



## User Acceptance Testing (UAT) VAR/SI EMV™ Test Card Set

Version 6.00

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## Revision History

Version	Date	Updated By	Revisions
1.00	May 10, 2018	B2PS	<ul style="list-style-type: none"> <li>Initial document release</li> </ul>
1.01	June 26, 2019	B2PS	<ul style="list-style-type: none"> <li>“UL” branding removed. No change to cards themselves.</li> </ul>
2.00	January 18, 2021	B2PS	<ul style="list-style-type: none"> <li>TC01, TC02: Updated cardstock support, where applicable “MasterCard”&gt;“Mastercard”</li> </ul>
3.00	February 25, 2021	B2PS	<ul style="list-style-type: none"> <li>TC02: Expiry Date, Issuer Key, ICC Length adjusted</li> <li>TC03: MTI (Contactless) tags 9F52, 9F54, 9F55, 9F56, 9F57 revealed.</li> </ul>
4.00	April 30, 2021	B2PS	<ul style="list-style-type: none"> <li>TC03: Change of BIN to ‘001202’, Offline Enciphered PIN CVM, 1984-bit CDA key</li> </ul>
5.00	July 26, 2021	B2PS	<ul style="list-style-type: none"> <li>TC03: Certification Authority Public Key Index (Tag ‘8F’) updated - is now ‘07’</li> </ul>
6.00	February 24, 2022	B2PS	<ul style="list-style-type: none"> <li>TC01: Expiry Date 24/12, new PAN</li> <li>TC03: Support for new cardstock (no change in functionality)</li> </ul>

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**CAUTION**

Multiple consecutive incorrect PIN entry attempts may result in the card being blocked. This is known as being 'PIN Blocked'.

If this occurs, it will no longer be possible to enter an Offline PIN which will cause all future transactions to be declined.

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

## Chapter 1 - Global Payments UAT VAR/SI EMV Test Card Set Profiles

This Global Payments User Acceptance Testing (UAT) - VAR/SI (Value Added Reseller / Systems Integrator) EMV Test Card Set contains 3 cards with one card from each of the following card brands.



	Test Card 01	Test Card 02	Test Card 03
<b>Brand</b>	Visa	Mastercard	Interac
<b>Type</b>	Credit	Credit	Debit
<b>AID</b>	A0000000031010	A0000000041010	A0000002771010
<b>PAN</b>	4761 7310 0000 00043	5413 3300 8960 4111	0012 0200 00001
<b>Expiry Date</b>	12/2024	12/2025	12/2028
<b>Service Code</b>	201	201	220
<b>Interface</b>	Contact, Contactless, MSR	Contact, Contactless, MSR	Contact, Contactless, MSR
<b>CVM (Contact) Default Condition: Terminal Supports CVM</b>	Online PIN (ATM) Signature Offline Plaintext PIN NO CVM required <a href="#">See card definition</a>	Online PIN (ATM) Offline PIN Offline Plaintext PIN Signature No CVM required <a href="#">See card definition</a>	Offline Enciphered PIN Offline Plaintext PIN Online PIN <a href="#">See card definition</a>
<b>Approval Amount</b>	\$10.00	\$20.00	\$10.00
<b>Issuer Country Code</b>	124 - Canada	124 - Canada	124 - Canada
<b>Application Currency Code</b>	124 - CAD	124 - CAD	124 - CAD
<b>Language(s)</b>	'en' - English	'fr' - French	'enfr' - English, French
<b>Card Version</b>	v4.x	v4.x	v5.x

## 1.1 Test Card 01 - Visa, DI, Credit, English, Canada, CAD

A Dual Interface (Contact / Contactless) Visa credit 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 5E03 4103 1F03')			
CVM	Verification Method	Conditions	If unsuccessful
1	Online PIN	Unattended Cash	Next CVM
2	Signature (paper)	Terminal supports CVM type	Next CVM
3	Offline Plaintext PIN	Terminal supports CVM type	Next CVM
4	NO CVM required	Terminal supports CVM type	Fail

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

Tag	Element name	Data	v4.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	47 4C 4F 42 41 4C 2F 54 65 73 74 20 43 61 72 64 20 30 31 20 20 20 20 20 20 - 'GLOBAL/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 - CAN	
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 Authenticate command b1 - Combined DDA / GEN AC NOT supported BYTE 2: b8 - Use for Visa NOT supported b7 - Is NOT Mobile phone	
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 5E 03 41 03 1F 03	
8F	Certification Authority Public Key Index	92	

