - non-ATM terminals valid BYTE 2: b8 - Domestic cashback NOT allowed b7 - International cashback NOT allowed	
9F 08	Application Version Number	00 01	
9F 0D	Issuer Action Code - Default	B0 50 DC 98 00	
9F 0E	Issuer Action Code - Denial	00 00 00 00 00	
9F 0F	Issuer Action Code - Online	B0 78 DC 98 00	
9F 10	Issuer Application Data [AEIPS 4.2]	xx xx 01 xx xx xx xx *	
9F 11	Issuer Code Table Index	01	
9F 12	Application Preferred Name	41 6D 65 72 69 63 61 6E 20 45 78 70 72 65 73 73 - 'American Express'	
9F 13	Last Online Application Transaction Counter (ATC) Register	xx xx *	
9F 17	Personal Identification Number (PIN) Try Counter	09	
9F 26	Application Cryptogram (AC)	xx xx xx xx xx xx xx xx *	
9F 27	Cryptogram Information Data (CID)	80	
9F 36	Application Transaction Counter (ATC)	xx xx *	
9F 38	Processing Options Data Object List (PDOL)	9F 35 01	
9F 42	Application Currency Code	08 40 - USD	

* Tag value changes with card usage

1.7.3 Contact: CVM List - AID A00000000291010, Amex (EMV)

Cardholder Verification Method List ('4201 5E03 5F03 0000')			
CVM	Verification Method	Conditions	If unsuccessful
1	Online PIN	Unattended Cash	Next CVM
2	Signature (paper)	Terminal supports CVM type	Next CVM
3	No CVM required	Terminal supports CVM type	Next CVM
4	Fail CVM Processing	Always	Fail

1.7.4 Contact: Application Tag Data - ID A00000000291010, Amex (EMV)

Tag	Element name	Data	Card v2.x
50	Application Label	41 4D 45 52 49 43 41 4E 20 45 58 50 52 45 53 53 - 'AMERICAN EXPRESS'	
57	Track 2 Equivalent Data	34 11 11 59 72 42 51 3D 24 01 20 11 50 21 23 45 00 00 0F	
5A	Application Primary Account Number (PAN)	34 11 11 59 72 42 51 3F	
5F 20	Cardholder Name	41 54 48 20 50 52 49 4D 41 2F 54 65 73 74 20 43 61 72 64 20 30 37 20 20 20 20 - 'ATH PRIMA/Test Card 07'	
5F 24	Application Expiration Date	24 01 31	
5F 25	Application Effective Date	xx xx xx *	
5F 28	Issuer Country Code	06 30 - PRO	
5F 2D	Language Preference	65 6E - 'en' (English)	

Tag	Element name	Data	Card v2.x
5F 30	Service Code	02 01	
5F 34	Application PAN Sequence Number	00	
82	Application Interchange Profile	1C 00 BYTE 1: b7 - Offline SDA NOT supported b6 - Offline DDA NOT supported b5 - Cardholder verification supported b4 - Terminal risk mgmt to be performed b3 - Issuer authentication supported b1 - Combined DDA / GEN AC NOT supported BYTE 2: b8 - EMV Contactless NOT supported	
84	Dedicated File (DF) Name	A0 00 00 00 29 10 10	
87	Application Priority Indicator	02	
8C	Card Risk Management Data Object List 1 (CDOL1)	9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04	
8D	Card Risk Management Data Object List 2 (CDOL2)	8A 02 9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04	
8E	Cardholder Verification Method (CVM) List	00 00 00 00 00 00 00 00 42 01 5E 03 5F 03 00 00	
94	Application File Locator (AFL)	08 01 01 00 08 02 03 01	
9F 07	Application Usage Control	FF 00 BYTE 1: b8 - Domestic cash trans. valid b7 - Int'l cash transactions valid b6 - Domestic goods valid b5 - International goods valid b4 - Domestic services valid b3 - International services valid b2 - ATMs valid b1 - non-ATM terminals valid BYTE 2: b8 - Domestic cashback NOT allowed b7 - International cashback NOT allowed	
9F 08	Application Version Number	00 01	
9F 0D	Issuer Action Code - Default	B0 50 DC 98 00	
9F 0E	Issuer Action Code - Denial	00 00 00 00 00	
9F 0F	Issuer Action Code - Online	B0 78 DC 98 00	
9F 10	Issuer Application Data [AEIPS 4.2]	xx xx 01 xx xx xx xx *	
9F 11	Issuer Code Table Index	01	
9F 12	Application Preferred Name	41 6D 65 72 69 63 61 6E 20 45 78 70 72 65 73 73 - 'American Express'	
9F 13	Last Online Application Transaction Counter (ATC) Register	xx xx *	
9F 17	Personal Identification Number (PIN) Try Counter	09	
9F 26	Application Cryptogram (AC)	xx xx xx xx xx xx xx xx *	
9F 27	Cryptogram Information Data (CID)	80	
9F 36	Application Transaction Counter (ATC)	xx xx *	
9F 38	Processing Options Data Object List (PDOL)	9F 35 01	
9F 42	Application Currency Code	08 40 - USD	

* Tag value changes with card usage

1.8 Test Card 08 – Amex, CO, 2-AID, Eng, PRO, USD

A Contact-only Amex credit card with Issuer Country Code of 'PRO' and Currency Code of 'USD'.

The recommended transaction amount to generate a host approval is \$1.03.

