



**Development (DEV) Canada
EMV™ Test Card Set**

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Revision History

Version	Date	Updated By	Revisions
5.50	August 29, 2016	B2PS	Initial document release
5.60	Sept. 21, 2017	B2PS	<ul style="list-style-type: none"> • TC08: Card v6.0 has 2-byte Kernel ID
6.00	January 4, 2018	B2PS	<ul style="list-style-type: none"> • TC02 - New version v6.0: Discretionary data updated (CVV) • TC07 - EMV Tags for AID A0000000291010 added • TC08 - New version v7.0: Increased contactless facility, 'Approval Amount' updated.
7.00	October 4, 2018	B2PS	<ul style="list-style-type: none"> • All cards - Tags 82, 9F07, 9F69 expanded & interpreted • Amex card TC07 - Expiry date changed to 24/12 • Discover card TC08 - Expiry date changed to 23/12
8.00	February 27, 2019	B2PS	<ul style="list-style-type: none"> • TC08 - Tag 57 expiry date corrected
9.00	May 29, 2019	B2PS	<ul style="list-style-type: none"> • TC07 - PAN changed - now ends in '41007', Approval amount changed, AIP contactless changed
9.01	June 7, 2019	B2PS	<ul style="list-style-type: none"> • Set renamed to "DEV Canada EMV Test Card Set". No change to cards themselves.
10.00	July 31, 2020	B2PS	<ul style="list-style-type: none"> • TC01, TC03 – updated cardstock support; where applicable, "MasterCard">"Mastercard" • TC05 – Now Offline Enciphered PIN
11.00	April 14, 2021	B2PS	<ul style="list-style-type: none"> • TC03, TC04 – Expiry Date change

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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 - DEV Canada EMV Test Card Set Profiles

This Development (DEV) Canada EMV Test Card Set contains 8 cards with at least one card from each of the following card brands.



	Test Card 01	Test Card 02	Test Card 03
Brand	Visa	Visa	Mastercard
Type	Credit	Credit	Credit
Description	Offline Capable	Fallback	Mastercard
IIN	-	-	-
AID	A0000000031010	-	A0000000041010
PAN	4761 7390 0101 0119	4761 7390 0101 0267	5413 3300 8960 4111
Expiry Date	12/2022	12/2022	12/2025
Service Code	201	201	201
Interface	Contact, Contactless, MSR	MSR	Contact, Contactless, MSR
CVM	See card definition	See card definition	See card definition
Approval Amount	\$10.00	\$10.00	\$20.00
Issuer Country Code	124 - Canada	-	124 - Canada
Application Currency Code	124 - CAD	-	124 - CAD
Language	'en' - English	-	'fr' - French
Card Version	v6.x	v6.x	v7.x

	Test Card 04	Test Card 05	Test Card 06
Brand	Mastercard	Interac	Interac
Type	Credit	Debit	Debit
Description	Fallback	Canadian Debit	Canadian Debit
IIN	-		
AID	-	A0000002771010	A0000002771010
PAN	5413 3300 8902 0029	4506 4450 0693 1933	4506 4450 0693 1933
Expiry Date	12/2025	12/2022	12/2022
Service Code	201	201	201
Interface	MSR	Contact, MSR	Contact, MSR
CVM	See card definition	See card definition	See card definition
Approval Amount	\$20.00	\$10.00	\$10.00
Issuer Country Code	-	124 - Canada	124 - Canada
Application Currency Code	-	124 - CAD	124 - CAD
Language	-	'en' - English	'fr' - French
Card Version	v6.x	v6.x	v5.x

	Test Card 07	Test Card 08
Brand	American Express	Discover
Type	Credit	Credit
Description	Online Only	Discover Credit
IIN	-	-
AID	A000000025010402, A0000000291010	A0000001523010
PAN	3742 450017 41007	6510 0000 0000 0216
Expiry Date	12/2024	12/2023
Service Code	201	201
Interface	Contact, Contactless, MSR	Contact, Contactless, MSR
CVM	See card definition	See card definition
Approval Amount	\$30.00	\$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	v9.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 Cardholder Verification Method List

