



**Fiserv
UAT Clover
EMV™ Test Card Set**

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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, for those cards supporting offline PIN, it will no longer be possible to enter an Offline PIN, causing all future transactions to be declined.

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

Chapter 1 - Fiserv UAT Clover EMV Test Card Profiles

This Test Card Set contains five cards containing at least one sample of the card brands shown below:



	Test Card 01	Test Card 02	Test Card 03
Brand	Visa	Mastercard	Interac
Card Purpose	Online-Only U.S. Credit Card	Online-Only U.S. Credit Card	Canadian Debit Card supporting contact OEP
AID	A0000000031010	A0000000041010	A0000002771010
PAN	4761 7390 0101 0119	5413 3300 8960 4111	0012 0200 00001
Expiry Date	12/2022	12/2025	12/2028
Service Code	201	201	220
Card Interface(s)	Contact, Contactless, MSR	Contact, Contactless, MSR	Contact, Contactless, MSR
CVM	See card definition	See card definition	See card definition
Approval Amount	\$10.00	\$20.00	\$10.00
Issuer Country Code	840 (USA)	840 (USA)	124 (CAN)
Application Currency Code	840 (USD)	840 (USD)	124 (CAD)
Language(s)	'en' – English	'en' – English	'enfr' – English, French
Card Version	v1.x	v1.x	v1.x

	Test Card 04	Test Card 05
Brand	Interac	Maestro
Card Purpose	Canadian Debit Card supporting contact OEP	U.S. Debit Card
AID	A0000002771010	A0000002742203
PAN	0012 0200 00001	5413 3300 8909 9130
Expiry Date	12/2028	12/2025
Service Code	220	220
Card Interface(s)	Contact, Contactless, MSR	Contact, MSR
CVM	See card definition	See card definition
Approval Amount	\$10.00	\$20.00
Issuer Country Code	124 (CAN)	840 (USA)
Application Currency Code	124 (CAD)	840 (USD)
Language(s)	'fren' – French, English	'en' – English
Card Version	v1.x	v1.x

1.1 Test Card 01 – Visa, Credit, English, USA, USD

A Visa credit card with Issuer Country Code of 'USA' and Currency Code of 'USD'.

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

1.1.1 CVM List – AID A0000000031010, Visa (EMV)

Cardholder Verification Method List ('0201 4204 1E04 0005 5E00 1F00)			
CVM	Verification Method	Conditions	If unsuccessful
1	Online PIN	Unattended Cash	Fail
2	Online PIN	Manual Cash	Next CVM
3	Signature (paper)	Manual Cash	Fail
4	Fail CVM Processing	Purchase with Cashback	Fail
5	Signature (paper)	Always	Next CVM
6	No CVM required	Always	Fail

1.1.2 Application Tag data (Contact)

Tag	Element name	Data	v1.x
50	Application Label	56 69 73 61 20 43 72 65 64 69 74 - 'Visa Credit'	
57	Track 2 Equivalent Data	47 61 73 90 01 01 01 19 D2 21 22 01 11 75 89 89 38 90 0F	
5A	Application Primary Account Number (PAN)	47 61 73 90 01 01 01 19	
5F 20	Cardholder Name	43 6C 6F 76 65 72 20 54 65 73 74 2F 43 61 72 64 20 30 31 20 20 20 20 20 20 20 - 'Clover Test/Card 01'	
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 [VIS]	18 00 BYTE 1: b7 - Offline SDA NOT supported b6 - Offline DDA NOT supported b5 - Cardholder verification supported b4 - Terminal risk mgmt to be performed b3 - Issuer authentication NOT supported via EXTERNAL AUTH command b1 - Combined DDA / GEN AC NOT supported BYTE 2: b8 - Use for Visa NOT supported b7 - Is NOT Mobile handset	
84	Dedicated File (DF) Name	A0 00 00 00 03 10 10	
8C	Card Risk Management Data Object List 1 (CDOL1)	9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04	
8D	Card Risk Management Data Object List 2 (CDOL2)	8A 02 9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04	
8E	Cardholder Verification Method (CVM) List	00 00 00 00 00 00 00 02 01 42 04 1E 04 00 05 5E 00 1F 00	
8F	Certification Authority Public Key Index	92	

Tag	Element name	Data	v1.x
90	Issuer Public Key Certificate	3C 96 F7 65 8F BC 29 A2 02 F1 91 46 BD E9 21 66 B0 F6 22 1B BC CB 02 E3 26 71 0B 9E 22 9D 16 FA E9 AD 0C 87 4C 06 85 91 6E 19 F0 E3 26 93 EE 20 1B CE 23 59 50 9A 6D 65 72 F8 EC 3F C3 73 12 6B 34 3F 9C B8 15 3D 61 B7 EA B2 D4 2D E1 9D 56 08 31 85 A0 3D D1 4C 26 8D 40 DF 08 35 C5 5E AB FA 38 ED 28 BC E4 2C D0 01 3D A9 4F 80 05 18 B7 53 C2 46 EF FB A0 8F D2 02 9B AD 5D FC F0 DA F0 7B 7D 80 1C 46 5F FD 25 2C 70 B9 21 53 B3 30 D9 5D CA 2F A1 FA AE 2D 01 68 A4 EA 8B 47 5C D8 05 DC 32 AA 96 4C 17 BF CD 2C D5 D0 30 9A B0 EA 76 1B	
92	Issuer Public Key Remainder	50 DA 20 DD A8 95 3B 69 3F ED 84 36 68 31 BA 1E EA 97 F7 8F 79 2A CF 8C B9 8F DF 01 49 A7 B7 8F DA 1C 49 67	
94	Application File Locator (AFL)	10 01 01 00 10 02 05 01 B0 01 01 00	
9F 07	Application Usage Control	FF 00 BYTE 1: b8 - Domestic cash trans. valid b7 - Int'l cash transactions valid b6 - Domestic goods valid b5 - International goods valid b4 - Domestic services valid b3 - International services valid b2 - ATMs valid b1 - non-ATM terminals valid BYTE 2: b8 - Domestic cashback NOT allowed b7 - International cashback NOT allowed	
9F 08	Application Version Number [VIS]	00 96	
9F 0D	Issuer Action Code - Default	B8 50 AC 88 00	
9F 0E	Issuer Action Code - Denial	00 00 00 00 00	
9F 0F	Issuer Action Code - Online	B8 70 9C 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	03	
9F 1F	Track 1 Discretionary Data	31 37 35 38 39 30 30 38 39 33 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	v1.x
9F 46	ICC Public Key Certificate	1F 07 2E 23 A9 94 BE EB B8 07 23 C5 9C ED 6C 67 65 85 D1 4D B3 D7 C8 1D 07 CF 41 19 4F A3 20 2A 80 29 BA BD 97 81 70 F5 75 E2 D2 6B FA F5 BD FA 6C D2 3F 18 E4 8F 8B BD 1E 03 BF 5D F0 8A 19 09 BF 6C DE E1 E3 03 E7 00 74 10 6B C2 D4 41 C5 AB E8 EF 8C E0 0A D8 CA 96 48 C2 05 E2 24 98 42 5F 7C F9 F5 E6 9F 59 C7 72 06 91 4B C3 55 61 20 16 F8 C6 4A 1E E3 E7 85 21 5E 05 71 E3 68 A3 6E E9 60 39 00 37 C7 35 91 54 77 FE 7D 8E 96 02 1C 65 72 FA 49 76 7B 7D 31 97 72 FE 55 81 65 F1 0B FA EF E8 65 E4 B6 13 1D FD E0 87 21 56 89 8B 0E 62	
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]	00 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 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 10 00	
9F 72	Consecutive Transaction Limit (International-Country) [VSDC]	00	
BF 55	Contactless Counters Data Template	DF 11 01 00 DF 21 01 00 DF 31 01 00	
BF 56	Counters Data Template	DF 11 01 01 DF 21 01 00 DF 31 01 00	
BF 57	International Counters Data Template	DF 11 01 00 DF 21 01 00 DF 31 01 00 DF 51 01 00 DF 61 01 00	
BF 58	Amounts Data Template	DF 11 06 00 00 00 00 00 00 DF 21 06 00 00 00 00 00 00 DF 31 06 00 00 00 00 00	
BF 5B	Application Internal Data Template	DF 01 02 00 00	