1.8.1 Contact: CVM List - AID A00000025010801, Amex (EMV)

Cardholder Verification Method List ('4201 4203 5F03 0000')			
CVM	Verification Method	Conditions	If unsuccessful
1	Online PIN	Unattended Cash	Next CVM
2	Online PIN	Terminal supports CVM type	Next CVM
3	No CVM required	Terminal supports CVM type	Next CVM
4	Fail CVM Processing	Always	Fail

1.8.2 Contact: Application Tag Data - AID A00000025010801, Amex (EMV)

Tag	Element name	Data	Card v2.x
50	Application Label	41 4D 45 52 49 43 41 4E 20 45 58 50 52 45 53 53 - 'AMERICAN EXPRESS'	
57	Track 2 Equivalent Data	37 42 45 00 17 51 00 6D 24 01 20 11 50 21 23 45 00 00 0F	
5A	Application Primary Account Number (PAN)	37 42 45 00 17 51 00 6F	
5F 20	Cardholder Name	41 54 48 20 50 52 49 4D 41 2F 54 65 73 74 20 43 61 72 64 20 30 38 20 20 20 20 - 'ATH PRIMA/Test Card 08'	
5F 24	Application Expiration Date	24 01 31	
5F 25	Application Effective Date	xx xx xx *	
5F 28	Issuer Country Code	06 30 - PRO	
5F 2D	Language Preference	65 6E - 'en' (English)	
5F 30	Service Code	02 01	
5F 34	Application PAN Sequence Number	00	
82	Application Interchange Profile	1C 00 BYTE 1: b7 - Offline SDA NOT supported b6 - Offline DDA NOT supported b5 - Cardholder verification supported b4 - Terminal risk mgmt to be performed b3 - Issuer authentication supported b1 - Combined DDA / GEN AC NOT supported BYTE 2: b8 - EMV Contactless NOT supported	
84	Dedicated File (DF) Name	A0 00 00 00 25 01 08 01	
87	Application Priority Indicator	01	
8C	Card Risk Management Data Object List 1 (CDOL1)	9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04	
8D	Card Risk Management Data Object List 2 (CDOL2)	8A 02 9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04	
8E	Cardholder Verification Method (CVM) List	00 00 00 00 00 00 00 00 42 01 42 03 5F 03 00 00	
94	Application File Locator (AFL)	08 01 01 00 08 02 03 01	

Tag	Element name	Data	Card v2.x
9F 07	Application Usage Control	FF 00 BYTE 1: b8 - Domestic cash trans. valid b7 - Int'l cash transactions valid b6 - Domestic goods valid b5 - International goods valid b4 - Domestic services valid b3 - International services valid b2 - ATMs valid b1 - non-ATM terminals valid BYTE 2: b8 - Domestic cashback NOT allowed b7 - International cashback NOT allowed	
9F 08	Application Version Number	00 01	
9F 0D	Issuer Action Code - Default	B0 50 DC 98 00	
9F 0E	Issuer Action Code - Denial	00 00 00 00 00	
9F 0F	Issuer Action Code - Online	B0 78 DC 98 00	
9F 10	Issuer Application Data [AEIPS 4.2]	xx xx 01 xx xx xx xx *	
9F 11	Issuer Code Table Index	01	
9F 12	Application Preferred Name	41 6D 65 72 69 63 61 6E 20 45 78 70 72 65 73 73 - 'American Express'	
9F 13	Last Online Application Transaction Counter (ATC) Register	xx xx *	
9F 17	Personal Identification Number (PIN) Try Counter	09	
9F 26	Application Cryptogram (AC)	xx xx xx xx xx xx xx xx *	
9F 27	Cryptogram Information Data (CID)	80	
9F 36	Application Transaction Counter (ATC)	xx xx *	
9F 38	Processing Options Data Object List (PDOL)	9F 35 01	
9F 42	Application Currency Code	08 40 - USD	

* Tag value changes with card usage

1.8.3 Contact: CVM List - AID A00000000291010, Amex (EMV)

Cardholder Verification Method List ('4201 5E03 5F03 0000')			
CVM	Verification Method	Conditions	If unsuccessful
1	Online PIN	Unattended Cash	Next CVM
2	Online PIN	Terminal supports CVM type	Next CVM
3	No CVM required	Terminal supports CVM type	Next CVM
4	Fail CVM Processing	Always	Fail

1.8.4 Contact: Application Tag Data - AID A00000000291010, Amex (EMV)

Tag	Element name	Data	Card v2.x
50	Application Label	41 4D 45 52 49 43 41 4E 20 45 58 50 52 45 53 53 - 'AMERICAN EXPRESS'	
57	Track 2 Equivalent Data	37 42 45 00 17 51 00 6D 24 01 20 11 50 21 23 45 00 00 0F	
5A	Application Primary Account Number (PAN)	37 42 45 00 17 51 00 6F	
5F 20	Cardholder Name	41 54 48 20 50 52 49 4D 41 2F 54 65 73 74 20 43 61 72 64 20 30 38 20 20 20 20 - 'ATH PRIMA/Test Card 08'	
5F 24	Application Expiration Date	24 01 31	
5F 25	Application Effective Date	xx xx xx *	
5F 28	Issuer Country Code	06 30 - PRO	
5F 2D	Language Preference	65 6E - 'en' (English)	