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 Application Tag data (Contact Interface, online)

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 90 01 01 01 19 D2 21 22 01 11 43 80 44 00 00 0F	
5A	Application Primary Account Number (PAN)	47 61 73 90 01 01 01 19	
5F 20	Cardholder Name	44 45 56 20 43 41 4E 2F 54 65 73 74 20 43 61 72 64 20 30 31 20 20 20 20 20 20 - 'DEV CAN/Test Card 01'	
5F 24	Application Expiration Date	22 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 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 v6.x
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	
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 v6.x
9F 46	ICC Public Key Certificate	92 CB BE E6 7B E7 C0 08 A3 5E B6 27 49 9D 7E 07 98 F8 FF CA 09 46 1D 09 9C 27 B4 69 75 8F 40 86 8C 92 63 E9 39 01 B8 13 23 80 3B BD 4D C6 FF 81 8C C1 AA 34 8A BB FA 80 E1 ED 34 9F 03 56 8A A1 F5 A7 68 60 FE 37 9D 53 95 6B 2C D8 05 FD CA 7A BF C2 66 05 3A 9F 9F 1A F4 21 57 86 01 8F 23 C2 31 B8 7D 96 B5 DA D1 22 D7 A4 91 7F AB 1B 8C 74 D7 18 85 9B 17 5A E3 3C AD 1C 9A 37 1D EC ED F2 2A 54 68 2F E1 89 8E 4A 19 80 27 B2 BA F2 43 CA 49 CD 7B 2F 9B D1 EC 99 A8 B6 7E 78 4C E6 0B AB 37 22 24 46 D2 C4 89 79 D6 32 D6 47 F6 B7 11 74	
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	AA 58 F6 9D 3B AB 5E 09 61 01 10 58 B6 97 07 26 A7 33 BA 95 01 11 A9 B3 7B F3 11 83 11 CC 35 DB F0 58 15 AA 97 21 DD 44 51 D0 A8 55 1C 34 21 2D 09 0E FE 8F 3E A2 F7 1C 6B D4 47 93 96 45 3F BD 86 1F 67 ED 31 F1 F0 08 10 75 A9 62 D8 89 99 A7 19 43 32 78 AA 08 D4 F3 72 A2 C9 9C D1 71 C4 DA E9 1A 98 3E 0E D4 B8 1E 4C 63 FE D3 AD D8 4A 94 94 23 1C 07 D8 AA 0C 4B DE 82 21 0B EE 48 45 CD	
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 03 DF 21 01 03 DF 31 01 07	
BF 56	Counters Data Template	DF 11 01 02 DF 21 01 03 DF 31 01 07	
BF 57	International Counters Data Template	DF 11 01 02 DF 21 01 03 DF 31 01 07 DF 51 01 05 DF 61 01 03	

Tag	Element name	Data	Card v6.x
BF 58	Amounts Data Template	DF 11 06 00 00 00 01 00 06 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 Application Tag data (Contactless Interface, online)