Tag	Element name	Data	v4.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 80 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	v4.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 - CAN	
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 30 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	
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	v4.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 - 'en' (English)	
5F 34	Application PAN Sequence Number	01	
82	Application Interchange Profile [VCPS]	20 00 BYTE 1: b7 - Offline SDA (online Auth) NOT supported b6 - Offline DDA supported BYTE 2: b8 - MSD NOT supported b7 - Is Mobile handset b6 - Is Contactless transaction	
84	Dedicated File (DF) Name	A0 00 00 00 03 10 10	
8F	Certification Authority Public Key Index	92	
90	Issuer Public Key Certificate	04 D6 DC A7 7E 2D DF B5 60 0A 9D DE 4E A2 23 91 BF 4A F3 37 F2 FB 99 41 91 E0 39 70 74 D5 35 E8 AB D2 7F 43 90 6A DD D4 5F 01 54 01 98 EF 23 3C 9D 4C C8 98 AD 56 A9 56 A9 66 D7 38 58 55 86 68 13 F5 E9 29 FB 72 FA E5 E4 40 64 2E B1 EE A3 0D 80 C3 E6 D2 81 E0 E6 FB 51 6B 25 1D D7 5C 01 D5 9C 71 78 28 27 39 1F 89 D8 FF D9 E6 EA 30 2C BE 1B C9 86 BE A0 36 5C 36 F7 A6 DA 9F FD 80 F4 D0 FF 9E D8 9D D5 15 9A 5B 00 3C 78 6A 11 17 94 FD 93 92 3D 6C ED 15 4D 35 4E A7 F0 4E 4A 48 76 1A 74 D9 FC 18 48 48 F1 C6 33 CE 5A DF 54 96 35 BD	
92	Issuer Public Key Remainder	85 AA DF 04 3F AA 38 48 ED 86 9D 6E B3 D9 70 F4 AC 08 A9 74 74 27 88 42 C8 55 84 E3 4B 6F AC C0 72 07 BC 41	
94	Application File Locator (AFL)	10 02 02 01 10 04 07 00	
9F 10	Issuer Application Data [VSDC]	xx xx 0A xx xx xx xx *	
9F 13	Last Online Application Transaction Counter (ATC) Register	xx xx *	
9F 17	Personal Identification Number (PIN) Try Counter	09	
9F 26	Application Cryptogram (AC)	xx xx xx xx xx xx xx xx *	
9F 27	Cryptogram Information Data (CID)	80	
9F 32	Issuer Public Key Exponent	03	
9F 36	Application Transaction Counter (ATC)	xx xx *	
9F 38	Processing Options Data Object List (PDOL)	9F 66 04 9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04	

Tag	Element name	Data	v4.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 4B	Signed Dynamic Application Data	08 B6 B0 74 C7 7F FA F3 EE C1 F1 0B 43 BD E7 58 E1 7E 52 25 41 0F 84 5D 21 91 9E CB 35 BC 49 D6 26 37 8E 98 1E DC 99 6B 49 99 51 A4 C3 08 8E D4 8E D5 1F 25 35 10 D4 DB 6A 13 44 57 08 1B 66 B4 40 52 01 9A 5E F1 C0 F1 E6 2E 43 CE 4C E2 75 0C 0F 9F 05 A9 0F 88 BF 5A B5 0F 96 AC E8 1A C1 C5 0E 46 0D FA FE 2D A2 BD 6A 2A 2A 09 CE FB 7C 8D	
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 30 00	

Tag	Element name	Data	v4.x
9F 69	Card Authentication Related Data [qVSDC]	01 96 19 31 F5 38 00 LAST TWO BYTES 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 6C	Card Transaction Qualifiers [qVSDC VCPS 2.1]	38 00	
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	
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

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

Tag	Element name	Data	v3.x
50	Application Label	56 49 53 41 20 43 52 45 44 49 54	
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 - 'en' (English)	
5F 34	Application PAN Sequence Number	01	
82	Application Interchange Profile [VCPS]	20 00	
84	Dedicated File (DF) Name	A0 00 00 00 03 10 10	
8F	Certification Authority Public Key Index	92	