Tag	Element name	Data	Card v2.x
5F 30	Service Code	02 01	
5F 34	Application PAN Sequence Number	00	
82	Application Interchange Profile	1C 00 BYTE 1: b7 - Offline SDA NOT supported b6 - Offline DDA NOT supported b5 - Cardholder verification supported b4 - Terminal risk mgmt to be performed b3 - Issuer authentication supported b1 - Combined DDA / GEN AC NOT supported BYTE 2: b8 - EMV Contactless NOT supported	
84	Dedicated File (DF) Name	A0 00 00 00 29 10 10	
87	Application Priority Indicator	02	
8C	Card Risk Management Data Object List 1 (CDOL1)	9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04	
8D	Card Risk Management Data Object List 2 (CDOL2)	8A 02 9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04	
8E	Cardholder Verification Method (CVM) List	00 00 00 00 00 00 00 00 42 01 42 03 5F 03 00 00	
94	Application File Locator (AFL)	08 01 01 00 08 02 03 01	
9F 07	Application Usage Control	FF 00 BYTE 1: b8 - Domestic cash trans. valid b7 - Int'l cash transactions valid b6 - Domestic goods valid b5 - International goods valid b4 - Domestic services valid b3 - International services valid b2 - ATMs valid b1 - non-ATM terminals valid BYTE 2: b8 - Domestic cashback NOT allowed b7 - International cashback NOT allowed	
9F 08	Application Version Number	00 01	
9F 0D	Issuer Action Code - Default	B0 50 DC 98 00	
9F 0E	Issuer Action Code - Denial	00 00 00 00 00	
9F 0F	Issuer Action Code - Online	B0 78 DC 98 00	
9F 10	Issuer Application Data [AEIPS 4.2]	xx xx 01 xx xx xx xx *	
9F 11	Issuer Code Table Index	01	
9F 12	Application Preferred Name	41 6D 65 72 69 63 61 6E 20 45 78 70 72 65 73 73 - 'American Express'	
9F 13	Last Online Application Transaction Counter (ATC) Register	xx xx *	
9F 17	Personal Identification Number (PIN) Try Counter	09	
9F 26	Application Cryptogram (AC)	xx xx xx xx xx xx xx xx *	
9F 27	Cryptogram Information Data (CID)	80	
9F 36	Application Transaction Counter (ATC)	xx xx *	
9F 38	Processing Options Data Object List (PDOL)	9F 35 01	
9F 42	Application Currency Code	08 40 - USD	

* Tag value changes with card usage

1.9 Test Card 09 – Diners, CO, 2-AID, Eng/Spa/Fre, USA, USD

A Contact-only Diners credit card with Issuer Country Code of 'USA' and Currency Code of 'USD'.

The recommended transaction amount to generate a host approval is \$79.00.

1.9.1 Contact: CVM List - AID A0000015230100000000000000000001, Diners (EMV)

Cardholder Verification Method List ('4201 4203 5E03 1F03')			
CVM	Verification Method	Conditions	If unsuccessful
1	Online PIN	Unattended Cash	Next CVM
2	Online PIN	Terminal supports CVM type	Next CVM
3	Signature (paper)	Terminal supports CVM type	Next CVM
4	No CVM required	Terminal supports CVM type	Fail

1.9.2 Contact: Application Tag Data - AID A0000015230100000000000000000001, Diners (EMV)

Tag	Element name	Data	Card v2.x
50	Application Label	44 49 53 43 4F 56 45 52 31 20 20 20 20 20 20 20 - 'DISCOVER1'	
57	Track 2 Data [Discover]	65 10 00 00 00 00 02 24 D2 31 22 01 10 00 07 49 0F	
5A	Application Primary Account Number (PAN)	65 10 00 00 00 00 02 24	
5F 20	Cardholder Name	41 54 48 20 50 52 49 4D 41 2F 54 65 73 74 20 43 61 72 64 20 30 39 - 'ATH PRIMA/Test Card 09'	
5F 24	Application Expiration Date	23 12 31	
5F 25	Application Effective Date	xx xx xx	
5F 28	Issuer Country Code	08 40 - USA	
5F 2D	Language Preference	65 6E 65 73 66 72 - 'enesfr' (English, Spanish, French)	
5F 30	Service Code	02 01	
5F 34	Application PAN Sequence Number	01	
82	Application Interchange Profile	18 00 BYTE 1: b7 - Offline SDA NOT supported b6 - Offline DDA NOT supported b5 - Cardholder verification supported b4 - Terminal risk mgmt to be performed b3 - Issuer authentication NOT supported b1 - Combined DDA / GEN AC NOT supported BYTE 2: b8 - EMV Contactless NOT supported	
84	Dedicated File (DF) Name	A0 00 00 01 52 30 10 00 00 00 00 00 00 00 00 00 01	
87	Application Priority Indicator	01	
8C	Card Risk Management Data Object List 1 (CDOL1)	9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04 9F 35 01 9F 34 03	
8D	Card Risk Management Data Object List 2 (CDOL2)	91 0A 8A 02 95 05 9F 37 04	
8E	Cardholder Verification Method (CVM) List	00 00 00 00 00 00 00 00 00 42 01 42 03 5E 03 1F 03	
94	Application File Locator (AFL)	08 01 02 00	

Tag	Element name	Data	Card v2.x
9F 07	Application Usage Control	FF 00 BYTE 1: b8 - Domestic cash trans. valid b7 - Int'l cash transactions valid b6 - Domestic goods valid b5 - International goods valid b4 - Domestic services valid b3 - International services valid b2 - ATMs valid b1 - non-ATM terminals valid BYTE 2: b8 - Domestic cashback NOT allowed b7 - International cashback NOT allowed	
9F 08	Application Version Number	00 01	
9F 0D	Issuer Action Code - Default	F0 40 C4 28 00	
9F 0E	Issuer Action Code - Denial	00 10 00 00 00	
9F 0F	Issuer Action Code - Online	F0 68 DC F8 00	
9F 10	Issuer Application Data [DPAS]	xx 05 xx xx xx xx xx xx *	
9F 11	Issuer Code Table Index	01	
9F 12	Application Preferred Name	44 69 6E 65 72 73 20 43 6C 75 62 20 31 20 20 20 - 'Diners Club 1'	
9F 17	Personal Identification Number (PIN) Try Counter	03	
9F 26	Application Cryptogram (AC)	xx xx xx xx xx xx xx xx *	
9F 27	Cryptogram Information Data (CID)	80	
9F 36	Application Transaction Counter (ATC)	xx xx *	
9F 4D	Transaction Log Entry	0B 0A	
9F 4F	Transaction Log Format	9F 02 06 5F 2A 02 9A 03 9F 36 02 9F 34 03 9F 52 06 9F 1A 02 95 05 9C 01 8A 02 9F 37 04 9F 03 06 9F 53 08 9F 66 04 9F 71 02 9F 6C 02	
9F 78	Application State [D-PAS]	00	
C1	Application Configuration Options [DPAS]	05 80	
C2	Issuer Life Cycle Data (ILCD) [DPAS]	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	
C3	Currency Conversion Codes 1 [DPAS]	08 40 00 00 02	
C4	Currency Conversion Codes 2 [DPAS]	08 40 00 00 02	
C5	Card Action Code - Denial [DPAS]	01 00	
C6	Card Action Code - Default [DPAS]	03 6B	
C7	Card Action Code - Online [DPAS]	B2 7F	
D0	Issuer Application Data ObjectList (IADOL) [DPAS]		
D2	CRM Country Code [DPAS]	08 40 - USA	
D3	CRM Currency Code [DPAS]	08 40 - USD	
DF 20	Transaction Profile Objects(TPO0) [DPAS]	00 18 00 08 01 02 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 01 00 B2 7F 03 6B 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	