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 90 01 01 01 19 D2 21 22 01 11 43 80 44 00 00 0F	
5A	Application Primary Account Number (PAN)	47 61 73 90 01 01 01 19	
5F 24	Application Expiration Date	22 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	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	
94	Application File Locator (AFL)	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 v6.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	5F AC 6A 54 56 21 81 6D 69 F4 71 52 D8 B7 6B 2B 37 11 2C 42 CA F0 89 4B AD 05 49 6C 72 F6 2E C3 EF 95 DC AB F4 DC 4D 73 12 3E 46 C8 A4 F7 B3 9F EF 7C 57 CC CF 30 E9 1A FD 16 DC 0C 9E 9F BA AC 41 13 BB FD E6 83 33 AC 58 65 D3 E4 49 8B E8 2B 2C 6C 2A 34 D3 B0 07 BC AB 13 9F 71 A0 F4 64 9A 6D AB 76 30 E4 23 DC 55 4A E2 FF A0 59 E1 24 83 1D 5E 88 4F 28 AF 9F 0E 9F 87 0E DA C4 01 77 6A 36 29 60 87 B5 45 52 E4 2E 33 FC D0 F6 43 EC F0 C5 41 1A 10 8D B6 05 FF 8D 82 E9 BC 3F 7E CA BF F6 06 16 51 F4 CD B4 8A EC A9 A4 7B 2E 5D 99 69	
9F 47	ICC Public Key Exponent	03	
9F 4A	Static Data Authentication Tag List	82	
9F 4B	Signed Dynamic Application Data	47 47 D1 A5 84 BE 75 7C 41 1D 0A 93 09 D0 8E A2 16 1E 3A 84 C4 00 F2 05 A5 CB 9C 48 0C E6 E8 E3 0A 2A 5F ED B2 75 7D AD 36 64 5E 7E F2 42 D3 A6 35 2C DD 74 0C 84 B8 AE 37 DC 8E F5 6A A3 D0 F5 C2 CA B1 41 5D 93 97 93 36 2E C9 65 F5 C8 5D 22 EF 1D 09 CD 37 03 10 96 69 33 01 63 30 63 7C E1 C4 FC 0A 6B 6D C5 70 AB CB 6D EC 7C 9E 44 48 64 81 11 19 3D 2B 03 2F 62 33 19 EE 47 D7 9B E2 22	
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 08 40 08 40	
9F 5C	Cumulative Total Transaction Amount Upper Limit [VSDC]	00 00 00 04 00 00	
9F 5E	Consecutive Transaction International Upper Limit [VSDC]	07	
9F 68	Card Additional Processes [qVSDC VCPS 2.1]	4E 00 F0 00	

Tag	Element name	Data	Card v6.x
9F 69	Card Authentication Related Data [qVSDC]	01 7D 73 67 96 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 b2 - Is NOT valid at ATMs	
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 03 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 06 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, Technical Fallback Card

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

When inserted, a chip error will be detected.

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

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

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

1.3 Test Card 03 - 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.

1.3.1 Cardholder Verification Method List

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

1.3.2 Application Tag data (Contact Interface, online)

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	44 45 56 20 43 41 4E 2F 54 65 73 74 20 43 61 72 64 20 30 33 20 20 20 20 20 20 - 'DEV CAN/Test Card 03'	
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	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	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	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 *	

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	E4 36 B5 44 E2 B5 2E 89 80 1F E9 55 01 CB 49 F0 2B EA 62 E1 FD E8 25 FC 1D E0 CF 3A DE 1D CB C4 F4 FC 0E A6 49 F7 A8 85 BB EF DB 7B AA E3 2A 44 36 A3 FD 79 56 93 A3 80 3E E1 5C EC 50 97 95 A5 58 52 66 08 29 BB A4 2B 0B 44 12 87 CB 58 8B 85 17 7D AC CF 64 60 B9 52 CB E2 85 12 24 AB AE D4 D2 93 2A 90 A9 57 CE 12 E4 C8 03 3A 0A 99 80 E4 73 70 A8 A4 E7 7E CA 3F 36 B4 D5 06 15 EF 53 2A 09 99 34 25 FD 5F 7A 10 A3 CD A7 EE 65 11 56 AE F5 55 FE DA 42 D4 6B 54 8B C5 7D A8 1F 55 D1 27 B5 2B 03 69 3A 17 89 AB 5B 75 6E C1 A6 AA D8 76 68 27 FF CD D5 B8 61 82 7B 95 96 56 3D 90 9B 43 0E DB FC 10 AF DE 73 FF 5D 2B 6B 69 00 DC 2C 10 7C DD 6D 4B C4 1E 0A D5 F2 99 49 00 94 09 DB 56 E2 BF 8B 57 BA 34 34 6A EE DA 34 68 7C 1D CF EB	
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	B8 27 E2 A0 EA 41 E7 2A 2C 3A BF 32 5D 43 6D 18 0B 13 2F 6F C8 4A 1B 4C CC F3 1F 85 CB 97 48 4C 0A DC 9A C4 47 4F 47 99 0B E0 2C DF 4B 30 42 F4 11 19 8A B4 31 F4 44 6A 6A 26 B2 19 30 10 B9 64 9E A6 94 5B 98 F5 11 88 0C 2E 72 F2 AE F1 13 F9 12 EC 09 FD F4 3E 9C 4E 0C A5 45 8D 6B 7C 1A 90 44 5B D9 3A CF C8 5F C7 F4 93 86 21 FD CC A2 79 20 E4 34 FD BF B6 35 B6 D6 11 8C E2 DB A5 7E CD F6 92 31 B3 91 F2 A7 E5 C3 75 C9 96 26 B2 FA E0 E7 0F 67 F8 30 AF E1 87 64 0D C3 D9 95 F2 B5 F3 BD EB A1 A7 D3 38 66 22 B2 E0 EE D4 D3 7B D7 9A	
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	

