



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

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Revision History

Version	Date	Updated By	Revisions
5.50	August 25, 2016	B2PS	Initial document release
5.60	Sept. 21, 2017	B2PS	<ul style="list-style-type: none">• TC15: Card v6.0 has 2-byte Kernel ID
6.00	December 27, 2017	B2PS	<ul style="list-style-type: none">• TC04 - New version v6.0: Discretionary data updated (CVV)• TC07 - 'Approval Amount' updated.• TC15 - New version v7.0: Increased contactless facility, 'Approval Amount' updated.
6.10	January 5, 2018	B2PS	<ul style="list-style-type: none">• TC12, TC13 - EMV Tags for A0000000291010 added
6.20	April 11, 2018	B2PS	<ul style="list-style-type: none">• TC11 - Profile table Service code corrected.
7.00	October 4, 2018	B2PS	<ul style="list-style-type: none">• All cards - Tags 82, 9F07, 9F69 expanded & interpreted• Amex cards (TC12, TC13, TC14) - Expiry date changed to 24/12• Discover cards (TC15, TC16) - Expiry date changed to 23/12



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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 - UL UAT Canada EMV Test Card Set Profiles

This User Acceptance Test (UAT) Canada EMV Test Card Set contains 16 cards with at least one card from each of the following card brands.



	Test Card 01	Test Card 02	Test Card 03
Brand	Visa	Visa	Visa
Type	Credit	Credit	Credit
Description	Offline Capable	USA Signature	No CVM
IIN	-	-	-
AID	A0000000031010	A0000000031010	A0000000031010
PAN	4761 7390 0101 0119	4761 7390 0101 0119	4761 7390 0101 0010
Expiry Date	12/2022	12/2022	12/2022
Service Code	201	201	201
Interface	Contact, Contactless, MSR	Contact, MSR	Contact, MSR
CVM	See card definition	See card definition	See card definition
Approval Amount	\$10.00	\$10.00	\$10.00
Issuer Country Code	124 – Canada	840 - USA	840 - USA
Application Currency Code	124 - CAD	840 - USD	840 - USD
Language	'en' – English	'en' – English	'en' – English
Card Version	v5.0	v5.0	v5.0



	Test Card 04	Test Card 05	Test Card 06
Brand	Visa	MasterCard	MasterCard
Type	Credit	Credit	Credit
Description	Fallback	Credit	MasterCard
IIN	-	-	-
AID	-	A0000000041010	A0000000041010
PAN	4761 7390 0101 0267	5413 3300 8960 4111	5413 3300 8960 4111
Expiry Date	12/2022	12/2022	12/2022
Service Code	201	201	201
Interface	MSR	Contact, Contactless, MSR	Contact, Contactless, MSR
CVM	See card definition	See card definition	See card definition
Approval Amount	\$10.00	\$20.00	\$20.00
Issuer Country Code	-	124 - Canada	124 - Canada
Application Currency Code	-	124 - CAD	124 - CAD
Language	-	'en' – English	'fr' – French
Card Version	v6.0	v5.0	v5.0

	Test Card 07	Test Card 08	Test Card 09
Brand	MasterCard	MasterCard	MasterCard
Type	Credit	Credit	Credit
Description	ARPC Failure	Fallback	Fallback
IIN	-	-	-
AID	A0000000041010	-	-
PAN	5413 3300 8902 0011	5413 3300 8902 0029	5413 3300 8902 0011
Expiry Date	12/2022	12/2022	12/2022
Service Code	201	201	601
Interface	Contact, MSR	MSR	MSR
CVM	See card definition	See card definition	See card definition
Approval Amount	\$120.00	\$20.00	\$20.00
Issuer Country Code	840 - USA	-	840 - USA
Application Currency Code	840 - USD	-	840 - USD
Language	'en' – English	-	'en' – English
Card Version	v5.0	v5.0	v5.0



	Test Card 10	Test Card 11	Test Card 12
Brand	Interac	Interac	American Express
Type	Debit	Debit	Credit
Description	Canadian Debit	Canadian Debit	Online Only
IIN			-
AID	A0000002771010	A0000002771010	A00000025010402, A000000291010
PAN	4506 4450 0693 1933	4506 4450 0693 1933	3742 450017 51006
Expiry Date	12/2022	12/2022	12/2024
Service Code	201	220	201
Interface	Contact, MSR	Contact, MSR	Contact, Contactless, MSR
CVM	See card definition	See card definition	See card definition
Approval Amount	\$10.00	\$10.00	\$68.00
Issuer Country Code	124 – Canada	124 – Canada	124 - Canada
Application Currency Code	124 - CAD	124 - CAD	124 - CAD
Language	'en' – English	'fr' – French	'en' – English
Card Version	v5.0	v5.0	v6.0

	Test Card 13	Test Card 14	Test Card 15
Brand	American Express	American Express	Discover
Type	Credit	Credit	Credit
Description	Amex Credit	Fallback	Discover Credit
IIN	-	-	-
AID	A00000025010402, A000000291010	-	A0000001523010
PAN	3742 450027 71003	3742 450037 31006	6510 0000 0000 0216
Expiry Date	12/2024	12/2024	12/2023
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	\$1.03	\$36.00	\$79.00
Issuer Country Code	124 – Canada	-	840 - USA
Application Currency Code	124 - CAD	-	840 - USD
Language	'en' – English	-	'en' – English
Card Version	v6.0	v6.0	v8.0



	Test Card 16
Brand	Discover
Type	Credit
Description	Fallback
IIN	-
AID	-
PAN	6510 0000 0000 0331
Expiry Date	12/2023
Service Code	201
Interface	MSR
CVM	See card definition
Approval Amount	\$26.00
Issuer Country Code	-
Application Currency Code	-
Language	-
Card Version	v6.0



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 value changes with card usage

Tag	Element name	Data	Card v5.0
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	55 41 54 20 43 41 4E 2F 54 65 73 74 20 43 61 72 64 20 30 31 20 20 20 20 20 20 - 'UAT CAN/Test Card 01'	
5F 24	Application Expiration Date	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 [VSDC]	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 - Mag-stripe mode 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 v5.0
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 04 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	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 v5.0
9F 46	ICC Public Key Certificate	5A BC F3 59 B3 31 9E A4 90 C6 F8 55 E5 6D 54 10 70 46 D7 54 81 01 6C 7C CD AF 4F 84 A6 57 9C 4C 70 9E 41 41 5D F2 7E AD 5D 2B 30 59 1C AF 14 C2 37 EA 95 EC EF 71 A8 AF 62 57 12 EE 73 2B A5 2B 06 15 8B 43 4D F5 4D 77 97 A8 86 0E 17 FD EB 8B D8 DD 58 84 69 72 A6 B2 22 E8 38 79 CF 65 61 80 9D B1 89 22 35 05 F1 6A 6D 80 41 3D 91 2A 1C A3 47 F5 EB 8A 26 C3 CC D2 B2 74 42 70 01 90 1F BF 04 C9 25 A5 FE 4E F1 50 A2 94 B4 62 44 94 51 AA 8A 70 B2 77 27 58 EB 48 C8 77 65 AC 36 F2 BF FE B8 88 51 3D B3 7B 32 14 5C FB 59 8F 0D 6B C2 53	
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	80 BB D1 B8 52 AC 40 17 0D 5B D3 B6 BB 98 1B AA CD 57 D9 2C 17 9A F9 E9 AC 54 68 9D 90 58 38 8A 63 51 25 EE 7F 34 52 85 97 0F 49 51 37 6C 6D 03 71 24 93 11 E8 87 73 5D 1F 7C 96 0B 9C 55 88 54 81 38 BA AD F3 B1 A1 43 BD 1C 30 B9 E9 72 1A 96 2E 3F CC 39 EB C8 07 8B 0B 2A 2B 15 3D F9 FA 10 9F 64 9A 82 1A D9 F6 63 81 06 02 A1 60 69 A1 4A 9C A6 45 4C A1 72 45 20 A8 B4 D0 62 60 A7 88 D5	
9F 51	Application Currency Code [VSDC]	01 24	
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 - Canada	
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 03 DF 21 01 03 DF 31 01 07	
BF 57	International Counters Data Template	DF 11 01 03 DF 21 01 03 DF 31 01 07 DF 51 01 06 DF 61 01 03	



Tag	Element name	Data	Card v5.0
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	

1.1.3 Application Tag data (Contactless Interface, online)

* Tag value changes with card usage

Tag	Element name	Data	Card v5.0
50	Application Label	56 49 53 41 20 43 52 45 44 49 54	
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 05 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 v5.0
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	8B 75 C4 3E 79 B1 6F B0 D8 85 FC 9F D0 60 9D BB C3 D0 8C E6 63 7B 89 50 8E 3A 8D 2F DF AD 37 C9 A0 C7 9B 8D 26 1A E4 19 34 3D 8E F2 AF C3 D9 94 53 CB 34 8F A4 06 37 37 E8 79 3D 26 81 17 EA 18 E4 C9 E7 B4 F2 0A 37 62 D4 4D B2 05 C1 1F 7A AB 62 AD 67 65 29 89 FC 40 5C C8 89 48 27 0B 2F C5 FA A7 98 90 9D 7B DF 93 91 BD 2B AD A8 6F B9 AA 2D DE 6B 7A CD 4D B5 64 B0 87 3D DC 2A DB 0F DF 1D 91 6A 8C 59 36 A8 15 8A 0D CE 41 40 96 F5 BA F8 68 08 2E B5 3C D7 DE 78 F6 D9 35 F8 28 4B 7F BF 8D CA 9D 1C F1 74 3F B8 0B 4B DC 5C 11 75 40	
9F 47	ICC Public Key Exponent	03	
9F 4A	Static Data Authentication Tag List	82	
9F 4B	Signed Dynamic Application Data	88 B9 0E 24 01 5C AF 2B CD 6B 99 5F EE FC BD 66 B1 CF 6A D2 6A DD 75 BE 15 30 95 2C 30 D3 17 32 00 57 99 A7 2A 1F BF 44 3F 5F 1F AB 2B 92 DA D0 CF 8B BF C3 43 48 BA A4 CC 23 0C BD B0 FB D6 B8 67 0F 6C 38 1F 82 B3 A7 23 35 56 10 67 C1 2F DC B2 6C 67 F4 01 9D C9 E1 9A F5 08 7B 9B 5F D3 8B 17 F1 CB D0 77 0A 08 7F B8 A7 5A 24 BC CF D2 92 15 4A C6 C2 E4 F9 49 3D 86 9B 55 BE 7D 5C 15 B9	
9F 51	Application Currency Code [VSDC]	01 24 - Canada	
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 - Canada	
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 v5.0
9F 69	Card Authentication Related Data [qVSDC]	01 19 2B 03 9E 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 - 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 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	
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	

1.2 Test Card 02 – Visa, Credit, English, USA, USD

A Visa debit card with two AIDs, Issuer Country Code of 'USA' and Currency Code of 'USD'. The recommended transaction amount to generate a host approval is \$10.00.