* Tag value changes with card usage

1.9.3 Contact: CVM List - AID A0000015230100000000000000000002, Diners (EMV)

Cardholder Verification Method List ('4201 4203 5E03 1F03')			
CVM	Verification Method	Conditions	If unsuccessful
1	Online PIN	Unattended Cash	Next CVM
2	Online PIN	Terminal supports CVM type	Next CVM
3	Signature (paper)	Terminal supports CVM type	Next CVM
4	No CVM required	Terminal supports CVM type	Fail

1.9.4 Contact: Application Tag Data - AID A0000015230100000000000000000002, Diners (EMV)

Tag	Element name	Data	Card v2.x
50	Application Label	44 49 53 43 4F 56 45 52 32 20 20 20 20 20 20 20 - 'DISCOVER2'	
57	Track 2 Data [Discover]	65 10 00 00 00 00 02 24 D2 31 22 01 10 00 07 49 0F	
5A	Application Primary Account Number (PAN)	65 10 00 00 00 00 02 24	
5F 20	Cardholder Name	41 54 48 20 50 52 49 4D 41 2F 54 65 73 74 20 43 61 72 64 20 30 39 - 'ATH PRIMA/Test Card 09'	
5F 24	Application Expiration Date	23 12 31	
5F 25	Application Effective Date	xx xx xx	
5F 28	Issuer Country Code	08 40 - USA	
5F 2D	Language Preference	65 6E 65 73 66 72 - 'enesfr' (English, Spanish, French)	
5F 30	Service Code	02 01	
5F 34	Application PAN Sequence Number	01	
82	Application Interchange Profile	18 00 BYTE 1: b7 - Offline SDA NOT supported b6 - Offline DDA NOT supported b5 - Cardholder verification supported b4 - Terminal risk mgmt to be performed b3 - Issuer authentication NOT supported b1 - Combined DDA / GEN AC NOT supported BYTE 2: b8 - EMV Contactless NOT supported	
84	Dedicated File (DF) Name	A0 00 00 01 52 30 10 00 00 00 00 00 00 00 00 02	
87	Application Priority Indicator	02	
8C	Card Risk Management Data Object List 1 (CDOL1)	9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04 9F 35 01 9F 34 03	
8D	Card Risk Management Data Object List 2 (CDOL2)	91 0A 8A 02 95 05 9F 37 04	
8E	Cardholder Verification Method (CVM) List	00 00 00 00 00 00 00 00 00 42 01 42 03 5E 03 1F 03	
94	Application File Locator (AFL)	08 01 02 00	

Tag	Element name	Data	Card v2.x
9F 07	Application Usage Control	FF 00 BYTE 1: b8 - Domestic cash trans. valid b7 - Int'l cash transactions valid b6 - Domestic goods valid b5 - International goods valid b4 - Domestic services valid b3 - International services valid b2 - ATMs valid b1 - non-ATM terminals valid BYTE 2: b8 - Domestic cashback NOT allowed b7 - International cashback NOT allowed	
9F 08	Application Version Number	00 01	
9F 0D	Issuer Action Code - Default	F0 40 C4 28 00	
9F 0E	Issuer Action Code - Denial	00 10 00 00 00	
9F 0F	Issuer Action Code - Online	F0 68 DC F8 00	
9F 10	Issuer Application Data [DPAS]	xx 05 xx xx xx xx xx xx *	
9F 11	Issuer Code Table Index	01	
9F 12	Application Preferred Name	44 69 6E 65 72 73 20 43 6C 75 62 20 32 20 20 20 - 'Diners Club 2'	
9F 17	Personal Identification Number (PIN) Try Counter	03	
9F 26	Application Cryptogram (AC)	xx xx xx xx xx xx xx xx *	
9F 27	Cryptogram Information Data (CID)	80	
9F 36	Application Transaction Counter (ATC)	xx xx *	
9F 4D	Transaction Log Entry	0B 0A	
9F 4F	Transaction Log Format	9F 02 06 5F 2A 02 9A 03 9F 36 02 9F 34 03 9F 52 06 9F 1A 02 95 05 9C 01 8A 02 9F 37 04 9F 03 06 9F 53 08 9F 66 04 9F 71 02 9F 6C 02	
9F 78	Application State [D-PAS]	00	
C1	Application Configuration Options [DPAS]	05 80	
C2	Issuer Life Cycle Data (ILCD) [DPAS]	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	
C3	Currency Conversion Codes 1 [DPAS]	08 40 00 00 02	
C4	Currency Conversion Codes 2 [DPAS]	08 40 00 00 02	
C5	Card Action Code - Denial [DPAS]	01 00	
C6	Card Action Code - Default [DPAS]	03 6B	
C7	Card Action Code - Online [DPAS]	B2 7F	
D0	Issuer Application Data ObjectList (IADOL) [DPAS]		
D2	CRM Country Code [DPAS]	08 40 - USA	
D3	CRM Currency Code [DPAS]	08 40 - USD	
DF 20	Transaction Profile Objects(TPO0) [DPAS]	00 18 00 08 01 02 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 01 00 B2 7F 03 6B 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	

* Tag value changes with card usage

1.10 Test Card 10 – Discover, DI, Eng, PRO, USD

A Dual Interface (Contact / Contactless) Discover credit card with Issuer Country Code of 'Puerto Rico' and Currency Code of 'USD'.