Tag	Element name	Data	Card v7.x
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]	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	

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 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	
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	

Tag	Element name	Data	Card v7.x
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

1.3.3 Cardholder Verification Method List (CL)

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

1.3.4 Application Tag data (Contactless Interface, online)

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	66 72 - 'fr' (French)	
5F 34	Application PAN Sequence Number	01	

Tag	Element name	Data	Card v7.x
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 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 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	
9F 44	Application Currency Exponent	02	
9F 46	ICC Public Key Certificate	D9 FE DC 4B AE 3C 0D 18 9D 24 F7 4B B7 DC 03 5C 7A ED 3A EB 02 AD 30 E3 51 4B E3 F4 20 29 7D 01 2D DF 5A 31 02 26 F7 23 25 1E C7 2D C9 61 21 D9 B1 AA 87 DD F2 46 A5 A5 63 CE F5 E7 C0 F5 63 9A AE F1 10 50 68 20 CB C1 56 56 6C 33 E5 C8 2F 10 37 53 54 A7 AA B9 29 04 2E 97 A6 FC 89 47 22 0A C5 72 54 72 0B 8D BC 49 C6 31 04 0B 0E 73 A9 91 A9 E2 A2 20 1A C8 70 01 50 94 2F 55 1A 98 39 E6 85 C5 43 23 71 9C 34 7E 80 1E 83 F8 02 50 84 CA B7 C9 3D 13 84 BC 88 A5 C9 5B 90 82 28 D4 73 54 52 F8 E6 D2 77 92 86 1F E9 33 8C 34 74 E8 BA 9B 73 7F 49 6A AA 3E F8 70 60 B6 FB 67 47 DF E3 AA D3 DB DB 57 B3 34 31 28 4D 08 84 31 30 80 F1 79 49 67 A9 17 D2 00 A5 D0 02 46 A1 17 BF 10 43 AB 08 A0 B7 60 85 B7 4D 7F CD E4 43 B4 A4 6F 98 65	
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]	1D E2	
9F 61	CVC3track2 [Mastercard]	C7 6E	
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	
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

1.4 Test Card 04 - Mastercard, Technical Fallback Card

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

When inserted, a chip error will be detected.

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

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

1.5 Test Card 05 - Interac, Debit, English, Canada, CAD

An Interac 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.

1.5.1 Cardholder Verification Method List

Cardholder Verification Method List ('0400')			
CVM	Verification Method	Conditions	If unsuccessful
1	Offline Enciphered PIN	Always	Fail

1.5.2 Application Tag data

Tag	Element name	Data	Card v6.x
50	Application Label	49 4E 54 45 52 41 43	'INTERAC'
57	Track 2 Equivalent Data	45 06 44 50 06 93 19 33 D2 21 22 20 01 62 90 74 00 00 1F	
5A	Application Primary Account Number (PAN)	45 06 44 50 06 93 19 33	
5F 20	Cardholder Name	44 45 56 20 43 41 4E 2F 54 65 73 74 20 43 61 72 64 20 30 35 20 20 20 20 20 20	'DEV CAN/Test Card 05'
5F 24	Application Expiration Date	22 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 20	
5F 34	Application PAN Sequence Number	01	
82	Application Interchange Profile [VIS]	1D 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 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	

