



User Acceptance Test (UAT) Canada EMV™ Test Card Set

Version 15.00

December 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

© 2016 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 UAT Canada EMV™ Test Card Set (16 cards) only.

Attribution

EMV™ is a trademark owned by EMVCo LLC.

All trademarked symbols seen below are registered trademarks their respective organizations: American Express Company, Discover Financial Services, Interac Association, 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
5.50	August 25, 2016	B2PS	Initial document release
5.60	Sept. 21, 2017	B2PS	<ul style="list-style-type: none"> TC15: Card v6.0 has 2-byte Kernel ID
6.00	December 27, 2017	B2PS	<ul style="list-style-type: none"> TC04 - New version v6.0: Discretionary data updated (CVV) TC07 - 'Approval Amount' updated TC15 - New version v7.0: Increased contactless facility, 'Approval Amount' updated.
6.10	January 5, 2018	B2PS	<ul style="list-style-type: none"> TC12, TC13 - EMV Tags for A0000000291010 added
6.20	April 11, 2018	B2PS	<ul style="list-style-type: none"> TC11 - Profile table Service code corrected.
7.00	October 4, 2018	B2PS	<ul style="list-style-type: none"> All cards - Tags 82, 9F07, 9F69 expanded & interpreted Amex cards (TC12, TC13, TC14) - Expiry date changed to 24/12 Discover cards (TC15, TC16) - Expiry date changed to 23/12
8.00	May 30, 2019	B2PS	<ul style="list-style-type: none"> TC12 - PAN changed - now ends in '41007', AIP contactless changed TC12 & TC13 - Approval amounts changed
8.01	June 7, 2019	B2PS	<ul style="list-style-type: none"> Set renamed to "UAT Canada EMV Test Card Set". No change to cards themselves.
9.00	June 29, 2020	B2PS	<ul style="list-style-type: none"> TC01, TC05, TC06, TC07, TC10 – updated cardstock support; where applicable, "MasterCard">"Mastercard"
10.00	November 4, 2020	B2PS	<ul style="list-style-type: none"> TC10 - updated CVM, AIP TC11 - Correction to documentation (CVM)
11.00	March 18, 2021	B2PS	<ul style="list-style-type: none"> Mastercard cards change Expiry Date to 25/12
11.01	March 19, 2021	B2PS	<ul style="list-style-type: none"> Format-only - limit awkward page-breaks
11.10	November 30, 2021	B2PS	<ul style="list-style-type: none"> TC05, TC06 - Documentation correction only. EMV Tag 5F20 has been corrected.
12.00	December 16, 2021	B2PS	<ul style="list-style-type: none"> TC01-TC04 - Visa cards change Expiry Date to 24/12 TC10, TC11 – now DI with new BIN range
13.00	March 18, 2021	B2PS	<ul style="list-style-type: none"> TC10, TC11 – new PAN, BIN range
14.00	August 17, 2022	B2PS	<ul style="list-style-type: none"> TC15, TC16 – Discover cards change Expiry Date to 05/26. New PANs assigned.

Version	Date	Updated By	Revisions
15.00	December 23, 2022	B2PS	<ul style="list-style-type: none"><li data-bbox="769 279 1351 342">• TC12, TC13 – change cardstock – NO change to functionality

Table of Contents

Chapter 1. UAT Canada EMV Test Card Set Profiles	3
1.1 Test Card 01 – Visa, DI, Credit, English, Canada, CAD	7
1.1.1 Contact: CVM List - AID A0000000031010 (EMV)	7
1.1.2 Contact: Application Tag data - AID A0000000031010 (EMV)	7
1.1.3 CTLS: Application Tag data - AID A0000000031010 (qVSDC Online)	10
1.1.4 CTLS: Application Tag data - AID A0000000031010 (qVSDC Offline).....	12
1.2 Test Card 02 – Visa, Credit, English, USA, USD	15
1.2.1 Contact: CVM List - AID A0000000031010 (EMV)	15
1.2.2 Contact: Application Tag data - A0000000031010 (EMV)	15
1.3 Test Card 03– Visa, No CVM, English, USA, USD	18
1.3.1 Contact: CVM List - AID A0000000031010 (EMV)	18
1.3.2 Contact: Application Tag data - AID A0000000031010 (EMV)	18
1.4 Test Card 04 – Visa, Technical Fallback Card	21
1.5 Test Card 05 – Mastercard, DI, Credit, English, Canada, CAD	21
1.5.1 Contact: CVM List - AID A0000000041010 (EMV)	21
1.5.2 Contact: Application Tag data AID A0000000041010 (EMV)	21
1.5.3 CTLS: CVM List - AID A0000000041010 (PayPass).....	26
1.5.4 CTLS: Application Tag data - AID A0000000041010 (PayPass).....	26
1.6 Test Card 06 – Mastercard, DI, Credit, French, Canada, CAD	30
1.6.1 Contact: CVM List - AID A0000000041010 (EMV)	30
1.6.2 Contact: Application Tag data - AID A0000000041010 (EMV)	30
1.6.3 CTLS: CVM List - AID A0000000041010 (PayPass).....	36
1.6.4 CTLS: Application Tag data - AID A0000000041010 (PayPass).....	36
1.7 Test Card 07 – Mastercard, ARPC Failure, Credit, English, USA, USD	40
1.7.1 Contact: CVM List - AID A0000000041010 (EMV)	40
1.7.2 Contact: Application Tag data- AID A0000000041010 (EMV)	40
1.8 Test Card 08 – Mastercard, Technical Fallback Card	43
1.9 Test Card 09 – Mastercard, ECL - MSR Fallback Card	43
1.10 Test Card 10 – Interac, DI, Debit, English, Canada, CAD	43
1.10.1 Contact: CVM List - AID A0000002771010 (EMV)	43
1.10.2 Contact: Application Tag data - AID A0000002771010 (EMV)	43
1.10.3 CTLS: Application Tag data - AID A0000002771010 (EMV)	46
1.11 Test Card 11 – Interac, DI, Debit, French, Canada, CAD	48
1.11.1 Contact: CVM List - AID A0000002771010 (EMV)	48
1.11.2 Contact: Application Tag data - AID A0000002771010 (EMV)	48
1.11.3 CTLS: Application Tag data - AID A0000002771010 (EMV)	50
1.12 Test Card 12 – American Express, DI, Credit, English, Canada, CAD	52
1.12.1 Contact: CVM List - AID A000000025010402 (EMV)	52
1.12.2 Contact: Application Tag data - AID A000000025010402 (EMV)	53
1.12.3 CTLS: CVM List - AID A000000025010402 (ExpressPay EMV)	54
1.12.4 CTLS: Application Tag data - AID A000000025010402 (ExpressPay EMV)	54
1.12.5 Contact: CVM List - AID A0000000291010 (EMV)	55
1.12.6 Contact: Application Tag data - AID A0000000291010 (EMV)	55

1.13	Test Card 13 – American Express, DI, Credit, English, Canada, CAD	57
1.13.1	Contact: CVM List - AID A000000025010402 (EMV)	57
1.13.2	Contact: Application Tag data - AID A000000025010402 (EMV)	57
1.13.3	CTLS: CVM List - AID A000000025010402 (ExpressPay EMV)	58
1.13.4	CTLS: Application Tag data - AID A000000025010402 (ExpressPay EMV)	58
1.13.5	CTLS: CVM List - AID A0000000291010 (EMV)	60
1.13.6	CTLS: Application Tag data - AID A0000000291010 (ExpressPay EMV)	60
1.14	Test Card 14 – American Express, Technical Fallback Card	61
1.15	Test Card 15 – Discover, DI, Credit, English, USA, USD	62
1.15.1	Contact: CVM List - AID A0000001523010 (EMV)	62
1.15.2	Contact: Application Tag data - AID A0000001523010 (EMV)	62
1.15.3	CTLS: CVM List - AID A0000001523010 (DPAS-EMV)	64
1.15.4	CTLS: Application Tag data - AID A0000001523010 (DPAS-EMV, Online)	64
1.15.5	CTLS: CVM List - AID A0000001523010 (DPAS-EMV)	66
1.15.6	CTLS: Application Tag data - AID A0000001523010 (DPAS-EMV, Offline)	66
1.16	Test Card 16 – Discover, Technical Fallback Card	68
Chapter 2.	ASCII Character Conversion Chart	69

<p>CAUTION</p> <p>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.</p> <p>*** It is not possible to unblock a 'PIN Blocked' card ***</p>
<p>NOTICE</p> <p>Interac Flash card has a '001203' BIN range. These cards are supported by all Canadian processors but are not yet supported by all U.S. and international processors.</p> <p>*** Check with your acquirer account representative to determine if the Interac Flash BIN range is supported by their development host. If your processor does not yet support Interac Flash, the card will function properly at the POS but it will not obtain a host approval. ***</p>
<p>RECOMMENDATION</p> <p>For those that are relatively new to EMV and seek assistance in understanding 'the basics'... Consider B2's online courses – eLearning and Virtual Training. Learn from the comfort and convenience of your office (or home-office), at your own pace.</p> <p>Visit: b2ps.com/b2-university</p>

Chapter 1. UAT Canada EMV Test Card Set Profiles

This User Acceptance Test (UAT) Canada EMV Test Card Set contains 16 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	Visa
Type	Credit	Credit	Credit
Description	Offline Capable	USA Signature	No CVM
AID	A0000000031010	A0000000031010	A0000000031010
PAN	4761 7310 0000 0043	4761 7300 0000 0011	4761 7300 0000 0243
Expiry Date	12/2024	12/2024	12/2024
Service Code	201	201	201
Interface	Contact, Contactless, MSR	Contact, MSR	Contact, MSR
CVM (Contact) Default Condition: Terminal Supports CVM	Online PIN (ATM) Offline Plaintext PIN Signature No CVM required See card definition	Online PIN (ATM) Online PIN (MCash) Signature No CVM required See card definition	No CVM required See card definition
Approval Amount	\$10.00	\$10.00	\$10.00
Issuer Country Code	124 - Canada	840 - USA	840 - USA
Application Currency Code	124 - CAD	840 - USD	840 - USD
Language	'en' – English	'en' – English	'en' – English
Card Version	v7.x	v6.x	v6.x

	Test Card 04	Test Card 05	Test Card 06
Brand	Visa	Mastercard	Mastercard
Type	Credit	Credit	Credit
Description	Fallback	Credit	MasterCard
AID	-	A0000000041010	A0000000041010
PAN	4761 7390 0101 0267	5413 3300 8960 4111	5413 3300 8960 4111
Expiry Date	12/2024	12/2025	12/2025
Service Code	201	201	201
Interface	MSR	Contact, Contactless, MSR	Contact, Contactless, MSR
CVM (Contact) Default Condition: <i>Terminal Supports CVM</i>	N/A See card definition	Online PIN (ATM) Signature No CVM required See card definition	Online PIN (ATM) Offline Enciphered PIN Offline Plaintext PIN Signature No CVM required See card definition
Approval Amount	\$10.00	\$20.00	\$20.00
Issuer Country Code	-	124 - Canada	124 - Canada
Application Currency Code	-	124 - CAD	124 - CAD
Language	-	'en' – English	'fr' – French
Card Version	v7.x	v7.x	v7.x

	Test Card 07	Test Card 08	Test Card 09
Brand	Mastercard	Mastercard	Mastercard
Type	Credit	Credit	Credit
Description	ARPC Failure	Fallback	Empty Candidate List
AID	A0000000041010	-	-
PAN	5413 3300 8902 0011	5413 3300 8902 0029	5413 3300 8902 0011
Expiry Date	12/2025	12/2025	12/2025
Service Code	201	201	601
Interface	Contact, MSR	MSR	MSR
CVM (Contact) Default Condition: <i>Terminal Supports CVM</i>	Signature No CVM required See card definition	N/A See card definition	N/A See card definition
Approval Amount	\$120.00	\$20.00	-
Issuer Country Code	840 - USA	-	-
Application Currency Code	840 - USD	-	-
Language	'en' – English	-	-
Card Version	v7.x	v6.x	v6.x

	Test Card 10	Test Card 11	Test Card 12
Brand	Interac	Interac	American Express
Type	Debit	Debit	Credit
Description	Canadian Debit	Canadian Debit	Online Only
AID	A0000002771010	A0000002771010	A00000025010402, A000000291010
PAN	0012 0300 0000 0003	0012 0300 0000 0003	3742 450017 41007
Expiry Date	12/2028	12/2028	12/2024
Service Code	220	220	201
Interface	Contact, Contactless, MSR	Contact, Contactless, MSR	Contact, Contactless, MSR
CVM (Contact) Default Condition: <i>Terminal Supports CVM</i>	Offline Enciphered PIN Offline Plaintext PIN Online PIN See card definition	Offline Enciphered PIN Offline Plaintext PIN Online PIN See card definition	Online PIN (ATM) Online PIN Signature No CVM required See card definition
Approval Amount	\$10.00	\$10.00	\$30.00
Issuer Country Code	124 - Canada	124 - Canada	124 - Canada
Application Currency Code	124 - CAD	124 - CAD	124 - CAD
Language	'en' – English	'fr' – French	'en' – English
Card Version	v10.x	v7.x	v8.x

	Test Card 13	Test Card 14	Test Card 15
Brand	American Express	American Express	Discover
Type	Credit	Credit	Credit
Description	Amex Credit	Fallback	Discover Credit
AID	A00000025010402, A000000291010	-	A0000001523010
PAN	3742 450027 71003	3742 450037 31006	6510 0000 0000 0844
Expiry Date	12/2024	12/2024	05/2026
Service Code	201	201	201
Interface	Contact, Contactless, MSR	MSR	Contact, Contactless, MSR
CVM (Contact) Default Condition: <i>Terminal Supports CVM</i>	Online PIN (ATM) Offline Plaintext PIN Signature No CVM required See card definition	N/A See card definition	Online PIN (ATM) Offline Plaintext PIN No CVM required See card definition
Approval Amount	\$39.00 or \$43.00	\$36.00	\$79.00
Issuer Country Code	124 - Canada	-	840 - USA
Application Currency Code	124 - CAD	-	840 - USD
Language	'en' – English	-	'en' – English
Card Version	v7.x	v6.x	v9.x

	Test Card 16
Brand	Discover
Type	Credit
Description	Fallback
AID	-
PAN	6510 0000 0000 0810
Expiry Date	05/2026
Service Code	201
Interface	MSR
CVM (Contact) Default Condition: <i>Terminal Supports CVM</i>	N/A See card definition
Approval Amount	\$26.00
Issuer Country Code	-
Application Currency Code	-
Language	-
Card Version	v7.x

1.1 Test Card 01 – Visa, DI, Credit, English, Canada, CAD

A Dual Interface (Contact / Contactless) Visa card with Issuer Country Code of ‘Canada’ and Currency Code of ‘CAD’.