1.2.1 Cardholder Verification Method List

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



1.2.2 Application Tag data

* Tag value changes with card usage

Tag	Element name	Data	Card v5.0
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	55 41 54 20 43 41 4E 2F 54 65 73 74 20 43 61 72 64 20 30 32 20 20 20 20 20 20 - 'UAT CAN/Test Card 02'	
5F 24	Application Expiration Date	22 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 [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 using External Auth command b1 - Combined DDA / GEN AC NOT supported BYTE 2: b8 - Mag-stripe mode NOT supported b7 - Is NOT Mobile handset	
84	Dedicated File (DF) Name	A0 00 00 00 03 10 10	
87	Application Priority Indicator	01	
8C	Card Risk Management Data Object List 1 (CDOL1)	9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04	
8D	Card Risk Management Data Object List 2 (CDOL2)	8A 02 9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04	
8E	Cardholder Verification Method (CVM) List	00 00 00 00 00 00 00 00 42 01 42 04 5E 03 1F 00	
8F	Certification Authority Public Key Index	92	
90	Issuer Public Key Certificate	3C 96 F7 65 8F BC 29 A2 02 F1 91 46 BD E9 21 66 B0 F6 22 1B BC CB 02 E3 26 71 0B 9E 22 9D 16 FA E9 AD 0C 87 4C 06 85 91 6E 19 F0 E3 26 93 EE 20 1B CE 23 59 50 9A 6D 65 72 F8 EC 3F C3 73 12 6B 34 3F 9C B8 15 3D 61 B7 EA B2 D4 2D E1 9D 56 08 31 85 A0 3D D1 4C 26 8D 40 DF 08 35 C5 5E AB FA 38 ED 28 BC E4 2C D0 01 3D A9 4F 80 05 18 B7 53 C2 46 EF FB A0 8F D2 02 9B AD 5D FC F0 DA F0 7B 7D 80 1C 46 5F FD 25 2C 70 B9 21 53 B3 30 D9 5D CA 2F A1 FA AE 2D 01 68 A4 EA 8B 47 5C D8 05 DC 32 AA 96 4C 17 BF CD 2C D5 D0 30 9A B0 EA 76 1B	



Tag	Element name	Data	Card v5.0
92	Issuer Public Key Remainder	50 DA 20 DD A8 95 3B 69 3F ED 84 36 68 31 BA 1E EA 97 F7 8F 79 2A CF 8C B9 8F DF 01 49 A7 B7 8F DA 1C 49 67	
93	Signed Static Application Data	4D 6E 72 DC CA 7A CA 6F 3C 0D 54 3F 68 28 14 CC E5 3C F7 82 41 D5 17 BF BE 88 0C B4 FC 50 0A 4D D5 34 24 D9 DA 04 04 23 FC 20 32 67 05 08 81 D3 0A 69 91 4E 65 15 FA DB 14 6C 0F CA 5B DC B3 88 69 94 38 41 1B D2 E6 10 EA 31 77 7B 72 AF A2 18 EE 16 88 B1 30 9A 45 4A 3B 2E 5A 26 AD 0A 44 5A 73 E2 C9 21 14 92 9F 19 2F 10 30 20 AD 08 B1 C6 BE 49 5E E9 9B BA 82 57 35 B3 6A 97 BF 81 90 8D 73 A4 20 E1 AF DB FE 45 BF F6 93 C1 C0 3C 6D A9 C2 95 8D 97 6A 22 09 1A 92 3B D5 1C BB 17 47 C5 4D 31 2B C4 4F 74 FD 24 20 ED A1 35 F6 A7 3C A7	
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	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 96	
9F 0D	Issuer Action Code - Default	B0 50 80 88 00	
9F 0E	Issuer Action Code - Denial	00 00 00 00 00	
9F 0F	Issuer Action Code - Online	B0 50 80 98 00	
9F 10	Issuer Application Data [VSDC]	xx xx 0A xx xx xx xx *	
9F 11	Issuer Code Table Index	01	
9F 12	Application Preferred Name	56 69 73 61 20 43 72 65 64 69 74 - 'Visa Credit'	
9F 13	Last Online Application Transaction Counter (ATC) Register	xx xx *	
9F 17	Personal Identification Number (PIN) Try Counter	09	
9F 1F	Track 1 Discretionary Data	31 31 34 33 38 30 34 34 30 30 30 30 30 30 30 30 30 30 30 30 30 30 30 30	
9F 26	Application Cryptogram (AC)	xx xx xx xx xx xx xx xx *	
9F 27	Cryptogram Information Data (CID)	80	
9F 32	Issuer Public Key Exponent	03	
9F 36	Application Transaction Counter (ATC)	xx xx *	
9F 44	Application Currency Exponent	02	



Tag	Element name	Data	Card v5.0
9F 46	ICC Public Key Certificate	AA BA FF 3C 5D B9 33 BD 77 0A 3F 7D A3 6C 12 CE 99 55 E3 AD EA 78 A9 92 31 4C 1D 8E D2 1A 2C B9 F7 B1 7D 55 0A 16 FF AA 52 16 59 0F 35 1A ED B2 6C E3 01 10 3A 7D 45 D1 2B 59 B3 A5 CE 3D 1A 83 AA 36 AD AC E9 BA AB 6D 51 B7 62 FA D1 6A B8 0B E6 D2 8F 5E 68 97 77 AA B2 71 2E 86 83 6C 9A 36 02 6B AF 50 A1 8D DE F6 10 39 16 AE 59 33 07 F2 E6 A6 65 B5 41 C9 49 BE 81 9B CE E9 C8 06 C1 4F 97 CC 5E B1 55 6D 17 76 39 F0 DE 90 68 BF AF 38 15 6F 94 BD 78 97 3B 4B 25 96 3F FC F7 91 3E 4A D8 7D B3 54 49 21 C0 DF 7D FA 95 30 38 8D 17 7A	
9F 47	ICC Public Key Exponent	03	
9F 49	Dynamic Data Authentication Data Object List (DDOL)	9F 37 04	
9F 4A	Static Data Authentication Tag List	82	
9F 51	Application Currency Code [VSDC]	08 40 - USA	
9F 52	Application Default Action [VSDC VIS 1.5]	C0 00 00 00 00 00	
9F 53	Consecutive Transaction Limit (International) [VSDC]	00	
9F 54	Cumulative Total Transaction Amount Limit [VSDC]	00 00 00 00 00 00	
9F 56	Issuer Authentication Indicator [VSDC]	80	
9F 57	Issuer Country Code [VSDC]	08 40 - USA	
9F 58	Consecutive Transaction Counter Limit [VSDC]	00	
9F 59	Consecutive Transaction Counter Upper Limit [VSDC]	00	
9F 5C	Cumulative Total Transaction Amount Upper Limit [VSDC]	00 00 00 00 00 00	
9F 5E	Consecutive Transaction International Upper Limit [VSDC]	00	
9F 68	Card Additional Processes [qVSDC VCPS 2.1]	10 00 D0 00	
9F 6D	VLP Reset Threshold [VSDC]	00 00 00 00 00 00	
9F 77	VLP Funds Limit [VSDC]	00 00 00 00 00 00	
9F 78	VLP Single Transaction Limit [VSDC]	00 00 00 00 00 00	
9F 79	VLP Available Funds [VSDC]	00 00 00 00 00 00	
BF 55	Contactless Counters Data Template	DF 61 06 00 00 00 00 00 00 DF 71 06 00 00 00 00 00 00 DF 41 06 00 00 00 00 00 00 DF 51 06 00 00 00 00 00 00 DF 11 01 00 DF 21 01 00 DF 31 01 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 02	
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	
BF 5B	Application Internal Data Template	DF 01 02 00 00	



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

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

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

1.3.1 Cardholder Verification Method List

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

1.3.2 Application Tag data

* Tag value changes with card usage

Tag	Element name	Data	Card v5.0
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 00 10 D2 21 22 01 11 43 80 44 00 00 0F	
5A	Application Primary Account Number (PAN)	47 61 73 90 01 01 00 10	
5F 20	Cardholder Name	55 41 54 20 43 41 4E 2F 54 65 73 74 20 43 61 72 64 20 30 33 20 20 20 20 - 'UAT CAN/Test Card 03'	
5F 24	Application Expiration Date	22 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 [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 using External Auth command b1 - Combined DDA / GEN AC NOT supported BYTE 2: b8 - Mag-stripe mode NOT supported b7 - Is NOT Mobile handset	
84	Dedicated File (DF) Name	A0 00 00 00 03 10 10	
87	Application Priority Indicator	01	
8C	Card Risk Management Data Object List 1 (CDOL1)	9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04	
8D	Card Risk Management Data Object List 2 (CDOL2)	8A 02 9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04	
8E	Cardholder Verification Method (CVM) List	00 00 00 00 00 00 00 00 1F 00	
8F	Certification Authority Public Key Index	92	



Tag	Element name	Data	Card v5.0
90	Issuer Public Key Certificate	3C 96 F7 65 8F BC 29 A2 02 F1 91 46 BD E9 21 66 B0 F6 22 1B BC CB 02 E3 26 71 0B 9E 22 9D 16 FA E9 AD 0C 87 4C 06 85 91 6E 19 F0 E3 26 93 EE 20 1B CE 23 59 50 9A 6D 65 72 F8 EC 3F C3 73 12 6B 34 3F 9C B8 15 3D 61 B7 EA B2 D4 2D E1 9D 56 08 31 85 A0 3D D1 4C 26 8D 40 DF 08 35 C5 5E AB FA 38 ED 28 BC E4 2C D0 01 3D A9 4F 80 05 18 B7 53 C2 46 EF FB A0 8F D2 02 9B AD 5D FC F0 DA F0 7B 7D 80 1C 46 5F FD 25 2C 70 B9 21 53 B3 30 D9 5D CA 2F A1 FA AE 2D 01 68 A4 EA 8B 47 5C D8 05 DC 32 AA 96 4C 17 BF CD 2C D5 D0 30 9A B0 EA 76 1B	
92	Issuer Public Key Remainder	50 DA 20 DD A8 95 3B 69 3F ED 84 36 68 31 BA 1E EA 97 F7 8F 79 2A CF 8C B9 8F DF 01 49 A7 B7 8F DA 1C 49 67	
93	Signed Static Application Data	72 74 01 9E 66 53 61 FB 61 2C BF 71 37 13 28 AE 83 02 28 26 54 F6 7D 32 09 17 E4 3B 40 39 73 17 EC 81 21 04 7D 1F A2 E1 DA 4F 01 7E 10 D2 7A C4 33 BD AE 2D 9B C3 3C B8 E8 B8 6F 32 D9 78 D4 14 32 DC C9 E2 BD 7A 5A EF 96 F2 EF 9D 6E 14 0D A1 A9 8D AB 82 BD E8 AC A0 2B 69 64 88 97 FA 3D A9 C1 05 3B 89 1F 11 33 8D BE CD 3D F2 2D CC 82 C8 76 F8 28 0E 7C 67 88 D9 3C 8D 32 38 F8 E5 87 97 8C 32 EE 67 BA 64 93 93 0A 0B F2 97 E1 7F 74 82 29 98 2F 17 A4 2F 5D B8 E8 A9 A5 2C C4 17 2D D3 B3 9E 34 F8 B2 E1 B2 43 84 1A 0A 68 31 20 0A 97	
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	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 96	
9F 0D	Issuer Action Code - Default	B0 50 80 88 00	
9F 0E	Issuer Action Code - Denial	00 00 00 00 00	
9F 0F	Issuer Action Code - Online	B0 50 80 98 00	
9F 10	Issuer Application Data [VSDC]	xx xx 0A xx xx xx xx *	
9F 11	Issuer Code Table Index	01	
9F 12	Application Preferred Name	56 69 73 61 20 43 72 65 64 69 74 - 'Visa Credit'	