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 00 00 04 00	
8F	Certification Authority Public Key Index	40	
90	Issuer Public Key Certificate	89 97 A2 AD 07 FD 6D 84 72 4D 6B EC 12 3E 2C 66 FB 7D 74 96 C6 2E 52 F4 F2 0D D0 A6 B9 F0 4A 3C 9E 18 1F C1 2C 79 21 39 D0 F9 D9 B3 85 14 D3 64 9F 02 8B 71 36 D0 BE D5 A1 D8 82 AB 87 02 AB 96 FF C8 08 08 3D DE 95 3D 82 1E 31 32 77 54 95 34 F7 82 5F 8C 0D D9 C5 6C BB 96 39 35 04 BA 93 03 28 2C A4 7E EE 7A 87 C9 30 4A 50 44 00 6B 15 A1 A7 BF 33 3D D8 16 8D 82 3C EA DB D4 76 C0 E8 AA	
92	Issuer Public Key Remainder	57 96 ED 1F 04 24 FE 5D 31 C8 7D DC 10 F3 6E E4 C7 BB 9C C7 36 DD 03 98 02 63 E2 A1 D8 09 08 B6 70 DB 2A 4D	
93	Signed Static Application Data	57 37 86 50 6A 91 C6 D8 88 5C 7B C7 3C AE 62 74 17 2D 30 A0 9E 6A FD 96 BC 2F DA 80 9B 16 C2 EA 22 E7 05 BF 29 75 81 EC FF AF 75 E8 1F 95 38 44 72 5A AE 21 8F 07 0D DC 5E A4 7D 38 EC 42 AB 4F 1E 2A 84 1F 2D 6A 9B FE D3 44 C7 0F F1 F9 7E E9 19 81 41 31 43 86 07 39 93 88 C4 29 81 62 EA 71 B0 BD 57 48 58 AD 6A 89 46 7C 58 01 64 1F 95 C2 32 17 A8 3B 33 69 58 D7 B2 9E 7F 21 02 9D 45 08	
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	AB 00 BYTE 1: b8 - Domestic cash trans. valid b7 - Int'l cash transactions NOT valid b6 - Domestic goods valid b5 - International goods NOT valid b4 - Domestic services valid b3 - International services NOT 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 01	
9F 0D	Issuer Action Code - Default	B0 70 BC 80 00	
9F 0E	Issuer Action Code - Denial	00 00 00 00 00	
9F 0F	Issuer Action Code - Online	B0 70 BC 98 00	
9F 10	Issuer Application Data [VIS 1.6]	xx xx 0A xx xx xx xx *	
9F 11	Issuer Code Table Index	01	
9F 12	Application Preferred Name	49 6E 74 65 72 61 63	
9F 13	Last Online Application Transaction Counter (ATC) Register	xx xx *	
9F 17	Personal Identification Number (PIN) Try Counter	09	

Tag	Element name	Data	Card v6.x
9F 1F	Track 1 Discretionary Data	31 36 32 39 30 37 34 30 30 30 30 31 30 30 30 30 30 30 30 30 30 30 30 30	
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 02 06 9F 1A 02	
9F 44	Application Currency Exponent	02	
9F 46	ICC Public Key Certificate	57 51 93 53 AE 4B EC 05 5C 04 66 81 05 87 6A BE CF 03 09 00 1B B0 A9 1C AD 70 A8 9C A9 EF 0F 4A CA 1A 5F C7 2C B9 78 9A 94 9C 46 E1 02 3E 03 D7 B7 20 64 CC 78 46 30 BA 73 A1 85 E4 FB 0F 6F 37 6E CC 1C 15 7D 17 7E 1E E8 E5 C8 B1 C9 16 31 9F 30 36 A0 72 3B BF 50 88 8D 74 96 92 23 90 1D 21 B6 B7 1C C9 77 D9 49 49 F4 54 5F 7C E8 1D B6 1E D9 9D 97 98 FF 27 72 CF 74 08 4D 88 3C 45 A9 77	
9F 47	ICC Public Key Exponent	03	
9F 48	ICC Public Key Remainder	98 A2 97 AF 4E 3E E3 7D 70 25 5F 07 DE D4 11 13 4E 45 F0 27 12 13 C3 11 70 45 5E 57 21 80 6A E6 5D 8A 7A 4A E1 09 43 0C 35 7B	
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]	01 24 - CAD	
9F 52	Application Default Action [VSDC VIS 1.6]	C0 38 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]	01 24 - CAN	
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 02 DF 21 01 00 DF 31 01 00	
BF 57	International Counters Data Template	DF 11 01 02 DF 21 01 00 DF 31 01 00 DF 51 01 01	
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

1.6 Test Card 06 - Interac, Debit, French, Canada, CAD

An Interac 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.