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

1.1.1 Contact: CVM List - AID A000000031010 (EMV)

Cardholder Verification Method List('4201 4103 5E03 1F03')			
CVM	Verification Method	Conditions	If unsuccessful
1	Online PIN	Unattended Cash	Next CVM
2	Offline Plaintext PIN	Terminal supports CVM type	Next CVM
3	Signature (paper)	Terminal supports CVM type	Next CVM
4	No CVM required	Always	Fail

1.1.2 Contact: Application Tag data - AID A000000031010 (EMV)

Tag	Element name	Data	Card v7.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	55 41 54 20 43 41 4E 2F 54 65 73 74 20 43 61 72 64 20 30 31 20 20 20 20 20 20 - 'UAT CAN/Test Card 01'	
5F 24	Application Expiration Date	24 12 31	
5F 25	Application Effective Date	xx xx xx	
5F 28	Issuer Country Code	01 24 - Canada	
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 [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 using 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 42 01 41 03 5E 03 1F 03	
8F	Certification Authority Public Key Index	92	

Tag	Element name	Data	Card v7.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 v7.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	7A 74 0E 09 46 53 4D EC D9 4E AD 3A F1 2A 7C 85 BB C3 D9 F5 1D 6E DC 15 B0 4F 0B FE 6B 34 9C 13 C4 6F 6D 41 B4 57 B3 08 CC 7B 94 65 ED 50 82 54 86 9C DD 43 7F 93 F2 27 6C 85 27 8D BE 54 D6 E2 51 60 9F 8C 0F C7 89 D2 F2 0A 23 C9 04 32 8E 5C AC 58 3C BC ED 0B 0B 03 EF DC 8D E8 53 48 3B FC 55 84 DA E2 8F 24 78 1A BA 0B F9 5D 89 94 11 90	
9F 51	Application Currency Code [VSDC]	01 24 - CAD	
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]	01 24 - CAN	
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 01 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 01 DF 21 01 03 DF 31 01 07 DF 51 01 04 DF 61 01 03	

Tag	Element name	Data	Card v7.x
BF 58	Amounts Data Template	DF 11 06 00 00 00 01 00 02 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 (qVSDC Online)

Tag	Element name	Data	Card v7.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	
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 a 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 *	

Tag	Element name	Data	Card v7.x
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	01 C4 FE F2 ED 0A 37 BF FC A8 A4 6A 90 EB 3E 07 F6 C6 F7 DE 2C ED D4 44 C6 79 48 25 FA D5 9D 7D AC 12 B3 66 2D FB 75 2D 4E 6F 8A CA 94 4A DB FF 48 1D 7F 06 A2 38 EC 80 D5 4B 95 74 97 BC 57 BE 78 3A EE AF 45 3D 79 7C 4D 53 15 E3 6E 76 0E FB F8 F9 E1 34 CA 31 3D D2 65 67 1B 6A E3 D8 8E 3C 02 3A 56 D6 79 07 53 A3 95 F6 3C BD 9D 2D 39 9D	
9F 51	Application Currency Code [VSDC]	01 24 - CAD	
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]	01 24 - CAN	
9F 58	Consecutive Transaction Counter Limit [VSDC]	03	
9F 59	Consecutive Transaction Counter Upper Limit [VSDC]	07	
9F 5A	Application Program Identifier	31 01 24 01 24	
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 25 6A F0 57 38 00	

Tag	Element name	Data	Card v7.x
9F 6C	Card Transaction Qualifiers [qVSDC VCPS 2.1]	38 00 BYTE 1: b8 - Online PIN NOT required b7 - Signature NOT required b6 - Do go online if Offline Data Authentication fails and Reader is online capable b5 - Do switch interface if Offline Data Authentication fails and Reader supports contact chip b4 - Do 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	

* Tag value changes with card usage

1.1.4 CTLs: Application Tag data - AID A000000031010 (qVSDC Offline)

Tag	Element name	Data	Card v7.x
50	Application Label	56 49 53 41 20 43 52 45 44 49	
57	Track 2 Equivalent Data	54 - 'VISA CREDIT'	
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	
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 a 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	

Tag	Element name	Data	Card v7.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 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	

Tag	Element name	Data	Card v7.x
9F 4B	Signed Dynamic Application Data	AB 5D 50 DE 6E 85 38 E3 3E F3 04 C6 AB E3 3F 98 5B 9A B2 CB 6D 36 D0 71 79 CC 2C A0 75 3A C9 A3 10 98 F1 DD CA C7 98 1E CD C7 F2 48 76 EC 41 23 25 B6 90 EA 17 C9 CF ED 86 50 07 ED 9E C8 03 4C C1 C0 33 05 82 CF 36 01 C1 1F 02 B7 15 09 96 B5 2A 2D 6E 0D BF F6 64 62 9A BC F0 BF E0 36 27 3D D7 41 97 1F 1C 14 91 D8 1C 09 44 7C C2 2E 72 C2	
9F 51	Application Currency Code [VSDC]	01 24 - CAD	
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]	01 24 - CAN	
9F 58	Consecutive Transaction Counter Limit [VSDC]	03	
9F 59	Consecutive Transaction Counter Upper Limit [VSDC]	07	
9F 5A	Application Program Identifier	31 01 24 01 24	
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 74 F1 A4 64 38 00	
9F 6C	Card Transaction Qualifiers [qVSDC VCPS 2.1]	38 00 BYTE 1: b8 - Online PIN NOT required b7 - Signature NOT required b6 - Do go online if Offline Data Authentication fails and Reader is online capable b5 - Do switch interface if Offline Data Authentication fails and Reader supports contact chip b4 - Do 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 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 01 DF 21 01 03 DF 31 01 07	
BF 56	Counters Data Template	DF 11 01 00 DF 21 01 03 DF 31 01 07	

Tag	Element name	Data	Card v7.x
BF 57	International Counters Data Template	DF 11 01 00 DF 21 01 03 DF 31 01 07 DF 51 01 03 DF 61 01 03	
BF 58	Amounts Data Template	DF 11 06 00 00 00 01 00 02 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, Credit, English, USA, USD

A Visa credit card with two AIDs, Issuer Country Code of 'USA' 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 (EMV)

Cardholder Verification Method List ('4201 4204 5E03 1F00')			
CVM	Verification Method	Conditions	If unsuccessful
1	Online PIN	Unattended Cash	Next CVM
2	Online PIN	Manual Cash	Next CVM
3	Signature (paper)	Terminal supports CVM type	Next CVM
4	No CVM required	Always	Fail

1.2.2 Contact: Application Tag data - A000000031010 (EMV)

Tag	Element name	Data	Card v6.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 00 00 00 00 11 D2 41 22 01 11 43 80 44 00 00 0F	
5A	Application Primary Account Number (PAN)	47 61 73 00 00 00 00 11	
5F 20	Cardholder Name	55 41 54 20 43 41 4E 2F 54 65 73 74 20 43 61 72 64 20 30 32 20 20 20 20 20 20 - 'UAT CAN/Test Card 02'	
5F 24	Application Expiration Date	24 12 31	
5F 25	Application Effective Date	xx xx xx	
5F 28	Issuer Country Code	08 40 - USA	
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 [VIS]	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 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	
87	Application Priority Indicator	01	

Tag	Element name	Data	Card v6.x
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 04 5E 03 1F 00	
8F	Certification Authority Public Key Index	92	
90	Issuer Public Key Certificate	3C 96 F7 65 8F BC 29 A2 02 F1 91 46 BD E9 21 66 B0 F6 22 1B BC CB 02 E3 26 71 0B 9E 22 9D 16 FA E9 AD 0C 87 4C 06 85 91 6E 19 F0 E3 26 93 EE 20 1B CE 23 59 50 9A 6D 65 72 F8 EC 3F C3 73 12 6B 34 3F 9C B8 15 3D 61 B7 EA B2 D4 2D E1 9D 56 08 31 85 A0 3D D1 4C 26 8D 40 DF 08 35 C5 5E AB FA 38 ED 28 BC E4 2C D0 01 3D A9 4F 80 05 18 B7 53 C2 46 EF FB A0 8F D2 02 9B AD 5D FC F0 DA F0 7B 7D 80 1C 46 5F FD 25 2C 70 B9 21 53 B3 30 D9 5D CA 2F A1 FA AE 2D 01 68 A4 EA 8B 47 5C D8 05 DC 32 AA 96 4C 17 BF CD 2C D5 D0 30 9A B0 EA 76 1B	
92	Issuer Public Key Remainder	50 DA 20 DD A8 95 3B 69 3F ED 84 36 68 31 BA 1E EA 97 F7 8F 79 2A CF 8C B9 8F DF 01 49 A7 B7 8F DA 1C 49 67	
93	Signed Static Application Data	18 E7 DC A7 C0 81 A4 B0 F1 9C 4E C3 2F 48 1F 8A A9 71 E1 05 56 4E D5 11 B6 7C E9 35 33 A4 43 AA 69 46 8D AB F7 92 4A 0F CC E7 9F 6A CA 11 AC 50 EA 7C F6 E3 61 13 8B CC 18 FF 56 94 6B CA ED 39 EA 62 B5 81 80 8F 15 0F 74 5A 4C 99 B9 0F EB 79 6F BF 9F 68 2D 72 B2 00 B0 DC 6A 91 EC 45 3A E2 04 41 D1 28 05 7F 91 3D 6F ED 89 D4 D5 98 35 E7 C9 F7 80 8B 63 03 28 F8 19 44 C4 84 AA CA E0 BF 08 7B BA 05 6D E5 90 4D 0A FA D2 CE AF AD 02 DB AB 87 91 CE 53 47 4A 37 19 70 CF A3 8C 8B B3 89 31 E9 E7 C6 D3 09 5A 3A FC 6B 46 7C F0 75 23 30	
94	Application File Locator (AFL)	10 01 01 00 10 02 05 01 10 08 08 00 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	

Tag	Element name	Data	Card v6.x
9F 08	Application Version Number [VIS]	00 96	
9F 0D	Issuer Action Code - Default	B0 50 80 88 00	
9F 0E	Issuer Action Code - Denial	00 00 00 00 00	
9F 0F	Issuer Action Code - Online	B0 50 80 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	
9F 46	ICC Public Key Certificate	25 FC B3 CA 15 F7 BD D7 53 40 27 90 BE 96 59 73 0B 8B ED F5 CF 92 55 3B A1 6F 31 B0 0A CE 07 1E 32 D0 A1 56 F0 09 30 BE 08 5E 47 BE B0 C1 8D 42 73 F6 6A C2 FB 15 29 01 19 3F 1C 35 45 B8 34 B8 B5 3F BA 40 21 4B 1F 05 AE 5C 66 95 3A 82 A8 C6 B5 E0 41 0A E0 7D 57 69 A0 88 B9 C9 9B B6 BF 59 3A 9A 49 54 4A 75 78 ED F2 9F 74 19 9B BB DA 77 E1 3A B4 D7 37 5E AC 2A 70 D1 CF C1 01 5A 7D 83 12 01 78 FA C6 AE 80 D6 7C 34 1A 47 0A 16 3B E5 61 53 12 EF 47 3C B8 98 26 A9 B1 AF 76 F6 50 74 95 53 27 31 B3 1C F1 22 2E 28 55 7E 73 D8 36 61	
9F 47	ICC Public Key Exponent	03	
9F 49	Dynamic Data Authentication Data Object List (DDOL)	9F 37 04	
9F 4A	Static Data Authentication Tag List	82	
9F 51	Application Currency Code [VSDC]	08 40 - USD	
9F 52	Application Default Action [VSDC VIS 1.5]	C0 00 00 00 00 00	
9F 53	Consecutive Transaction Limit (International) [VSDC]	00	
9F 54	Cumulative Total Transaction Amount Limit [VSDC]	00 00 00 00 00 00	
9F 56	Issuer Authentication Indicator [VSDC]	80	
9F 57	Issuer Country Code [VSDC]	08 40 - USA	
9F 58	Consecutive Transaction Counter Limit [VSDC]	00	
9F 59	Consecutive Transaction Counter Upper Limit [VSDC]	00	
9F 5C	Cumulative Total Transaction Amount Upper Limit [VSDC]	00 00 00 00 00 00	
9F 5E	Consecutive Transaction International Upper Limit [VSDC]	00	

Tag	Element name	Data	Card v6.x
BF 56	Counters Data Template	DF 11 01 01 DF 21 01 00 DF 31 01 00	
BF 57	International Counters Data Template	DF 11 01 00 DF 21 01 00 DF 31 01 00 DF 51 01 00	
BF 58	Amounts Data Template	DF 11 06 00 00 00 00 00 00 DF 21 06 00 00 00 00 00 00 DF 31 06 00 00 00 00 00 00	

* Tag value changes with card usage

1.3 Test Card 03– Visa, No CVM, English, USA, USD

A Visa card with no CVM, Issuer Country Code of 'USA' and Currency Code of 'USD'.