* Tag value changes with card usage

1.1.3 No CVM List – AID A000000031010, Visa (qVSDC, online)
1.1.4 Application Tag data (Contactless)

Tag	Element name	Data	v1.x
50	Application Label	56 69 73 61 20 43 72 65 64 69 74 - 'Visa Credit'	
57	Track 2 Equivalent Data	47 61 73 90 01 01 01 19 D2 21 22 01 11 75 89 89 38 90 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]	00 00 b7 - Offline SDA (online Auth) NOT supported b6 - Offline DDA NOT supported BYTE 2: b8 - MSD NOT supported b7 - Is Mobile handset b6 - Is Contactless transaction	
84	Dedicated File (DF) Name	A0 00 00 00 03 10 10	
8F	Certification Authority Public Key Index	92	
90	Issuer Public Key Certificate	3C 96 F7 65 8F BC 29 A2 02 F1 91 46 BD E9 21 66 B0 F6 22 1B BC CB 02 E3 26 71 0B 9E 22 9D 16 FA E9 AD 0C 87 4C 06 85 91 6E 19 F0 E3 26 93 EE 20 1B CE 23 59 50 9A 6D 65 72 F8 EC 3F C3 73 12 6B 34 3F 9C B8 15 3D 61 B7 EA B2 D4 2D E1 9D 56 08 31 85 A0 3D D1 4C 26 8D 40 DF 08 35 C5 5E AB FA 38 ED 28 BC E4 2C D0 01 3D A9 4F 80 05 18 B7 53 C2 46 EF FB A0 8F D2 02 9B AD 5D FC F0 DA F0 7B 7D 80 1C 46 5F FD 25 2C 70 B9 21 53 B3 30 D9 5D CA 2F A1 FA AE 2D 01 68 A4 EA 8B 47 5C D8 05 DC 32 AA 96 4C 17 BF CD 2C D5 D0 30 9A B0 EA 76 1B	
92	Issuer Public Key Remainder	50 DA 20 DD A8 95 3B 69 3F ED 84 36 68 31 BA 1E EA 97 F7 8F 79 2A CF 8C B9 8F DF 01 49 A7 B7 8F DA 1C 49 67	
94	Application File Locator (AFL)	10 04 07 00	
9F 10	Issuer Application Data [VSDC]	xx xx 0A xx xx xx xx *	
9F 13	Last Online Application Transaction Counter (ATC) Register	xx xx *	
9F 17	Personal Identification Number (PIN) Try Counter	03	
9F 26	Application Cryptogram (AC)	xx xx xx xx xx xx xx xx *	
9F 27	Cryptogram Information Data (CID)	80	
9F 32	Issuer Public Key Exponent	03	
9F 36	Application Transaction Counter (ATC)	xx xx *	
9F 38	Processing Options Data Object List (PDOL)	9F 66 04 9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04	

Tag	Element name	Data	v1.x
9F 46	ICC Public Key Certificate	7D 87 B2 E1 75 EB 04 FD A9 6D 7E D7 6A 0D 8A 28 31 83 C4 93 90 C4 17 1F 8C D2 F6 2D 36 56 40 0F 65 52 D3 3B A9 8E 2B 12 BA E8 E8 3A C1 51 1D AD D6 31 C9 CB 5E CA DD C4 0A 93 99 99 87 1A BA 99 82 41 E2 C0 86 EF 07 94 FB BD 02 46 CE 9E 1B EB 03 FF 99 2C 12 23 49 33 D0 DE 6C 54 97 0C A2 F9 6E E2 49 33 9D C8 DA 07 BD 3D D6 39 9F 78 3D D0 0A AA 04 A3 8D 36 96 C5 B7 31 A0 A9 99 7E 7F F2 7A E6 5D 94 54 52 EE 34 63 84 F9 80 27 8E AC 32 35 FA FA DA 82 53 8C D1 F5 90 03 18 79 A7 62 EE 03 D4 AA B5 34 1A 25 33 9C 62 EB B2 AC 2C 99 4D	
9F 47	ICC Public Key Exponent	03	
9F 51	Application Currency Code [VSDC]	08 40 - USD	
9F 52	Application Default Action [VSDC VIS 1.5]	00 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 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 5A	Application Program Identifier	31 08 40 08 40	
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 10 00	
9F 69	Card Authentication Related Data [qVSDC]	01 00 00 00 00 00 00	
9F 6C	Card Transaction Qualifiers [qVSDC VCPS 2.1]	38 00 BYTE 1: b8 - Online PIN NOT required b7 - Signature NOT required b6 - Do go online if Offline Data Authentication fails and Reader is online capable b5 - Do switch interface if Offline Data Authentication fails and Reader supports contact chip b4 - Do go Online if Application Expired b3 - Do NOT switch interface for Cash Transactions b2 - Do NOT switch interface for Cashback Transactions b1 - Is valid for contactless ATM transactions BYTE 2: b8 - Consumer Device CVM NOT performed b7 - Card does NOT Support Issuer Update Processing at POS	

Tag	Element name	Data	v1.x
9F 6E	Form Factor Indicator [qVSDC]	20 70 00 00	
9F 72	Consecutive Transaction Limit (International-Country) [VSDC]	00	
BF 55	Contactless Counters Data Template	DF 11 01 00 DF 21 01 00 DF 31 01 00	
BF 56	Counters Data Template	DF 11 01 00 DF 21 01 00 DF 31 01 00	
BF 57	International Counters Data Template	DF 11 01 00 DF 21 01 00 DF 31 01 00 DF 51 01 00 DF 61 01 00	
BF 58	Amounts Data Template	DF 11 06 00 00 00 00 00 00 DF 21 06 00 00 00 00 00 00 DF 31 06 00 00 00 00 00	
BF 5B	Application Internal Data Template	DF 01 02 00 00	

* Tag value changes with card usage

1.1.5 No CVM List – AID A000000031010, Visa (qVSDC, offline)

1.1.6 Application Tag data (Contactless)

Tag	Element name	Data	v1.x
50	Application Label	56 69 73 61 20 43 72 65 64 69 74 - 'Visa Credit'	
57	Track 2 Equivalent Data	47 61 73 90 01 01 01 19 D2 21 22 01 11 75 89 89 38 90 0F	
5F 2D	Language Preference	65 6E - 'en' (English)	
5F 34	Application PAN Sequence Number	01	
82	Application Interchange Profile [VCPS]	00 00 b7 - Offline SDA (online Auth) NOT supported b6 - Offline DDA NOT 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	
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	03	
9F 26	Application Cryptogram (AC)	xx xx xx xx xx xx xx xx *	
9F 27	Cryptogram Information Data (CID)	80	
9F 36	Application Transaction Counter (ATC)	xx xx *	
9F 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 51	Application Currency Code [VSDC]	08 40 - USD	
9F 52	Application Default Action [VSDC VIS 1.5]	00 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 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 5A	Application Program Identifier	31 08 40 08 40	

Tag	Element name	Data	v1.x
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 10 00	
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]	00	
BF 55	Contactless Counters Data Template	DF 11 01 00 DF 21 01 00 DF 31 01 00	
BF 56	Counters Data Template	DF 11 01 00 DF 21 01 00 DF 31 01 00	
BF 57	International Counters Data Template	DF 11 01 00 DF 21 01 00 DF 31 01 00 DF 51 01 00 DF 61 01 00	
BF 58	Amounts Data Template	DF 11 06 00 00 00 00 00 00 DF 21 06 00 00 00 00 00 00 DF 31 06 00 00 00 00 00	
BF 5B	Application Internal Data Template	DF 01 02 00 00	

* Tag value changes with card usage

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

A Mastercard credit card with Issuer Country Code of 'USA' and Currency Code of 'USD'.