1.6.1 Cardholder Verification Method List

Cardholder Verification Method List ('0100')			
CVM	Verification Method	Conditions	If unsuccessful
1	Offline Plaintext PIN	Always	Fail

1.6.2 Application Tag data

Tag	Element name	Data	Card v5.x
50	Application Label	49 6E 74 65 72 61 63	'INTERAC'
57	Track 2 Equivalent Data	45 06 44 50 06 93 19 33 D2 21 22 20 01 62 90 74 00 00 2F	
5A	Application Primary Account Number (PAN)	45 06 44 50 06 93 19 33	
5F 20	Cardholder Name	44 45 56 20 43 41 4E 2F 54 65 73 74 20 43 61 72 64 20 30 36 20 20 20 20 20 20	'DEV CAN/Test Card 06'
5F 24	Application Expiration Date	22 12 31	
5F 25	Application Effective Date	xx xx xx	
5F 28	Issuer Country Code	01 24	Canada
5F 2D	Language Preference	66 72	'fr' (French)
5F 30	Service Code	02 20	
5F 34	Application PAN Sequence Number	01	
82	Application Interchange Profile [VSDC]	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 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	
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 01 00	
8F	Certification Authority Public Key Index	55	

Tag	Element name	Data	Card v5.x
90	Issuer Public Key Certificate	6C 16 73 99 B8 BE 0C CA 2A A9 EF 30 EC F5 14 C4 F4 F1 F0 89 85 8A 46 08 6F 12 F2 80 B6 81 FD CA 40 8C 09 51 C0 D6 BA 64 FD 05 C7 2C 5A 23 B2 66 DA 11 D6 75 BA B2 AC 74 C5 AF E0 41 A6 94 2D 84 FC 19 0D C0 6D 83 CF 17 71 F2 F9 74 B8 31 73 5A A1 30 39 4D 12 DC CF D5 74 61 D1 20 E5 58 F6 35 12 F6 DB 82 46 DD 41 00 9F A1 D9 73 1B 27 42 F9 7E FD 2B C1 16 DF B9 AF 7A 96 6A CF 12 83 A8 49 A7 A9 73 6A 0D 8A E2 63 98 36 BC A6 9B D9 EE 78	
92	Issuer Public Key Remainder	EC A4 19 2A 02 CA AC 0B 75 22 44 EC AE 9F 1A BA 46 15 E7 05 27 AD D0 D8 03 67 54 CA 9F A5 2E 7D 42 16 22 0F	
93	Signed Static Application Data	10 4E 83 86 72 A5 E9 D2 55 37 D2 68 6D C2 96 F2 5B A1 0F C2 FC 67 A2 77 6D EF 0E CB 67 10 A8 EF 8B 0C D3 A4 7C 69 42 53 CB D4 7E E9 97 BA C4 08 43 26 34 56 35 EE 5E E6 5F 33 FA 64 F9 46 54 96 F6 20 F6 1E 4A 9C 80 4B 1C 5D A9 FB 15 B8 BF E4 EC CF 7D 98 77 66 82 FB D4 F3 75 10 64 E8 66 73 8C 30 C9 08 5C C3 84 F0 8E 25 9D 7D C2 96 B6 F8 90 F9 03 DF C3 24 92 F7 32 2E 1F 11 89 80 DD 01 C0 87 0A E7 F4 C8 54 A1 E3 23 A7 E3 89 B4 4F C1	
94	Application File Locator (AFL)	10 01 01 00 10 02 04 01 10 06 06 00 B0 01 01 00	
9F 07	Application Usage Control	AB 00 BYTE 1: b8 - Domestic cash trans. valid b7 - Int'l cash transactions NOT valid b6 - Domestic goods valid b5 - International goods NOT valid b4 - Domestic services valid b3 - International services NOT 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 70 BC 80 00	
9F 0E	Issuer Action Code - Denial	00 00 00 00 00	
9F 0F	Issuer Action Code - Online	B0 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	49 6E 74 65 72 61 63 - 'Interac'	
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 36 32 39 30 37 34 30 30 30 30 32 30 30 30 30 30 30 30 30 30 30 30 30	