Tag	Element name	Data	v3.x
90	Issuer Public Key Certificate	04 D6 DC A7 7E 2D DF B5 60 0A 9D DE 4E A2 23 91 BF 4A F3 37 F2 FB 99 41 91 E0 39 70 74 D5 35 E8 AB D2 7F 43 90 6A DD D4 5F 01 54 01 98 EF 23 3C 9D 4C C8 98 AD 56 A9 56 A9 66 D7 38 58 55 86 68 13 F5 E9 29 FB 72 FA E5 E4 40 64 2E B1 EE A3 0D 80 C3 E6 D2 81 E0 E6 FB 51 6B 25 1D D7 5C 01 D5 9C 71 78 28 27 39 1F 89 D8 FF D9 E6 EA 30 2C BE 1B C9 86 BE A0 36 5C 36 F7 A6 DA 9F FD 80 F4 D0 FF 9E D8 9D D5 15 9A 5B 00 3C 78 6A 11 17 94 FD 93 92 3D 6C ED 15 4D 35 4E A7 F0 4E 4A 48 76 1A 74 D9 FC 18 48 48 F1 C6 33 CE 5A DF 54 96 35 BD	
92	Issuer Public Key Remainder	85 AA DF 04 3F AA 38 48 ED 86 9D 6E B3 D9 70 F4 AC 08 A9 74 74 27 88 42 C8 55 84 E3 4B 6F AC C0 72 07 BC 41	
94	Application File Locator (AFL)	10 02 02 01 10 04 07 00	
9F 10	Issuer Application Data [VSDC]	xx xx 0A xx xx xx xx *	
9F 13	Last Online Application Transaction Counter (ATC) Register	xx xx *	
9F 17	Personal Identification Number (PIN) Try Counter	09	
9F 26	Application Cryptogram (AC)	xx xx xx xx xx xx xx xx *	
9F 27	Cryptogram Information Data (CID)	40	
9F 32	Issuer Public Key Exponent	03	
9F 36	Application Transaction Counter (ATC)	xx xx *	
9F 38	Processing Options Data Object List (PDOL)	9F 66 04 9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04	
9F 46	ICC Public Key Certificate	8C 30 F9 F0 DF 98 58 74 1E BE 22 B7 EF 1A 22 CD 7B BC 5E 4E 6C CA E1 22 D9 EF 9E 72 01 05 7C 11 E5 AB F1 8F F4 26 0B E7 92 07 95 06 55 34 FB 26 1B 82 E9 F0 BE 16 7C 47 3B A1 77 7A E4 55 10 BD 66 B8 B4 99 BB 41 33 6E 3E 83 DF D3 5C 37 BC 26 DB 3C 85 66 C5 49 CE 29 F5 65 E6 BE 0D 94 51 2E CE 5F 6D D8 46 80 19 61 0B 4F FF 9C E4 84 C4 17 E9 73 A3 9A 9D 41 7E 49 C7 BF 19 F5 42 AC B8 DA 51 97 36 F6 14 9B A7 D4 BE 13 2F 0C F7 8E B9 28 35 47 34 5A 3B 1F 2F 6D 77 C3 D9 09 D2 EC EB BC DC F2 54 47 B4 4F 24 57 B0 6C FC DE 96 AC 68 6F	
9F 47	ICC Public Key Exponent	03	
9F 4B	Signed Dynamic Application Data	65 B1 15 2C 97 F5 B7 53 71 47 02 E6 D4 AE 46 C8 BC 80 B8 C9 7C 17 D7 1A 43 A2 F5 F5 E5 CF C1 78 7B EB F3 F2 1E 9D 34 5F 32 35 79 A5 9C D8 A4 72 96 59 E7 27 51 76 C7 A0 E0 09 DF E7 20 D4 26 AC EB 00 CF 67 FC C2 F1 2F 16 21 BD 19 4C 72 85 11 CE 40 94 5F C3 67 B9 2F 6D 7E BF 6B B9 CB 43 A8 2D 33 E8 E9 AB 80 FA 8A 3A 7C D6 B7 81 E2 DE E8	
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	

Tag	Element name	Data	v3.x
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 30 00	
9F 69	Card Authentication Related Data [qVSDC]	01 19 E5 29 80 38 00 LAST TWO BYTES 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 6C	Card Transaction Qualifiers [qVSDC VCPS 2.1]	38 00	
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	
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 - 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.