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

1.2.1 CVM List – AID A000000041010, Mastercard (EMV)

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

1.2.2 Application Tag data (Contact)

Tag	Element name	Data	v1.x
50	Application Label	4D 61 73 74 65 72 63 61 72 64 - 'Mastercard'	
57	Track 2 Equivalent Data	54 13 33 00 89 60 41 11 D2 51 22 01 01 23 40 91 72 02 9F	
5A	Application Primary Account Number (PAN)	54 13 33 00 89 60 41 11	
5F 20	Cardholder Name	43 6C 6F 76 65 72 20 54 65 73 74 2F 43 61 72 64 20 30 32 20 20 20 20 20 20 - 'Clover Test/Card 02'	
5F 24	Application Expiration Date	25 12 31	
5F 25	Application Effective Date	xx xx xx *	
5F 28	Issuer Country Code	08 40 - USA	
5F 2D	Language Preference	65 6E - 'en' (English)	
5F 30	Service Code	02 01	
5F 34	Application PAN Sequence Number	01	

Tag	Element name	Data	v1.x
82	Application Interchange Profile	38 00 BYTE 1: b7 - Offline SDA NOT supported b6 - Offline DDA supported b5 - Cardholder verification supported b4 - Terminal risk mgmt to be performed b3 - Issuer authentication NOT supported via EXTERNAL AUTH command b1 - Combined DDA / GEN AC NOT supported BYTE 2: b8 - EMV Contactless NOT supported	
84	Dedicated File (DF) Name	A0 00 00 00 04 10 10	
87	Application Priority Indicator	01	
8C	Card Risk Management Data Object List 1 (CDOL1)	9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04 9F 35 01 9F 45 02 9F 4C 08 9F 34 03 9F 21 03 9F 7C 14	
8D	Card Risk Management Data Object List 2 (CDOL2)	91 0A 8A 02 95 05 9F 37 04 9F 4C 08	
8E	Cardholder Verification Method (CVM) List	00 00 00 00 00 00 00 00 42 03 1E 03 1F 03	
8F	Certification Authority Public Key Index	EF	
90	Issuer Public Key Certificate	5B 2E 1F EF 4D 7D 2C 16 16 12 21 F7 97 2F E6 99 B7 82 44 E0 73 C8 AC 75 86 CE D1 76 EF 7B 93 AC 19 0B 05 70 40 E1 18 4F 2F 55 AC 70 D2 AA C3 94 BE 22 6A 26 50 D3 CA ED 90 60 88 C5 3A 88 B8 3C 46 1F 37 6D 89 10 B8 51 81 54 F3 08 EE ED 23 BC 15 7C FA BA 6E 51 26 9F 01 6D 59 FE 21 A6 F9 10 F2 85 13 0D EA F6 A4 78 BE 77 9D 2B AD 08 E1 2E D6 A5 93 71 5A 18 72 15 C5 63 28 1C B2 B7 2E 5B 14 05 5D 2D D8 30 4A C2 20 2E 53 96 D0 4C 5C 79 55 0B 4D E9 FA DA CB 35 F3 19 06 C5 A4 42 27 29 D6 A5 A8 F5 E1 4C B9 0D B7 05 49 4B 3D B1 0D E6 19 F3 B0 3E 64 96 FE 79 F4 6E 64 97 2A 46 34 A0 35 EF 7E 50 20 49 40 36 03 E0 BC FC 33 C3 87 BB 6D 72 CF F8 33 89 7E 81 F5 02 3F F4 D6 A9 CC 0C 89 E8 78 3F 07 B7 F0 55 3E 9D D3 59 B6 5B 62 3A F1 CE 27 8D 65 3C 37 07	
92	Issuer Public Key Remainder	14 3E 90 B8 B5 E6 2B E5 A9 0D 5A 4E F1 5C 77 40 4D 29 94 48 98 77 85 D7 E8 80 C2 CD	
94	Application File Locator (AFL)	08 02 04 01 18 01 01 00 20 01 01 00	
94	Application File Locator (AFL)	08 02 04 01 18 01 01 00 20 01 01 00	

Tag	Element name	Data	v1.x
9F 07	Application Usage Control	FF 00 BYTE 1: b8 - Domestic cash trans. valid b7 - Int'l cash transactions valid b6 - Domestic goods valid b5 - International goods valid b4 - Domestic services valid b3 - International services valid b2 - ATMs valid b1 - non-ATM terminals valid BYTE 2: b8 - Domestic cashback NOT allowed b7 - International cashback NOT allowed	
9F 08	Application Version Number	00 02	
9F 0D	Issuer Action Code - Default	B8 50 9C 80 00	
9F 0E	Issuer Action Code - Denial	00 00 00 00 00	
9F 0F	Issuer Action Code - Online	B8 70 9C 98 00	
9F 10	Issuer Application Data [M/Chip Advance]	xx 10 xx xx xx xx xx xx xx xx xx xx xx xx xx xx xx xx *	
9F 11	Issuer Code Table Index	01	
9F 12	Application Preferred Name	4D 61 73 74 65 72 63 61 72 64 43 72 65 64 69 74 - 'MastercardCredit'	
9F 14	Counter 1 Lower Limit [Mastercard]	00	
9F 17	Personal Identification Number (PIN) Try Counter	03	
9F 1F	Track 1 Discretionary Data	20 20	
9F 23	Counter 1 Upper Limit [Mastercard]	00	
9F 26	Application Cryptogram (AC)	xx xx xx xx xx xx xx xx *	
9F 27	Cryptogram Information Data (CID)	80	
9F 32	Issuer Public Key Exponent	03	
9F 36	Application Transaction Counter (ATC)	xx xx xx xx xx xx xx xx *	
9F 42	Application Currency Code	08 40 - USD	
9F 44	Application Currency Exponent	02	
9F 46	ICC Public Key Certificate	5B BA E2 30 C0 2A 0B 5C EC 86 AE 13 3B 3C C4 1D 95 48 FE F7 59 6E BA D2 CE A6 4F CA 76 88 DB CA 95 BD F0 6D D8 D1 D2 EA 64 A9 D3 BF 41 D6 C0 7D 1B E7 16 6C C4 CD 4D 4E B4 FA 43 6E 64 99 A2 2C 1C 77 AC 79 13 5B 35 DD 04 E5 A2 09 6A BB 68 3A 9E 27 CF 20 B9 08 64 41 F5 92 28 19 B1 12 A1 5A 92 27 13 7C 7E BC 70 C8 9B 19 73 5E 13 2D 88 96 24 B1 A6 5D D3 0F 63 02 8A 2D EC B2 C7 B3 17 5E 80 8A 3D 72 56 4B E2 CD 6E C0 8C EE 47 53 D8 71 01 C1 BF F2 D2 0C 3F 14 87 EE 88 47 F1 6E EC 64 45 3D AA 04 61 C5 C9 59 9C 28 D8 05 AB 8E CA 84 12 9D AD 90 0C EE D5 82 CC AB 43 96 91 21 3D 81 3B 0B 86 CD D9 67 89 F8 CB 78 C2 32 1A D8 CF 64 CC 2D 64 5F 54 FB 6C 23 F3 35 C6 F3 3E 7C 59 76 F4 88 5B 6A 27 69 69 51 E6 35 2E A9 00 4F 74 D1	
9F 47	ICC Public Key Exponent	03	