Tag	Element name	Data	Card v5.x
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 02 06 9F 1A 02	
9F 44	Application Currency Exponent	02	
9F 46	ICC Public Key Certificate	4A 55 B7 BB 0D 7A 9B A1 38 F8 C7 9F DC 17 D0 5A FE 2B 57 F6 73 C7 19 35 19 17 92 F2 B6 BB 92 9F 72 D5 70 64 38 72 85 D5 5F 79 D8 CF F9 8C 58 78 AB DC 36 13 BB 5E 03 23 F2 CF 01 73 D3 91 78 AB 28 93 8C 96 18 02 A0 2D 53 0F 31 1E 97 D6 01 4A 7C 1A 3E D2 9F 5D C5 1B F4 C4 DD 40 D4 B6 19 06 29 8D 48 68 BC A9 1A 70 88 22 63 92 85 C5 9D CC F6 C3 24 F0 31 FA B1 F0 6E 01 2E FD 31 5A E1 5D DF D6 4C CB 23 42 22 BF 42 D7 E4 1B 61 16 33 06	
9F 47	ICC Public Key Exponent	03	
9F 48	ICC Public Key Remainder	CF 73 74 B6 6B 39 27 A5 74 19 B5 58 7E B1 35 F4 81 BF 23 C7 F7 A5 4D 64 28 4F	
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]	01 24 - CAD	
9F 52	Application Default Action [VSDC VIS 1.5]	C0 38 00 00 00 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]	01 24 - CAN	
9F 5C	Cumulative Total Transaction Amount Upper Limit [VSDC]	00 00 00 00 00 00	
9F 68	Card Additional Processes [qVSDC VCPS 2.1]	10 00 10 00	
9F 6D	VLP Reset Threshold [VSDC]	00 00 00 00 00 00	

* Tag value changes with card usage

1.7 Test Card 07 - 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

1.7.1 Cardholder Verification Method List - A000000025010402

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

1.7.2 Application Tag data (Contact Interface, online) - A000000025010402

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 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	44 45 56 20 43 41 4E 2F 54 65 73 74 20 43 61 72 64 20 30 37 20 20 20 20 20 20 - 'DEV CAN/Test Card 07'	
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 v7.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

1.7.3 Cardholder Verification Method List (CL) - A00000025010402

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

1.7.4 Application Tag data (Contactless Interface, online) - A00000025010402

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 10 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	44 45 56 20 43 41 4E 2F 54 65 73 74 20 43 61 72 64 20 30 37 20 20 20 20 20 20 - 'DEV CAN/Test Card 07'	
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 2.0]	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 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 v7.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 NOT 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 [Expresspay 2.0]	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

1.7.5 Cardholder Verification Method List - A000000291010

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

1.7.6 Application Tag data (Contact Interface, online) - A000000291010

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 5353 - 'AMERICAN EXPRESS'	
57	Track 2 Equivalent Data	37 42 45 00 10 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	44 45 56 20 43 41 4E 2F 54 65 73 74 20 43 61 72 64 20 30 37 20 20 20 20 20 20 - 'DEV CAN/Test Card 07'	
5F 24	Application Expiration Date	24 12 31	
5F 25	Application Effective Date	xx xx xx	