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

1.3.1 Contact: CVM List - AID A000000031010 (EMV)

Cardholder Verification Method List ('1F00')			
CVM	Verification Method	Conditions	If unsuccessful
1	No CVM required	Always	Fail

1.3.2 Contact: Application Tag data - AID A000000031010 (EMV)

Tag	Element name	Data	Card v6.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 00 00 00 02 43 D2 41 22 01 11 43 80 44 00 00 0F	
5A	Application Primary Account Number (PAN)	47 61 73 00 00 00 02 43	
5F 20	Cardholder Name	55 41 54 20 43 41 4E 2F 54 65 73 74 20 43 61 72 64 20 30 33 20 20 20 20 20 20 - 'UAT CAN/Test Card 03'	
5F 24	Application Expiration Date	24 12 31	
5F 25	Application Effective Date	xx xx xx	
5F 28	Issuer Country Code	08 40 - USA	
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 [VIS]	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 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	
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	

Tag	Element name	Data	Card v6.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 1F 00	
8F	Certification Authority Public Key Index	92	
90	Issuer Public Key Certificate	3C 96 F7 65 8F BC 29 A2 02 F1 91 46 BD E9 21 66 B0 F6 22 1B BC CB 02 E3 26 71 0B 9E 22 9D 16 FA E9 AD 0C 87 4C 06 85 91 6E 19 F0 E3 26 93 EE 20 1B CE 23 59 50 9A 6D 65 72 F8 EC 3F C3 73 12 6B 34 3F 9C B8 15 3D 61 B7 EA B2 D4 2D E1 9D 56 08 31 85 A0 3D D1 4C 26 8D 40 DF 08 35 C5 5E AB FA 38 ED 28 BC E4 2C D0 01 3D A9 4F 80 05 18 B7 53 C2 46 EF FB A0 8F D2 02 9B AD 5D FC F0 DA F0 7B 7D 80 1C 46 5F FD 25 2C 70 B9 21 53 B3 30 D9 5D CA 2F A1 FA AE 2D 01 68 A4 EA 8B 47 5C D8 05 DC 32 AA 96 4C 17 BF CD 2C D5 D0 30 9A B0 EA 76 1B	
92	Issuer Public Key Remainder	50 DA 20 DD A8 95 3B 69 3F ED 84 36 68 31 BA 1E EA 97 F7 8F 79 2A CF 8C B9 8F DF 01 49 A7 B7 8F DA 1C 49 67	
93	Signed Static Application Data	41 BA C7 39 63 B3 5B 8B 7C 4C 06 BC ED AD 44 CA 88 C4 9F E3 51 83 5C 8D 7B EB 67 0F 22 2F 8B FC ED 81 44 5F 56 6A 0F B0 65 15 1C 97 B3 7F 54 6F 0E A8 BF 5A A4 2E FB 8A A2 A9 6A EE 06 77 12 B9 F8 6C 91 F3 AF A8 C3 E2 08 B9 16 07 6D 86 5F 28 1A 83 73 B0 B2 7E CE 15 8E 51 AF ED 9B 19 47 25 E5 F4 9A 85 84 C4 42 07 E5 69 F4 8D 4D 34 B5 A3 D5 7C B5 BF C5 6B 41 3B F3 D1 8E BB AF EE 79 D7 2B FD 72 A2 EE 53 6E DF 7A 85 95 FC A2 3D A5 87 C3 60 ED 6A 0D D6 17 61 F3 0C 33 53 AF CC EB 2C D1 03 F9 39 E8 26 2B D0 90 97 87 97 7E DB F6 A5	
94	Application File Locator (AFL)	10 01 01 00 10 02 05 01 10 08 08 00 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	B0 50 80 88 00	
9F 0E	Issuer Action Code - Denial	00 00 00 00 00	
9F 0F	Issuer Action Code - Online	B0 50 80 98 00	

Tag	Element name	Data	Card v6.x
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 38 39 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	
9F 46	ICC Public Key Certificate	32 78 62 F6 AE 5C 3E EB 03 1D 25 FB C8 71 6A 88 51 E3 1A 54 57 71 F8 8D 42 EC 54 4D 22 9B D1 E4 D5 B7 C7 8C 37 78 89 F9 68 60 6F 5C 85 93 BC 22 28 26 FD 5A 00 48 53 48 B3 2B 5F 97 5E B0 8B 57 68 F6 94 73 07 6E C0 67 10 0D 54 E7 37 40 90 BA 3D 96 FF DE 7F B6 4B 43 2E 86 C8 30 D0 2E F4 1E BD 39 3A 8E 2D A4 62 98 08 51 92 3E 60 3E F9 5E 0E 69 85 BD B3 81 3E 45 5B 75 20 EB 02 B3 FD 4B 2E 41 BD C3 03 1B BB D3 B4 16 2C AD FC 63 C9 6C F3 6A 3D B5 EC 81 AB 8A 30 BB 66 5F 91 AB 09 E1 08 E7 8D 8F 62 D5 E8 9C A9 8D B5 8D E5 8F 97 60	
9F 47	ICC Public Key Exponent	03	
9F 49	Dynamic Data Authentication Data Object List (DDOL)	9F 37 04	
9F 4A	Static Data Authentication Tag List	82	
9F 51	Application Currency Code [VSDC]	08 40 - USD	
9F 52	Application Default Action [VSDC VIS 1.5]	C0 00 00 00 00 00	
9F 53	Consecutive Transaction Limit (International) [VSDC]	00	
9F 54	Cumulative Total Transaction Amount Limit [VSDC]	00 00 00 00 00 00	
9F 56	Issuer Authentication Indicator [VSDC]	80	
9F 57	Issuer Country Code [VSDC]	08 40 - USA	
9F 58	Consecutive Transaction Counter Limit [VSDC]	00	
9F 59	Consecutive Transaction Counter Upper Limit [VSDC]	00	
9F 5C	Cumulative Total Transaction Amount Upper Limit [VSDC]	00 00 00 00 00 00	
9F 5E	Consecutive Transaction International Upper Limit [VSDC]	00	
BF 56	Counters Data Template	DF 11 01 01 DF 21 01 00 DF 31 01 00	
BF 57	International Counters Data Template	DF 11 01 00 DF 21 01 00 DF 31 01 00 DF 51 01 00	

Tag	Element name	Data	Card v6.x
BF 58	Amounts Data Template	DF 11 06 00 00 00 00 00 00 DF 21 06 00 00 00 00 00 00 DF 31 06 00 00 00 00 00 00	

* Tag value changes with card usage

1.4 Test Card 04 – Visa, Technical Fallback Card

This card has a chip image printed on it but 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 \$10.00.

Note: The test host may Approve / Decline based on its configuration with respect to CVV processing.

1.5 Test Card 05 – Mastercard, DI, Credit, English, Canada, CAD

A Dual Interface (Contact / Contactless) Mastercard credit card with Issuer Country Code of 'Canada' and Currency Code of 'CAD'.

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

1.5.1 Contact: CVM List - AID A000000041010 (EMV)

Cardholder Verification Method List ('4201 5E03 1F03')			
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	Fail

1.5.2 Contact: Application Tag data AID A000000041010 (EMV)

Tag	Element name	Data	Card v7.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 60 41 11 D2 51 22 01 01 23 40 91 72 02 9F	
5A	Application Primary Account Number (PAN)	54 13 33 00 89 60 41 11	
5F 20	Cardholder Name	55 41 54 20 43 41 4E 2F 54 65 73 74 20 43 61 72 64 20 30 35 20 20 20 20 20 20 - 'UAT CAN/Test Card 05'	
5F 24	Application Expiration Date	25 12 31	
5F 25	Application Effective Date	xx xx xx	
5F 28	Issuer Country Code	01 24 - Canada	
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 v7.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 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 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 42 01 5E 03 1F 03	
8F	Certification Authority Public Key Index	EF	
90	Issuer Public Key Certificate	5B 2E 1F EF 4D 7D 2C 16 16 12 21 F7 97 2F E6 99 B7 82 44 E0 73 C8 AC 75 86 CE D1 76 EF 7B 93 AC 19 0B 05 70 40 E1 18 4F 2F 55 AC 70 D2 AA C3 94 BE 22 6A 26 50 D3 CA ED 90 60 88 C5 3A 88 B8 3C 46 1F 37 6D 89 10 B8 51 81 54 F3 08 EE ED 23 BC 15 7C FA BA 6E 51 26 9F 01 6D 59 FE 21 A6 F9 10 F2 85 13 0D EA F6 A4 78 BE 77 9D 2B AD 08 E1 2E D6 A5 93 71 5A 18 72 15 C5 63 28 1C B2 B7 2E 5B 14 05 5D 2D D8 30 4A C2 20 2E 53 96 D0 4C 5C 79 55 0B 4D E9 FA DA CB 35 F3 19 06 C5 A4 42 27 29 D6 A5 A8 F5 E1 4C B9 0D B7 05 49 4B 3D B1 0D E6 19 F3 B0 3E 64 96 FE 79 F4 6E 64 97 2A 46 34 A0 35 EF 7E 50 20 49 40 36 03 E0 BC FC 33 C3 87 BB 6D 72 CF F8 33 89 7E 81 F5 02 3F F4 D6 A9 CC 0C 89 E8 78 3F 07 B7 F0 55 3E 9D D3 59 B6 5B 62 3A F1 CE 27 8D 65 3C 37 07	
92	Issuer Public Key Remainder	14 3E 90 B8 B5 E6 2B E5 A9 0D 5A 4E F1 5C 77 40 4D 29 94 48 98 77 85 D7 E8 80 C2 CD	
94	Application File Locator (AFL)	08 02 04 01 18 01 01 00 20 01 01 00	
94	Application File Locator (AFL)	08 02 04 01 18 01 01 00 20 01 01 00	

Tag	Element name	Data	Card v7.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 02	
9F 0D	Issuer Action Code - Default	B0 50 9C 80 00	
9F 0E	Issuer Action Code - Denial	00 00 00 00 00	
9F 0F	Issuer Action Code - Online	B0 70 9C 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 - 'Mastercard'	
9F 14	Counter 1 Lower Limit [Mastercard]	00	
9F 17	Personal Identification Number (PIN) Try Counter	03	
9F 1F	Track 1 Discretionary Data	30 31 32 33 34 30 39 31 37 32 30 30 30 30 30 30 30 30 30 30 30 30 30 30	
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 32	Issuer Public Key Exponent	03	
9F 36	Application Transaction Counter (ATC)	xx xx *	
9F 42	Application Currency Code	01 24 - CAD	
9F 44	Application Currency Exponent	02	
9F 46	ICC Public Key Certificate	96 A1 F8 A5 47 21 92 8B B7 1A E3 25 26 ED AC 97 F2 D9 C0 99 C2 50 ED 79 DF E3 A4 C7 90 6E 20 71 89 DB 46 0C A0 65 EB B7 6F 37 62 F8 83 1E D0 9E C2 12 41 6E 22 2F 31 E2 BE A8 AA 27 B2 00 3A 42 06 37 60 CD 4B 67 54 5B 66 21 1D 86 0E FC 00 96 08 E7 3A 40 82 76 B6 A0 52 F3 49 88 94 E1 88 48 5E 6A 5F 55 88 D5 14 E9 92 BA 29 21 EC 3D BE 66 9F 7A 0B 81 78 79 70 32 40 06 C9 8C 94 BA BF B6 82 2D 47 4E 4B DD 0C 74 EF 23 B0 2D 47 A2 E6 DB 8B 15 39 01 49 A7 DF B1 09 0F FB 30 B5 69 CD 59 AA 19 7E 23 10 68 0E 15 AA 4F 36 E5 D7 0F 3C 2D 68 E0 42 85 67 EA 37 DF AB BC 8E EE F8 07 66 71 B1 1C F7 19 C1 78 17 6E 77 7E 50 80 22 11 C7 0C 2B 4C 94 6C 2B B9 87 9F DD FF AD AD E5 9C A8 E7 5B 77 9F 71 84 56 93 36 8C 73 C7 66 30 47 A0 CF	
9F 47	ICC Public Key Exponent	03	

Tag	Element name	Data	Card v7.x
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 DF 3E 01 9F 21 03 9F 7C 14	
9F 5D	Application Capabilities Information [M/Chip Advance]	01 00 00	
9F 6E	Third Party Data [Mastercard]	01 24 00 00 30 30 00	
9F 70	Protected Data Envelope 1 [M/Chip Advance]	20 20	
9F 71	Protected Data Envelope 2 [M/Chip Advance]	20 20	
9F 72	Protected Data Envelope 3 [M/Chip Advance]	20 20	
9F 73	Protected Data Envelope 4 [M/Chip Advance]	20 20	
9F 74	Protected Data Envelope 5 [M/Chip Advance]	20 20	
9F 75	Unprotected Data Envelope 1 [M/Chip Advance]	20 20	
9F 76	Unprotected Data Envelope 2 [M/Chip Advance]	20 20	
9F 77	Unprotected Data Envelope 3 [M/Chip Advance]	20 20	
9F 78	Unprotected Data Envelope 4 [M/Chip Advance]	20 20	
9F 79	Unprotected Data Envelope 5 [M/Chip Advance]	20 20	
9F 7E	Application Life Cycle Data [Mastercard]	03 10 0C 12 00 09 00 00 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 (Contact) - Decline [M/Chip Advance]	00 00 00	
C4	Card Issuer Action Code (Contact) - Default [M/Chip Advance]	46 58 00	

Tag	Element name	Data	Card v7.x
C5	Card Issuer Action Code (Contact) - Online [M/Chip Advance]	06 F8 00	
C6	PIN Try Limit [M/Chip Advance]	03	
C7	CDOL1 Related Data Length [Mastercard]	42	
C8	CRM Country Code [Mastercard]	01 24 - CAN	
C9	Accumulator 1 Currency Code [Mastercard]	01 24 - CAD	
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 58 00	
CE	Card Issuer Action Code (Contactless) - Online [M/Chip Advance]	00 F8 00	
CF	Card Issuer Action Code (Contactless) - Decline [M/Chip Advance]	00 00 00	
D1	Accumulator 1 Currency Conversion Table [Mastercard]	01 24 00 01 00 01 24 00 01 00 01 24 00 01 00 01 24 00 01 00 01 24 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 FF	
D5	Application Control [M/Chip Advance]	8C 00 80 00 86 02	
D6	Default ARPC Response Code [M/Chip Advance]	00 12	
D7	Application Control [M/Chip Advance]	40 01 40 00 86 02	
D9	Application File Locator (Contactless)	08 01 01 00 10 01 01 01 18 01 01 00 20 01 02 00	
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]	C1	
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]	09 99	
DF 17	Accumulator 2 Currency Conversion Table [Mastercard]	09 99 00 01 00 09 99 00 01 00 09 99 00 01 00 09 99 00 01 00 09 99 00 01 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]	C1	
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]	09 99	
DF 25	MTA NoCVM (Contact) [M/Chip Advance]	00 00 00 00 00 00	

Tag	Element name	Data	Card v7.x
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]	03	
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 00 00 00	
DF 40	Read Record Filter (Contactless) [M/Chip Advance]	08 03 03 00	
DF 41	DS Management Control [M/Chip Advance]	20	

* Tag value changes with card usage

1.5.3 CTLS: CVM List - AID A000000041010 (PayPass)

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

1.5.4 CTLS: Application Tag data - AID A000000041010 (PayPass)

Tag	Element name	Data	Card v7.x
50	Application Label	4D 41 53 54 45 52 43 41 52 44 - 'MASTERCARD'	
56	Track 1 Equivalent Data [Mastercard]	42 35 34 31 33 33 33 30 30 38 39 36 30 34 31 31 31 5E 20 2F 5E 32 35 31 32 32 30 31 30	
57	Track 2 Equivalent Data	54 13 33 00 89 60 41 11 D2 51 22 01 01 23 40 91 72 02 9F	
5A	Application Primary Account Number (PAN)	54 13 33 00 89 60 41 11	