Tag	Element name	Data	Card v5.0
9F 13	Last Online Application Transaction Counter (ATC) Register	xx xx *	
9F 17	Personal Identification Number (PIN) Try Counter	09	
9F 1F	Track 1 Discretionary Data	31 31 34 33 38 30 34 34 38 39 30 30 30 30 30 30 30 30 30 30 30 30 30 30	
9F 26	Application Cryptogram (AC)	xx xx xx xx xx xx xx xx *	
9F 27	Cryptogram Information Data (CID)	80	
9F 32	Issuer Public Key Exponent	03	
9F 36	Application Transaction Counter (ATC)	xx xx *	
9F 44	Application Currency Exponent	02	
9F 46	ICC Public Key Certificate	68 5B 24 56 F5 00 1D E2 EF 1B AE 78 77 D5 D4 8E CD F8 1C ED 9C 53 CB E2 59 80 EC 6F C5 06 FA 2A FF 01 A9 35 1B 82 F0 39 E0 04 6A A2 8C AB 2B 64 26 29 AD AF 61 1C 5E 85 96 16 BB 4A 78 EE DB F1 02 52 D8 51 AC 40 14 F9 F9 45 BA D1 71 AD 2B 00 27 01 FA 60 6C F8 17 B3 A8 D5 CC CF F7 DE 2E FC 76 C2 06 80 DC 41 2C BC 55 84 38 B9 47 E9 AB B6 54 44 D2 E7 C5 EC F2 CD 2A 77 D9 B5 96 32 0D B6 0F B3 58 C9 70 DF BB 8B F2 A0 9E 32 CD 18 9F 14 72 6C CD 4C 47 41 B9 9B E5 A4 A5 92 51 0E 1B B6 19 99 29 C6 70 DD 47 2E 34 88 AD DA 2C C5 A2 E6	
9F 47	ICC Public Key Exponent	03	
9F 49	Dynamic Data Authentication Data Object List (DDOL)	9F 37 04	
9F 4A	Static Data Authentication Tag List	82	
9F 51	Application Currency Code [VSDC]	08 40 - USD	
9F 52	Application Default Action [VSDC VIS 1.5]	C0 00 00 00 00 00	
9F 53	Consecutive Transaction Limit (International) [VSDC]	00	
9F 54	Cumulative Total Transaction Amount Limit [VSDC]	00 00 00 00 00 00	
9F 56	Issuer Authentication Indicator [VSDC]	80	
9F 57	Issuer Country Code [VSDC]	08 40 - USA	
9F 58	Consecutive Transaction Counter Limit [VSDC]	00	
9F 59	Consecutive Transaction Counter Upper Limit [VSDC]	00	
9F 5C	Cumulative Total Transaction Amount Upper Limit [VSDC]	00 00 00 00 00 00	
9F 5E	Consecutive Transaction International Upper Limit [VSDC]	00	
9F 68	Card Additional Processes [qVSDC VCPS 2.1]	10 00 D0 00	
9F 6D	VLP Reset Threshold [VSDC]	00 00 00 00 00 00	
9F 77	VLP Funds Limit [VSDC]	00 00 00 00 00 00	
9F 78	VLP Single Transaction Limit [VSDC]	00 00 00 00 00 00	
9F 79	VLP Available Funds [VSDC]	00 00 00 00 00 00	



Tag	Element name	Data	Card v5.0
BF 55	Contactless Counters Data Template	DF 61 06 00 00 00 00 00 00 00 DF 71 06 00 00 00 00 00 00 00 DF 41 06 00 00 00 00 00 00 00 DF 51 06 00 00 00 00 00 00 00 DF 11 01 00 DF 21 01 00 DF 31 01 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 02	
BF 58	Amounts Data Template	DF 11 06 00 00 00 00 00 00 00 DF 21 06 00 00 00 00 00 00 00 DF 31 06 00 00 00 00 00 00	
BF 5B	Application Internal Data Template	DF 01 02 00 00	

1.4 Test Card 04 – 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.

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

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

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

1.5.1 Cardholder Verification Method List

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

1.5.2 Application Tag data (Contact Interface, online)

* Tag value changes with card usage

Tag	Element name	Data	Card v5.0
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 21 22 01 01 23 40 91 72 02 9F	
5A	Application Primary Account Number (PAN)	54 13 33 00 89 60 41 11	



Tag	Element name	Data	Card v5.0
5F 20	Cardholder Name	55 41 54 20 43 41 4E 2F 54 65 73 74 20 43 61 72 64 20 30 35 20 20 20 20 20 20 - 'UAT CAN/Test Card 05'	
5F 24	Application Expiration Date	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 [M/Chip, PayPass]	18 00 BYTE 1: b7 - Offline SDA NOT supported b6 - Offline DDA NOT supported b5 - Cardholder verification supported b4 - Terminal risk mgmt to be performed b3 - Issuer authentication NOT supported using External Auth command b2 - On device Cardholder verification NOT supported b1 - Combined DDA / GEN AC NOT supported BYTE 2: b8 - EMV mode NOT supported	
84	Dedicated File (DF) Name	A0 00 00 00 04 10 10	
87	Application Priority Indicator	01	
8C	Card Risk Management Data Object List 1 (CDOL1)	9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04 9F 35 01 9F 45 02 9F 4C 08 9F 34 03	
8D	Card Risk Management Data Object List 2 (CDOL2)	91 0A 8A 02 95 05 9F 37 04 9F 4C 08	
8E	Cardholder Verification Method (CVM) List	00 00 00 00 00 00 00 00 42 01 5E 03 1F 03	
8F	Certification Authority Public Key Index	FA	
90	Issuer Public Key Certificate	18 89 B9 97 E6 FC E8 4B 4A E7 AB 87 43 1C BD B3 DF 8C 1D 5A 55 A7 F6 0D 29 59 AF 3A 51 04 E7 58 83 17 ED 74 08 66 68 CF 1A 05 47 84 F7 49 3C 6D 74 7F A7 96 EC 14 D3 33 A6 8E C7 E0 08 62 95 9A 0B D0 F0 48 20 80 B7 1A C1 B7 62 5B 1B 8B 1F 35 A6 69 19 99 BA 78 F5 92 E2 3F 95 E9 96 09 D1 08 CF 1C 0E 30 8A 8B F6 4F BD E8 37 D3 CE 13 8A 50 DC 50 AF 4B 41 EE 53 D9 8A 11 B6 A8 1D DD 44 CC 43 0C 1E F3 BB 9D 1D 75 A0 2F AA 9C 81 4A FC 58	
92	Issuer Public Key Remainder	D3 52 41 07	
94	Application File Locator (AFL)	08 02 04 01 18 01 01 00 20 01 01 00	



Tag	Element name	Data	Card v5.0
9F 07	Application Usage Control	FF 00 BYTE 1: b8 - Domestic cash trans. valid b7 - Int'l cash transactions valid b6 - Domestic goods valid b5 - International goods valid b4 - Domestic services valid b3 - International services valid b2 - ATMs valid b1 - non-ATM terminals valid BYTE 2: b8 - Domestic cashback NOT allowed b7 - International cashback NOT allowed	
9F 08	Application Version Number	00 02	
9F 0D	Issuer Action Code - Default	B0 50 9C 80 00	
9F 0E	Issuer Action Code - Denial	00 00 00 00 00	
9F 0F	Issuer Action Code - Online	B0 70 9C 98 00	
9F 10	Issuer Application Data [M/Chip 4]	xx 10 xx xx xx xx xx xx xx xx xx xx xx xx xx xx xx xx *	
9F 11	Issuer Code Table Index	01	
9F 12	Application Preferred Name	4D 61 73 74 65 72 43 61 72 64 - 'MasterCard'	
9F 14	Lower Consecutive Offline Limit	00	
9F 17	Personal Identification Number (PIN) Try Counter	03	
9F 1F	Track 1 Discretionary Data	30 31 32 33 34 30 39 31 37 32 30 30 30 30 30 30 30 30 30 30 30 30 30 30	
9F 23	Upper Consecutive Offline Limit	00	
9F 26	Application Cryptogram (AC)	xx xx xx xx xx xx xx xx *	
9F 27	Cryptogram Information Data (CID)	80	
9F 32	Issuer Public Key Exponent	03	
9F 36	Application Transaction Counter (ATC)	xx xx *	
9F 42	Application Currency Code	01 24 - CAD	
9F 44	Application Currency Exponent	02	
9F 46	ICC Public Key Certificate	5B E6 A9 9C 35 CD 6E 6C DE BB 38 15 43 13 B1 83 36 6A BA F0 6F 70 DB 26 8C 15 79 F7 A5 EB E0 53 06 E2 65 18 D9 55 64 92 DC BB 57 24 DA C6 2A C9 BD 27 78 54 89 3D 51 9B 40 27 39 71 44 0E 18 A4 C5 DD 8C 00 4D 3D 62 08 4F 03 F5 DC 33 1A 58 4D C9 58 A9 06 D2 5B C2 7C 8E B2 8D E3 98 13 E5 8C F9 89 8A 92 0F 80 21 BC 8D E1 3F 04 9F DE F1 3A	
9F 47	ICC Public Key Exponent	03	
9F 48	ICC Public Key Remainder	23 5C DB 71 63 5D 44 EC ED 02 7E 8A BC 03 27 14 11 6A 00 E9 2E C1 83 DE 65 AA 31 BA 99 04 E7 21 36 7A AB DF EC E0 5C 04 31 97	
9F 49	Dynamic Data Authentication Data Object List (DDOL)	9F 37 04	
9F 4A	Static Data Authentication Tag List	82	
9F 4D	Transaction Log Entry	0B 0A	
9F 4F	Transaction Log Format	9F 27 01 9F 02 06 5F 2A 02 9A 03 9F 36 02 9F 52 06	



Tag	Element name	Data	Card v5.0
9F 6E	Third Party Data [MasterCard]	08 40 00 00 30 30 00	
9F 7E	Application Life Cycle Data [MasterCard]	03 10 0C 12 00 09 00 00 FF 00 04 00 00 02 60 00 00 38 4A 02 11 50 35 43 44 30 37 32 20	
C3	Card Issuer Action Code - Decline [MasterCard]	00 00 00	
C4	Card Issuer Action Code - Default [MasterCard]	46 58 00	
C5	Card Issuer Action Code - Online [MasterCard]	06 F8 00	
C6	Counters [MasterCard]	00 03 00 00 00 00 00 00 00 00	
C7	CDOL1 Related Data Length [MasterCard]	2B	
C8	CRM Country Code [MasterCard]	01 24 - Canada	
C9	CRM Currency Code [M/Chip4]	01 24 - CAD	
CA	Lower Cumulative Offline Transaction Amount [M/Chip]	00 00 00 00 00 00	
CB	Upper Cumulative Offline Transaction Amount [M/Chip]	00 00 00 00 00 00	
CD	Card Issuer Action Code - Default [PayPass M/Chip]	00 58 00	
CE	Card Issuer Action Code - Online [PayPass M/Chip]	00 F8 00	
CF	Card Issuer Action Code - Denial [PayPass M/Chip]	00 00 00	
D1	Currency Conversion Table [M/Chip]	01 24 00 01 00 01 24 00 01 00 01 24 00 01 00 01 24 00 01 00 01 24 00 01 00	
D3	Additional Check Table [MasterCard]	00 00 00 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF	
D5	Application Control [M/Chip]	C4 00	
D6	Default ARPC Response Code [M/Chip4]	00 12	
D7	Application Control [PayPass M/Chip]	40 00 40	
DF 02	Security Limits Status [MasterCard]	00	