Tag	Element name	Data	v1.x
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	45 F3 8B 3F 5A 21 99 96 B0 96 DE E1 9D F5 77 D4 1D 74 DF 9A D9 08 99 CB 88 0D 70 C4 A1 FC 20 C2 EB 1E 34 9C CD B4 6D A6 75 88 2D FF 30 A1 A2 84 C9 BD 0F 91 C3 85 A9 1E E1 A5 E8 44 FC 46 2E 12 DF 24 AF 43 5A CA 20 89 55 E4 EB 14 44 66 44 FF BE D0 D7 A4 9A CC FE E4 A6 C0 12 71 DC 47 BD 30 E9 60 DA F1 E8 F8 4B C0 AF 56 79 27 29 46 B3 45 46 DD 5A E4 A6 3A 48 4E F6 67 CC 17 56 8F B0 AB 2C 28 9F 2F 2A 95 C2 24 41 10 00 25 3C BF 9C 1D 39 48 8D 89 E1 5C 29 AC 1F 9D FF 99 0C 1F 7B 88 A0 3C 54 DC 49 EB 43 3E 16 37 9D 58 1B F1 10 A6	
9F 4D	Transaction Log Entry	0B 0A	
9F 4F	Transaction Log Format	9F 27 01 9F 02 06 5F 2A 02 9A 03 9F 36 02 9F 52 06 DF 3E 01 9F 21 03 9F 7C 14	
9F 5D	Application Capabilities Information [M/Chip Advance]	01 00 00	
9F 6E	Third Party Data [Mastercard]	08 40 00 00 30 30 00	
9F 70	Protected Data Envelope 1 [M/Chip Advance]	20 20	
9F 71	Protected Data Envelope 2 [M/Chip Advance]	20 20	
9F 72	Protected Data Envelope 3 [M/Chip Advance]	20 20	
9F 73	Protected Data Envelope 4 [M/Chip Advance]	20 20	
9F 74	Protected Data Envelope 5 [M/Chip Advance]	20 20	
9F 75	Unprotected Data Envelope 1 [M/Chip Advance]	20 20	
9F 76	Unprotected Data Envelope 2 [M/Chip Advance]	20 20	
9F 77	Unprotected Data Envelope 3 [M/Chip Advance]	20 20	

Tag	Element name	Data	v1.x
9F 78	Unprotected Data Envelope 4 [M/Chip Advance]	20 20	
9F 79	Unprotected Data Envelope 5 [M/Chip Advance]	20 20	
9F 7E	Application Life Cycle Data [Mastercard]	03 10 0C 12 00 09 00 00 FF 00 04 00 00 02 60 00 00 38 4A 02 11 50 35 43 44 30 37 32 20	
C3	Card Issuer Action Code (Contact) - Decline [M/Chip Advance]	00 00 00	
C4	Card Issuer Action Code (Contact) - Default [M/Chip Advance]	06 58 00	
C5	Card Issuer Action Code (Contact) - Online [M/Chip Advance]	06 F8 00	
C6	PIN Try Limit [M/Chip Advance]	03	
C7	CDOL1 Related Data Length [Mastercard]	42	
C8	CRM Country Code [Mastercard]	08 40 - USA	
C9	Accumulator 1 Currency Code [Mastercard]	08 40 - USD	
CA	Accumulator 1 Lower Limit [Mastercard]	00 00 00 00 00 00	
CB	Accumulator 1 Upper Limit [Mastercard]	00 00 00 00 00 00	
CD	Card Issuer Action Code (Contactless) - Default [M/Chip Advance]	00 58 00	
CE	Card Issuer Action Code (Contactless) - Online [M/Chip Advance]	00 F8 00	
CF	Card Issuer Action Code (Contactless) - Decline [M/Chip Advance]	08 00 00	
D1	Accumulator 1 Currency Conversion Table [Mastercard]	08 40 00 01 00 08 40 00 01 00 08 40 00 01 00 08 40 00 01 00 08 40 00 01 00	
D3	Additional Check Table [Mastercard]	00 00 00 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF	
D5	Application Control [M/Chip Advance]	8C 00 80 00 86 02	
D6	Default ARPC Response Code [M/Chip Advance]	00 12	
D7	Application Control [M/Chip Advance]	40 01 40 00 86 02	
D9	Application File Locator (Contactless)	08 01 01 00 10 01 01 01 18 01 01 00 20 01 02 00	
DE	Log Data Table [M/Chip Advance]	00 00 00 00 00 00 00 00 00	
DF 02	Security Limits Status (Contact) [M/Chip Advance]	00	
DF 11	Accumulator 1 Control (Contact) [M/Chip Advance]	C1	
DF 12	Accumulator 1 Control (Contactless) [M/Chip Advance]	C1	
DF 14	Accumulator 2 Control (Contact) [M/Chip Advance]	00	
DF 15	Accumulator 2 Control (Contactless) [M/Chip Advance]	00	
DF 16	Accumulator 2 Currency Code [Mastercard]	09 99	
DF 17	Accumulator 2 Currency Conversion Table [Mastercard]	09 99 00 01 00 09 99 00 01 00 09 99 00 01 00 09 99 00 01 00 09 99 00 01 00	
DF 18	Accumulator 2 Lower Limit [Mastercard]	00 00 00 00 00 00	

Tag	Element name	Data	v1.x
DF 19	Accumulator 2 Upper Limit [Mastercard]	00 00 00 00 00 00	
DF 1A	Counter 1 Control (Contact) [M/Chip Advance]	c1	
DF 1B	Counter 1 Control (Contactless) [M/Chip Advance]	c1	
DF 1D	Counter 2 Control (Contact) [M/Chip Advance]	00	
DF 1E	Counter 2 Control (Contactless) [M/Chip Advance]	00	
DF 1F	Counter 2 Lower Limit [Mastercard]	00	
DF 21	Counter 2 Upper Limit [Mastercard]	00	
DF 22	MTA CVM (Contact) [M/Chip Advance]	00 00 00 00 00 00	
DF 23	MTA CVM (Contactless) [M/Chip Advance]	00 00 00 00 00 00	
DF 24	MTA Currency Code [M/Chip Advance]	09 99	
DF 25	MTA NoCVM (Contact) [M/Chip Advance]	00 00 00 00 00 00	
DF 26	MTA NoCVM (Contactless) [M/Chip Advance]	00 00 00 00 00 00	
DF 27	Number Of Days Offline Limit [M/Chip Advance]	00 00	
DF 28	Accumulator 1 CVR Dependency Data (Contact) [M/Chip Advance]	00 00 00	
DF 29	Accumulator 1 CVR Dependency Data (Contactless) [M/Chip Advance]	00 00 00	
DF 2A	Accumulator 2 CVR Dependency Data (Contact) [M/Chip Advance]	00 00 00	
DF 2B	Accumulator 2 CVR Dependency Data (Contactless) [M/Chip Advance]	00 00 00	
DF 2C	Counter 1 CVR Dependency Data (Contact) [M/Chip Advance]	00 00 00	
DF 2D	Counter 1 CVR Dependency Data (Contactless) [M/Chip Advance]	00 00 00	
DF 2E	Counter 2 CVR Dependency Data (Contact) [M/Chip Advance]	00 00 00	
DF 2F	Counter 2 CVR Dependency Data (Contactless) [M/Chip Advance]	00 00 00	
DF 30	Interface Enabling Switch [M/Chip Advance]	03	
DF 35	Security Limits Status (Contactless) [M/Chip Advance]	00	
DF 37	Security Limits Status Common [M/Chip Advance]	00	
DF 3C	CVR Issuer Discretionary Data (Contact) [M/Chip Advance]	00	
DF 3D	CVR Issuer Discretionary Data (Contactless) [M/Chip Advance]	00	
DF 3F	Read Record Filter (Contact) [M/Chip Advance]	00 00 00 00	
DF 40	Read Record Filter (Contactless) [M/Chip Advance]	08 03 03 00	
DF 41	DS Management Control [M/Chip Advance]	20	