The recommended transaction amount to generate a host approval is \$79.00.

1.10.1 Contact: CVM List - AID A0000001523010, Discover (EMV)

Cardholder Verification Method List ('4203 5E03 1F03')			
CVM	Verification Method	Conditions	If unsuccessful
1	Online PIN	Terminal supports CVM type	Next CVM
2	Signature (paper)	Terminal supports CVM type	Next CVM
3	No CVM required	Terminal supports CVM type	Fail

1.10.2 Contact: Application Tag Data - AID A0000001523010, Discover (EMV)

Tag	Element name	Data	Card v2.x
50	Application Label	44 49 53 43 4F 56 45 52	- 'DISCOVER'
57	Track 2 Data [Discover]	65 10 00 00 00 00 02 08 D2 31 22 01 10 00 07 49 00 00 0F	
5A	Application Primary Account Number (PAN)	65 10 00 00 00 00 02 08	
5F 20	Cardholder Name	41 54 48 20 50 52 49 4D 41 2F 54 65 73 74 20 43 61 72 64 20 31 30 20 20 20 20	- 'ATH PRIMA/Test Card 10'
5F 24	Application Expiration Date	23 12 31	
5F 25	Application Effective Date	xx xx xx *	
5F 28	Issuer Country Code	06 30	- PRO
5F 2D	Language Preference	65 6E	- 'en' (English)
5F 30	Service Code	02 01	
5F 34	Application PAN Sequence Number	01	
82	Application Interchange Profile	18 00 BYTE 1: b7 - Offline SDA NOT supported b6 - Offline DDA NOT supported b5 - Cardholder verification supported b4 - Terminal risk mgmt to be performed b3 - Issuer authentication NOT supported b1 - Combined DDA / GEN AC NOT supported BYTE 2: b8 - EMV Contactless NOT supported	
84	Dedicated File (DF) Name	A0 00 00 01 52 30 10	
87	Application Priority Indicator	01	
8C	Card Risk Management Data Object List 1 (CDOL1)	9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04 9F 35 01 9F 34 03	
8D	Card Risk Management Data Object List 2 (CDOL2)	91 0A 8A 02 95 05 9F 37 04	
8E	Cardholder Verification Method (CVM) List	00 00 00 00 00 00 00 00 00 42 03 5E 03 1F 03	
94	Application File Locator (AFL)	08 01 01 00 18 01 02 01	

Tag	Element name	Data	Card v2.x
9F 07	Application Usage Control	FF 00 BYTE 1: b8 - Domestic cash trans. valid b7 - Int'l cash transactions valid b6 - Domestic goods valid b5 - International goods valid b4 - Domestic services valid b3 - International services valid b2 - ATMs valid b1 - non-ATM terminals valid BYTE 2: b8 - Domestic cashback NOT allowed b7 - International cashback NOT allowed	
9F 08	Application Version Number	00 01	
9F 0D	Issuer Action Code - Default	30 40 E4 28 00	
9F 0E	Issuer Action Code - Denial	00 10 00 00 40	
9F 0F	Issuer Action Code - Online	30 68 C4 F8 00	
9F 10	Issuer Application Data [DPAS]	xx 06 xx xx xx xx xx xx *	
9F 11	Issuer Code Table Index	01	
9F 12	Application Preferred Name	44 69 73 63 6F 76 65 72 - 'Discover'	
9F 17	Personal Identification Number (PIN) Try Counter	03	
9F 26	Application Cryptogram (AC)	xx xx xx xx xx xx xx xx *	
9F 27	Cryptogram Information Data (CID)	80	
9F 36	Application Transaction Counter (ATC)	xx xx *	
9F 4D	Transaction Log Entry	0B 0A	
9F 4F	Transaction Log Format	9F 02 06 5F 2A 02 9A 03 9F 36 02 9F 34 03 9F 52 06 9F 1A 02 95 05 9C 01 8A 02 9F 37 04 9F 03 06 9F 53 08 9F 66 04 9F 71 02 9F 6C 02	
9F 78	Application State [D-PAS]	01	
C1	Application Configuration Options [DPAS]	15 60	
C2	Issuer Life Cycle Data (ILCD) [DPAS]	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	
C3	Currency Conversion Codes 1 [DPAS]	08 40 00 00 02	
C4	Currency Conversion Codes 2 [DPAS]	08 40 00 00 02	
C5	Card Action Code - Denial [DPAS]	01 00	
C6	Card Action Code - Default [DPAS]	22 4B	
C7	Card Action Code - Online [DPAS]	F6 7F	
D0	Issuer Application Data ObjectList (IADOL) [DPAS]		
D2	CRM Country Code [DPAS]	06 30 - PRO	
D3	CRM Currency Code [DPAS]	08 40 - USD	
DF 20	Transaction Profile Objects(TPO0) [DPAS]	00 18 00 08 01 01 00 18 01 02 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 01 00 F6 7F 22 4B 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	

* Tag value changes with card usage

1.10.3 CTLS: CVM List - AID A000001523010, Discover (D-PAS EMV Online)

Cardholder Verification Method List ('4203 5E03 1F03')			
CVM	Verification Method	Conditions	If unsuccessful
1	Online PIN	Terminal supports CVM type	Next CVM
2	Signature (paper)	Terminal supports CVM type	Next CVM
3	No CVM required	Terminal supports CVM type	Fail