1.5.3 Cardholder Verification Method List (CL)

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

1.5.4 Application Tag data (Contactless Interface, online)

* Tag value changes with card usage

Tag	Element name	Data	Card v5.0
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 32 31 32 32 30 31 30	



Tag	Element name	Data	Card v5.0
57	Track 2 Equivalent Data	54 13 33 00 89 60 41 11 D2 21 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	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 34	Application PAN Sequence Number	01	
82	Application Interchange Profile [M/Chip, PayPass]	19 80 BYTE 1: b7 - Offline SDA NOT supported b6 - Offline DDA NOT supported b5 - Cardholder verification supported b4 - Terminal risk mgmt to be performed b3 - Issuer authentication NOT supported using External Auth command b2 - On device Cardholder verification NOT supported b1 - Combined DDA / GEN AC supported BYTE 2: b8 - M/Chip 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	
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	FA	
90	Issuer Public Key Certificate	18 89 B9 97 E6 FC E8 4B 4A E7 AB 87 43 1C BD B3 DF 8C 1D 5A 55 A7 F6 0D 29 59 AF 3A 51 04 E7 58 83 17 ED 74 08 66 68 CF 1A 05 47 84 F7 49 3C 6D 74 7F A7 96 EC 14 D3 33 A6 8E C7 E0 08 62 95 9A 0B D0 F0 48 20 80 B7 1A C1 B7 62 5B 1B 8B 1F 35 A6 69 19 99 BA 78 F5 92 E2 3F 95 E9 96 09 D1 08 CF 1C 0E 30 8A 8B F6 4F BD E8 37 D3 CE 13 8A 50 DC 50 AF 4B 41 EE 53 D9 8A 11 B6 A8 1D DD 44 CC 43 0C 1E F3 BB 9D 1D 75 A0 2F AA 9C 81 4A FC 58	
92	Issuer Public Key Remainder	D3 52 41 07	
94	Application File Locator (AFL)	08 01 01 00 10 01 01 01 18 01 01 00 20 01 02 00	



Tag	Element name	Data	Card v5.0
9F 07	Application Usage Control	FF 00 BYTE 1: b8 - Domestic cash trans. valid b7 - Int'l cash transactions valid b6 - Domestic goods valid b5 - International goods valid b4 - Domestic services valid b3 - International services valid b2 - ATMs valid b1 - non-ATM terminals valid BYTE 2: b8 - Domestic cashback NOT allowed b7 - International cashback NOT allowed	
9F 08	Application Version Number	00 02	
9F 0D	Issuer Action Code - Default	B4 70 80 80 00	
9F 0E	Issuer Action Code - Denial	00 00 00 00 00	
9F 0F	Issuer Action Code - Online	B4 70 84 80 00	
9F 10	Issuer Application Data [M/Chip 4]	xx 10 xx xx xx xx xx xx xx xx xx xx xx xx xx xx xx xx *	
9F 11	Issuer Code Table Index	01	
9F 12	Application Preferred Name	4D 61 73 74 65 72 43 61 72 64 - 'MasterCard'	
9F 14	Lower Consecutive Offline Limit	00	
9F 17	Personal Identification Number (PIN) Try Counter	03	
9F 23	Upper Consecutive Offline Limit	00	
9F 27	Cryptogram Information Data (CID)	80	
9F 32	Issuer Public Key Exponent	03	
9F 36	Application Transaction Counter (ATC)	xx xx *	
9F 46	ICC Public Key Certificate	79 A6 22 A8 47 8E 42 DB 15 0D 4D D0 F9 64 49 FE 97 8D 46 53 AE C3 51 97 7F 02 10 18 5B C5 9C 34 97 27 20 43 13 5B CB 84 CC 2C 3E 20 7E A1 A2 51 2F 95 F4 82 F6 E6 4F 60 74 83 E3 91 A6 6F A8 58 5B FB B4 D9 62 42 8B E4 4F C0 45 5F 5B 85 D9 1D 1F BC 3B F1 9A 44 ED C5 00 59 B2 9C 06 49 A1 10 19 C1 C9 C2 18 7E C7 97 8C 96 E8 A3 D0 55 B1 44	
9F 47	ICC Public Key Exponent	03	
9F 48	ICC Public Key Remainder	23 5C DB 71 63 5D 44 EC ED 02 7E 8A BC 03 27 14 11 6A 00 E9 2E C1 83 DE 65 AA 31 BA 99 04 E7 21 36 7A AB DF EC E0 5C 04 31 97	
9F 4A	Static Data Authentication Tag List	82	
9F 4D	Transaction Log Entry	0B 0A	
9F 4F	Transaction Log Format	9F 27 01 9F 02 06 5F 2A 02 9A 03 9F 36 02 9F 52 06	
9F 60	CVC3track1 [MasterCard]	E3 0C	
9F 61	CVC3track2 [MasterCard]	1A EB	
9F 62	PCVC3track1 [MasterCard]	00 00 00 38 00 00	
9F 63	PUNATCtrack1 [MasterCard]	00 00 00 00 E0 E0	
9F 64	NATCtrack1 [MasterCard]	03	
9F 65	PCVC3track2 [MasterCard]	00 0E	
9F 66	PUNATCtrack2 [MasterCard]	0E 70	
9F 67	NATCtrack2 [MasterCard]	03	



Tag	Element name	Data	Card v5.0
9F 6B	Track 2 Equivalent Data [MasterCard]	54 13 33 00 89 60 41 11 D2 21 22 01 00 00 40 00 00 00 0F	
9F 6C	Application Version [MasterCard]	00 01	
9F 6E	Third Party Data [MasterCard]	08 40 00 00 30 30 00	
9F 7E	Application Life Cycle Data [MasterCard]	03 10 0C 12 00 09 00 00 FF 00 04 00 00 02 60 00 00 38 4A 02 11 50 35 43 44 30 37 32 20	
C3	Card Issuer Action Code - Decline [MasterCard]	00 00 00	
C4	Card Issuer Action Code - Default [MasterCard]	46 58 00	
C5	Card Issuer Action Code - Online [MasterCard]	06 F8 00	
C6	Counters [MasterCard]	00 01 00 00 00 00 00 00 00 00	
C7	CDOL1 Related Data Length [MasterCard]	2B	
C8	CRM Country Code [MasterCard]	01 24 - Canada	
C9	CRM Currency Code [M/Chip4]	01 24 - CAD	
CA	Lower Cumulative Offline Transaction Amount [M/Chip]	00 00 00 00 00 00	
CB	Upper Cumulative Offline Transaction Amount [M/Chip]	00 00 00 00 00 00	
CD	Card Issuer Action Code - Default [PayPass M/Chip]	00 58 00	
CE	Card Issuer Action Code - Online [PayPass M/Chip]	00 F8 00	
CF	Card Issuer Action Code - Denial [PayPass M/Chip]	00 00 00	
D1	Currency Conversion Table [M/Chip]	01 24 00 01 00 01 24 00 01 00 01 24 00 01 00 01 24 00 01 00 01 24 00 01 00	
D3	Additional Check Table [MasterCard]	00 00 00 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF	
D5	Application Control [M/Chip]	C4 00	
D6	Default ARPC Response Code [M/Chip4]	00 12	
D7	Application Control [PayPass M/Chip]	40 00 40	
DF 02	Security Limits Status [MasterCard]	00	



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

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

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

1.6.1 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 PIN	Terminal supports CVM type	Next CVM
3	Offline Plaintext PIN	Terminal supports CVM type	Next CVM
4	Signature (paper)	Terminal supports CVM type	Next CVM
5	No CVM required	Terminal supports CVM type	Fail

1.6.2 Application Tag data (Contact Interface, online)

* Tag value changes with card usage

Tag	Element name	Data	Card v5.0
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 21 22 01 01 23 40 91 72 02 9F	
5A	Application Primary Account Number (PAN)	54 13 33 00 89 60 41 11	
5F 20	Cardholder Name	55 41 54 20 43 41 4E 2F 54 65 73 74 20 43 61 72 64 20 30 36 20 20 20 20 20 20 - 'UAT CAN/Test Card 06'	
5F 24	Application Expiration Date	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 01	
5F 34	Application PAN Sequence Number	01	
82	Application Interchange Profile [M/Chip, PayPass]	39 00 BYTE 1: b7 - Offline SDA NOT supported b6 - Offline DDA supported b5 - Cardholder verification supported b4 - Terminal risk mgmt to be performed b3 - Issuer authentication NOT supported using External Auth command b2 - On device Cardholder verification NOT supported b1 - Combined DDA / GEN AC supported BYTE 2: b8 - EMV mode NOT supported	
84	Dedicated File (DF) Name	A0 00 00 00 04 10 10	
87	Application Priority Indicator	01	
8C	Card Risk Management Data Object List 1 (CDOL1)	9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04 9F 35 01 9F 45 02 9F 4C 08 9F 34 03	
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	



Tag	Element name	Data	Card v5.0
8F	Certification Authority Public Key Index	FA	
90	Issuer Public Key Certificate	18 89 B9 97 E6 FC E8 4B 4A E7 AB 87 43 1C BD B3 DF 8C 1D 5A 55 A7 F6 0D 29 59 AF 3A 51 04 E7 58 83 17 ED 74 08 66 68 CF 1A 05 47 84 F7 49 3C 6D 74 7F A7 96 EC 14 D3 33 A6 8E C7 E0 08 62 95 9A 0B D0 F0 48 20 80 B7 1A C1 B7 62 5B 1B 8B 1F 35 A6 69 19 99 BA 78 F5 92 E2 3F 95 E9 96 09 D1 08 CF 1C 0E 30 8A 8B F6 4F BD E8 37 D3 CE 13 8A 50 DC 50 AF 4B 41 EE 53 D9 8A 11 B6 A8 1D DD 44 CC 43 0C 1E F3 BB 9D 1D 75 A0 2F AA 9C 81 4A FC 58	
92	Issuer Public Key Remainder	D3 52 41 07	
94	Application File Locator (AFL)	08 02 04 01 18 01 01 00 20 01 01 00	
9F 07	Application Usage Control	FF 00 BYTE 1: b8 - Domestic cash trans. valid b7 - Int'l cash transactions valid b6 - Domestic goods valid b5 - International goods valid b4 - Domestic services valid b3 - International services valid b2 - ATMs valid b1 - non-ATM terminals valid BYTE 2: b8 - Domestic cashback NOT allowed b7 - International cashback NOT allowed	
9F 08	Application Version Number	00 02	
9F 0D	Issuer Action Code - Default	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 4]	xx 10 xx xx xx xx xx xx xx xx xx xx xx xx xx xx xx xx *	
9F 11	Issuer Code Table Index	01	
9F 12	Application Preferred Name	4D 61 73 74 65 72 43 61 72 64 - 'MasterCard'	
9F 14	Lower Consecutive Offline Limit	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	Upper Consecutive Offline Limit	07	
9F 27	Cryptogram Information Data (CID)	80	
9F 32	Issuer Public Key Exponent	03	
9F 36	Application Transaction Counter (ATC)	xx xx *	
9F 42	Application Currency Code	01 24 - CAD	
9F 44	Application Currency Exponent	02	