## 1.2.1 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 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

## 1.2.2 Contact: Application Tag List - AID A000000041010 (EMV)

Tag	Element name	Data	v4.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	47 4C 4F 42 41 4C 2F 54 65 73 74 20 43 61 72 64 20 30 32 20 20 20 20 - 'GLOBAL/Test Card 02'	
5F 24	Application Expiration Date	25 12 31	
5F 25	Application Effective Date	xx xx xx	
5F 28	Issuer Country Code	01 24 - CAN	
5F 2D	Language Preference	66 72 - 'fr' (French)	
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 via EXTERNAL AUTH command b1 - Combined DDA / GEN AC 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 44 03 41 03 5E 03 1F 03	
8F	Certification Authority Public Key Index	EF	

Tag	Element name	Data	v4.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	
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	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	

Tag	Element name	Data	v4.x
9F 46	ICC Public Key Certificate	F8 C6 C9 4D D9 FD BB 0E 80 2E 99 68 3D F6 08 0D 42 FB 67 AC 14 EA 99 2B B8 A1 F7 12 E4 09 F0 2A 9F 9A 45 62 0A 18 56 F3 58 08 BA 4C 1C 81 D8 B1 9B DC 50 DF 51 31 23 5B 8B 2F 3A 47 B4 29 5A EB E2 A6 5A AC A5 70 98 64 0B 47 F9 DC 97 86 AB 7C 0A 2A B8 D7 67 AF F6 B9 A5 DB 97 53 97 7A 66 26 09 88 FC 6E B7 7B D6 0A 79 34 51 9D 09 CA 0D 77 90 E7 82 C3 59 96 6B 0D BC 0E 88 2E 46 45 6E 91 B9 5F 92 18 CB 9B 85 E3 B6 A7 06 3C D1 B9 6E 5B 9D 48 6F 1F 37 01 AA DD 10 44 DE 8C 9A A1 F7 59 B0 71 51 A3 83 CB DE B4 C0 8F 01 7E 08 C9 4D 9A 0F DD D8 09 0C 1F 1A A3 E1 2B B5 8F 40 4E 23 8D 3A F0 64 1F DB D6 9B 6D CD 11 8B 0B 0C 92 05 91 F4 0E FE 82 9A 10 D0 19 AC 05 EA F2 7F B2 BF 9E 29 8F 79 1C 4F AD 89 1D 3F AC 69 B7 77 5E C1 D3	
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 4B	Signed Dynamic Application Data	C5 44 34 E3 18 F5 BF F4 B2 62 1D 7F C5 36 56 C2 55 0A 18 89 B7 B6 1A 41 43 7E BC D2 62 91 9A B5 62 04 2B D0 5A FC EC 9F 50 F6 8C 29 29 B8 C0 80 52 94 8E 63 15 7C 2C BE 97 FA 06 00 40 57 F1 4F 58 D5 DC 1F A0 B4 27 D2 A8 93 A6 36 FC 44 86 55 D3 CF B1 28 CD FF AD C8 B1 24 88 42 46 4D 75 D5 02 54 5D C8 24 54 2C 1B C3 3D 50 DF E1 C2 94 D6 55 CB AD 16 C1 CE 48 1D BB FF 0C C3 61 CC CE 21 27 1E 25 D6 CA 7E DA 50 AC 6E EC 74 43 5F 52 F1 44 9A FD E3 CE AB CA 11 F8 9E 4A 71 1B F8 D3 4F 2F A9 64 84 3B F8 B2 05 9A D1 09 74 82 61 5F 03	
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	



Tag	Element name	Data	v4.x
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]	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	
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	

Tag	Element name	Data	v4.x
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	
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	

Tag	Element name	Data	v4.x
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

1.2.3 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

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

Tag	Element name	Data	v3.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 - CAN	
5F 2D	Language Preference	66 72 - 'fr' (French)	
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 via EXTERNAL AUTH command b1 - Combined DDA / GEN AC supported BYTE 2: b8 - EMV Contactless 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 00 5E 03 1F 03	
8F	Certification Authority Public Key Index	EF	