* Tag value changes with card usage

1.2.3 CVM List – AID A000000041010, Mastercard (PayPass MChip)

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

1.2.4 Application Tag data (Contactless)

Tag	Element name	Data	v1.x
50	Application Label	4D 61 73 74 65 72 63 61 72 64 - 'Mastercard'	
56	Track 1 Equivalent Data [Mastercard]	42 35 34 31 33 33 33 30 30 38 39 36 30 34 31 31 31 5E 20 2F 5E 32 35 31 32 32 30 31 30 30 30 30 30 30 30 30 30 30 20 20 20 20 20 30 30 30 20 20 20 20 30	
57	Track 2 Equivalent Data	54 13 33 00 89 60 41 11 D2 51 22 01 01 23 40 91 72 02 9F	
5A	Application Primary Account Number (PAN)	54 13 33 00 89 60 41 11	
5F 24	Application Expiration Date	25 12 31	
5F 25	Application Effective Date	xx xx xx *	
5F 28	Issuer Country Code	08 40 - USA	
5F 2D	Language Preference	65 6E - 'en' (English)	
5F 34	Application PAN Sequence Number	01	
82	Application Interchange Profile	19 80 BYTE 1: b7 - Offline SDA NOT supported b6 - Offline DDA NOT supported b5 - Cardholder verification supported b4 - Terminal risk mgmt to be performed b3 - Issuer authentication NOT supported via EXTERNAL AUTH command b1 - Combined DDA / GEN AC supported BYTE 2: b8 - EMV Contactless supported	
84	Dedicated File (DF) Name	A0 00 00 00 04 10 10	
87	Application Priority Indicator	01	
8C	Card Risk Management Data Object List 1 (CDOL1)	9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04 9F 35 01 9F 45 02 9F 4C 08 9F 34 03 9F 21 03 9F 7C 14	
8D	Card Risk Management Data Object List 2 (CDOL2)	91 0A 8A 02 95 05 9F 37 04 9F 4C 08	
8E	Cardholder Verification Method (CVM) List	00 00 00 00 00 00 00 00 42 03 1E 03 1F 03	
8F	Certification Authority Public Key Index	EF	

Tag	Element name	Data	v1.x
90	Issuer Public Key Certificate	5B 2E 1F EF 4D 7D 2C 16 16 12 21 F7 97 2F E6 99 B7 82 44 E0 73 C8 AC 75 86 CE D1 76 EF 7B 93 AC 19 0B 05 70 40 E1 18 4F 2F 55 AC 70 D2 AA C3 94 BE 22 6A 26 50 D3 CA ED 90 60 88 C5 3A 88 B8 3C 46 1F 37 6D 89 10 B8 51 81 54 F3 08 EE ED 23 BC 15 7C FA BA 6E 51 26 9F 01 6D 59 FE 21 A6 F9 10 F2 85 13 0D EA F6 A4 78 BE 77 9D 2B AD 08 E1 2E D6 A5 93 71 5A 18 72 15 C5 63 28 1C B2 B7 2E 5B 14 05 5D 2D D8 30 4A C2 20 2E 53 96 D0 4C 5C 79 55 0B 4D E9 FA DA CB 35 F3 19 06 C5 A4 42 27 29 D6 A5 A8 F5 E1 4C B9 0D B7 05 49 4B 3D B1 0D E6 19 F3 B0 3E 64 96 FE 79 F4 6E 64 97 2A 46 34 A0 35 EF 7E 50 20 49 40 36 03 E0 BC FC 33 C3 87 BB 6D 72 CF F8 33 89 7E 81 F5 02 3F F4 D6 A9 CC 0C 89 E8 78 3F 07 B7 F0 55 3E 9D D3 59 B6 5B 62 3A F1 CE 27 8D 65 3C 37 07	
92	Issuer Public Key Remainder	14 3E 90 B8 B5 E6 2B E5 A9 0D 5A 4E F1 5C 77 40 4D 29 94 48 98 77 85 D7 E8 80 C2 CD	
94	Application File Locator (AFL)	08 01 01 00 10 01 01 01 18 01 01 00 20 01 02 00	
9F 07	Application Usage Control	FF 00 BYTE 1: b8 - Domestic cash trans. valid b7 - Int'l cash transactions valid b6 - Domestic goods valid b5 - International goods valid b4 - Domestic services valid b3 - International services valid b2 - ATMs valid b1 - non-ATM terminals valid BYTE 2: b8 - Domestic cashback NOT allowed b7 - International cashback NOT allowed	
9F 08	Application Version Number	00 02	
9F 0D	Issuer Action Code - Default	B4 70 84 00 00	
9F 0E	Issuer Action Code - Denial	00 00 00 00 00	
9F 0F	Issuer Action Code - Online	B4 70 84 80 00	
9F 10	Issuer Application Data [M/Chip Advance]	xx 11 xx xx xx xx xx xx xx xx xx xx xx xx xx xx xx xx *	
9F 11	Issuer Code Table Index	01	
9F 12	Application Preferred Name	4D 61 73 74 65 72 63 61 72 64 43 72 65 64 69 74 - 'MastercardCredit'	
9F 14	Counter 1 Lower Limit [Mastercard]	00	
9F 17	Personal Identification Number (PIN) Try Counter	03	
9F 23	Counter 1 Upper Limit [Mastercard]	00	
9F 27	Cryptogram Information Data (CID)	80	
9F 32	Issuer Public Key Exponent	03	
9F 36	Application Transaction Counter (ATC)	xx xx *	
9F 42	Application Currency Code	08 40 - USD	

Tag	Element name	Data	v1.x
9F 44	Application Currency Exponent	02	
9F 46	ICC Public Key Certificate	31 24 80 93 DA 8B 69 FA 95 C3 06 59 2C 0F 16 5B CE 84 42 A7 C6 8D 41 64 75 50 9C 99 B9 E7 F6 91 E8 61 DE 76 F0 FB E3 8D 50 F7 5F 35 9B B6 3E EA E1 21 FD 08 50 F6 FF C8 61 A3 23 7D 68 FF 87 CF 86 BC C9 71 B8 E0 D4 BC F2 8F 5E 50 C3 75 AA EA 99 52 C9 7C 4E 31 3E 96 F1 D1 EF 5C AC AC 24 B2 D6 90 DA 58 FD E1 84 AA 36 1D F8 EB 54 4B DF 22 16 5D 94 70 CD 11 C7 61 38 64 A6 96 04 B4 14 23 18 D9 E4 55 70 2A 9A 8F A4 E4 B6 62 29 4A D9 0F 79 E9 2B 3F 06 40 92 DB BC 81 71 16 14 7A C8 56 92 0A 00 6D 4B 64 8C DA A8 D1 01 0D 47 66 8A 26 E2 A1 50 47 E8 FC DA B4 79 11 F6 E0 82 97 5F 81 F0 B5 17 E5 DE EB E2 5A 44 21 EA 3E 21 C2 33 6A 45 55 A0 4A C5 48 F4 FD F3 88 0D DA 85 53 B9 6B 84 FD 06 95 55 EA 94 FD F8 A9 84 F7 33 F1 7C 3A	
9F 47	ICC Public Key Exponent	03	
9F 4A	Static Data Authentication Tag List	82	
9F 4D	Transaction Log Entry	0B 0A	
9F 4F	Transaction Log Format	9F 27 01 9F 02 06 5F 2A 02 9A 03 9F 36 02 9F 52 06 DF 3E 01 9F 21 03 9F 7C 14	
9F 5D	Application Capabilities Information [M/Chip Advance]	01 00 00	
9F 60	CVC3track1 [Mastercard]	43 FC	
9F 61	CVC3track2 [Mastercard]	C7 6E	
9F 62	Track 1 Bitmap for CVC3 (PCVC3 Track 1) [Mastercard]	00 00 00 38 00 00	
9F 63	Track 1 Bitmap for UN and ATC (PUNATC Track 1) [Mastercard]	00 00 00 00 E0 E0	
9F 64	Track 1 Number of ATC Digits (NATC Track 1) [Mastercard]	03	
9F 65	Track 2 Bitmap for CVC3 (PCVC3 Track 2) [Mastercard]	00 0E	
9F 66	Track 2 Bitmap for UN and ATC (PUNATC Track 2) [Mastercard]	0E 70	
9F 67	Track 2 Number of ATC Digits (NATC Track 2) [Mastercard]	03	
9F 6B	Track 2 Equivalent Data [Mastercard]	54 13 33 00 89 60 41 11 D2 51 22 01 00 00 40 00 00 00 0F	
9F 6C	Application Version [Mastercard]	00 01	
9F 6E	Third Party Data [Mastercard]	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	