1.10.4 CTLS: Application Tag Data - AID A000001523010, Discover (D-PAS EMV online)

Tag	Element name	Data	Card v2.x
50	Application Label	44 49 53 43 4F 56 45 52 20 43 4C -	'DISCOVER CL'
57	Track 2 Data [Discover]	65 10 00 00 00 00 02 08 D2 31 22 01 10 00 07 49 00 00 0F	
5A	Application Primary Account Number (PAN)	65 10 00 00 00 00 02 08	
5F 20	Cardholder Name	41 54 48 20 50 52 49 4D 41 2F 54 65 73 74 20 43 61 72 64 20 31 30 20 20 20 20 - 'ATH PRIMA/Test Card 10'	
5F 24	Application Expiration Date	23 12 31	
5F 25	Application Effective Date	xx xx xx *	
5F 28	Issuer Country Code	06 30 - PRO	
5F 2D	Language Preference	65 6E - 'en' (English)	
5F 30	Service Code	02 01	
5F 34	Application PAN Sequence Number	01	
82	Application Interchange Profile [DPAS CL]	18 00 BYTE 1: b7 - Offline SDA NOT supported b6 - Offline DDA NOT supported b5 - Cardholder verification supported b4 - Terminal risk mgmt to be performed b3 - Issuer authentication NOT supported b1 - Combined DDA / GEN AC NOT supported BYTE 2: b8 - EMV Contactless NOT supported	
84	Dedicated File (DF) Name	A0 00 00 01 52 30 10	
87	Application Priority Indicator	01	
8E	Cardholder Verification Method (CVM) List	00 00 00 00 00 00 00 00 42 03 5E 03 1F 03	
94	Application File Locator (AFL)	08 02 02 00 18 03 04 01	
9F 07	Application Usage Control	FF 00 BYTE 1: b8 - Domestic cash trans. valid b7 - Int'l cash transactions valid b6 - Domestic goods valid b5 - International goods valid b4 - Domestic services valid b3 - International services valid b2 - ATMs valid b1 - non-ATM terminals valid BYTE 2: b8 - Domestic cashback NOT allowed b7 - International cashback NOT allowed	
9F 08	Application Version Number	00 01	
9F 0D	Issuer Action Code - Default	00 00 00 00 00	
9F 0E	Issuer Action Code - Denial	00 00 00 00 00	
9F 0F	Issuer Action Code - Online	00 00 00 00 00	
9F 10	Issuer Application Data [DPAS CL]	xx 15 xx xx xx xx xx xx xx xx *	
9F 11	Issuer Code Table Index	01	

Tag	Element name	Data	Card v2.x
9F 12	Application Preferred Name	20 20 20 20 20 20 20 20 20 20	- "
9F 26	Application Cryptogram (AC)	xx xx xx xx xx xx xx xx	*
9F 27	Cryptogram Information Data (CID)	80	
9F 36	Application Transaction Counter (ATC)	xx xx	*
9F 38	Processing Options Data Object List (PDOL)	9F 66 04 9F 02 06 9F 03 06 9F 1A 02 5F 2A 02 9A 03 9C 01 9F 37 04	
9F 4F	Transaction Log Format	9F 02 06 5F 2A 02 9A 03 9F 36 02 9F 34 03 9F 52 06 9F 1A 02 95 05 9C 01 8A 02 9F 37 04 9F 03 06 9F 53 08 9F 66 04 9F 71 02 9F 6C 02	
9F 6C	Card Transaction Qualifiers [DPAS]	00 00 BYTE 1: b8 - Online PIN NOT required b7 - Signature NOT required b6 - Do NOT go online if Offline Data Authentication fails and Reader is online capable b5 - Do NOT switch interface if Offline Data Authentication fails and Reader supports contact chip b4 - Do NOT go Online if Application Expired b3 - Do NOT switch interface for Cash Transactions b2 - Do NOT switch interface for Cashback Transactions b1 - Is valid for contactless ATM transactions BYTE 2: b8 - Consumer Device CVM NOT performed b7 - Card does NOT Support Issuer Update Processing at POS	
9F 71	Card Processing Requirements [DPAS]	00 0F	
9F 78	Application State [D-PAS]	01	
BF 51	Contactless D-PAS MS and ZIP Default Profile	82 02 00 00 94 04 08 01 01 00	
C0	Contactless Application Configuration Options (CL-ACO)	00 80	
C2	Issuer Life Cycle Data (ILCD) [DPAS]	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	
C3	Currency Conversion Codes 1 [DPAS]	08 40 00 00 02	
C4	Currency Conversion Codes 2 [DPAS]	08 40 00 00 02	
C8	Lower Consecutive Offline Amount (LCOA) Limit [DPAS]	00 00 00 00 00 00	
C9	Upper Consecutive Offline Amount Limit (UCOA) [DPAS]	00 00 00 00 00 00	
CA	Single Transaction Amount (STA) Limit [DPAS]	00 00 00 00 00 00	
CB	Lower Consecutive Offline Limit (LCOL) [DPAS]	00	
CC	Upper Consecutive Offline Transaction Limit (UCOL) [DPAS]	00	
CD	Number of Consecutive Offline Transactions (NCOT) [DPAS]	00	
CE	Cumulative Offline Amount [DPAS]	00 00 00 00 00 00	
D0	Issuer Application Data ObjectList (IADOL) [DPAS]		
D1	Offline Balance [DPAS]	00 00 00 00 00 00	
D2	CRM Country Code [DPAS]	06 30	- PRO
D3	CRM Currency Code [DPAS]	08 40	- USD