Tag	Element name	Data	v3.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	v3.x
9F 46	ICC Public Key Certificate	CF 91 76 AC 06 8D 54 4F F0 90 CF 31 0B 9D AF 30 94 D0 CA 82 F9 EE 17 25 89 F9 43 66 BD 48 7D B7 B4 65 1A 68 DC 69 26 DD EB 57 D5 B8 C0 55 FA ED EA 62 C2 FF CD 7E C5 BB 0C 87 B3 BB 59 00 5C 79 C0 DE 9D 4D 7B 97 5F 04 5A 19 9E 23 CA 36 B5 B6 A0 3D EF 73 B4 A8 96 E8 89 33 A8 76 79 66 04 04 B3 C9 C2 A4 02 9E 7C B2 33 AB 27 61 8E CA 78 EE 94 E5 3D FC 45 AB 7D 34 AB 3A 90 9D 51 AA A5 FF C9 77 1C 34 2B 78 D4 26 78 1D AE 91 E2 23 92 FA E8 D2 EC CF 7B DA AA 86 76 74 3D A5 16 F4 74 FA 06 F3 BF D5 3A 16 7A E6 C0 CA F7 D3 16 6F B2 F8 86 8C 52 A6 60 67 65 34 F3 A2 19 8E 7D 26 81 A8 45 37 6F 92 C3 83 3E C7 4C A9 95 92 CF C1 93 D4 2A 75 BD B2 03 0D 9E FB 26 0D 4F DB 4B B8 A8 2F 7B 57 9C CD E0 4F C2 3F F2 73 29 88 36 45 E2 DF	
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]	26 71	
9F 61	CVC3track2 [Mastercard]	C1 51	
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	
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	

Tag	Element name	Data	v3.x
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	
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

**1.3 Test Card 03 - Interac, DI, Debit, Eng/Fre, Canada, CAD**

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

Merchant Type Indicator (MTI) Limits (tags 9F52, 9F54, 9F55, 9F56, 9F57) all set to \$250.01.

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

**1.3.1 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

**1.3.2 Contact: Application Tag data - AID A000002771010 (EMV)**

Tag	Element name	Data	v5.x
50	Application Label	49 6E 74 65 72 61 63 - ‘Interac’	
57	Track 2 Equivalent Data	00 12 02 00 00 00 1D 28 12 22 00 01 23 00 00 00 02 00 0F	
5A	Application Primary Account Number (PAN)	00 12 02 00 00 00 1F	
5F 20	Cardholder Name	47 4C 4F 42 41 4C 2F 54 65 73 74 20 43 61 72 64 20 30 33 20 20 20 20 20 20 - ‘GLOBAL/Test Card 03	
5F 24	Application Expiration Date	28 12 31	
5F 25	Application Effective Date	xx xx xx	
5F 28	Issuer Country Code	01 24 - CAN	
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	

Tag	Element name	Data	v5.x
90	Issuer Public Key Certificate	1D 20 2E 58 DD 49 87 AC F7 62 08 02 0E 4A D4 33 E3 E1 97 2B 37 E2 23 1B 2B 8D 3C 46 BB 61 9C 50 DC E8 03 25 54 93 C3 45 7B 98 05 B0 B0 FF E4 22 9D 07 32 F6 3E C0 FA 8A 2C 93 95 7C 23 BB 6F DB 59 16 17 B8 C1 AB 27 D6 93 46 32 D8 0D 78 1E 6A CF 63 76 01 DE 6E 25 69 4A A7 C6 2A 68 80 B7 C8 93 A0 EB 0D 0B CD 50 64 76 4E 9E 8E C6 95 1B D1 FF DE 43 81 1D 6D 27 A8 CE 5C 6F 03 9D 38 EF 20 EC F7 1C E8 36 AB E3 85 04 0E 98 B1 A8 06 82 32 62 6F 4F D6 33 BF 5B EE 6F 76 C4 73 12 7F 96 8C 6F A4 65 26 AC FB D7 68 CF 04 63 BE ED 63 5A 23 4B 87 84 8A C0 9B A4 D3 77 2A 75 E4 E7 3E 14 6A C6 A2 74 7D 1D 9C EC AB F2 25 49 5D 61 E7 48 5A 92 F1 60 AE B7 5D CA 55 53 57 F7 67 58 71 DC C3 93 A5 7B 53 B4 DB E8 72 CB F1 60 66 01 B0 59 1E 48 98 2F 20 55 42 C7 25	
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 01 xx *	
9F 13	Last Online Application Transaction Counter (ATC) Register	xx xx *	
9F 17	Personal Identification Number (PIN) Try Counter	09	
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	9E 7B 0C F0 D6 BB 61 60 B9 3B 85 0D 3C 16 EA A7 E6 CA 57 5F B9 BD BE 4D 1A 7E 6C 19 AB E3 72 B1 F0 AC D6 8F 43 EB 9B CD 20 20 73 B9 31 FB 73 73 A4 DC CF DA 24 C3 40 43 78 21 88 5B 8B D8 03 FE 99 F5 31 DE D3 09 2A FC 68 60 30 57 01 5B 5E B9 94 05 A3 B9 33 1D 3D A9 FF 48 F0 EE C9 8D 5D D2 7D E7 0C B0 CC 44 F9 C1 D6 0A 21 05 77 34 07 53 FF 72 92 7D CC E4 60 0C 41 CE 03 52 1C CE 40 1B AC 5B 49 07 4F C3 CD 4D 4A 5B F6 C1 66 32 62 AE	