Tag	Element name	Data	v1.x
C3	Card Issuer Action Code (Contact) - Decline [M/Chip Advance]	00 00 00	
C4	Card Issuer Action Code (Contact) - Default [M/Chip Advance]	06 58 00	
C5	Card Issuer Action Code (Contact) - Online [M/Chip Advance]	06 F8 00	
C6	PIN Try Limit [M/Chip Advance]	03	
C7	CDOL1 Related Data Length [Mastercard]	42	
C8	CRM Country Code [Mastercard]	08 40 - USA	
C9	Accumulator 1 Currency Code [Mastercard]	08 40 - USD	
CA	Accumulator 1 Lower Limit [Mastercard]	00 00 00 00 00 00	
CB	Accumulator 1 Upper Limit [Mastercard]	00 00 00 00 00 00	
CD	Card Issuer Action Code (Contactless) - Default [M/Chip Advance]	00 58 00	
CE	Card Issuer Action Code (Contactless) - Online [M/Chip Advance]	00 F8 00	
CF	Card Issuer Action Code (Contactless) - Decline [M/Chip Advance]	08 00 00	
D1	Accumulator 1 Currency Conversion Table [Mastercard]	08 40 00 01 00 08 40 00 01 00 08 40 00 01 00 08 40 00 01 00 08 40 00 01 00	
D3	Additional Check Table [Mastercard]	00 00 00 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF	
D5	Application Control [M/Chip Advance]	8C 00 80 00 86 02	
D6	Default ARPC Response Code [M/Chip Advance]	00 12	
D7	Application Control [M/Chip Advance]	40 01 40 00 86 02	
DF 02	Security Limits Status (Contact) [M/Chip Advance]	00	

* Tag value changes with card usage

1.3 Test Card 03 – Interac, Debit, English/French, CAN, CAD

An Interac (Canadian) debit card with Issuer Country Code of 'CAN' and Currency Code of 'CAD'.

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

1.3.1 CVM List – AID A000002771010, Interac (EMV)

Cardholder Verification Method List ('0403 0103 0203')			
CVM	Verification Method	Conditions	If unsuccessful
1	Offline Enciphered PIN	Terminal supports CVM type	Fail
2	Offline Plaintext PIN	Terminal supports CVM type	Fail
3	Online PIN	Terminal supports CVM type	Fail

1.3.2 Application Tag data (Contact)

Tag	Element name	Data	v1.x
50	Application Label	49 6E 74 65 72 61 63 - 'Interac'	
57	Track 2 Equivalent Data	00 12 02 00 00 00 1D 28 12 22 00 01 23 00 00 00 02 00 0F	
5A	Application Primary Account Number (PAN)	00 12 02 00 00 00 1F	

Tag	Element name	Data	v1.x
5F 20	Cardholder Name	43 6C 6F 76 65 72 20 54 65 73 74 2F 43 61 72 64 20 30 33 20 20 20 20 20 20 20 - 'Clover Test/Card 03'	
5F 24	Application Expiration Date	28 12 31	
5F 25	Application Effective Date	xx xx xx *	
5F 28	Issuer Country Code	01 24 - CAN	
5F 2D	Language Preference	65 6E 66 72 - 'enfr' (English, French)	
5F 30	Service Code	02 20	
5F 34	Application PAN Sequence Number	01	
5F 56	Issuer Country Code (alpha3 format)	43 41 4E - 'CAN'	
82	Application Interchange Profile	19 00 BYTE 1: b7 - Offline SDA NOT supported b6 - Offline DDA NOT supported b5 - Cardholder verification supported b4 - Terminal risk mgmt to be performed b3 - Issuer authentication NOT supported b1 - Combined DDA / GEN AC supported BYTE 2: b8 - EMV Contactless NOT supported	
84	Dedicated File (DF) Name	A0 00 00 02 77 10 10	
87	Application Priority Indicator	01	
8C	Card Risk Management Data Object List 1 (CDOL1)	9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04 9F 45 02 9F 4C 08 9F 34 03	
8D	Card Risk Management Data Object List 2 (CDOL2)	91 0A 8A 02 95 05 9F 37 04 9F 4C 08	
8E	Cardholder Verification Method (CVM) List	00 00 00 00 00 00 00 00 04 03 01 03 02 03	
8F	Certification Authority Public Key Index	07	
90	Issuer Public Key Certificate	1D 20 2E 58 DD 49 87 AC F7 62 08 02 0E 4A D4 33 E3 E1 97 2B 37 E2 23 1B 2B 8D 3C 46 BB 61 9C 50 DC E8 03 25 54 93 C3 45 7B 98 05 B0 B0 FF E4 22 9D 07 32 F6 3E C0 FA 8A 2C 93 95 7C 23 BB 6F DB 59 16 17 B8 C1 AB 27 D6 93 46 32 D8 0D 78 1E 6A CF 63 76 01 DE 6E 25 69 4A A7 C6 2A 68 80 B7 C8 93 A0 EB 0D 0B CD 50 64 76 4E 9E 8E C6 95 1B D1 FF DE 43 81 1D 6D 27 A8 CE 5C 6F 03 9D 38 EF 20 EC F7 1C E8 36 AB E3 85 04 0E 98 B1 A8 06 82 32 62 6F 4F D6 33 BF 5B EE 6F 76 C4 73 12 7F 96 8C 6F A4 65 26 AC FB D7 68 CF 04 63 BE ED 63 5A 23 4B 87 84 8A C0 9B A4 D3 77 2A 75 E4 E7 3E 14 6A C6 A2 74 7D 1D 9C EC AB F2 25 49 5D 61 E7 48 5A 92 F1 60 AE B7 5D CA 55 53 57 F7 67 58 71 DC C3 93 A5 7B 53 B4 DB E8 72 CB F1 60 66 01 B0 59 1E 48 98 2F 20 55 42 C7 25	
94	Application File Locator (AFL)	08 01 04 00 10 01 01 01 18 01 04 01	

Tag	Element name	Data	v1.x
9F 07	Application Usage Control	FF 00 BYTE 1: b8 - Domestic cash trans. valid b7 - Int'l cash transactions valid b6 - Domestic goods valid b5 - International goods valid b4 - Domestic services valid b3 - International services valid b2 - ATMs valid b1 - non-ATM terminals valid BYTE 2: b8 - Domestic cashback NOT allowed b7 - International cashback NOT allowed	
9F 08	Application Version Number	00 02	
9F 0D	Issuer Action Code - Default	FC 78 FC A8 40	
9F 0E	Issuer Action Code - Denial	00 00 00 00 00	
9F 0F	Issuer Action Code - Online	FC F8 FC F8 70	
9F 10	Issuer Application Data [InteracFlash]	xx 01 xx *	
9F 13	Last Online Application Transaction Counter (ATC) Register	xx xx *	
9F 17	Personal Identification Number (PIN) Try Counter	09	
9F 27	Cryptogram Information Data (CID)	80	
9F 32	Issuer Public Key Exponent	01 00 01	
9F 36	Application Transaction Counter (ATC)	xx xx *	
9F 42	Application Currency Code	01 24 - CAD	
9F 44	Application Currency Exponent	02	
9F 46	ICC Public Key Certificate	C0 B9 B2 99 70 DE ED F0 C9 4B 5E DA 0F 81 32 63 F8 3E AF CF 00 E9 87 14 E0 40 CC AB 1C F8 91 65 90 FD 56 08 FB 16 FB 29 B4 A6 3F 02 77 18 03 B5 8A 38 D6 83 D4 FC 08 27 6A 76 7E A7 35 75 1C 62 52 6B 09 95 AB 5B 34 05 FE A5 5A F4 10 15 24 2D 6D F0 F0 69 BD 67 40 77 7B C0 82 68 3C CB E0 8D 17 26 8F D1 C0 1C DF 1A 4E 00 E2 E4 3B 9B 05 62 7B DE C1 44 46 60 18 80 D9 27 DD 03 67 40 78 73 57 CA 12 DA 99 68 7C 65 99 52 3A 53 9A 15 AB 11	
9F 47	ICC Public Key Exponent	03	
9F 48	ICC Public Key Remainder	15 13 B8 47 06 2B CC 5C 94 FA 1A 9A 1D 51 58 57 78 06 D0 60 B9 D5 45 0E 01 B7	
9F 4A	Static Data Authentication Tag List	82	
9F 4D	Transaction Log Entry	0B 0A	
9F 4F	Transaction Log Format	9F 02 06 5F 2A 02 9A 03 9F 36 02 9F 1A 02 95 05 9C 01 8A 02	
9F 62	Card Product Code [InteracFlash]	00 01	
DF 62	Application Selection Flag [Canada]	80 80	