Tag	Element name	Data	Card v7.x
5F 24	Application Expiration Date	25 12 31	
5F 25	Application Effective Date	xx xx xx	
5F 28	Issuer Country Code	01 24 - Canada	
5F 2D	Language Preference	65 6E - 'en' (English)	
5F 34	Application PAN Sequence Number	01	
82	Application Interchange Profile	19 80 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 - M/Chip 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 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 5E 03 1F 03	
8F	Certification Authority Public Key Index	EF	
90	Issuer Public Key Certificate	5B 2E 1F EF 4D 7D 2C 16 16 12 21 F7 97 2F E6 99 B7 82 44 E0 73 C8 AC 75 86 CE D1 76 EF 7B 93 AC 19 0B 05 70 40 E1 18 4F 2F 55 AC 70 D2 AA C3 94 BE 22 6A 26 50 D3 CA ED 90 60 88 C5 3A 88 B8 3C 46 1F 37 6D 89 10 B8 51 81 54 F3 08 EE ED 23 BC 15 7C FA BA 6E 51 26 9F 01 6D 59 FE 21 A6 F9 10 F2 85 13 0D EA F6 A4 78 BE 77 9D 2B AD 08 E1 2E D6 A5 93 71 5A 18 72 15 C5 63 28 1C B2 B7 2E 5B 14 05 5D 2D D8 30 4A C2 20 2E 53 96 D0 4C 5C 79 55 0B 4D E9 FA DA CB 35 F3 19 06 C5 A4 42 27 29 D6 A5 A8 F5 E1 4C B9 0D B7 05 49 4B 3D B1 0D E6 19 F3 B0 3E 64 96 FE 79 F4 6E 64 97 2A 46 34 A0 35 EF 7E 50 20 49 40 36 03 E0 BC FC 33 C3 87 BB 6D 72 CF F8 33 89 7E 81 F5 02 3F F4 D6 A9 CC 0C 89 E8 78 3F 07 B7 F0 55 3E 9D D3 59 B6 5B 62 3A F1 CE 27 8D 65 3C 37 07	
92	Issuer Public Key Remainder	14 3E 90 B8 B5 E6 2B E5 A9 0D 5A 4E F1 5C 77 40 4D 29 94 48 98 77 85 D7 E8 80 C2 CD	
94	Application File Locator (AFL)	08 01 01 00 10 01 01 01 18 01 01 00 20 01 02 00	

Tag	Element name	Data	Card v7.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 02	
9F 0D	Issuer Action Code - Default	B4 70 80 80 00	
9F 0E	Issuer Action Code - Denial	00 00 00 00 00	
9F 0F	Issuer Action Code - Online	B4 70 84 80 00	
9F 10	Issuer Application Data [M/Chip Advance]	xx 11 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	Counter 1 Lower Limit [Mastercard]	00	
9F 17	Personal Identification Number (PIN) Try Counter	03	
9F 23	Counter 1 Upper Limit [Mastercard]	00	
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	01 24 - CAD	
9F 44	Application Currency Exponent	02	
9F 46	ICC Public Key Certificate	2A E7 AD A2 C7 85 ED 93 FC 76 F7 00 97 40 4E 19 FE 82 C1 99 1D 82 00 E8 ED 7E 71 5B 3C 9B F9 F2 E8 3F 9A 35 46 25 2E 70 AC 71 46 6F 5C 7A 65 A3 1C A8 41 0B 23 60 22 66 36 75 21 99 AB E8 56 47 C8 1F AB CA FA C7 6A E8 97 DE 1A 81 14 37 A5 20 0A 72 5B E4 4D 86 8B C3 09 71 52 17 57 87 59 EE AB D0 4E 51 92 04 E1 5D DB 7F 10 E1 6A A3 2C 80 D9 04 08 23 08 F8 45 79 49 2D B1 D5 30 60 51 E9 76 08 71 65 1C 13 80 65 0B 44 54 EB 2D 6B 39 4A D9 B4 E6 2F 69 D4 04 1B 3C 98 48 AA D3 B8 78 FD 9B 3A DA 07 48 D5 1A AE 37 D6 90 22 BD 41 72 90 73 92 22 F4 E3 88 86 D5 5D 3E 25 69 02 93 43 46 9E FC BD DD 88 F3 36 86 B6 8D CD B5 C4 5F 71 5C 3B CF 20 C7 EA AA 30 47 5C 4D 8F 6C FE AF A0 B1 20 F3 0B 48 C5 78 CE BE B6 2B F2 4A 39 74 A4 45	
9F 47	ICC Public Key Exponent	03	
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 v7.x
9F 5D	Application Capabilities Information [M/Chip Advance]	01 00 00	
9F 60	CVC3track1 [Mastercard]	xx xx *	
9F 61	CVC3track2 [Mastercard]	xx xx *	
9F 62	Track 1 Bitmap for CVC3 (PCVC3 Track 1) [Mastercard]	00 00 00 38 00 00	
9F 63	Track 1 Bitmap for UN and ATC (PUNATC Track 1) [Mastercard]	00 00 00 00 E0 E0	
9F 64	Track 1 Number of ATC Digits (NATC Track 1) [Mastercard]	03	
9F 65	Track 2 Bitmap for CVC3 (PCVC3 Track 2) [Mastercard]	00 0E	
9F 66	Track 2 Bitmap for UN and ATC (PUNATC Track 2) [Mastercard]	0E 70	
9F 67	Track 2 Number of ATC Digits (NATC Track 2) [Mastercard]	03	
9F 6B	Track 2 Equivalent Data [Mastercard]	54 13 33 00 89 60 41 11 D2 51 22 01 00 00 40 00 00 00 0F	
9F 6C	Application Version [Mastercard]	00 01 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 6E	Third Party Data [Mastercard]	01 24 00 00 30 30 00	
9F 7E	Application Life Cycle Data [Mastercard]	03 10 0C 12 00 09 00 00 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 (Contact) - Decline [M/Chip Advance]	00 00 00	
C4	Card Issuer Action Code (Contact) - Default [M/Chip Advance]	46 58 00	
C5	Card Issuer Action Code (Contact) - Online [M/Chip Advance]	06 F8 00	
C6	PIN Try Limit [M/Chip Advance]	03	
C7	CDOL1 Related Data Length [Mastercard]	42	
C8	CRM Country Code [Mastercard]	01 24 - CAN	
C9	Accumulator 1 Currency Code [Mastercard]	01 24 - CAD	

Tag	Element name	Data	Card v7.x
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 58 00	
CE	Card Issuer Action Code (Contactless) - Online [M/Chip Advance]	00 F8 00	
CF	Card Issuer Action Code (Contactless) - Decline [M/Chip Advance]	00 00 00	
D1	Accumulator 1 Currency Conversion Table [Mastercard]	01 24 00 01 00 01 24 00 01 00 01 24 00 01 00 01 24 00 01 00 01 24 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 FF	
D5	Application Control [M/Chip Advance]	8C 00 80 00 86 02	
D6	Default ARPC Response Code [M/Chip Advance]	00 12	
D7	Application Control [M/Chip Advance]	40 01 40 00 86 02	
DF 02	Security Limits Status (Contact) [M/Chip Advance]	00	

* Tag value changes with card usage

1.6 Test Card 06 – Mastercard, DI, Credit, French, Canada, CAD

A Dual Interface (Contact / Contactless) Mastercard credit card with Issuer Country Code of 'Canada' and Currency Code of 'CAD'.

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

1.6.1 Contact: CVM List - AID A000000041010 (EMV)

Cardholder Verification Method List ('4201 4403 4103 5E03 1F03')			
CVM	Verification Method	Conditions	If unsuccessful
1	Online PIN	Unattended Cash	Next CVM
2	Offline Enciphered PIN	Terminal supports CVM type	Next CVM
3	Offline Plaintext PIN	Terminal supports CVM type	Next CVM
4	Signature (paper)	Terminal supports CVM type	Next CVM
5	No CVM required	Terminal supports CVM type	Fail

1.6.2 Contact: Application Tag data - AID A000000041010 (EMV)

Tag	Element name	Data	Card v7x
50	Application Label	4D 41 53 54 45 52 43 41 52 44 - 'MASTERCARD'	
57	Track 2 Equivalent Data	54 13 33 00 89 60 41 11 D2 51 22 01 01 23 40 91 72 02 9F	
5A	Application Primary Account Number (PAN)	54 13 33 00 89 60 41 11	
5F 20	Cardholder Name	55 41 54 20 43 41 4E 2F 54 65 73 74 20 43 61 72 64 20 30 36 20 20 20 20 20 20 - 'UAT CAN/Test Card 06'	
5F 24	Application Expiration Date	25 12 31	
5F 25	Application Effective Date	xx xx xx	
5F 28	Issuer Country Code	01 24 - Canada	
5F 2D	Language Preference	65 6E - 'en' (English)	

Tag	Element name	Data	Card v7x
5F 30	Service Code	02 01	
5F 34	Application PAN Sequence Number	01	
82	Application Interchange Profile	39 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 NOT supported using External Auth command b2 - On device Cardholder verification NOT supported b1 - Combined DDA / GEN AC supported BYTE 2: b8 - EMV mode 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 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 42 01 44 03 41 03 5E 03 1F 03	
8F	Certification Authority Public Key Index	EF	
90	Issuer Public Key Certificate	5B 2E 1F EF 4D 7D 2C 16 16 12 21 F7 97 2F E6 99 B7 82 44 E0 73 C8 AC 75 86 CE D1 76 EF 7B 93 AC 19 0B 05 70 40 E1 18 4F 2F 55 AC 70 D2 AA C3 94 BE 22 6A 26 50 D3 CA ED 90 60 88 C5 3A 88 B8 3C 46 1F 37 6D 89 10 B8 51 81 54 F3 08 EE ED 23 BC 15 7C FA BA 6E 51 26 9F 01 6D 59 FE 21 A6 F9 10 F2 85 13 0D EA F6 A4 78 BE 77 9D 2B AD 08 E1 2E D6 A5 93 71 5A 18 72 15 C5 63 28 1C B2 B7 2E 5B 14 05 5D 2D D8 30 4A C2 20 2E 53 96 D0 4C 5C 79 55 0B 4D E9 FA DA CB 35 F3 19 06 C5 A4 42 27 29 D6 A5 A8 F5 E1 4C B9 0D B7 05 49 4B 3D B1 0D E6 19 F3 B0 3E 64 96 FE 79 F4 6E 64 97 2A 46 34 A0 35 EF 7E 50 20 49 40 36 03 E0 BC FC 33 C3 87 BB 6D 72 CF F8 33 89 7E 81 F5 02 3F F4 D6 A9 CC 0C 89 E8 78 3F 07 B7 F0 55 3E 9D D3 59 B6 5B 62 3A F1 CE 27 8D 65 3C 37 07	
92	Issuer Public Key Remainder	14 3E 90 B8 B5 E6 2B E5 A9 0D 5A 4E F1 5C 77 40 4D 29 94 48 98 77 85 D7 E8 80 C2 CD	
94	Application File Locator (AFL)	08 02 04 01 18 01 01 00 20 01 01 00	
94	Application File Locator (AFL)	08 02 04 01 18 01 01 00 20 01 01 00	

Tag	Element name	Data	Card v7x
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	BC 50 BC 80 00	
9F 0E	Issuer Action Code - Denial	00 00 00 00 00	
9F 0F	Issuer Action Code - Online	BC 70 BC 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 - 'Mastercard'	
9F 14	Counter 1 Lower Limit [Mastercard]	03	
9F 17	Personal Identification Number (PIN) Try Counter	09	
9F 1F	Track 1 Discretionary Data	30 31 32 33 34 30 39 31 37 32 30 30 30 30 30 30 30 30 30 30 30 30 30 30	
9F 23	Counter 1 Upper Limit [Mastercard]	07	
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	01 24 - CAD	
9F 44	Application Currency Exponent	02	
9F 46	ICC Public Key Certificate	F2 11 20 DF B3 7F F8 25 A5 63 31 91 4A 3A 34 F1 50 E6 8B 14 54 AD CD AF B7 A0 7B 87 95 05 A2 1C B9 31 DB 96 0F FD 80 82 9C AB 28 C5 46 05 41 CD 29 B6 FF E7 9B 9D FF E1 F2 3A DA 21 67 78 AF 24 72 3F CF 75 C6 C5 F1 BE 3B 8B E3 F2 16 4A 2A 1C 92 24 D9 6D 3A 80 F2 24 B9 03 87 43 09 87 83 7C 16 CE 3D 6B 31 0D E1 29 16 6C 44 65 25 AC 28 C2 A9 B9 CE 63 71 F9 54 81 9B A1 AF 88 C8 91 64 2C 91 92 75 39 D5 27 AC 15 71 7B D7 4E 7D BD 10 5E 15 53 A8 E7 67 CA CC A0 F3 A1 7E 25 73 18 3D BB 7A A1 DA 5A E2 59 98 28 D6 6C A5 49 FE C1 C8 95 13 04 E0 EC C8 F1 E1 AB 78 31 CB 78 CE 23 DD 24 0F 27 33 DF BA B8 4D 69 AA 8E 9B 4D E0 8B D4 B1 A9 50 25 DA A2 A5 03 11 1B ED BF CD 98 E2 BE BF 28 16 59 F2 03 6B 9D 84 8B 8F F4 06 62 35 84 F5	
9F 47	ICC Public Key Exponent	03	
9F 49	Dynamic Data Authentication Data Object List (DDOL)	9F 37 04	

Tag	Element name	Data	Card v7x
9F 4A	Static Data Authentication Tag List	82	
9F 4B	Signed Dynamic Application Data	08 A2 35 14 6D 6F 41 1C AB FD A1 92 45 67 A7 C6 1E 39 A9 19 E4 16 24 56 6C 3D 3A D6 95 B8 5D 65 98 A8 5F 81 CE 4C A0 3F 61 0A 40 E2 18 A6 EA D6 D7 AE 17 DC 54 5E 00 5C 12 D6 1C 13 17 4E 1C B2 10 6E 2A BD 80 1D A4 D0 99 85 E0 77 A0 C7 F4 18 43 1C E6 1B 48 33 C8 BA 15 B5 26 80 32 F8 13 3A C0 64 0A 69 3D 7D A4 5A 7C E4 C6 AD 86 01 86 51 67 61 A7 45 BD 9E D9 2A 34 21 F4 7C E0 C9 04 7C C7 4B 67 AF 09 8F 57 2D 04 62 40 86 85 14 11 22 B1 7D DC 97 78 E5 4A 90 07 66 74 DC 39 6C F0 98 5E 13 C4 8B 74 67 DC 5B C8 DC 33 5D 18 97 C3 D6	
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 5D	Application Capabilities Information [M/Chip Advance]	01 00 00	
9F 6E	Third Party Data [Mastercard]	01 24 00 00 30 30 00	
9F 70	Protected Data Envelope 1 [M/Chip Advance]	20 20	
9F 71	Protected Data Envelope 2 [M/Chip Advance]	20 20	
9F 72	Protected Data Envelope 3 [M/Chip Advance]	20 20	
9F 73	Protected Data Envelope 4 [M/Chip Advance]	20 20	
9F 74	Protected Data Envelope 5 [M/Chip Advance]	20 20	
9F 75	Unprotected Data Envelope 1 [M/Chip Advance]	20 20	
9F 76	Unprotected Data Envelope 2 [M/Chip Advance]	20 20	
9F 77	Unprotected Data Envelope 3 [M/Chip Advance]	20 20	