Tag	Element name	Data	v5.x
9F 47	ICC Public Key Exponent	03	
9F 48	ICC Public Key Remainder	8A 79 C4 16 91 3D 8C E1 6E AD 34 B5 E3 21 56 3F 62 CB 2C 7F C3 D6 53 27 64 79	
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

### 1.3.3 CTLS: Application Tag data - AID A000002771010 (Flash)

Tag	Element name	Data	v5.x
50	Application Label	49 6E 74 65 72 61 63 - 'Interac'	
57	Track 2 Equivalent Data	00 12 02 00 00 00 1D 28 12 22 00 01 23 00 00 00 02 00 0F	
5A	Application Primary Account Number (PAN)	00 12 02 00 00 00 1F	
5F 24	Application Expiration Date	28 12 31	
5F 25	Application Effective Date	xx xx xx	
5F 28	Issuer Country Code	01 24 - CAN	
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 OPTIONALLY 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	

Tag	Element name	Data	v5.x
90	Issuer Public Key Certificate	1D 20 2E 58 DD 49 87 AC F7 62 08 02 0E 4A D4 33 E3 E1 97 2B 37 E2 23 1B 2B 8D 3C 46 BB 61 9C 50 DC E8 03 25 54 93 C3 45 7B 98 05 B0 B0 FF E4 22 9D 07 32 F6 3E C0 FA 8A 2C 93 95 7C 23 BB 6F DB 59 16 17 B8 C1 AB 27 D6 93 46 32 D8 0D 78 1E 6A CF 63 76 01 DE 6E 25 69 4A A7 C6 2A 68 80 B7 C8 93 A0 EB 0D 0B CD 50 64 76 4E 9E 8E C6 95 1B D1 FF DE 43 81 1D 6D 27 A8 CE 5C 6F 03 9D 38 EF 20 EC F7 1C E8 36 AB E3 85 04 0E 98 B1 A8 06 82 32 62 6F 4F D6 33 BF 5B EE 6F 76 C4 73 12 7F 96 8C 6F A4 65 26 AC FB D7 68 CF 04 63 BE ED 63 5A 23 4B 87 84 8A C0 9B A4 D3 77 2A 75 E4 E7 3E 14 6A C6 A2 74 7D 1D 9C EC AB F2 25 49 5D 61 E7 48 5A 92 F1 60 AE B7 5D CA 55 53 57 F7 67 58 71 DC C3 93 A5 7B 53 B4 DB E8 72 CB F1 60 66 01 B0 59 1E 48 98 2F 20 55 42 C7 25	
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 01 xx *	
9F 13	Last Online Application Transaction Counter (ATC) Register	xx xx *	
9F 17	Personal Identification Number (PIN) Try Counter	09	
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	v5.x
9F 46	ICC Public Key Certificate	9D DC 13 D7 18 C7 9D 3E BB B0 AC 59 CD 90 72 98 E4 E6 48 2F BD 5B A9 56 83 CF E4 E2 33 4F 24 7B E3 1A 1C 57 60 4F FC A4 8A 13 4C BA E6 EF 95 27 82 B9 6C B2 1F 74 1C C2 C0 95 B1 A7 2D 8F 1F BB A2 E1 80 DE B6 42 A1 02 E6 1C AD 07 4D 82 BB 70 CF D5 12 5D DA CB AA 80 25 2C 7C C3 CB EB A3 F1 DF 6D 3D 07 D9 F3 0D 01 14 9A F8 24 00 F8 1F 64 86 6F 34 0A EF FF C2 70 A1 96 62 65 B2 C9 E8 8A DA 89 91 4E 94 67 20 42 7A CA C9 F6 E0 D6 49 6C	
9F 47	ICC Public Key Exponent	03	
9F 48	ICC Public Key Remainder	8A 79 C4 16 91 3D 8C E1 6E AD 34 B5 E3 21 56 3F 62 CB 2C 7F C3 D6 53 27 64 79	
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	
9F 57	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

## Chapter 2 - ASCII Character Conversion Chart

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