* Tag value changes with card usage

1.3.3 NO CVM List – AID A000002771010, Interac (Flash)

1.3.4 Application Tag data (Contactless)

Tag	Element name	Data	v1.x
50	Application Label	49 6E 74 65 72 61 63 - 'Interac'	
57	Track 2 Equivalent Data	00 12 02 00 00 00 1D 28 12 22 00 01 23 00 00 00 02 00 0F	
5A	Application Primary Account Number (PAN)	00 12 02 00 00 00 1F	
5F 24	Application Expiration Date	28 12 31	
5F 25	Application Effective Date	xx xx xx *	
5F 28	Issuer Country Code	01 24 - CAN	
5F 2D	Language Preference	65 6E 66 72 - 'enfr' (English, French)	
5F 30	Service Code	02 20	
5F 34	Application PAN Sequence Number	01	
5F 56	Issuer Country Code (alpha3 format)	43 41 4E - 'CAN'	
82	Application Interchange Profile	01 00 BYTE 1: b7 - Offline SDA NOT supported b6 - Offline DDA NOT supported b5 - Cardholder verification NOT supported b4 - Terminal risk mgmt OPTIONALLY NOT to be performed b3 - Issuer authentication NOT supported b1 - Combined DDA / GEN AC supported BYTE 2: b8 - EMV Contactless NOT supported	
84	Dedicated File (DF) Name	A0 00 00 02 77 10 10	
87	Application Priority Indicator	01	
8C	Card Risk Management Data Object List 1 (CDOL1)	9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04 9F 45 02 9F 4C 08 9F 34 03	
8F	Certification Authority Public Key Index	07	
90	Issuer Public Key Certificate	1D 20 2E 58 DD 49 87 AC F7 62 08 02 0E 4A D4 33 E3 E1 97 2B 37 E2 23 1B 2B 8D 3C 46 BB 61 9C 50 DC E8 03 25 54 93 C3 45 7B 98 05 B0 B0 FF E4 22 9D 07 32 F6 3E C0 FA 8A 2C 93 95 7C 23 BB 6F DB 59 16 17 B8 C1 AB 27 D6 93 46 32 D8 0D 78 1E 6A CF 63 76 01 DE 6E 25 69 4A A7 C6 2A 68 80 B7 C8 93 A0 EB 0D 0B CD 50 64 76 4E 9E 8E C6 95 1B D1 FF DE 43 81 1D 6D 27 A8 CE 5C 6F 03 9D 38 EF 20 EC F7 1C E8 36 AB E3 85 04 0E 98 B1 A8 06 82 32 62 6F 4F D6 33 BF 5B EE 6F 76 C4 73 12 7F 96 8C 6F A4 65 26 AC FB D7 68 CF 04 63 BE ED 63 5A 23 4B 87 84 8A C0 9B A4 D3 77 2A 75 E4 E7 3E 14 6A C6 A2 74 7D 1D 9C EC AB F2 25 49 5D 61 E7 48 5A 92 F1 60 AE B7 5D CA 55 53 57 F7 67 58 71 DC C3 93 A5 7B 53 B4 DB E8 72 CB F1 60 66 01 B0 59 1E 48 98 2F 20 55 42 C7 25	
94	Application File Locator (AFL)	08 01 04 00 10 01 05 03	

Tag	Element name	Data	v1.x
9F 07	Application Usage Control	FF 00 BYTE 1: b8 - Domestic cash trans. valid b7 - Int'l cash transactions valid b6 - Domestic goods valid b5 - International goods valid b4 - Domestic services valid b3 - International services valid b2 - ATMs valid b1 - non-ATM terminals valid BYTE 2: b8 - Domestic cashback NOT allowed b7 - International cashback NOT allowed	
9F 08	Application Version Number	00 02	
9F 0D	Issuer Action Code - Default	FC F8 FC F8 00	
9F 0E	Issuer Action Code - Denial	00 00 00 00 00	
9F 0F	Issuer Action Code - Online	FC F8 FC F8 00	
9F 10	Issuer Application Data [InteracFlash]	xx 01 xx *	
9F 13	Last Online Application Transaction Counter (ATC) Register	xx xx *	
9F 17	Personal Identification Number (PIN) Try Counter	09	
9F 27	Cryptogram Information Data (CID)	80	
9F 32	Issuer Public Key Exponent	01 00 01	
9F 36	Application Transaction Counter (ATC)	xx xx *	
9F 38	Processing Options Data Object List (PDOL)	9F 59 03 9F 5A 01 9F 02 06 9F 1A 02 5F 2A 02 9F 37 04 9F 58 01	
9F 42	Application Currency Code	01 24 - CAD	
9F 44	Application Currency Exponent	02	
9F 46	ICC Public Key Certificate	34 A2 DF 11 99 D4 57 16 2C 8D A3 ED 79 7F 99 4C 7D 88 FF 49 C3 E3 58 02 F8 28 B7 E2 BF E9 AC 13 0F 95 B9 D5 66 22 C3 2E 0F 3A E1 83 96 D6 48 A9 4A 59 52 16 23 74 93 1D 75 F6 E6 AA C0 B7 A8 68 EB A9 BD 07 A5 08 76 2B 6D 68 96 34 E4 CA 50 B5 45 8A A0 FC 06 4C D3 99 7E 99 D5 BA 48 90 E2 E2 AD 8F E4 BF A7 D8 F8 E2 1D 0E 71 3D D0 1F 89 E3 15 E9 55 C0 E3 E8 A3 D8 BA F2 DC 8F 91 A1 4A 66 9F 5E 63 68 1F F5 09 3E 89 14 39 98 AD 60 24 C7	
9F 47	ICC Public Key Exponent	03	
9F 48	ICC Public Key Remainder	15 13 B8 47 06 2B CC 5C 94 FA 1A 9A 1D 51 58 57 78 06 D0 60 B9 D5 45 0E 01 B7	
9F 4A	Static Data Authentication Tag List	82	
9F 4D	Transaction Log Entry	0B 0A	
9F 4F	Transaction Log Format	9F 02 06 5F 2A 02 9A 03 9F 36 02 9F 1A 02 95 05 9C 01 8A 02	
9F 62	Card Product Code [InteracFlash]	00 01	
9F 63	Card Transaction Information [InteracFlash]	00 10 00 00	
DF 62	Application Selection Flag [Canada]	80 80	

* Tag value changes with card usage

1.4 Test Card 04 – Interac, Debit, French/English, CAN, CAD

An Interac (Canadian) debit card with Issuer Country Code of 'CAN' and Currency Code of 'CAD'.