Tag	Element name	Data	Card v7x
9F 78	Unprotected Data Envelope 4 [M/Chip Advance]	20 20	
9F 79	Unprotected Data Envelope 5 [M/Chip Advance]	20 20	
9F 7E	Application Life Cycle Data [Mastercard]	03 10 0C 12 00 09 00 00 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 (Contact) - Decline [M/Chip Advance]	00 00 00	
C4	Card Issuer Action Code (Contact) - Default [M/Chip Advance]	19 50 00	
C5	Card Issuer Action Code (Contact) - Online [M/Chip Advance]	39 FB 00	
C6	PIN Try Limit [M/Chip Advance]	09	
C7	CDOL1 Related Data Length [Mastercard]	42	
C8	CRM Country Code [Mastercard]	01 24 - CAN	
C9	Accumulator 1 Currency Code [Mastercard]	01 24 - CAD	
CA	Accumulator 1 Lower Limit [Mastercard]	00 00 00 02 00 00	
CB	Accumulator 1 Upper Limit [Mastercard]	00 00 00 04 00 00	
CD	Card Issuer Action Code (Contactless) - Default [M/Chip Advance]	00 58 00	
CE	Card Issuer Action Code (Contactless) - Online [M/Chip Advance]	00 F8 00	
CF	Card Issuer Action Code (Contactless) - Decline [M/Chip Advance]	00 00 00	
D1	Accumulator 1 Currency Conversion Table [Mastercard]	01 24 00 01 00 01 24 00 01 00 01 24 00 01 00 01 24 00 01 00 01 24 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 FF	
D5	Application Control [M/Chip Advance]	8C 00 80 00 86 02	
D6	Default ARPC Response Code [M/Chip Advance]	00 12	
D7	Application Control [M/Chip Advance]	40 01 40 00 86 02	
D9	Application File Locator (Contactless)	08 01 01 00 10 01 01 01 18 01 01 00 20 01 02 00	
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]	C1	
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]	09 99	
DF 17	Accumulator 2 Currency Conversion Table [Mastercard]	09 99 00 01 00 09 99 00 01 00 09 99 00 01 00 09 99 00 01 00 09 99 00 01 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	

Tag	Element name	Data	Card v7x
DF 1A	Counter 1 Control (Contact) [M/Chip Advance]	c1	
DF 1B	Counter 1 Control (Contactless) [M/Chip Advance]	c1	
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]	09 99	
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]	03	
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 00 00 00	
DF 40	Read Record Filter (Contactless) [M/Chip Advance]	08 03 03 00	
DF 41	DS Management Control [M/Chip Advance]	20	

* Tag value changes with card usage

1.6.3 CTLS: CVM List - AID A000000041010 (PayPass)

Cardholder Verification Method List ('4201 4403 4103 5E03 1F03')			
CVM	Verification Method	Conditions	If unsuccessful
1	Online PIN	Unattended Cash	Next CVM
2	Offline Enciphered PIN	Terminal supports CVM type	Next CVM
3	Offline Plaintext PIN	Terminal supports CVM type	Next CVM
4	Signature (paper)	Terminal supports CVM type	Next CVM
5	No CVM required	Terminal supports CVM type	Fail

1.6.4 CTLS: Application Tag data - AID A000000041010 (PayPass)

Tag	Element name	Data	Card v7.x	
50	Application Label	4D 41 53 54 45 52 43 41 52 44 -	'MASTERCARD'	
56	Track 1 Equivalent Data [Mastercard]	42 35 34 31 33 33 33 30 30 38 39 36 30 34 31 31 31 5E 20 2F 5E 32 35 31 32 32 30 31 30		
57	Track 2 Equivalent Data	54 13 33 00 89 60 41 11 D2 51 22 01 01 23 40 91 72 02 9F		
5A	Application Primary Account Number (PAN)	54 13 33 00 89 60 41 11		
5F 24	Application Expiration Date	25 12 31		
5F 25	Application Effective Date	xx xx xx		
5F 28	Issuer Country Code	01 24 - Canada		
5F 2D	Language Preference	65 6E - 'en' (English)		
5F 34	Application PAN Sequence Number	01		
82	Application Interchange Profile	19 80 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 supported BYTE 2: b8 - M/Chip 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 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 5E 03 1F 03		
8F	Certification Authority Public Key Index	EF		

Tag	Element name	Data	Card v7.x
90	Issuer Public Key Certificate	5B 2E 1F EF 4D 7D 2C 16 16 12 21 F7 97 2F E6 99 B7 82 44 E0 73 C8 AC 75 86 CE D1 76 EF 7B 93 AC 19 0B 05 70 40 E1 18 4F 2F 55 AC 70 D2 AA C3 94 BE 22 6A 26 50 D3 CA ED 90 60 88 C5 3A 88 B8 3C 46 1F 37 6D 89 10 B8 51 81 54 F3 08 EE ED 23 BC 15 7C FA BA 6E 51 26 9F 01 6D 59 FE 21 A6 F9 10 F2 85 13 0D EA F6 A4 78 BE 77 9D 2B AD 08 E1 2E D6 A5 93 71 5A 18 72 15 C5 63 28 1C B2 B7 2E 5B 14 05 5D 2D D8 30 4A C2 20 2E 53 96 D0 4C 5C 79 55 0B 4D E9 FA DA CB 35 F3 19 06 C5 A4 42 27 29 D6 A5 A8 F5 E1 4C B9 0D B7 05 49 4B 3D B1 0D E6 19 F3 B0 3E 64 96 FE 79 F4 6E 64 97 2A 46 34 A0 35 EF 7E 50 20 49 40 36 03 E0 BC FC 33 C3 87 BB 6D 72 CF F8 33 89 7E 81 F5 02 3F F4 D6 A9 CC 0C 89 E8 78 3F 07 B7 F0 55 3E 9D D3 59 B6 5B 62 3A F1 CE 27 8D 65 3C 37 07	
92	Issuer Public Key Remainder	14 3E 90 B8 B5 E6 2B E5 A9 0D 5A 4E F1 5C 77 40 4D 29 94 48 98 77 85 D7 E8 80 C2 CD	
94	Application File Locator (AFL)	08 01 01 00 10 01 01 01 18 01 01 00 20 01 02 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	B4 50 80 80 00	
9F 0E	Issuer Action Code - Denial	00 00 00 00 00	
9F 0F	Issuer Action Code - Online	B4 70 80 80 00	
9F 10	Issuer Application Data [M/Chip Advance]	xx 11 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	Counter 1 Lower Limit [Mastercard]	03	
9F 17	Personal Identification Number (PIN) Try Counter	09	
9F 23	Counter 1 Upper Limit [Mastercard]	07	
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	01 24 - CAD	
9F 44	Application Currency Exponent	02	

Tag	Element name	Data	Card v7.x
9F 46	ICC Public Key Certificate	81 8D 5A F1 AB 86 EA AC C4 99 6E 65 FA 3F 5A C9 E5 4D 6D B8 0D C2 49 B5 3F FA 89 72 31 89 4D 15 34 C5 9F 97 F8 01 53 20 63 CE 3C 02 53 FF 7A D9 74 BA 7F 21 28 64 29 C9 89 D7 B2 04 D4 F5 4E 67 EC DF 83 F8 A9 E5 F4 DF EA F1 97 3A BB 59 1D 6B 36 0A 8C A5 BA E1 75 0B 4A 0D FC 3F 3B E9 A0 A9 35 D0 1E A7 5B 9E AB 1C 64 45 0C F2 BF 74 AB D0 B9 00 3A E1 FA CF 76 09 55 F4 5B A2 25 80 F8 9C EC 73 14 0E E9 90 7B FE 2C F8 5B 03 5E AD D8 A3 91 6B CA FC C3 C3 FD 4A C4 9E 3F C6 76 AB 82 72 C9 3F 40 C8 10 59 75 17 01 45 90 96 63 4A 07 47 4C BA D2 46 BB AC 09 86 5D 9F 79 FF E1 2C 81 5E 5F 73 87 7E 20 F4 6F 90 DD C1 66 F8 58 3B E4 C7 A1 8E 56 B0 80 FA D8 CF 0D 58 72 26 BE D2 80 E7 70 CC 70 28 5F 69 93 82 9C 01 32 F7 74 03 04 54	
9F 47	ICC Public Key Exponent	03	
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	
9F 5D	Application Capabilities Information [M/Chip Advance]	01 00 00	
9F 60	CVC3track1 [Mastercard]	xx xx *	
9F 61	CVC3track2 [Mastercard]	xx xx *	
9F 62	Track 1 Bitmap for CVC3 (PCVC3 Track 1) [Mastercard]	00 00 00 38 00 00	
9F 63	Track 1 Bitmap for UN and ATC (PUNATC Track 1) [Mastercard]	00 00 00 00 E0 E0	
9F 64	Track 1 Number of ATC Digits (NATC Track 1) [Mastercard]	03	
9F 65	Track 2 Bitmap for CVC3 (PCVC3 Track 2) [Mastercard]	00 0E	
9F 66	Track 2 Bitmap for UN and ATC (PUNATC Track 2) [Mastercard]	0E 70	
9F 67	Track 2 Number of ATC Digits (NATC Track 2) [Mastercard]	03	
9F 6B	Track 2 Equivalent Data [Mastercard]	54 13 33 00 89 60 41 11 D2 51 22 01 00 00 40 00 00 00 0F	

Tag	Element name	Data	Card v7.x
9F 6C	Application Version [Mastercard]	00 01 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 6E	Third Party Data [Mastercard]	01 24 00 00 30 30 00	
9F 7E	Application Life Cycle Data [Mastercard]	03 10 0C 12 00 09 00 00 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 (Contact) - Decline [M/Chip Advance]	00 00 00	
C4	Card Issuer Action Code (Contact) - Default [M/Chip Advance]	19 50 00	
C5	Card Issuer Action Code (Contact) - Online [M/Chip Advance]	39 FB 00	
C6	PIN Try Limit [M/Chip Advance]	09	
C7	CDOL1 Related Data Length [Mastercard]	42	
C8	CRM Country Code [Mastercard]	01 24 - CAN	
C9	Accumulator 1 Currency Code [Mastercard]	01 24 - CAD	
CA	Accumulator 1 Lower Limit [Mastercard]	00 00 00 02 00 00	
CB	Accumulator 1 Upper Limit [Mastercard]	00 00 00 04 00 00	
CD	Card Issuer Action Code (Contactless) - Default [M/Chip Advance]	00 58 00	
CE	Card Issuer Action Code (Contactless) - Online [M/Chip Advance]	00 F8 00	
CF	Card Issuer Action Code (Contactless) - Decline [M/Chip Advance]	00 00 00	
D1	Accumulator 1 Currency Conversion Table [Mastercard]	01 24 00 01 00 01 24 00 01 00 01 24 00 01 00 01 24 00 01 00 01 24 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 FF	
D5	Application Control [M/Chip Advance]	8C 00 80 00 86 02	
D6	Default ARPC Response Code [M/Chip Advance]	00 12	
D7	Application Control [M/Chip Advance]	40 01 40 00 86 02	
DF 02	Security Limits Status (Contact) [M/Chip Advance]	00	

1.7 Test Card 07 – Mastercard, ARPC Failure, Credit, English, USA, USD

A Mastercard credit card that fails Authorization Response Cryptogram (ARPC) validation, and has Issuer Country Code of 'USA' and Currency Code of 'USD'.

The recommended transaction amount to generate a host approval is \$120.00.

Note: If the host approves the transaction, the card will decline the transaction at the 2nd Generate AC.

1.7.1 Contact: CVM List - AID A000000041010 (EMV)

Cardholder Verification Method List ('5E03 1F00')			
CVM	Verification Method	Conditions	If unsuccessful
1	Signature (paper)	Terminal supports CVM type	Next CVM
2	No CVM required	Terminal supports CVM type	Fail

1.7.2 Contact: Application Tag data- AID A000000041010 (EMV)

Tag	Element name	Data	Card v7.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 22 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	55 41 54 20 43 41 4E 2F 54 65 73 74 20 43 61 72 64 20 30 37 20 20 20 20 20 20 - 'UAT CAN/Test Card 07'	
5F 24	Application Expiration Date	25 12 31	
5F 25	Application Effective Date	xx xx xx	
5F 28	Issuer Country Code	08 40 - USA	
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 [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 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	
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 9F 37 04 9F 4C 08	
8E	Cardholder Verification Method (CVM) List	00 00 00 00 00 00 00 00 5E 03 1F 00	
8F	Certification Authority Public Key Index	EF	

Tag	Element name	Data	Card v7.x
90	Issuer Public Key Certificate	5B 2E 1F EF 4D 7D 2C 16 16 12 21 F7 97 2F E6 99 B7 82 44 E0 73 C8 AC 75 86 CE D1 76 EF 7B 93 AC 19 0B 05 70 40 E1 18 4F 2F 55 AC 70 D2 AA C3 94 BE 22 6A 26 50 D3 CA ED 90 60 88 C5 3A 88 B8 3C 46 1F 37 6D 89 10 B8 51 81 54 F3 08 EE ED 23 BC 15 7C FA BA 6E 51 26 9F 01 6D 59 FE 21 A6 F9 10 F2 85 13 0D EA F6 A4 78 BE 77 9D 2B AD 08 E1 2E D6 A5 93 71 5A 18 72 15 C5 63 28 1C B2 B7 2E 5B 14 05 5D 2D D8 30 4A C2 20 2E 53 96 D0 4C 5C 79 55 0B 4D E9 FA DA CB 35 F3 19 06 C5 A4 42 27 29 D6 A5 A8 F5 E1 4C B9 0D B7 05 49 4B 3D B1 0D E6 19 F3 B0 3E 64 96 FE 79 F4 6E 64 97 2A 46 34 A0 35 EF 7E 50 20 49 40 36 03 E0 BC FC 33 C3 87 BB 6D 72 CF F8 33 89 7E 81 F5 02 3F F4 D6 A9 CC 0C 89 E8 78 3F 07 B7 F0 55 3E 9D D3 59 B6 5B 62 3A F1 CE 27 8D 65 3C 37 07	
92	Issuer Public Key Remainder	14 3E 90 B8 B5 E6 2B E5 A9 0D 5A 4E F1 5C 77 40 4D 29 94 48 98 77 85 D7 E8 80 C2 CD	
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	B0 50 80 80 00	
9F 0E	Issuer Action Code - Denial	00 00 00 00 00	
9F 0F	Issuer Action Code - Online	B0 70 80 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	00	
9F 17	Personal Identification Number (PIN) Try Counter	0F	
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	