Tag	Element name	Data	Card v5.0
9F 46	ICC Public Key Certificate	65 53 84 BA 96 75 9A 62 30 12 C9 AC 3F 9F 8E 24 9C 30 60 0E CE C3 BD 72 7F 39 02 18 69 7B 4F 87 AA 84 32 C8 E1 3B 94 C2 5B 3C BA 15 EB 8B C3 86 57 F2 9F E4 F2 29 0B E4 01 08 38 66 0C 77 07 C4 51 DD EA 34 98 58 28 AD F8 6F 50 6D 76 90 AA CE EA D9 B2 AE D1 64 0B BA 84 D5 39 B5 92 59 DC E2 E5 C1 33 E7 FA 7D B7 5D EF 07 97 84 D8 14 18 83	
9F 47	ICC Public Key Exponent	03	
9F 48	ICC Public Key Remainder	1E C6 26 E6 A8 A3 F8 8B C5 08 FA FF 16 E9 25 D9 D6 75 83 AE 91 95 CD A1 15 A4 A1 BB 56 F8 E8 5D 36 95 2A 15 2E E9 E1 F5 1B 57	
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	A0 86 4D C5 1C 3C DE DA 46 74 65 41 4C 20 D0 AC 0B 87 DE 84 33 90 96 A8 A1 A4 5F 1C 02 AB 33 01 D6 41 2E 8C 71 97 89 34 EE 58 4A C6 77 47 76 8F 54 E4 0D 9E 4C 3D EA 15 0D E8 53 6F D4 F1 C5 A9 11 F5 15 8E CA 0A F8 DF 8A 3F 09 76 B3 6E AE A3 F3 06 5A 18 9F 6A 30 2E 44 2C 45 5D 31 7D 46 D5 73 B5 82 EF DD BA 48 7F 41 C8 0E 1D 10 4A 89 67	
9F 4D	Transaction Log Entry	0B 0A	
9F 4F	Transaction Log Format	9F 27 01 9F 02 06 5F 2A 02 9A 03 9F 36 02 9F 52 06	
9F 6E	Third Party Data [MasterCard]	08 40 00 00 30 30 00	
9F 7E	Application Life Cycle Data [MasterCard]	03 10 0C 12 00 09 00 00 FF 00 04 00 00 02 60 00 00 38 4A 02 11 50 35 43 44 30 37 32 20	
C3	Card Issuer Action Code - Decline [MasterCard]	00 00 00	
C4	Card Issuer Action Code - Default [MasterCard]	19 50 00	
C5	Card Issuer Action Code - Online [MasterCard]	39 FB 00	
C6	Counters [MasterCard]	00 06 00 00 00 00 00 00 00 00	
C7	CDOL1 Related Data Length [MasterCard]	2B	
C8	CRM Country Code [MasterCard]	01 24 - Canada	
C9	CRM Currency Code [M/Chip4]	01 24 - CAD	
CA	Lower Cumulative Offline Transaction Amount [M/Chip]	00 00 00 02 00 00	
CB	Upper Cumulative Offline Transaction Amount [M/Chip]	00 00 00 04 00 00	
CD	Card Issuer Action Code - Default [PayPass M/Chip]	00 58 00	



Tag	Element name	Data	Card v5.0
CE	Card Issuer Action Code - Online [PayPass M/Chip]	00 F8 00	
CF	Card Issuer Action Code - Denial [PayPass M/Chip]	00 00 00	
D1	Currency Conversion Table [M/Chip]	01 24 00 01 00 01 24 00 01 00 01 24 00 01 00 01 24 00 01 00 01 24 00 01 00	
D3	Additional Check Table [MasterCard]	00 00 00 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF	
D5	Application Control [M/Chip]	CC 00	
D6	Default ARPC Response Code [M/Chip4]	00 12	
D7	Application Control [PayPass M/Chip]	40 01 40	
DF 02	Security Limits Status [MasterCard]	00	

1.6.3 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 PIN	Terminal supports CVM type	Next CVM
3	Offline Plaintext PIN	Terminal supports CVM type	Next CVM
4	Signature (paper)	Terminal supports CVM type	Next CVM
5	No CVM required	Terminal supports CVM type	Fail

1.6.4 Application Tag data (Contactless Interface, online)

* Tag value changes with card usage

Tag	Element name	Data	Card v5.0
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 21 22 01 01 23 40 91 72 02 9F	
5A	Application Primary Account Number (PAN)	54 13 33 00 89 60 41 11	
5F 20	Cardholder Name	55 41 54 20 43 41 4E 2F 54 65 73 74 20 43 61 72 64 20 30 36 20 20 20 20 20 20 - 'UAT CAN/Test Card 06'	
5F 24	Application Expiration Date	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 01	
5F 34	Application PAN Sequence Number	01	
82	Application Interchange Profile [M/Chip, PayPass]	19 80 BYTE 1: b7 - Offline SDA NOT supported b6 - Offline DDA NOT supported b5 - Cardholder verification supported b4 - Terminal risk mgmt to be performed b3 - Issuer authentication NOT supported using External Auth command b2 - On device Cardholder verification NOT supported b1 - Combined DDA / GEN AC supported BYTE 2: b8 - M/Chip supported	
84	Dedicated File (DF) Name	A0 00 00 00 04 10 10	
87	Application Priority Indicator	01	



Tag	Element name	Data	Card v5.0
8C	Card Risk Management Data Object List 1 (CDOL1)	9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04 9F 35 01 9F 45 02 9F 4C 08 9F 34 03	
8D	Card Risk Management Data Object List 2 (CDOL2)	91 0A 8A 02 95 05 9F 37 04 9F 4C 08	
8E	Cardholder Verification Method (CVM) List	00 00 00 00 00 00 00 00 42 01 44 03 41 03 5E 03 1F 03	
8F	Certification Authority Public Key Index	FA	
90	Issuer Public Key Certificate	18 89 B9 97 E6 FC E8 4B 4A E7 AB 87 43 1C BD B3 DF 8C 1D 5A 55 A7 F6 0D 29 59 AF 3A 51 04 E7 58 83 17 ED 74 08 66 68 CF 1A 05 47 84 F7 49 3C 6D 74 7F A7 96 EC 14 D3 33 A6 8E C7 E0 08 62 95 9A 0B D0 F0 48 20 80 B7 1A C1 B7 62 5B 1B 8B 1F 35 A6 69 19 99 BA 78 F5 92 E2 3F 95 E9 96 09 D1 08 CF 1C 0E 30 8A 8B F6 4F BD E8 37 D3 CE 13 8A 50 DC 50 AF 4B 41 EE 53 D9 8A 11 B6 A8 1D DD 44 CC 43 0C 1E F3 BB 9D 1D 75 A0 2F AA 9C 81 4A FC 58	
92	Issuer Public Key Remainder	D3 52 41 07	
94	Application File Locator (AFL)	08 02 04 01 18 01 01 00 20 01 01 00	
9F 07	Application Usage Control	FF 00 BYTE 1: b8 - Domestic cash trans. valid b7 - Int'l cash transactions valid b6 - Domestic goods valid b5 - International goods valid b4 - Domestic services valid b3 - International services valid b2 - ATMs valid b1 - non-ATM terminals valid BYTE 2: b8 - Domestic cashback NOT allowed b7 - International cashback NOT allowed	
9F 08	Application Version Number	00 02	
9F 0D	Issuer Action Code - Default	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 4]	xx 10 xx xx xx xx xx xx xx xx xx xx xx xx xx xx xx xx *	
9F 11	Issuer Code Table Index	01	
9F 12	Application Preferred Name	4D 61 73 74 65 72 43 61 72 64 - 'MasterCard'	
9F 14	Lower Consecutive Offline Limit	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	Upper Consecutive Offline Limit	07	
9F 27	Cryptogram Information Data (CID)	80	
9F 32	Issuer Public Key Exponent	03	
9F 36	Application Transaction Counter (ATC)	xx xx *	
9F 42	Application Currency Code	01 24 - CAD	
9F 44	Application Currency Exponent	02	



Tag	Element name	Data	Card v5.0
9F 46	ICC Public Key Certificate	65 53 84 BA 96 75 9A 62 30 12 C9 AC 3F 9F 8E 24 9C 30 60 0E CE C3 BD 72 7F 39 02 18 69 7B 4F 87 AA 84 32 C8 E1 3B 94 C2 5B 3C BA 15 EB 8B C3 86 57 F2 9F E4 F2 29 0B E4 01 08 38 66 0C 77 07 C4 51 DD EA 34 98 58 28 AD F8 6F 50 6D 76 90 AA CE EA D9 B2 AE D1 64 0B BA 84 D5 39 B5 92 59 DC E2 E5 C1 33 E7 FA 7D B7 5D EF 07 97 84 D8 14 18 83	
9F 47	ICC Public Key Exponent	03	
9F 48	ICC Public Key Remainder	1E C6 26 E6 A8 A3 F8 8B C5 08 FA FF 16 E9 25 D9 D6 75 83 AE 91 95 CD A1 15 A4 A1 BB 56 F8 E8 5D 36 95 2A 15 2E E9 E1 F5 1B 57	
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	A0 86 4D C5 1C 3C DE DA 46 74 65 41 4C 20 D0 AC 0B 87 DE 84 33 90 96 A8 A1 A4 5F 1C 02 AB 33 01 D6 41 2E 8C 71 97 89 34 EE 58 4A C6 77 47 76 8F 54 E4 0D 9E 4C 3D EA 15 0D E8 53 6F D4 F1 C5 A9 11 F5 15 8E CA 0A F8 DF 8A 3F 09 76 B3 6E AE A3 F3 06 5A 18 9F 6A 30 2E 44 2C 45 5D 31 7D 46 D5 73 B5 82 EF DD BA 48 7F 41 C8 0E 1D 10 4A 89 67	
9F 4D	Transaction Log Entry	0B 0A	
9F 4F	Transaction Log Format	9F 27 01 9F 02 06 5F 2A 02 9A 03 9F 36 02 9F 52 06	
9F 6E	Third Party Data [MasterCard]	08 40 00 00 30 30 00	
9F 7E	Application Life Cycle Data [MasterCard]	03 10 0C 12 00 09 00 00 FF 00 04 00 00 02 60 00 00 38 4A 02 11 50 35 43 44 30 37 32 20	
C3	Card Issuer Action Code - Decline [MasterCard]	00 00 00	
C4	Card Issuer Action Code - Default [MasterCard]	19 50 00	
C5	Card Issuer Action Code - Online [MasterCard]	39 FB 00	
C6	Counters [MasterCard]	00 06 00 00 00 00 00 00 00 00	
C7	CDOL1 Related Data Length [MasterCard]	2B	
C8	CRM Country Code [MasterCard]	01 24 - Canada	
C9	CRM Currency Code [M/Chip4]	01 24 - CAD	
CA	Lower Cumulative Offline Transaction Amount [M/Chip]	00 00 00 02 00 00	
CB	Upper Cumulative Offline Transaction Amount [M/Chip]	00 00 00 04 00 00	
CD	Card Issuer Action Code - Default [PayPass M/Chip]	00 58 00	