Tag	Element name	Data	Card v2.x
D4	CVM-Accumulator [DPAS]	00 00 00 00 00 00	
D5	CVM-Cum limit 1	00 00 00 00 00 00	
D6	CVM-Cum limit 2	00 00 00 00 00 00	
D7	CVM-STA limit 1	00 00 00 00 00 00	
D8	CVM-STA limit 2	00 00 00 00 00 00	
D9	CVM-Counter	00	
DA	CVM-Cons limit 1	00	
DB	CVM-Cons limit 2	00	
DE	Counter and Accumulator Control Options (CACO) [D-PAS]	C1 01 21 01 01 00	
DF 30	CRM-CAC Switch Interface [D-PAS]	00 00 00	
DF 31	CRM-CAC Denial [D-PAS]	00 00 00	
DF 32	CRM-CAC Online [D-PAS]	C8 FE FF	
DF 33	CRM-CAC Default [D-PAS]	98 FE EB	
DF 34	CVM Card Action Codes - Online	40 80	
DF 35	CVM Card Action Codes - Signature	00 80	
DF 40	CL-Accumulator	00 00 00 00 00 00	
DF 41	CL-Cum Limit	00 00 00 00 00 00	
DF 42	CL-STA	00 00 00 00 00 00	
DF 43	CL-Counter	00	
DF 44	CL-Cons Limit	00	

* Tag value changes with card usage

1.10.5 CTLS: CVM List - AID A000001523010, Discover (D-PAS EMV Offline)

Cardholder Verification Method List ('4203 5E03 1F03')			
CVM	Verification Method	Conditions	If unsuccessful
1	Online PIN	Terminal supports CVM type	Next CVM
2	Signature (paper)	Terminal supports CVM type	Next CVM
3	No CVM required	Terminal supports CVM type	Fail

1.10.6 CTLS: Application Tag Data - AID A000001523010, Discover (D-PAS EMV Offline)

Tag	Element name	Data	Card v2.x
50	Application Label	44 49 53 43 4F 56 45 52 20 43 4C - 'DISCOVER CL'	
57	Track 2 Data [Discover]	65 10 00 00 00 00 02 08 D2 31 22 01 10 00 07 49 00 00 0F	
5A	Application Primary Account Number (PAN)	65 10 00 00 00 00 02 08	
5F 20	Cardholder Name	41 54 48 20 50 52 49 4D 41 2F 54 65 73 74 20 43 61 72 64 20 31 30 20 20 20 20 - 'ATH PRIMA/Test Card 10'	
5F 24	Application Expiration Date	23 12 31	
5F 25	Application Effective Date	xx xx xx *	
5F 28	Issuer Country Code	06 30 - PRO	
5F 2D	Language Preference	65 6E - 'en' (English)	
5F 30	Service Code	02 01	
5F 34	Application PAN Sequence Number	01	

Tag	Element name	Data	Card v2.x
82	Application Interchange Profile [DPAS CL]	18 00 BYTE 1: b7 - Offline SDA NOT supported b6 - Offline DDA NOT supported b5 - Cardholder verification supported b4 - Terminal risk mgmt to be performed b3 - Issuer authentication NOT supported b1 - Combined DDA / GEN AC NOT supported BYTE 2: b8 - EMV Contactless NOT supported	
84	Dedicated File (DF) Name	A0 00 00 01 52 30 10	
87	Application Priority Indicator	01	
8E	Cardholder Verification Method (CVM) List	00 00 00 00 00 00 00 00 42 03 5E 03 1F 03	
94	Application File Locator (AFL)	08 02 02 00 18 03 04 01	
9F 07	Application Usage Control	FF 00 BYTE 1: b8 - Domestic cash trans. valid b7 - Int'l cash transactions valid b6 - Domestic goods valid b5 - International goods valid b4 - Domestic services valid b3 - International services valid b2 - ATMs valid b1 - non-ATM terminals valid BYTE 2: b8 - Domestic cashback NOT allowed b7 - International cashback NOT allowed	
9F 08	Application Version Number	00 01	
9F 0D	Issuer Action Code - Default	00 00 00 00 00	
9F 0E	Issuer Action Code - Denial	00 00 00 00 00	
9F 0F	Issuer Action Code - Online	00 00 00 00 00	
9F 10	Issuer Application Data [DPAS CL]	xx 15 xx xx xx xx xx xx xx xx *	
9F 11	Issuer Code Table Index	01	
9F 12	Application Preferred Name	20 20 20 20 20 20 20 20 20 - "	
9F 26	Application Cryptogram (AC)	xx xx xx xx xx xx xx xx *	
9F 27	Cryptogram Information Data (CID)	00	
9F 36	Application Transaction Counter (ATC)	xx xx *	
9F 38	Processing Options Data Object List (PDOL)	9F 66 04 9F 02 06 9F 03 06 9F 1A 02 5F 2A 02 9A 03 9C 01 9F 37 04	
9F 4F	Transaction Log Format	9F 02 06 5F 2A 02 9A 03 9F 36 02 9F 34 03 9F 52 06 9F 1A 02 95 05 9C 01 8A 02 9F 37 04 9F 03 06 9F 53 08 9F 66 04 9F 71 02 9F 6C 02	