Tag	Element name	Data	Card v7.x
9F 36	Application Transaction Counter (ATC)	xx xx *	
9F 42	Application Currency Code	08 40 - USA	
9F 44	Application Currency Exponent	02	
9F 46	ICC Public Key Certificate	23 BE 47 30 6E BD 4B 97 75 D2 5F 86 56 78 78 13 20 34 DD 00 05 3C F6 D0 DC BA 2D 09 4C F2 8D 09 FD 9E 8E E6 8E A6 79 E0 30 27 88 F2 5F 4B 4E E3 26 98 5E 08 F8 7E 00 AE 10 58 6F 46 F7 FA 4E A3 AF 7D 26 2E 03 86 B8 3B 3C 28 F3 45 F2 C6 F7 33 5F 72 2A 3E 0C BC 25 1A 90 75 FB 8B 22 71 37 95 C1 4D E2 24 5F A5 E9 59 2A 5C F3 06 3B CA 51 FD 8D D7 64 90 1F 66 3D 81 B4 0F C5 EB C0 26 43 B8 98 F6 41 95 BF 00 27 7B 9C 44 2A F1 E8 3E FF 1D 5C 00 E5 71 07 60 4F 01 A6 52 59 E2 08 44 C3 20 D5 84 22 96 B2 C1 BA 67 55 E2 46 B1 26 03 03 98 F7 49 D0 3E 4F 2E 9E 44 94 41 08 50 BA 63 66 5E 87 5F C1 27 CD 30 FD 96 0F E9 ED F1 01 74 5B 1A E0 DF 45 5F 56 B3 08 50 A8 34 00 57 9F 9E 78 9D 3E 7E EF A2 A1 6A DD DB 9A 5A 29 F3 3C FA 8C 22	
9F 47	ICC Public Key Exponent	03	
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]	08 40 00 00 30 30 00	
9F 7E	Application Life Cycle Data [Mastercard]	03 10 0C 12 00 09 00 00 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]	40 50 00	
C5	Card Issuer Action Code - Online [Mastercard]	06 F8 00	
C6	Counters [Mastercard]	00 01 00 00 00 00 00 00 00 00	
C7	CDOL1 Related Data Length [Mastercard]	2D	
C8	CRM Country Code [Mastercard]	08 40 - USA	
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	

Tag	Element name	Data	Card v7.x
D3	Additional Check Table [Mastercard]	00 00 00 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF	
D5	Application Control [M/Chip]	C0 00	
D6	Default ARPC Response Code [M/Chip4]	00 10	
DF 02	Security Limits Status [Mastercard]	00	

* Tag value changes with card usage

1.8 Test Card 08 – Mastercard, Technical Fallback Card

This card has a chip image printed on it but 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.

1.9 Test Card 09 – Mastercard, ECL - MSR Fallback Card

This card has an un-programmed chip. When inserted, an Empty Candidate List will result and the POS should invoke fallback processing.

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

1.10 Test Card 10 – Interac, DI, Debit, English, Canada, CAD

An Interac Flash (Contact / Contactless) debit card with Issuer Country Code of 'Canada' and Currency Code of 'CAD'.

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

1.10.1 Contact: CVM List - AID A0000002771010 (EMV)

Cardholder Verification Method List ('0403 0103 0203')			
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	Online PIN	Terminal supports CVM type	Fail

1.10.2 Contact: Application Tag data - AID A0000002771010 (EMV)

Tag	Element name	Data	Card v10.x
50	Application Label	49 6E 74 65 72 61 63	'Interac'
57	Track 2 Equivalent Data	00 12 03 00 00 00 00 03 D2 81 22 20 08 97 74 00 00 00 1F	
5A	Application Primary Account Number (PAN)	00 12 03 00 00 00 00 03	

Tag	Element name	Data	Card v10.x
5F 20	Cardholder Name	55 41 54 20 43 41 4E 2F 54 65 73 74 20 43 61 72 64 20 31 30 20 20 20 20 20 20 - 'UAT CAN/Test Card 10'	
5F 24	Application Expiration Date	28 12 31	
5F 25	Application Effective Date	xx xx xx	
5F 28	Issuer Country Code	01 24 - Canada	
5F 2D	Language Preference	65 6E 66 72 - 'enfr' (English, French)	
5F 30	Service Code	02 20	
5F 34	Application PAN Sequence Number	01	
5F 56	Issuer Country Code (alpha3 format)	43 41 4E - 'CAN'	
82	Application Interchange Profile	19 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 supported BYTE 2: b8 - EMV Contactless NOT supported	
84	Dedicated File (DF) Name	A0 00 00 02 77 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 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 04 03 01 03 02 03	
8F	Certification Authority Public Key Index	07	
90	Issuer Public Key Certificate	7E 37 FF 15 A4 88 1C 32 6D 5F 61 E4 D7 4A 00 39 24 76 D5 44 80 B9 16 92 4A 70 65 B7 B3 40 F3 1F A4 86 84 E1 99 CE 82 DA 3F F6 0C 77 4A 13 D0 0B C8 46 7B 87 1C 9E 00 40 28 FA 44 D9 55 38 0E D5 50 F9 F0 C8 B0 3B 3F 9A CE 0F FA FA 8B A6 B4 0C F9 69 A9 72 AF C9 D1 EC 56 25 A0 0B B8 0E E0 38 6E 57 22 BD FC 5C 7D 89 0C 71 5F 54 67 4F CE B2 0B 5E 0E 80 E8 77 0B 59 9E A4 E6 15 D8 60 2D 30 37 F4 CB B2 CC 6F 4D B2 99 34 78 FC CE 47 A5 23 59 AA 00 A4 94 C5 87 BB D3 2F 3B 64 A9 2E F8 77 47 25 66 A1 A7 24 F2 0B BB C8 24 26 9C 34 80 22 EF E7 83 85 13 A7 AD 3B DE 7B 2B 3D B8 8F 5F B3 A1 DA 45 B8 38 14 16 A1 0F 77 7E 55 07 B8 05 48 33 D3 99 97 C1 5B 34 34 E0 86 A7 B6 7F 6B B0 29 60 E1 F5 59 20 DC 2E 12 38 91 DA 23 34 03 AA D3 97 75 0F 44 56 09 CD 2A	
94	Application File Locator (AFL)	08 01 04 00 10 01 01 01 18 01 04 01	

Tag	Element name	Data	Card v10.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 02	
9F 0D	Issuer Action Code - Default	FC 78 FC A8 40	
9F 0E	Issuer Action Code - Denial	00 00 00 00 00	
9F 0F	Issuer Action Code - Online	FC F8 FC F8 70	
9F 10	Issuer Application Data [InteracFlash]	xx 02 xx *	
9F 13	Last Online Application Transaction Counter (ATC) Register	xx xx *	
9F 17	Personal Identification Number (PIN) Try Counter	99	
9F 27	Cryptogram Information Data (CID)	80	
9F 32	Issuer Public Key Exponent	01 00 01	
9F 36	Application Transaction Counter (ATC)	xx xx *	
9F 42	Application Currency Code	01 24 - CAD	
9F 44	Application Currency Exponent	02	
9F 46	ICC Public Key Certificate	4C 11 7F 08 F0 E4 84 63 25 E0 E9 9A 80 1B 10 E0 7D 38 3C D6 11 91 4F DF 60 C7 26 0E F1 15 D3 01 9C DD 8D 1C 23 D6 68 C6 0B 20 43 30 EE 7B 19 2C 9A A4 D2 74 FA 48 31 3D 15 62 59 C5 3A 0B BB FB 76 3B 00 C7 7A E2 8E 33 E9 84 28 C9 B3 C8 6D 66 48 B9 BD C6 62 0C D4 8C 1E 2E 89 BE 18 2C C0 7F 2D DB CA 5D B6 27 18 F0 66 F8 D3 8E 4D 18 4E D8 F8 93 1B FB 71 F8 1A 7B 29 F8 25 C0 6D EC C2 67 8D BF 5F 4E 94 E0 64 9B 24 C7 00 50 A9 8E A6 AE A6 C7 B2 28 F2 69 96 94 81 BB D2 CA 9F EA 8C 58 F5 B8 F0 73 00 08 C5 A6 4C C3 84 81 0D 34 34 4B	
9F 47	ICC Public Key Exponent	01 00 01	
9F 48	ICC Public Key Remainder	B9 05 E4 9E 6C 73 1E 87 79 17	
9F 4A	Static Data Authentication Tag List	82	
9F 4D	Transaction Log Entry	0B 0A	
9F 4F	Transaction Log Format	9F 02 06 5F 2A 02 9A 03 9F 36 02 9F 1A 02 95 05 9C 01 8A 02	
9F 62	Card Product Code [InteracFlash]	00 01	
9F 70	Form Factor Indicator [InteracFlash]	00	
DF 62	Application Selection Flag [Canada]	80 80	

* Tag value changes with card usage

1.10.3 CTLS: Application Tag data - AID A000002771010 (EMV)

Tag	Element name	Data	Card v10.x
50	Application Label	49 6E 74 65 72 61 63	'Interac'
57	Track 2 Equivalent Data	00 12 03 00 00 00 00 03 D2 81 22 20 08 97 74 00 00 00 1F	
5A	Application Primary Account Number (PAN)	00 12 03 00 00 00 00 03	
5F 24	Application Expiration Date	28 12 31	
5F 25	Application Effective Date	xx xx xx	
5F 28	Issuer Country Code	01 24	- Canada
5F 2D	Language Preference	65 6E 66 72	- 'enfr' (English, French)
5F 30	Service Code	02 20	
5F 34	Application PAN Sequence Number	01	
5F 56	Issuer Country Code (alpha3 format)	43 41 4E	'CAN'
82	Application Interchange Profile	01 00 BYTE 1: b7 - Offline SDA NOT supported b6 - Offline DDA NOT supported b5 - Cardholder verification NOT supported b4 - Terminal risk mgmt NOT to be performed b3 - Issuer authentication NOT supported b1 - Combined DDA / GEN AC supported BYTE 2: b8 - EMV Contactless NOT supported	
84	Dedicated File (DF) Name	A0 00 00 02 77 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 45 02 9F 4C 08 9F 34 03	
8F	Certification Authority Public Key Index	07	
90	Issuer Public Key Certificate	7E 37 FF 15 A4 88 1C 32 6D 5F 61 E4 D7 4A 00 39 24 76 D5 44 80 B9 16 92 4A 70 65 B7 B3 40 F3 1F A4 86 84 E1 99 CE 82 DA 3F F6 0C 77 4A 13 D0 0B C8 46 7B 87 1C 9E 00 40 28 FA 44 D9 55 38 0E D5 50 F9 F0 C8 B0 3B 3F 9A CE 0F FA FA 8B A6 B4 0C F9 69 A9 72 AF C9 D1 EC 56 25 A0 0B B8 0E E0 38 6E 57 22 BD FC 5C 7D 89 0C 71 5F 54 67 4F CE B2 0B 5E 0E 80 E8 77 0B 59 9E A4 E6 15 D8 60 2D 30 37 F4 CB B2 CC 6F 4D B2 99 34 78 FC CE 47 A5 23 59 AA 00 A4 94 C5 87 BB D3 2F 3B 64 A9 2E F8 77 47 25 66 A1 A7 24 F2 0B BB C8 24 26 9C 34 80 22 EF E7 83 85 13 A7 AD 3B DE 7B 2B 3D B8 8F 5F B3 A1 DA 45 B8 38 14 16 A1 0F 77 7E 55 07 B8 05 48 33 D3 99 97 C1 5B 34 34 E0 86 A7 B6 7F 6B B0 29 60 E1 F5 59 20 DC 2E 12 38 91 DA 23 34 03 AA D3 97 75 0F 44 56 09 CD 2A	
94	Application File Locator (AFL)	08 01 04 00 10 01 05 03	

Tag	Element name	Data	Card v10.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 02	
9F 0D	Issuer Action Code - Default	FC F8 FC F8 00	
9F 0E	Issuer Action Code - Denial	00 00 00 00 00	
9F 0F	Issuer Action Code - Online	FC F8 FC F8 00	
9F 10	Issuer Application Data [InteracFlash]	xx 02 xx *	
9F 13	Last Online Application Transaction Counter (ATC) Register	xx xx *	
9F 17	Personal Identification Number (PIN) Try Counter	99	
9F 27	Cryptogram Information Data (CID)	80	
9F 32	Issuer Public Key Exponent	01 00 01	
9F 36	Application Transaction Counter (ATC)	xx xx *	
9F 38	Processing Options Data Object List (PDOL)	9F 59 03 9F 5A 01 9F 02 06 9F 1A 02 5F 2A 02 9F 37 04 9F 58 01	
9F 42	Application Currency Code	01 24 - CAD	
9F 44	Application Currency Exponent	02	
9F 46	ICC Public Key Certificate	C9 AC 57 A3 26 96 CC 26 DC BF D2 9B 5C 5B 5C 79 20 C9 E4 28 E7 2C 35 EE 49 12 F2 0B 83 A4 21 FA 6F 34 04 55 69 52 A6 5A E1 4F E2 5F FC B8 48 76 8A 41 B4 FD 41 E0 1C 05 32 6D 74 B8 13 2B C9 24 BC 02 AA 4D 98 7A DA 82 25 08 1F 81 A5 F2 8C 42 B9 7E A5 38 B8 57 51 9C 0E 0A 0E 00 CF B7 B9 87 C5 8C 32 48 8C 33 A6 C7 CE D2 0B 46 8B 8D F7 FF 81 6D F2 0E 06 19 DA 54 E4 A7 8A 2A F5 D8 8B 44 F2 71 8B 47 F6 E0 94 43 5C D0 31 A6 53 E2 A8 AD DF 99 3E 86 A4 7B 03 3A BA 01 AD B5 9A B2 CC F8 D9 2C 44 EA C5 EC 5D FC 39 60 90 30 36 9A DE 82	
9F 47	ICC Public Key Exponent	01 00 01	
9F 48	ICC Public Key Remainder	B9 05 E4 9E 6C 73 1E 87 79 17	
9F 4A	Static Data Authentication Tag List	82	
9F 4D	Transaction Log Entry	0B 0A	
9F 4F	Transaction Log Format	9F 02 06 5F 2A 02 9A 03 9F 36 02 9F 1A 02 95 05 9C 01 8A 02	
9F 52	Merchant Type Indicator Limits 01	00 00 00 02 50 01 99 99 99 99 99 99	
9F 54	Merchant Type Indicator Limits 02	00 00 00 02 50 01 99 99 99 99 99 99	
9F 55	Merchant Type Indicator Limits 03	00 00 00 02 50 01 99 99 99 99 99 99	

Tag	Element name	Data	Card v10.x
9F 56	Merchant Type Indicator Limits 04	00 00 00 02 50 01 99 99 99 99 99 99	
9F57	Merchant Type Indicator Limits 05	00 00 00 02 50 01 99 99 99 99 99 99	
9F 62	Card Product Code [InteracFlash]	00 01	
9F 63	Card Transaction Information [InteracFlash]	00 10 00 00	
9F 70	Form Factor Indicator [InteracFlash]	00	
DF 62	Application Selection Flag [Canada]	80 80	

* Tag value changes with card usage

1.11 Test Card 11 – Interac, DI, Debit, French, Canada, CAD

An Interac Flash (Contact / Contactless) Canadian debit card with Issuer Country Code of 'Canada' and Currency Code of 'CAD'.