Tag	Element name	Data	Card v5.0
CE	Card Issuer Action Code - Online [PayPass M/Chip]	00 F8 00	
CF	Card Issuer Action Code - Denial [PayPass M/Chip]	00 00 00	
D1	Currency Conversion Table [M/Chip]	01 24 00 01 00 01 24 00 01 00 01 24 00 01 00 01 24 00 01 00 01 24 00 01 00	
D3	Additional Check Table [MasterCard]	00 00 00 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF	
D5	Application Control [M/Chip]	CC 00	
D6	Default ARPC Response Code [M/Chip4]	00 12	
D7	Application Control [PayPass M/Chip]	40 01 40	
DF 02	Security Limits Status [MasterCard]	00	

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

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

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

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

1.7.1 Cardholder Verification Method List

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

1.7.2 Application Tag data

* Tag value changes with card usage

Tag	Element name	Data	Card v5.0
50	Application Label	4D 41 53 54 45 52 43 41 52 44 - 'MASTERCARD'	
57	Track 2 Equivalent Data	54 13 33 00 89 02 00 11 D2 21 22 01 07 93 60 80 50 00 0F	
5A	Application Primary Account Number (PAN)	54 13 33 00 89 02 00 11	
5F 20	Cardholder Name	55 41 54 20 43 41 4E 2F 54 65 73 74 20 43 61 72 64 20 30 37 20 20 20 20 20 20 - 'UAT CAN/Test Card 07'	
5F 24	Application Expiration Date	22 12 31	
5F 25	Application Effective Date	xx xx xx	
5F 28	Issuer Country Code	08 40 - USA	
5F 2D	Language Preference	65 6E - 'en' (English)	
5F 30	Service Code	02 01	
5F 34	Application PAN Sequence Number	00	



Tag	Element name	Data	Card v5.0
82	Application Interchange Profile [M/Chip, PayPass]	18 00 BYTE 1: b7 - Offline SDA NOT supported b6 - Offline DDA NOT supported b5 - Cardholder verification supported b4 - Terminal risk mgmt to be performed b3 - Issuer authentication NOT supported using External Auth command b2 - On device Cardholder verification NOT supported b1 - Combined DDA / GEN AC NOT supported BYTE 2: b8 - EMV mode NOT supported	
84	Dedicated File (DF) Name	A0 00 00 00 04 10 10	
87	Application Priority Indicator	01	
8C	Card Risk Management Data Object List 1 (CDOL1)	9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04 9F 35 01 9F 45 02 9F 4C 08 9F 34 03 9B 02	
8D	Card Risk Management Data Object List 2 (CDOL2)	91 0A 8A 02 95 05 9F 37 04 9F 4C 08	
8E	Cardholder Verification Method (CVM) List	00 00 00 00 00 00 00 00 5E 03 1F 00	
8F	Certification Authority Public Key Index	FA	
90	Issuer Public Key Certificate	18 89 B9 97 E6 FC E8 4B 4A E7 AB 87 43 1C BD B3 DF 8C 1D 5A 55 A7 F6 0D 29 59 AF 3A 51 04 E7 58 83 17 ED 74 08 66 68 CF 1A 05 47 84 F7 49 3C 6D 74 7F A7 96 EC 14 D3 33 A6 8E C7 E0 08 62 95 9A 0B D0 F0 48 20 80 B7 1A C1 B7 62 5B 1B 8B 1F 35 A6 69 19 99 BA 78 F5 92 E2 3F 95 E9 96 09 D1 08 CF 1C 0E 30 8A 8B F6 4F BD E8 37 D3 CE 13 8A 50 DC 50 AF 4B 41 EE 53 D9 8A 11 B6 A8 1D DD 44 CC 43 0C 1E F3 BB 9D 1D 75 A0 2F AA 9C 81 4A FC 58	
92	Issuer Public Key Remainder	D3 52 41 07	
94	Application File Locator (AFL)	08 02 04 01 18 01 01 00 20 01 01 00	
9F 07	Application Usage Control	FF 00 BYTE 1: b8 - Domestic cash trans. valid b7 - Int'l cash transactions valid b6 - Domestic goods valid b5 - International goods valid b4 - Domestic services valid b3 - International services valid b2 - ATMs valid b1 - non-ATM terminals valid BYTE 2: b8 - Domestic cashback NOT allowed b7 - International cashback NOT allowed	
9F 08	Application Version Number	00 02	
9F 0D	Issuer Action Code - Default	B0 50 80 80 00	
9F 0E	Issuer Action Code - Denial	00 00 00 00 00	
9F 0F	Issuer Action Code - Online	B0 70 80 98 00	
9F 10	Issuer Application Data [M/Chip 4]	xx 10 xx xx xx xx xx xx xx xx xx xx xx xx xx xx xx xx *	



Tag	Element name	Data	Card v5.0
9F 11	Issuer Code Table Index	01	
9F 12	Application Preferred Name	4D 61 73 74 65 72 43 61 72 64 - 'MasterCard'	
9F 14	Lower Consecutive Offline Limit	00	
9F 17	Personal Identification Number (PIN) Try Counter	0F	
9F 1F	Track 1 Discretionary Data	30 37 39 33 36 30 38 30 35 30 30 30 30 30 30 30 30 30 30 30 30 30 30 30	
9F 23	Upper Consecutive Offline Limit	00	
9F 26	Application Cryptogram (AC)	xx xx xx xx xx xx xx xx *	
9F 27	Cryptogram Information Data (CID)	80	
9F 32	Issuer Public Key Exponent	03	
9F 36	Application Transaction Counter (ATC)	xx xx *	
9F 42	Application Currency Code	08 40 - USD	
9F 44	Application Currency Exponent	02	
9F 46	ICC Public Key Certificate	14 F4 D7 21 ED 9B 5D E5 47 49 27 AC BD E8 95 B8 C2 7F 9B A4 97 E3 C6 70 C2 72 47 3D D5 6A 2E 9D 94 C5 FF 60 0E AA B9 7D 05 05 BE 44 A2 56 E9 4B CF F2 CF 4E 54 81 DE E8 34 DC 1B EE F8 AC 4B AD 3B 11 17 B6 36 DA F0 E0 C3 7E E1 E9 FD C4 D6 97 7E 20 FE 9A 56 18 D3 2D 77 2A D9 D0 AF BE FE D4 DD 96 9C DD FD 81 D5 0D 8D E2 DF DD 9C 7E 5C 6A	
9F 47	ICC Public Key Exponent	03	
9F 48	ICC Public Key Remainder	90 0A 5A B8 F8 94 CE 96 04 24 CE 5C C6 0E 2A 5B 2B 2A 29 39 AA 39 D7 D8 8A 5D FC B4 E7 0E 75 B4 19 24 0D CB 77 C2 57 04 6D B3	
9F 49	Dynamic Data Authentication Data Object List (DDOL)	9F 37 04	
9F 4A	Static Data Authentication Tag List	82	
9F 4D	Transaction Log Entry	0B 0A	
9F 4F	Transaction Log Format	9F 27 01 9F 02 06 5F 2A 02 9A 03 9F 36 02 9F 52 06	
9F 6E	Third Party Data [MasterCard]	08 40 00 00 30 30 00	
9F 7E	Application Life Cycle Data [MasterCard]	03 10 0C 12 00 09 00 00 FF 00 04 00 00 02 60 00 00 38 4A 02 11 50 35 43 44 30 37 32 20	
C3	Card Issuer Action Code - Decline [MasterCard]	00 00 00	
C4	Card Issuer Action Code - Default [MasterCard]	40 50 00	
C5	Card Issuer Action Code - Online [MasterCard]	06 F8 00	
C6	Counters [MasterCard]	00 02 00 00 00 00 00 00 00 00	
C7	CDOL1 Related Data Length [MasterCard]	2D	
C8	CRM Country Code [MasterCard]	08 40 - USA	
C9	CRM Currency Code [M/Chip4]	08 40 - USD	



Tag	Element name	Data	Card v5.0
CA	Lower Cumulative Offline Transaction Amount [M/Chip]	00 00 00 00 00 00	
CB	Upper Cumulative Offline Transaction Amount [M/Chip]	00 00 00 00 00 00	
CD	Card Issuer Action Code - Default [PayPass M/Chip]	00 58 00	
CE	Card Issuer Action Code - Online [PayPass M/Chip]	00 F8 00	
CF	Card Issuer Action Code - Denial [PayPass M/Chip]	00 00 00	
D1	Currency Conversion Table [M/Chip]	08 40 00 00 00 08 40 00 00 00 08 40 00 00 00 08 40 00 00 00 08 40 00 00 00	
D3	Additional Check Table [MasterCard]	00 00 00 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF	
D5	Application Control [M/Chip]	C0 00	
D6	Default ARPC Response Code [M/Chip4]	00 10	
D7	Application Control [PayPass M/Chip]	40 01 40	
DF 02	Security Limits Status [MasterCard]	00	

1.8 Test Card 08 – 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.

1.9 Test Card 09 – MasterCard, MSR Fallback Card

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

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



1.10 Test Card 10 – Interac, 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.

1.10.1 Cardholder Verification Method List

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

1.10.2 Application Tag data

* Tag value changes with card usage

Tag	Element name	Data	Card v5.0
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	55 41 54 20 43 41 4E 2F 54 65 73 74 20 43 61 72 64 20 31 30 20 20 20 20 20 20	- 'UAT CAN/Test Card 10'
5F 24	Application Expiration Date	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 [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 00 01 00	
8F	Certification Authority Public Key Index	55	



Tag	Element name	Data	Card v5.0
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 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 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 31 30 30 30 30 30 30 30 30 30 30 30 30	



Tag	Element name	Data	Card v5.0
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	65 64 5B 61 27 72 8D BB 94 F4 C8 A5 D2 FD 79 D7 2E 6F 4A E7 55 50 88 FE 63 61 0F A7 E5 75 D8 3B 4D F7 F8 F1 D8 8A F9 38 D5 33 14 92 87 66 A0 81 60 37 11 96 6B F6 F9 CF 4B BB E2 6F 03 4C E4 5F 35 51 16 A8 36 0F BB E8 4B A8 FB 9A 98 FA 0A 86 66 FF 13 2F 68 71 7F 8E 67 48 6B 5A E8 47 27 DC 22 E9 AE DB B9 7C C5 AD 18 5F FA F1 BB 09 DA A3 4C 16 80 E6 4C 6F B9 3C B6 C8 81 06 A8 CE C6 3D 01 04 7E 1D 09 55 8C E6 D5 D5 46 DD 0C 1E 0B 60	
9F 47	ICC Public Key Exponent	03	
9F 48	ICC Public Key Remainder	AF C0 AB 3D 06 13 3D C7 0C 3C 92 33 B1 9A 25 64 97 1C F2 C1 9B D4 DD AA 13 47	
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 - Canada	
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	

1.11 Test Card 11 – 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.

1.11.1 Cardholder Verification Method List

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

1.11.2 Application Tag data

* Tag value changes with card usage



Tag	Element name	Data	Card v5.0
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	55 41 54 20 43 41 4E 2F 54 65 73 74 20 43 61 72 64 20 31 31 20 20 20 20 20 20	- 'UAT CAN/Test Card 11'
5F 24	Application Expiration Date	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 00 01 00	
8F	Certification Authority Public Key Index	55	
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	



Tag	Element name	Data	Card v5.0
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 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 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	
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	



Tag	Element name	Data	Card v5.0
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 - Canada	
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	

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

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

The recommended transaction amount to generate a host approval is \$68.00.