Tag	Element name	Data	Card v2.x
9F 6C	Card Transaction Qualifiers [DPAS]	00 00 BYTE 1: b8 - Online PIN NOT required b7 - Signature NOT required b6 - Do NOT go online if Offline Data Authentication fails and Reader is online capable b5 - Do NOT switch interface if Offline Data Authentication fails and Reader supports contact chip b4 - Do NOT go Online if Application Expired b3 - Do NOT switch interface for Cash Transactions b2 - Do NOT switch interface for Cashback Transactions b1 - Is valid for contactless ATM transactions BYTE 2: b8 - Consumer Device CVM NOT performed b7 - Card does NOT Support Issuer Update Processing at POS	
9F 71	Card Processing Requirements [DPAS]	00 0F	
9F 78	Application State [D-PAS]	01	
BF 51	Contactless D-PAS MS and ZIP Default Profile	82 02 00 00 94 04 08 01 01 00	
C0	Contactless Application Configuration Options (CL-ACO)	00 80	
C2	Issuer Life Cycle Data (ILCD) [DPAS]	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	
C3	Currency Conversion Codes 1 [DPAS]	08 40 00 00 02	
C4	Currency Conversion Codes 2 [DPAS]	08 40 00 00 02	
C8	Lower Consecutive Offline Amount (LCOA) Limit [DPAS]	00 00 00 00 00 00	
C9	Upper Consecutive Offline Amount Limit (UCOA) [DPAS]	00 00 00 00 00 00	
CA	Single Transaction Amount (STA) Limit [DPAS]	00 00 00 00 00 00	
CB	Lower Consecutive Offline Limit (LCOL) [DPAS]	00	
CC	Upper Consecutive Offline Transaction Limit (UCOL) [DPAS]	00	
CD	Number of Consecutive Offline Transactions (NCOT) [DPAS]	00	
CE	Cumulative Offline Amount [DPAS]	00 00 00 00 00 00	
D0	Issuer Application Data ObjectList (IADOL) [DPAS]		
D1	Offline Balance [DPAS]	00 00 00 00 00 00	
D2	CRM Country Code [DPAS]	06 30 - PRO	
D3	CRM Currency Code [DPAS]	08 40 - USD	
D4	CVM-Accumulator [DPAS]	00 00 00 00 00 00	
D5	CVM-Cum limit 1	00 00 00 00 00 00	
D6	CVM-Cum limit 2	00 00 00 00 00 00	
D7	CVM-STA limit 1	00 00 00 00 00 00	
D8	CVM-STA limit 2	00 00 00 00 00 00	
D9	CVM-Counter	00	
DA	CVM-Cons limit 1	00	
DB	CVM-Cons limit 2	00	

Tag	Element name	Data	Card v2.x
DE	Counter and Accumulator Control Options (CACO) [D-PAS]	C1 01 21 01 01 00	
DF 30	CRM-CAC Switch Interface [D-PAS]	00 00 00	
DF 31	CRM-CAC Denial [D-PAS]	00 00 00	
DF 32	CRM-CAC Online [D-PAS]	C8 FE FF	
DF 33	CRM-CAC Default [D-PAS]	98 FE EB	
DF 34	CVM Card Action Codes - Online	40 80	
DF 35	CVM Card Action Codes - Signature	00 80	
DF 40	CL-Accumulator	00 00 00 00 00 00	
DF 41	CL-Cum Limit	00 00 00 00 00 00	
DF 42	CL-STA	00 00 00 00 00 00	
DF 43	CL-Counter	00	
DF 44	CL-Cons Limit	00	

* Tag value changes with card usage

Chapter 2 - ASCII Character Conversion Chart

Dec	Bin	Hex	Char	Dec	Bin	Hex	Char	Dec	Bin	Hex	Char
00	00000000	00	NUL	44	00101100	2C	,	88	01011000	58	X
01	00000001	01	SOH	45	00101101	2D	-	89	01011001	59	Y
02	00000010	02	STX	46	00101110	2E	.	90	01011010	5A	Z
03	00000011	03	ETX	47	00101111	2F	/	91	01011011	5B	[
04	00000100	04	EOT	48	00110000	30	0	92	01011100	5C	\
05	00000101	05	ENQ	49	00110001	31	1	93	01011101	5D]
06	00000110	06	ACK	50	00110010	32	2	94	01011110	5E	^
07	00000111	07	BEL	51	00110011	33	3	95	01011111	5F	_
08	00001000	08	BS	52	00110100	34	4	96	01100000	60	`
09	00001001	09	HT	53	00110101	35	5	97	01100001	61	a
10	00001010	0A	LF	54	00110110	36	6	98	01100010	62	b
11	00001011	0B	VT	55	00110111	37	7	99	01100011	63	c
12	00001100	0C	FF	56	00111000	38	8	100	01100100	64	d
13	00001101	0D	CR	57	00111001	39	9	101	01100101	65	e
14	00001110	0E	SO	58	00111010	3A	:	102	01100110	66	f
15	00001111	0F	SI	59	00111011	3B	;	103	01100111	67	g
16	00010000	10	DLE	60	00111100	3C	<	104	01101000	68	h
17	00010001	11	DC1	61	00111101	3D	=	105	01101001	69	i
18	00010010	12	DC2	62	00111110	3E	>	106	01101010	6A	j
19	00010011	13	DC3	63	00111111	3F	?	107	01101011	6B	k
20	00010100	14	DC4	64	01000000	40	@	108	01101100	6C	l
21	00010101	15	NAK	65	01000001	41	A	109	01101101	6D	m
22	00010110	16	SYM	66	01000010	42	B	110	01101110	6E	n
23	00010111	17	ETB	67	01000011	43	C	111	01101111	6F	o
24	00011000	18	CAN	68	01000100	44	D	112	01110000	70	p
25	00011001	19	EM	69	01000101	45	E	113	01110001	71	q
26	00011010	1A	SUB	70	01000110	46	F	114	01110010	72	r
27	00011011	1B	ESC	71	01000111	47	G	115	01110011	73	s
28	00011100	1C	FS	72	01001000	48	H	116	01110100	74	t
29	00011101	1D	GS	73	01001001	49	I	117	01110101	75	u
30	00011110	1E	RS	74	01001010	4A	J	118	01110110	76	v
31	00011111	1F	US	75	01001011	4B	K	119	01110111	77	w
32	00100000	20	SP	76	01001100	4C	L	120	01111000	78	x
33	00100001	21	!	77	01001101	4D	M	121	01111001	79	y
34	00100010	22	"	78	01001110	4E	N	122	01111010	7A	z
35	00100011	23	#	79	01001111	4F	O	123	01111011	7B	{
36	00100100	24	\$	80	01010000	50	P	124	01111100	7C	
37	00100101	25	%	81	01010001	51	Q	125	01111101	7D	}
38	00100110	26	&	82	01010010	52	R	126	01111110	7E	~
39	00100111	27	'	83	01010011	53	S	127	01111111	7F	DEL
40	00101000	28	(84	01010100	54	T				
41	00101001	29)	85	01010101	55	U				
42	00101010	2A	*	86	01010110	56	V				
43	00101011	2B	+	87	01010111	57	W				