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

1.11.1 Contact: CVM List - AID A000002771010 (EMV)

Cardholder Verification Method List ('0403 0103 0203')			
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	Online PIN	Terminal supports CVM type	Fail

1.11.2 Contact: Application Tag data - AID A000002771010 (EMV)

Tag	Element name	Data	Card v7.x
50	Application Label	49 6E 74 65 72 61 63 - 'Interac'	
57	Track 2 Equivalent Data	00 12 03 00 00 00 00 03 D2 81 22 20 08 97 74 00 00 00 1F	
5A	Application Primary Account Number (PAN)	00 12 03 00 00 00 00 03	
5F 20	Cardholder Name	55 41 54 20 43 41 4E 2F 54 65 73 74 20 43 61 72 64 20 31 31 20 20 20 20 20 20 - 'UAT CAN/Test Card 11'	
5F 24	Application Expiration Date	28 12 31	
5F 25	Application Effective Date	xx xx xx	
5F 28	Issuer Country Code	01 24 - Canada	
5F 2D	Language Preference	66 72 65 6E - 'fren' (French, English)	
5F 30	Service Code	02 20	
5F 34	Application PAN Sequence Number	01	
5F 56	Issuer Country Code (alpha3 format)	43 41 4E - 'CAN'	
82	Application Interchange Profile	19 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 supported BYTE 2: b8 - EMV Contactless NOT supported	
84	Dedicated File (DF) Name	A0 00 00 02 77 10 10	
87	Application Priority Indicator	01	

Tag	Element name	Data	Card v7.x
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 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 04 03 01 03 02 03	
8F	Certification Authority Public Key Index	07	
90	Issuer Public Key Certificate	7E 37 FF 15 A4 88 1C 32 6D 5F 61 E4 D7 4A 00 39 24 76 D5 44 80 B9 16 92 4A 70 65 B7 B3 40 F3 1F A4 86 84 E1 99 CE 82 DA 3F F6 0C 77 4A 13 D0 0B C8 46 7B 87 1C 9E 00 40 28 FA 44 D9 55 38 0E D5 50 F9 F0 C8 B0 3B 3F 9A CE 0F FA FA 8B A6 B4 0C F9 69 A9 72 AF C9 D1 EC 56 25 A0 0B B8 0E E0 38 6E 57 22 BD FC 5C 7D 89 0C 71 5F 54 67 4F CE B2 0B 5E 0E 80 E8 77 0B 59 9E A4 E6 15 D8 60 2D 30 37 F4 CB B2 CC 6F 4D B2 99 34 78 FC CE 47 A5 23 59 AA 00 A4 94 C5 87 BB D3 2F 3B 64 A9 2E F8 77 47 25 66 A1 A7 24 F2 0B BB C8 24 26 9C 34 80 22 EF E7 83 85 13 A7 AD 3B DE 7B 2B 3D B8 8F 5F B3 A1 DA 45 B8 38 14 16 A1 0F 77 7E 55 07 B8 05 48 33 D3 99 97 C1 5B 34 34 E0 86 A7 B6 7F 6B B0 29 60 E1 F5 59 20 DC 2E 12 38 91 DA 23 34 03 AA D3 97 75 0F 44 56 09 CD 2A	
94	Application File Locator (AFL)	08 01 04 00 10 01 01 01 18 01 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 02	
9F 0D	Issuer Action Code - Default	FC 78 FC A8 40	
9F 0E	Issuer Action Code - Denial	00 00 00 00 00	
9F 0F	Issuer Action Code - Online	FC F8 FC F8 70	
9F 10	Issuer Application Data [InteracFlash]	xx 02 xx *	
9F 13	Last Online Application Transaction Counter (ATC) Register	xx xx *	
9F 17	Personal Identification Number (PIN) Try Counter	99	
9F 27	Cryptogram Information Data (CID)	80	
9F 32	Issuer Public Key Exponent	01 00 01	
9F 36	Application Transaction Counter (ATC)	xx xx *	

Tag	Element name	Data	Card v7.x
9F 42	Application Currency Code	01 24	- CAD
9F 44	Application Currency Exponent	02	
9F 46	ICC Public Key Certificate	11 A1 DD 2F F9 07 2B A3 AC 8A 15 F9 69 74 F5 6F F4 2B 5D 84 B6 4E 3F DC B1 60 90 B9 41 C8 6C 58 A0 1A 0E 5D 1D 6E A1 A6 05 21 85 D1 B9 43 E9 DC 59 FD 73 FB 62 30 BB C2 A8 50 B2 23 4F 68 C4 44 6E 71 9C 26 AA DA CE 0D 45 93 8D 22 64 4A 60 40 15 E7 F5 BC 5B 1F 44 66 9D 58 62 2E 2E 77 50 60 9E C9 43 EE FC 45 8D E1 C8 E6 79 D1 69 64 DC 01 8C 47 27 A2 D2 82 B6 AC A6 54 E4 21 14 F1 78 8D 94 F6 2E 35 15 FB 68 EA F7 C6 5B 0B 5C C4 47 48 D2 4C 72 7C 40 E6 BB 03 44 AA 59 92 AF 8F F7 43 AC 38 E8 CE F3 6B A7 CC 18 16 56 07 97 38 B9 80	
9F 47	ICC Public Key Exponent	01 00 01	
9F 48	ICC Public Key Remainder	42 B8 EF 42 AC A8 D1 C7 E5 C7	
9F 4A	Static Data Authentication Tag List	82	
9F 4D	Transaction Log Entry	0B 0A	
9F 4F	Transaction Log Format	9F 02 06 5F 2A 02 9A 03 9F 36 02 9F 1A 02 95 05 9C 01 8A 02	
9F 62	Card Product Code [InteracFlash]	00 01	
9F 70	Form Factor Indicator [InteracFlash]	00	
DF 62	Application Selection Flag [Canada]	80 80	

* Tag value changes with card usage

1.11.3 CTLS: Application Tag data - AID A000002771010 (EMV)

Tag	Element name	Data	Card v7.x
50	Application Label	49 6E 74 65 72 61 63	- 'Interac'
57	Track 2 Equivalent Data	00 12 03 00 00 00 00 03 D2 81 22 20 08 97 74 00 00 00 1F	
5A	Application Primary Account Number (PAN)	00 12 03 00 00 00 00 03	
5F 24	Application Expiration Date	28 12 31	
5F 25	Application Effective Date	xx xx xx	
5F 28	Issuer Country Code	01 24	- Canada
5F 2D	Language Preference	66 72 65 6E	- 'fren' (French, English)
5F 30	Service Code	02 20	
5F 34	Application PAN Sequence Number	01	
5F 56	Issuer Country Code (alpha3 format)	43 41 4E	- 'CAN'
82	Application Interchange Profile	01 00 BYTE 1: b7 - Offline SDA NOT supported b6 - Offline DDA NOT supported b5 - Cardholder verification NOT supported b4 - Terminal risk mgmt NOT to be performed b3 - Issuer authentication NOT supported b1 - Combined DDA / GEN AC supported BYTE 2: b8 - EMV Contactless NOT supported	
84	Dedicated File (DF) Name	A0 00 00 02 77 10 10	
87	Application Priority Indicator	01	

Tag	Element name	Data	Card v7.x
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 45 02 9F 4C 08 9F 34 03	
8F	Certification Authority Public Key Index	07	
90	Issuer Public Key Certificate	7E 37 FF 15 A4 88 1C 32 6D 5F 61 E4 D7 4A 00 39 24 76 D5 44 80 B9 16 92 4A 70 65 B7 B3 40 F3 1F A4 86 84 E1 99 CE 82 DA 3F F6 0C 77 4A 13 D0 0B C8 46 7B 87 1C 9E 00 40 28 FA 44 D9 55 38 0E D5 50 F9 F0 C8 B0 3B 3F 9A CE 0F FA FA 8B A6 B4 0C F9 69 A9 72 AF C9 D1 EC 56 25 A0 0B B8 0E E0 38 6E 57 22 BD FC 5C 7D 89 0C 71 5F 54 67 4F CE B2 0B 5E 0E 80 E8 77 0B 59 9E A4 E6 15 D8 60 2D 30 37 F4 CB B2 CC 6F 4D B2 99 34 78 FC CE 47 A5 23 59 AA 00 A4 94 C5 87 BB D3 2F 3B 64 A9 2E F8 77 47 25 66 A1 A7 24 F2 0B BB C8 24 26 9C 34 80 22 EF E7 83 85 13 A7 AD 3B DE 7B 2B 3D B8 8F 5F B3 A1 DA 45 B8 38 14 16 A1 0F 77 7E 55 07 B8 05 48 33 D3 99 97 C1 5B 34 34 E0 86 A7 B6 7F 6B B0 29 60 E1 F5 59 20 DC 2E 12 38 91 DA 23 34 03 AA D3 97 75 0F 44 56 09 CD 2A	
94	Application File Locator (AFL)	08 01 04 00 10 01 05 03	
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 F8 FC F8 00	
9F 0E	Issuer Action Code - Denial	00 00 00 00 00	
9F 0F	Issuer Action Code - Online	FC F8 FC F8 00	
9F 10	Issuer Application Data [InteracFlash]	xx 02 xx *	
9F 13	Last Online Application Transaction Counter (ATC) Register	xx xx *	
9F 17	Personal Identification Number (PIN) Try Counter	99	
9F 27	Cryptogram Information Data (CID)	80	
9F 32	Issuer Public Key Exponent	01 00 01	
9F 36	Application Transaction Counter (ATC)	xx xx *	
9F 38	Processing Options Data Object List (PDOL)	9F 59 03 9F 5A 01 9F 02 06 9F 1A 02 5F 2A 02 9F 37 04 9F 58 01	
9F 42	Application Currency Code	01 24 - CAD	
9F 44	Application Currency Exponent	02	

Tag	Element name	Data	Card v7.x
9F 46	ICC Public Key Certificate	00 32 3A 2A E0 48 A6 C8 57 8D 62 54 A1 E4 78 5D 62 24 F3 37 09 31 B2 1F DD F9 34 DB 31 57 E1 39 77 0F B5 80 0D 9F DC 05 6A 40 61 7F DE 05 E6 13 98 D2 BA 27 1B 53 97 F7 89 FE 47 45 DD 4C AC C8 22 B3 60 FF DD F1 16 43 E5 81 F8 69 2E 40 CB A5 43 CE 12 DB D7 D4 C0 69 78 2D 05 CB 3B BD 52 CB 42 99 D3 CC 22 8E 68 B8 B3 2E 64 29 5F 31 6A B5 D7 54 C0 AF BB F0 79 BB DE 47 0D 26 DC 32 D8 DB 9C 73 A0 5C D3 3B 63 A3 8C 0C 9D D6 09 24 C7 1F 16 AA 17 5C D1 3E E2 D7 0F 50 CC DF F3 3A A1 5A 66 84 44 5A 3C DF A8 D5 5A BE D8 9B DA 2D 40 98	
9F 47	ICC Public Key Exponent	01 00 01	
9F 48	ICC Public Key Remainder	42 B8 EF 42 AC A8 D1 C7 E5 C7	
9F 4A	Static Data Authentication Tag List	82	
9F 4D	Transaction Log Entry	0B 0A	
9F 4F	Transaction Log Format	9F 02 06 5F 2A 02 9A 03 9F 36 02 9F 1A 02 95 05 9C 01 8A 02	
9F 52	Merchant Type Indicator Limits 01	00 00 00 02 50 01 99 99 99 99 99 99	
9F 54	Merchant Type Indicator Limits 02	00 00 00 02 50 01 99 99 99 99 99 99	
9F 55	Merchant Type Indicator Limits 03	00 00 00 02 50 01 99 99 99 99 99 99	
9F 56	Merchant Type Indicator Limits 04	00 00 00 02 50 01 99 99 99 99 99 99	
9F57	Merchant Type Indicator Limits 05	00 00 00 02 50 01 99 99 99 99 99 99	
9F 62	Card Product Code [InteracFlash]	00 01	
9F 63	Card Transaction Information [InteracFlash]	00 10 00 00	
9F 70	Form Factor Indicator [InteracFlash]	00	
DF 62	Application Selection Flag [Canada]	80 80	

* Tag value changes with card usage

1.12 Test Card 12 – American Express, DI, Credit, English, Canada, CAD

A Dual Interface (Contact / Contactless) American Express credit card with Issuer Country Code of 'Canada' and Currency Code of 'CAD'.

The recommended transaction amount to generate a host approval is \$30.00.