Tag	Element name	Data	Card v7.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	18 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 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	BC 50 EC A8 00	
9F 0E	Issuer Action Code - Denial	00 00 00 00 00	
9F 0F	Issuer Action Code - Online	BC 78 FC F8 00	
9F 10	Issuer Application Data [AEIPS 4.2]	xx xx 01 xx xx xx xx *	
9F 11	Issuer Code Table Index	01	
9F 12	Application Preferred Name	41 6D 65 72 69 63 61 6E 20 45 78 70 72 65 73 73 - 'American Express'	
9F 13	Last Online Application Transaction Counter (ATC) Register	xx xx *	
9F 17	Personal Identification Number (PIN) Try Counter	09	
9F 26	Application Cryptogram (AC)	xx xx xx xx xx xx xx xx *	
9F 27	Cryptogram Information Data (CID)	80	
9F 36	Application Transaction Counter (ATC)	xx xx *	
9F 38	Processing Options Data Object List (PDOL)	9F 35 01	
9F 42	Application Currency Code	01 24	- CAD

* Tag value changes with card usage

1.8 Test Card 08 - 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.

1.8.1 Cardholder Verification Method List

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

1.8.2 Application Tag data (Contact Interface, online)

Tag	Element name	Data	Card v8.x
50	Application Label	44 49 53 43 4F 56 45 52 -	'DISCOVER'
57	Track 2 Data [Discover]	65 10 00 00 00 00 02 16 D2 31 22 01 10 00 07 49 00 00 0F	
5A	Application Primary Account Number (PAN)	65 10 00 00 00 00 02 16	
5F 20	Cardholder Name	44 45 56 20 43 41 4E 2F 54 65 73 74 20 43 61 72 64 20 30 38 20 20 20 20 20 20 - 'DEV CAN/Test Card 08'	
5F 24	Application Expiration Date	23 12 31	
5F 25	Application Effective Date	xx xx xx	
5F 28	Issuer Country Code	08 40 - USA	
5F 2D	Language Preference	65 6E - '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 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 v8.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	43 72 65 64 69 74 - 'Credit'	
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 4D	Transaction Log Entry	0B 0A	
9F 4F	Transaction Log Format	9F 02 06 5F 2A 02 9A 03 9F 36 02 9F 34 03 9F 52 06 9F 1A 02 95 05 9C 01 8A 02 9F 37 04 9F 03 06 9F 53 08 9F 66 04 9F 71 02 9F 6C 02	
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 4B	
C7	Card Action Code - Online [DPAS]	F6 7F	
D0	Issuer Application Data ObjectList (IADOL) [DPAS]		
D2	CRM Country Code [DPAS]	08 40 - USA	
D3	CRM Currency Code [DPAS]	08 40 - USD	
DF 20	Transaction Profile Objects(TPO0) [DPAS]	00 18 00 08 01 01 00 18 01 02 01 00 01 00 F6 7F 22 4B 00	

* Tag value changes with card usage

1.8.3 Cardholder Verification Method List (CL)

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

1.8.4 Application Tag data (Contactless Interface, online)

Tag	Element name	Data	Card v8.x
50	Application Label	44 49 53 43 4F 56 45 52 20 43 4C - 'Discover CL'	
57	Track 2 Data [Discover]	65 10 00 00 00 00 02 16 D2 31 22 01 10 00 07 49 00 00 0F	
5A	Application Primary Account Number (PAN)	65 10 00 00 00 00 02 16	
5F 20	Cardholder Name	44 45 56 20 43 41 4E 2F 54 65 73 74 20 43 61 72 64 20 30 38 20 20 20 20 20 20 - 'DEV CAN/Test Card 08'	
5F 24	Application Expiration Date	23 12 31	
5F 25	Application Effective Date	xx xx xx	
5F 28	Issuer Country Code	08 40 - USA	
5F 2D	Language Preference	65 6E - '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 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	
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 *	
9F 11	Issuer Code Table Index	01	

Tag	Element name	Data	Card v8.x
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 6C 02	
9F 6C	Card Transaction Qualifiers [DPAS]	00 00	
9F 71	Card Processing Requirements [DPAS]	00 0F BYTE 1 (Transient Data): b8 - Online PIN NOT required b7 - Signature NOT required b6 - PID Limit NOT reached b5 - Consumer Device CVM NOT performed 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	
D0	Issuer Application Data ObjectList (IADOL) [DPAS]		

Tag	Element name	Data	Card v8.x
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	
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

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				