1.12.1 Cardholder Verification Method List - AID A00000025010402

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



1.12.2 Application Tag data (Contact Interface, online) - AID A00000025010402

* Tag value changes with card usage

Tag	Element name	Data	Card v6.0
50	Application Label	41 4D 45 52 49 43 41 4E 20 45 58 50 52 45 53 53 - 'AMERICAN EXPRESS'	
57	Track 2 Equivalent Data	37 42 45 00 17 51 00 6D 24 12 20 11 50 21 23 45 00 00 0F	
5A	Application Primary Account Number (PAN)	37 42 45 00 17 51 00 6F	
5F 20	Cardholder Name	55 41 54 20 43 41 4E 2F 54 65 73 74 20 43 61 72 64 20 31 32 20 20 20 20 20 20 - 'UAT CAN/Test Card 12'	
5F 24	Application Expiration Date	24 12 31	
5F 25	Application Effective Date	xx xx xx	
5F 28	Issuer Country Code	01 24 - Canada	
5F 2D	Language Preference	65 6E - 'en' (English)	
5F 30	Service Code	02 01	
5F 34	Application PAN Sequence Number	00	
82	Application Interchange Profile	1C 00 BYTE 1: b7 - Offline SDA NOT supported b6 - Offline DDA NOT supported b5 - Cardholder verification supported b4 - Terminal risk mgmt to be performed b3 - Issuer authentication supported b1 - Combined DDA / GEN AC NOT supported BYTE 2: b8 - EMV Contactless NOT supported	
84	Dedicated File (DF) Name	A0 00 00 00 25 01 04 02	
87	Application Priority Indicator	01	
8C	Card Risk Management Data Object List 1 (CDOL1)	9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04	
8D	Card Risk Management Data Object List 2 (CDOL2)	8A 02 9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04	
8E	Cardholder Verification Method (CVM) List	00 00 00 00 00 00 00 00 42 01 41 03 5E 03 5F 03	
94	Application File Locator (AFL)	08 01 01 00 08 02 03 01	
9F 07	Application Usage Control	FF 00 BYTE 1: b8 - Domestic cash trans. valid b7 - Int'l cash transactions valid b6 - Domestic goods valid b5 - International goods valid b4 - Domestic services valid b3 - International services valid b2 - ATMs valid b1 - non-ATM terminals valid BYTE 2: b8 - Domestic cashback NOT allowed b7 - International cashback NOT allowed	
9F 08	Application Version Number	00 01	
9F 0D	Issuer Action Code - Default	B0 50 FC 98 00	
9F 0E	Issuer Action Code - Denial	00 00 00 00 00	
9F 0F	Issuer Action Code - Online	B0 78 FC 98 00	
9F 10	Issuer Application Data [American Express]	xx xx 01 xx xx xx xx *	
9F 11	Issuer Code Table Index	01	



Tag	Element name	Data	Card v6.0
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)	00 07	
9F 38	Processing Options Data Object List (PDOL)	9F 35 01	
9F 42	Application Currency Code	01 24 - CAD	

1.12.3 Cardholder Verification Method List (CL) - AID 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

1.12.4 Application Tag data (Contactless Interface, online) - AID A00000025010402

* Tag value changes with card usage

Tag	Element name	Data	Card v6.0
50	Application Label	41 4D 45 52 49 43 41 4E 20 45 58 50 52 45 53 53 - 'AMERICAN EXPRESS'	
57	Track 2 Equivalent Data	37 42 45 00 17 51 00 6D 24 12 70 21 50 21 23 45 00 00 0F	
5A	Application Primary Account Number (PAN)	37 42 45 00 17 51 00 6F	
5F 20	Cardholder Name	55 41 54 20 43 41 4E 2F 54 65 73 74 20 43 61 72 64 20 31 32 20 20 20 20 20 20 - 'UAT CAN/Test Card 12'	
5F 24	Application Expiration Date	24 12 31	
5F 25	Application Effective Date	xx xx xx	
5F 28	Issuer Country Code	01 24 - Canada	
5F 2D	Language Preference	65 6E - 'en' (English)	
5F 30	Service Code	02 01	
5F 34	Application PAN Sequence Number	00	
82	Application Interchange Profile [Expresspay]	1C 80 BYTE 1: b7 - SDA NOT supported b6 - DDA NOT supported b5 - Cardholder verification supported b4 - Terminal risk mgmt to be performed b3 - Issuer authentication supported b1 - CDA NOT supported BYTE 2: b8 - EMV & Mag-stripe modes supported b7 - Expresspay Mobile NOT supported b6 - Expresspay Mobile HCE NOT supported	
84	Dedicated File (DF) Name	A0 00 00 00 25 01 04 02	
87	Application Priority Indicator	01	



Tag	Element name	Data	Card v6.0
8C	Card Risk Management Data Object List 1 (CDOL1)	9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04	
8D	Card Risk Management Data Object List 2 (CDOL2)	8A 02 9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04	
8E	Cardholder Verification Method (CVM) List	00 00 00 00 00 00 00 00 42 01 5E 03 1F 02	
94	Application File Locator (AFL)	08 01 02 00 08 03 04 02	
9F 07	Application Usage Control	3D 00 BYTE 1: b8 - Domestic cash trans. NOT valid b7 - Int'l cash transactions NOT valid b6 - Domestic goods valid b5 - International goods valid b4 - Domestic services valid b3 - International services valid b2 - ATMs valid b1 - non-ATM terminals valid BYTE 2: b8 - Domestic cashback NOT allowed b7 - International cashback NOT allowed	
9F 08	Application Version Number	00 01	
9F 0D	Issuer Action Code - Default	B0 50 FC 98 00	
9F 0E	Issuer Action Code - Denial	00 00 00 00 00	
9F 0F	Issuer Action Code - Online	B0 78 FC 98 00	
9F 10	Issuer Application Data [American Express]	xx xx 01 xx xx xx xx *	
9F 12	Application Preferred Name	41 6D 65 72 69 63 61 6E 20 45 78 70 72 65 73 73 - 'American Express'	
9F 26	Application Cryptogram (AC)	xx xx xx xx xx xx xx xx *	
9F 27	Cryptogram Information Data (CID)	80	
9F 36	Application Transaction Counter (ATC)	xx xx *	
9F 38	Processing Options Data Object List (PDOL)	9F 35 01	
9F 42	Application Currency Code	01 24 - CAD	

1.12.5 Cardholder Verification Method List - AID 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

1.12.6 Application Tag data (Contact Interface, online) - AID A000000291010

* Tag value changes with card usage

Tag	Element name	Data	Card v6.0
50	Application Label	41 4D 45 52 49 43 41 4E 20 45 58 50 52 45 53 53 - 'AMERICAN EXPRESS'	
57	Track 2 Equivalent Data	37 42 45 00 17 51 00 6D 24 12 20 11 50 21 23 45 00 00 0F	
5A	Application Primary Account Number (PAN)	37 42 45 00 17 51 00 6F	
5F 20	Cardholder Name	55 41 54 20 43 41 4E 2F 54 65 73 74 20 43 61 72 64 20 31 32 20 20 20 20 20 20 - 'UAT CAN/Test Card 12'	



Tag	Element name	Data	Card v6.0
5F 24	Application Expiration Date	24 12 31	
5F 25	Application Effective Date	xx xx xx	
5F 28	Issuer Country Code	01 24 - Canada	
5F 2D	Language Preference	65 6E - 'en' (English)	
5F 30	Service Code	02 01	
5F 34	Application PAN Sequence Number	00	
82	Application Interchange Profile	1C 00 BYTE 1: b7 - Offline SDA NOT supported b6 - Offline DDA NOT supported b5 - Cardholder verification supported b4 - Terminal risk mgmt to be performed b3 - Issuer authentication supported b1 - Combined DDA / GEN AC NOT supported BYTE 2: b8 - EMV Contactless NOT supported	
84	Dedicated File (DF) Name	A0 00 00 00 29 10 10	
87	Application Priority Indicator	02	
8C	Card Risk Management Data Object List 1 (CDOL1)	9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04	
8D	Card Risk Management Data Object List 2 (CDOL2)	8A 02 9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04	
8E	Cardholder Verification Method (CVM) List	00 00 00 00 00 00 00 00 42 01 41 03 5E 03 5F 03	
94	Application File Locator (AFL)	08 01 01 00 08 02 03 01	
9F 07	Application Usage Control	FF 00 BYTE 1: b8 - Domestic cash trans. valid b7 - Int'l cash transactions valid b6 - Domestic goods valid b5 - International goods valid b4 - Domestic services valid b3 - International services valid b2 - ATMs valid b1 - non-ATM terminals valid BYTE 2: b8 - Domestic cashback NOT allowed b7 - International cashback NOT allowed	
9F 08	Application Version Number	00 01	
9F 0D	Issuer Action Code - Default	B0 50 FC 98 00	
9F 0E	Issuer Action Code - Denial	00 00 00 00 00	
9F 0F	Issuer Action Code - Online	B0 78 FC 98 00	
9F 10	Issuer Application Data [American Express]	xx xx 01 xx xx xx xx xx *	
9F 11	Issuer Code Table Index	01	
9F 12	Application Preferred Name	41 6D 65 72 69 63 61 6E 20 45 78 70 72 65 73 73 - 'American Express'	
9F 13	Last Online Application Transaction Counter (ATC) Register	xx xx *	
9F 17	Personal Identification Number (PIN) Try Counter	09	
9F 26	Application Cryptogram (AC)	xx xx xx xx xx xx xx xx *	
9F 27	Cryptogram Information Data (CID)	80	
9F 36	Application Transaction Counter (ATC)	00 08	
9F 38	Processing Options Data Object List (PDOL)	9F 35 01	
9F 42	Application Currency Code	01 24 - CAD	



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

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

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

1.13.1 Cardholder Verification Method List - AID A00000025010402

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

1.13.2 Application Tag data (Contact Interface, online) - AID A00000025010402

* Tag value changes with card usage

Tag	Element name	Data	Card v6.0
50	Application Label	41 4D 45 52 49 43 41 4E 20 45 58 50 52 45 53 53 - 'AMERICAN EXPRESS'	
57	Track 2 Equivalent Data	37 42 45 00 27 71 00 3D 24 12 20 11 50 21 23 45 00 00 0F	
5A	Application Primary Account Number (PAN)	37 42 45 00 27 71 00 3F	
5F 20	Cardholder Name	55 41 54 20 43 41 4E 2F 54 65 73 74 20 43 61 72 64 20 31 33 20 20 20 20 20 20 - 'UAT CAN/Test Card 13'	
5F 24	Application Expiration Date	24 12 31	
5F 25	Application Effective Date	xx xx xx	
5F 28	Issuer Country Code	01 24 - Canada	
5F 2D	Language Preference	65 6E - 'en' (English)	
5F 30	Service Code	02 01	
5F 34	Application PAN Sequence Number	00	
82	Application Interchange Profile	1C 00 BYTE 1: b7 - Offline SDA NOT supported b6 - Offline DDA NOT supported b5 - Cardholder verification supported b4 - Terminal risk mgmt to be performed b3 - Issuer authentication supported b1 - Combined DDA / GEN AC NOT supported BYTE 2: b8 - EMV Contactless NOT supported	
84	Dedicated File (DF) Name	A0 00 00 00 25 01 04 02	
87	Application Priority Indicator	01	
8C	Card Risk Management Data Object List 1 (CDOL1)	9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04	
8D	Card Risk Management Data Object List 2 (CDOL2)	8A 02 9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04	
8E	Cardholder Verification Method (CVM) List	00 00 00 00 00 00 00 00 42 01 41 03 5E 03 5F 03	
94	Application File Locator (AFL)	08 01 01 00 08 02 03 01	