1.12.1 Contact: CVM List - AID A000000025010402 (EMV)

Cardholder Verification Method List ('4201 4203 5E03 5F03')			
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	Next CVM

1.12.2 Contact: Application Tag data - AID A00000025010402 (EMV)

Tag	Element name	Data	Card v8.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 41 00 7D 24 12 20 11 71 01 23 45 00 00 0F	
5A	Application Primary Account Number (PAN)	37 42 45 00 17 41 00 7F	
5F 20	Cardholder Name	55 41 54 20 43 41 4E 2F 54 65 73 74 20 43 61 72 64 20 31 32 20 20 20 20 20 20 - 'UAT CAN/Test Card 12'	
5F 24	Application Expiration Date	24 12 31	
5F 25	Application Effective Date	xx xx xx	
5F 28	Issuer Country Code	01 24 - Canada	
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 04 02	
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 41 03 5E 03 5F 03	
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 FC 98 00	
9F 0E	Issuer Action Code - Denial	00 00 00 00 00	
9F 0F	Issuer Action Code - Online	B0 78 FC 98 00	
9F 10	Issuer Application Data [AEIPS 4.2]	xx xx 01 xx xx xx xx *	
9F 11	Issuer Code Table Index	01	

Tag	Element name	Data	Card v8.x
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	01 24 - CAD	

* Tag value changes with card usage

1.12.3 CTLs: CVM List - AID A00000025010402 (ExpressPay EMV)

Cardholder Verification Method List ('4201 5E03 1F02')			
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	Not Unattended Cash, Manual Cash or Cashback	Fail

1.12.4 CTLs: Application Tag data - AID A00000025010402 (ExpressPay EMV)

Tag	Element name	Data	Card v8.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 41 00 7D 24 12 70 21 71 01 23 45 00 00 0F	
5A	Application Primary Account Number (PAN)	37 42 45 00 17 41 00 7F	
5F 20	Cardholder Name	55 41 54 20 43 41 4E 2F 54 65 73 74 20 43 61 72 64 20 31 32 20 20 20 20 20 20 - 'UAT CAN/Test Card 12'	
5F 24	Application Expiration Date	24 12 31	
5F 25	Application Effective Date	xx xx xx	
5F 28	Issuer Country Code	01 24 - Canada	
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 [Expresspay]	18 80 BYTE 1: b7 - SDA NOT supported b6 - DDA NOT supported b5 - Cardholder verification supported b4 - Terminal risk mgmt to be performed b3 - Issuer authentication NOT supported b1 - CDA NOT supported BYTE 2: b8 - EMV Contactless supported	
84	Dedicated File (DF) Name	A0 00 00 00 25 01 04 02	
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	

Tag	Element name	Data	Card v8.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 42 01 5E 03 1F 02	
94	Application File Locator (AFL)	08 01 02 00 08 03 04 02	
9F 07	Application Usage Control	3D 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 01	
9F 0D	Issuer Action Code - Default	B0 50 FC 98 00	
9F 0E	Issuer Action Code - Denial	00 00 00 00 00	
9F 0F	Issuer Action Code - Online	B0 78 FC 98 00	
9F 10	Issuer Application Data [American Express]	xx xx 01 xx xx xx xx *	
9F 12	Application Preferred Name	41 6D 65 72 69 63 61 6E 20 45 78 70 72 65 73 73 - 'American Express'	
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	01 24 - CAD	

* Tag value changes with card usage

1.12.5 Contact: CVM List - AID A000000291010 (EMV)

Cardholder Verification Method List ('4201 4203 5E03 5F03')			
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	Next CVM

1.12.6 Contact: Application Tag data - AID A000000291010 (EMV)

Tag	Element name	Data	Card v8.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 41 00 7D 24 12 20 11 71 01 23 45 00 00 0F	
5A	Application Primary Account Number (PAN)	37 42 45 00 17 41 00 7F	
5F 20	Cardholder Name	55 41 54 20 43 41 4E 2F 54 65 73 74 20 43 61 72 64 20 31 32 20 20 20 20 20 20 - 'UAT CAN/Test Card 12'	
5F 24	Application Expiration Date	24 12 31	
5F 25	Application Effective Date	xx xx xx	

Tag	Element name	Data	Card v8.x
5F 28	Issuer Country Code	01 24	- Canada
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 [Expresspay 2.0]	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 41 03 5E 03 5F 03	
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 FC 98 00	
9F 0E	Issuer Action Code - Denial	00 00 00 00 00	
9F 0F	Issuer Action Code - Online	B0 78 FC 98 00	
9F 10	Issuer Application Data [AEIPS 4.2]	xx xx 01 xx 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	01 24	- CAD

* Tag value changes with card usage

1.13 Test Card 13 – American Express, DI, Credit, English, Canada, CAD

A Dual Interface (Contact / Contactless) American Express credit card with Issuer Country Code of 'Canada' and Currency Code of 'CAD'.

The recommended transaction amount to generate a host approval is \$39.00 or \$43.00.

1.13.1 Contact: CVM List - AID A00000025010402 (EMV)

Cardholder Verification Method List ('4201 4103 5E03 5F03')			
CVM	Verification Method	Conditions	If unsuccessful
1	Online PIN	Unattended Cash	Next CVM
2	Offline Plaintext PIN	Terminal supports CVM type	Next CVM
3	Signature (paper)	Terminal supports CVM type	Next CVM
4	No CVM required	Terminal supports CVM type	Next CVM

1.13.2 Contact: Application Tag data - AID A00000025010402 (EMV)

Tag	Element name	Data	Card v7.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 27 71 00 3D 24 12 20 11 50 21 23 45 00 00 0F	
5A	Application Primary Account Number (PAN)	37 42 45 00 27 71 00 3F	
5F 20	Cardholder Name	55 41 54 20 43 41 4E 2F 54 65 73 74 20 43 61 72 64 20 31 33 20 20 20 20 20 20 - 'UAT CAN/Test Card 13'	
5F 24	Application Expiration Date	24 12 31	
5F 25	Application Effective Date	xx xx xx	
5F 28	Issuer Country Code	01 24 - Canada	
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 04 02	
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 41 03 5E 03 5F 03	
94	Application File Locator (AFL)	08 01 01 00 08 02 03 01	

Tag	Element name	Data	Card v7.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 FC 98 00	
9F 0E	Issuer Action Code - Denial	00 00 00 00 00	
9F 0F	Issuer Action Code - Online	B0 78 FC 98 00	
9F 10	Issuer Application Data [American Express]	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	01 24 - CAD	

* Tag value changes with card usage

1.13.3 CTLS: CVM List - AID A00000025010402 (ExpressPay EMV)

Cardholder Verification Method List ('4201 5E03 1F02')			
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	Not Unattended Cash, Manual Cash or Cashback	Fail

1.13.4 CTLS: Application Tag data - AID A00000025010402 (ExpressPay EMV)

Tag	Element name	Data	Card v7.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 27 71 00 3D 24 12 70 21 50 21 23 45 00 00 0F	
5A	Application Primary Account Number (PAN)	37 42 45 00 27 71 00 3F	
5F 20	Cardholder Name	55 41 54 20 43 41 4E 2F 54 65 73 74 20 43 61 72 64 20 31 33 20 20 20 20 20 20 - 'UAT CAN/Test Card 13'	
5F 24	Application Expiration Date	24 12 31	
5F 25	Application Effective Date	xx xx xx	
5F 28	Issuer Country Code	01 24 - Canada	

Tag	Element name	Data	Card v7.x
5F 2D	Language Preference	65 6E	
5F 30	Service Code	02 01	
5F 34	Application PAN Sequence Number	00	
82	Application Interchange Profile [Expresspay]	1C 80 BYTE 1: b7 - SDA NOT supported b6 - DDA NOT supported b5 - Cardholder verification supported b4 - Terminal risk mgmt to be performed b3 - Issuer authentication supported b1 - CDA NOT supported BYTE 2: b8 - EMV & Mag-stripe modes supported b7 - Expresspay Mobile NOT supported b6 - Expresspay Mobile HCE NOT supported	
84	Dedicated File (DF) Name	A0 00 00 00 25 01 04 02	
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 1F 02	
94	Application File Locator (AFL)	08 01 02 00 08 03 04 02	
9F 07	Application Usage Control	3D 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 01	
9F 0D	Issuer Action Code - Default	B0 50 FC 98 00	
9F 0E	Issuer Action Code - Denial	00 00 00 00 00	
9F 0F	Issuer Action Code - Online	B0 78 FC 98 00	
9F 10	Issuer Application Data [American Express]	xx xx 01 xx xx xx xx *	
9F 12	Application Preferred Name	41 6D 65 72 69 63 61 6E 20 45 78 70 72 65 73 73 - 'American Express'	
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	01 24 - CAD	

* Tag value changes with card usage

1.13.5 CTLS: CVM List - AID A000000291010 (EMV)

Cardholder Verification Method List ('4201 4203 5E03 5F03')			
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	Next CVM

1.13.6 CTLS: Application Tag data - AID A000000291010 (ExpressPay EMV)

Tag	Element name	Data	Card v7.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 27 71 00 3D 24 12 20 11 50 21 23 45 00 00 0F	
5A	Application Primary Account Number (PAN)	37 42 45 00 27 71 00 3F	
5F 20	Cardholder Name	55 41 54 20 43 41 4E 2F 54 65 73 74 20 43 61 72 64 20 31 33 20 20 20 20 20 20 - 'UAT CAN/Test Card 13'	
5F 24	Application Expiration Date	24 12 31	
5F 25	Application Effective Date	xx xx xx	
5F 28	Issuer Country Code	01 24 - Canada	
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 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 41 03 5E 03 5F 03	
94	Application File Locator (AFL)	08 01 01 00 08 02 03 01	

Tag	Element name	Data	Card v7.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 FC 98 00	
9F 0E	Issuer Action Code - Denial	00 00 00 00 00	
9F 0F	Issuer Action Code - Online	B0 78 FC 98 00	
9F 10	Issuer Application Data [American Express]	xx xx 01 xx 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	01 24 - CAD	

* Tag value changes with card usage

1.14 Test Card 14 – American Express, Technical Fallback Card

This card has a chip image printed on it but 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 \$36.00.

1.15 Test Card 15 – Discover, DI, Credit, English, USA, USD

A Dual Interface (Contact / Contactless) Discover 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.

1.15.1 Contact: CVM List - AID A0000001523010 (EMV)

Cardholder Verification Method List ('4201 4103 1F03')			
CVM	Verification Method	Conditions	If unsuccessful
1	Online PIN	Unattended Cash	Next CVM
2	Offline Plaintext PIN	Terminal supports CVM type	Next CVM
3	No CVM required	Terminal supports CVM type	Fail

1.15.2 Contact: Application Tag data - AID A0000001523010 (EMV)

Tag	Element name	Data	Card v9.x
50	Application Label	44 49 53 43 4F 56 45 52 -	
57	Track 2 Data [Discover]	65 10 00 00 00 00 08 44 D2 60 52 01 11 11 19 10 00 00 0F	
5A	Application Primary Account Number (PAN)	65 10 00 00 00 00 08 44	
5F 20	Cardholder Name	55 41 54 20 43 41 4E 2F 54 65 73 74 20 43 61 72 64 20 31 35 20 20 20 20 20 20 - 'UAT CAN/Test Card 15'	
5F 24	Application Expiration Date	26 05 31	
5F 25	Application Effective Date	xx xx xx	
5F 28	Issuer Country Code	08 40 - USA	
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 42 01 41 03 1F 03	
94	Application File Locator (AFL)	08 01 01 00 18 01 02 01	

Tag	Element name	Data	Card v9.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 78	Application State [D-PAS]	01	
C1	Application Configuration Options [DPAS]	15 E0	
C2	Issuer Life Cycle Data (ILCD) [DPAS]	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 0B	
C7	Card Action Code - Online [DPAS]	F6 7F	
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 01 00 18 01 02 01 00 01 00 F6 7F 22 0B 00	

* Tag value changes with card usage

1.15.3 CTLS: CVM List - AID A000001523010 (DPAS-EMV)

Cardholder Verification Method List ('4201 4103 1F03')			
CVM	Verification Method	Conditions	If unsuccessful
1	Online PIN	Unattended Cash	Next CVM
2	Offline Plaintext PIN	Terminal supports CVM type	Next CVM
3	No CVM required	Terminal supports CVM type	Fail

1.15.4 CTLS: Application Tag data - AID A000001523010 (DPAS-EMV, Online)

Tag	Element name	Data	Card v9.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 08 44 D2 60 52 01 11 11 19 10 00 00 0F	
5A	Application Primary Account Number (PAN)	65 10 00 00 00 00 08 44	
5F 20	Cardholder Name	55 41 54 20 43 41 4E 2F 54 65 73 74 20 43 61 72 64 20 31 35 20 20 20 20 20 20 - 'UAT CAN/Test Card 15'	
5F 24	Application Expiration Date	26 05 31	
5F 25	Application Effective Date	xx xx xx	
5F 28	Issuer Country Code	08 40 - USA	
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 01 41 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 *	

Tag	Element name	Data	Card v9.x
9F 11	Issuer Code Table Index	01	
9F 12	Application Preferred Name	44 69 73 63 6F 76 65 72 20 43 4C - 'Discover CL'	
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 71	Card Processing Requirements [DPAS]	00 0F BYTE 2 (Permanent Data): b8 - Do NOT switch to other interface if unable to process online b7 - Do NOT process online if CDA failed b6 - Do NOT decline/switch other interface if CDA failed b5 - Issuer Update Processing NOT supported b4 - Do process online if card expired b3 - Do decline if card expired b2 - CVM Fallback to Signature allowed b1 - CVM Fallback to 'No CVM' allowed	
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	
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	
D1	Offline Balance [DPAS]	00 00 00 00 00 00	
D2	CRM Country Code [DPAS]	08 40 - USA	
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	

Tag	Element name	Data	Card v9.x
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

1.15.5 CTLS: CVM List - AID A000001523010 (DPAS-EMV)

Cardholder Verification Method List ('4201 4103 1F03')			
CVM	Verification Method	Conditions	If unsuccessful
1	Online PIN	Unattended Cash	Next CVM
2	Offline Plaintext PIN	Terminal supports CVM type	Next CVM
3	No CVM required	Terminal supports CVM type	Fail

1.15.6 CTLS: Application Tag data - AID A000001523010 (DPAS-EMV, Offline)

Tag	Element name	Data	Card v9.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 08 44 D2 60 52 01 11 11 19 10 00 00 0F	
5A	Application Primary Account Number (PAN)	65 10 00 00 00 00 08 44	
5F 20	Cardholder Name	55 41 54 20 43 41 4E 2F 54 65 73 74 20 43 61 72 64 20 31 35 20 20 20 20 20 20 - 'UAT CAN/Test Card 15'	
5F 24	Application Expiration Date	26 05 31	
5F 25	Application Effective Date	xx xx xx	
5F 28	Issuer Country Code	08 40 - USA	
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 using External Auth command b1 - Combined DDA / GEN AC NOT supported	
84	Dedicated File (DF) Name	A0 00 00 01 52 30 10	
87	Application Priority Indicator	01	

Tag	Element name	Data	Card v9.x
8E	Cardholder Verification Method (CVM) List	00 00 00 00 00 00 00 00 42 01 41 03 1F 03	
94	Application File Locator (AFL)	08 02 02 00 18 03 04 01	
9F 07	Application Usage Control	FF 00	
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 *	
9F 11	Issuer Code Table Index	01	
9F 12	Application Preferred Name	44 69 73 63 6F 76 65 72 20 43 4C - 'Discover CL'	
9F 26	Application Cryptogram (AC)	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 71	Card Processing Requirements [DPAS]	00 0F BYTE 2 (Permanent Data): b8 - Do NOT switch to other interface if unable to process online b7 - Do NOT process online if CDA failed b6 - Do NOT decline/switch other interface if CDA failed b5 - Issuer Update Processing NOT supported b4 - Do process online if card expired b3 - Do decline if card expired b2 - CVM Fallback to Signature allowed b1 - CVM Fallback to 'No CVM' allowed	
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	
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	
C9	Upper Consecutive Offline Amount Limit (UCOA) [DPAS]	00 00 00 00 00	
CA	Single Transaction Amount (STA) Limit [DPAS]	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	

Tag	Element name	Data	Card v9.x
CE	Cumulative Offline Amount [DPAS]	00 00 00 00 00 00	
D1	Offline Balance [DPAS]	00 00 00 00 00 00	
D2	CRM Country Code [DPAS]	08 40 - USA	
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-ST A limit 1	00 00 00 00 00 00	
D8	CVM-ST A 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-ST A	00 00 00 00 00 00	
DF 43	CL-Counter	00	
DF 44	CL-Cons Limit	00	

* Tag value changes with card usage

1.16 Test Card 16 – Discover, Technical Fallback Card

This card has a chip image printed on it but 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 transaction.

The recommended transaction amount to generate a host approval is \$26.00.

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				