Tag	Element name	Data	Card v6.0
9F 07	Application Usage Control	FF 00 BYTE 1: b8 - Domestic cash transactions valid b7 - Int'l cash transactions valid b2 - ATMs valid BYTE 2: b8 - Domestic cashback NOT allowed b7 - International cashback NOT allowed	
9F 08	Application Version Number	00 01	
9F 0D	Issuer Action Code - Default	B0 50 FC 98 00	
9F 0E	Issuer Action Code - Denial	00 00 00 00 00	
9F 0F	Issuer Action Code - Online	B0 78 FC 98 00	
9F 10	Issuer Application Data [American Express]	xx xx 01 xx xx xx xx *	
9F 11	Issuer Code Table Index	01	
9F 12	Application Preferred Name	41 6D 65 72 69 63 61 6E 20 45 78 70 72 65 73 73 - 'American Express'	
9F 13	Last Online Application Transaction Counter (ATC) Register	xx xx *	
9F 17	Personal Identification Number (PIN) Try Counter	09	
9F 26	Application Cryptogram (AC)	1E 6C 93 B6 A5 86 0A 4F	
9F 27	Cryptogram Information Data (CID)	80	
9F 36	Application Transaction Counter (ATC)	00 07	
9F 38	Processing Options Data Object List (PDOL)	9F 35 01	
9F 42	Application Currency Code	01 24 - CAD	

1.13.3 Cardholder Verification Method List (CL) - AID A000000025010402

Cardholder Verification Method List ('4201 5E03 1F02')			
CVM	Verification Method	Conditions	If unsuccessful
1	Online PIN	Unattended Cash	Next CVM
2	Signature (paper)	Terminal supports CVM type	Next CVM
3	No CVM required	Not Unattended Cash, Manual Cash or Cashback	Fail

1.13.4 Application Tag data (Contactless Interface, online) - AID A000000025010402

* Tag value changes with card usage

Tag	Element name	Data	Card v6.0
50	Application Label	41 4D 45 52 49 43 41 4E 20 45 58 50 52 45 53 53 - 'AMERICAN EXPRESS'	
57	Track 2 Equivalent Data	37 42 45 00 27 71 00 3D 24 12 70 21 50 21 23 45 00 00 0F	
5A	Application Primary Account Number (PAN)	37 42 45 00 27 71 00 3F	
5F 20	Cardholder Name	55 41 54 20 43 41 4E 2F 54 65 73 74 20 43 61 72 64 20 31 33 20 20 20 20 20 20 - 'UAT CAN/Test Card 13'	
5F 24	Application Expiration Date	24 12 31	
5F 25	Application Effective Date	xx xx xx	
5F 28	Issuer Country Code	01 24	
5F 2D	Language Preference	65 6E	
5F 30	Service Code	02 01	
5F 34	Application PAN Sequence Number	00	



Tag	Element name	Data	Card v6.0
82	Application Interchange Profile [Expresspay]	1C 80 BYTE 1: b7 - SDA NOT supported b6 - DDA NOT supported b5 - Cardholder verification supported b4 - Terminal risk mgmt to be performed b3 - Issuer authentication supported b1 - CDA NOT supported BYTE 2: b8 - EMV & Mag-stripe modes supported b7 - Expresspay Mobile NOT supported b6 - Expresspay Mobile HCE NOT supported	
84	Dedicated File (DF) Name	A0 00 00 00 25 01 04 02	
87	Application Priority Indicator	01	
8C	Card Risk Management Data Object List 1 (CDOL1)	9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04	
8D	Card Risk Management Data Object List 2 (CDOL2)	8A 02 9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04	
8E	Cardholder Verification Method (CVM) List	00 00 00 00 00 00 00 00 42 01 5E 03 1F 02	
94	Application File Locator (AFL)	08 01 02 00 08 03 04 02	
9F 07	Application Usage Control	3D 00 BYTE 1: b8 - Domestic cash trans. NOT valid b7 - Int'l cash transactions NOT valid b6 - Domestic goods valid b5 - International goods valid b4 - Domestic services valid b3 - International services valid b2 - ATMs valid b1 - non-ATM terminals valid BYTE 2: b8 - Domestic cashback NOT allowed b7 - International cashback NOT allowed	
9F 08	Application Version Number	00 01	
9F 0D	Issuer Action Code - Default	B0 50 FC 98 00	
9F 0E	Issuer Action Code - Denial	00 00 00 00 00	
9F 0F	Issuer Action Code - Online	B0 78 FC 98 00	
9F 10	Issuer Application Data [American Express]	xx xx 01 xx xx xx xx *	
9F 12	Application Preferred Name	41 6D 65 72 69 63 61 6E 20 45 78 70 72 65 73 73 - 'AmericanExpress'	
9F 26	Application Cryptogram (AC)	39 E1 04 46 F3 FC 0A 9E	
9F 27	Cryptogram Information Data (CID)	80	
9F 36	Application Transaction Counter (ATC)	00 06	
9F 38	Processing Options Data Object List (PDOL)	9F 35 01	
9F 42	Application Currency Code	01 24 - CAD	

1.13.5 Cardholder Verification Method List - AID 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



1.13.6 Application Tag data (Contact Interface, online) - AID A000000291010

* Tag value changes with card usage

Tag	Element name	Data	Card v6.0
50	Application Label	41 4D 45 52 49 43 41 4E 20 45 58 50 52 45 53 53 - 'AMERICAN EXPRESS'	
57	Track 2 Equivalent Data	37 42 45 00 27 71 00 3D 24 12 20 11 50 21 23 45 00 00 0F	
5A	Application Primary Account Number (PAN)	37 42 45 00 27 71 00 3F	
5F 20	Cardholder Name	55 41 54 20 43 41 4E 2F 54 65 73 74 20 43 61 72 64 20 31 33 20 20 20 20 20 20 - 'UAT CAN/Test Card 13'	
5F 24	Application Expiration Date	24 12 31	
5F 25	Application Effective Date	xx xx xx	
5F 28	Issuer Country Code	01 24 - Canada	
5F 2D	Language Preference	65 6E - 'en' (English)	
5F 30	Service Code	02 01	
5F 34	Application PAN Sequence Number	00	
82	Application Interchange Profile	1C 00 BYTE 1: b7 - Offline SDA NOT supported b6 - Offline DDA NOT supported b5 - Cardholder verification supported b4 - Terminal risk mgmt to be performed b3 - Issuer authentication supported b1 - Combined DDA / GEN AC NOT supported BYTE 2: b8 - EMV Contactless NOT supported	
84	Dedicated File (DF) Name	A0 00 00 00 29 10 10	
87	Application Priority Indicator	02	
8C	Card Risk Management Data Object List 1 (CDOL1)	9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04	
8D	Card Risk Management Data Object List 2 (CDOL2)	8A 02 9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04	
8E	Cardholder Verification Method (CVM) List	00 00 00 00 00 00 00 00 42 01 41 03 5E 03 5F 03	
94	Application File Locator (AFL)	08 01 01 00 08 02 03 01	
9F 07	Application Usage Control	FF 00 BYTE 1: b8 - Domestic cash trans. valid b7 - Int'l cash transactions valid b6 - Domestic goods valid b5 - International goods valid b4 - Domestic services valid b3 - International services valid b2 - ATMs valid b1 - non-ATM terminals valid BYTE 2: b8 - Domestic cashback NOT allowed b7 - International cashback NOT allowed	
9F 08	Application Version Number	00 01	
9F 0D	Issuer Action Code - Default	B0 50 FC 98 00	
9F 0E	Issuer Action Code - Denial	00 00 00 00 00	
9F 0F	Issuer Action Code - Online	B0 78 FC 98 00	
9F 10	Issuer Application Data [American Express]	xx xx 01 xx xx xx xx xx	
9F 11	Issuer Code Table Index	01	



Tag	Element name	Data	Card v6.0
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 01 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	

1.14 Test Card 14 – American Express, 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 \$36.00.

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

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

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

1.15.1 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

1.15.2 Application Tag data (Contact Interface, online)

* Tag value changes with card usage

Tag	Element name	Data	Card v8.0
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	55 41 54 20 43 41 4E 2F 54 65 73 74 20 43 61 72 64 20 31 35 20 20 20 20 20 20 - 'UAT CAN/Test Card 15'	



Tag	Element name	Data	Card v8.0
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 NOT supported b1 - Combined DDA / GEN AC NOT supported BYTE 2: b8 - EMV Contactless NOT supported	
84	Dedicated File (DF) Name	A0 00 00 01 52 30 10	
87	Application Priority Indicator	01	
8C	Card Risk Management Data Object List 1 (CDOL1)	9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04 9F 35 01 9F 34 03	
8D	Card Risk Management Data Object List 2 (CDOL2)	91 0A 8A 02 95 05 9F 37 04	
8E	Cardholder Verification Method (CVM) List	00 00 00 00 00 00 00 00 42 01 41 03 1F 03	
94	Application File Locator (AFL)	08 01 01 00 18 01 02 01	
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 xx A0 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	
9F 78	Application State [D-PAS]	01	
C1	Application Configuration Options [DPAS]	15 E0	



Tag	Element name	Data	Card v8.0	
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		

1.15.3 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

1.15.4 Application Tag data (Contactless Interface, online)

* Tag value changes with card usage

Tag	Element name	Data	Card v8.0
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 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	55 41 54 20 43 41 4E 2F 54 65 73 74 20 43 61 72 64 20 31 35 20 20 20 20 20 20 - 'UAT CAN/Test Card 15'	
5F 24	Application Expiration Date	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 NOT supported using External Auth command b1 - Combined DDA / GEN AC NOT supported	



Tag	Element name	Data	Card v8.0
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	
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	
9F 71	Card Processing Requirements [DPAS]	00 0F	
9F 78	Application State [D-PAS]	01	
BF 51	Contactless D-PAS MS and ZIP Default Profile	82 02 00 00 94 04 08 01 01 00	
C0	Contactless Application Configuration Options (CL-ACO)	00 80	
C2	Issuer Life Cycle Data (ILCD) [DPAS]	00 00	
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	



Tag	Element name	Data	Card v8.0
CC	Upper Consecutive Offline Transaction Limit (UCOL) [DPAS]	00	
CD	Number of Consecutive Offline Transactions (NCOT) [DPAS]	00	
CE	Cumulative Offline Amount [DPAS]	00 00 00 00 00 00	
D0	Issuer Application Data ObjectList (IADOL) [DPAS]		
D1	Offline Balance [DPAS]	00 00 00 00 00 00	
D2	CRM Country Code [DPAS]	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	

1.16 Test Card 16 – Discover, 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 transaction.

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



Chapter 2 - ASCII Character Conversion Chart

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