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

1.4.1 CVM List – AID A0000002771010, Interac (EMV)

Cardholder Verification Method List ('0403 0103 0203')			
CVM	Verification Method	Conditions	If unsuccessful
1	Offline Enciphered PIN	Terminal supports CVM type	Fail
2	Offline Plaintext PIN	Terminal supports CVM type	Fail
3	Online PIN	Terminal supports CVM type	Fail

1.4.2 Application Tag data (Contact)

Tag	Element name	Data	v1.x
50	Application Label	49 6E 74 65 72 61 63 - 'Interac'	
57	Track 2 Equivalent Data	00 12 02 00 00 00 1D 28 12 22 00 01 23 00 00 00 02 00 0F	
5A	Application Primary Account Number (PAN)	00 12 02 00 00 00 1F	
5F 20	Cardholder Name	43 6C 6F 76 65 72 20 54 65 73 74 2F 43 61 72 64 20 30 34 20 20 20 20 20 20 20 - 'Clover Test/Card 04'	
5F 24	Application Expiration Date	28 12 31	
5F 25	Application Effective Date	xx xx xx *	
5F 28	Issuer Country Code	01 24 - CAN	
5F 2D	Language Preference	66 72 65 6E - 'fren' (French, English)	
5F 30	Service Code	02 20	
5F 34	Application PAN Sequence Number	01	
5F 56	Issuer Country Code (alpha3 format)	43 41 4E - 'CAN'	
82	Application Interchange Profile	19 00 BYTE 1: b7 - Offline SDA NOT supported b6 - Offline DDA NOT supported b5 - Cardholder verification supported b4 - Terminal risk mgmt to be performed b3 - Issuer authentication NOT supported b1 - Combined DDA / GEN AC supported BYTE 2: b8 - EMV Contactless NOT supported	
84	Dedicated File (DF) Name	A0 00 00 02 77 10 10	
87	Application Priority Indicator	02	
8C	Card Risk Management Data Object List 1 (CDOL1)	9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04 9F 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 04 03 01 03 02 03	
8F	Certification Authority Public Key Index	98	

Tag	Element name	Data	v1.x
90	Issuer Public Key Certificate	19 35 B3 0D 49 9C D4 77 F0 2D 09 00 6E 81 77 84 14 C4 9D 0E AD E9 8C B8 BA E3 D7 B5 47 E7 B9 30 2F 5F FF 5D 6F 6A B1 29 E8 7B 75 6A A8 82 21 C0 E1 C5 DE 9A 76 71 1B 3E 63 10 08 AB C9 F1 52 74 55 F2 34 3F D9 E7 73 46 B6 21 A1 96 71 BF 9A 5F FC 31 D9 4D 5A E8 E7 77 62 23 40 A2 E5 E8 1F BE 8C 9F 06 47 10 AD 96 C0 B6 9E 97 CB C7 EA 85 7A 1C E1 36 6C 79 77 D2 C2 0B 31 E1 ED F6 4D 92 3D 56 EE 74 CA AC A4 81 ED F5 78 63 F1 70 F6 48 DB 1B 90 F7 18 BA 75 47 E5 B3 BD 71 E6 82 63 B6 30 B7 6C 7D FA 3C 10 3C CD 98 1D 89 66 8C 45 75 04 99 F5 79 E0 2B EF AE 7B 34 39 99 71 30 D3 39 1B 2B 6D 44 62 DB 53 F6 74 75 22 89 25 3C 80 A3 E3 B1 EC 79 9E 7E D6 A7 76 91 8E 72 89 B1 52 3D 06 14 CF AB D6 FA 2B DE 09 0E 8C 2A 65 C2 D9 56 D8 9D 84 FC 22 60 D1 B6 25	
94	Application File Locator (AFL)	08 01 04 00 10 01 01 01 18 01 04 01	
9F 07	Application Usage Control	FF 00 BYTE 1: b8 - Domestic cash trans. valid b7 - Int'l cash transactions valid b6 - Domestic goods valid b5 - International goods valid b4 - Domestic services valid b3 - International services valid b2 - ATMs valid b1 - non-ATM terminals valid BYTE 2: b8 - Domestic cashback NOT allowed b7 - International cashback NOT allowed	
9F 08	Application Version Number	00 02	
9F 0D	Issuer Action Code - Default	FC 78 FC A8 40	
9F 0E	Issuer Action Code - Denial	00 00 00 00 00	
9F 0F	Issuer Action Code - Online	FC F8 FC F8 70	
9F 10	Issuer Application Data [InteracFlash]	xx 01 xx *	
9F 13	Last Online Application Transaction Counter (ATC) Register	xx xx *	
9F 17	Personal Identification Number (PIN) Try Counter	09	
9F 27	Cryptogram Information Data (CID)	80	
9F 32	Issuer Public Key Exponent	01 00 01	
9F 36	Application Transaction Counter (ATC)	xx xx *	
9F 42	Application Currency Code	01 24 - CAD	
9F 44	Application Currency Exponent	02	

Tag	Element name	Data	v1.x
9F 46	ICC Public Key Certificate	1C F7 64 AE EB 88 ED F0 43 91 29 B4 0B B1 04 17 89 88 B9 58 E3 D1 C9 87 C6 B7 E5 33 1E D9 5E 7F 60 9F CF 39 FD 7B 66 D0 1B 54 93 7B 54 11 EF 50 29 F9 3E D1 F9 29 61 E1 B8 E6 0F DD 56 D6 74 8E D1 2F 8B 81 96 BC E3 C3 75 71 CF E1 AA 9F 15 F2 ED A0 5B D1 C8 9F 30 32 5B 99 EE EB CD D8 67 8C 0F B0 81 3F 8C EC 9B 24 F7 5E 8E 69 E7 D3 D7 A6 FF 3B FF 5E 2D 3D 07 A3 09 D4 15 49 B3 35 9A 19 E6 C3 A5 01 D9 FC D1 5B A6 2C 78 43 84 C9 FF 50	
9F 47	ICC Public Key Exponent	03	
9F 48	ICC Public Key Remainder	84 01 23 B6 8D 9E B4 4C 7C 5D 57 27 24 22 12 03 D3 E6 AD 2C DD 13 7B EB CF 11	
9F 4A	Static Data Authentication Tag List	82	
9F 4D	Transaction Log Entry	0B 0A	
9F 4F	Transaction Log Format	9F 02 06 5F 2A 02 9A 03 9F 36 02 9F 1A 02 95 05 9C 01 8A 02	
9F 62	Card Product Code [InteracFlash]	00 01	
DF 62	Application Selection Flag [Canada]	80 80	

* Tag value changes with card usage

1.4.3 No CVM List – AID A000002771010, Interac (Flash)

1.4.4 Application Tag data (Contactless)

Tag	Element name	Data	v1.x
50	Application Label	49 6E 74 65 72 61 63 - 'Interac'	
57	Track 2 Equivalent Data	00 12 02 00 00 00 1D 28 12 22 00 01 23 00 00 00 02 00 0F	
5A	Application Primary Account Number (PAN)	00 12 02 00 00 00 1F	
5F 24	Application Expiration Date	28 12 31	
5F 25	Application Effective Date	xx xx xx *	
5F 28	Issuer Country Code	01 24 - CAN	
5F 2D	Language Preference	66 72 65 6E - 'fren' (French, English)	
5F 30	Service Code	02 20	
5F 34	Application PAN Sequence Number	01	
5F 56	Issuer Country Code (alpha3 format)	43 41 4E - 'CAN'	
82	Application Interchange Profile	01 00 BYTE 1: b7 - Offline SDA NOT supported b6 - Offline DDA NOT supported b5 - Cardholder verification NOT supported b4 - Terminal risk mgmt OPTIONALLY NOT to be performed b3 - Issuer authentication NOT supported b1 - Combined DDA / GEN AC supported BYTE 2: b8 - EMV Contactless NOT supported	
84	Dedicated File (DF) Name	A0 00 00 02 77 10 10	
87	Application Priority Indicator	02	

Tag	Element name	Data	v1.x
8C	Card Risk Management Data Object List 1 (CDOL1)	9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04 9F 45 02 9F 4C 08 9F 34 03	
8F	Certification Authority Public Key Index	98	
90	Issuer Public Key Certificate	19 35 B3 0D 49 9C D4 77 F0 2D 09 00 6E 81 77 84 14 C4 9D 0E AD E9 8C B8 BA E3 D7 B5 47 E7 B9 30 2F 5F FF 5D 6F 6A B1 29 E8 7B 75 6A A8 82 21 C0 E1 C5 DE 9A 76 71 1B 3E 63 10 08 AB C9 F1 52 74 55 F2 34 3F D9 E7 73 46 B6 21 A1 96 71 BF 9A 5F FC 31 D9 4D 5A E8 E7 77 62 23 40 A2 E5 E8 1F BE 8C 9F 06 47 10 AD 96 C0 B6 9E 97 CB C7 EA 85 7A 1C E1 36 6C 79 77 D2 C2 0B 31 E1 ED F6 4D 92 3D 56 EE 74 CA AC A4 81 ED F5 78 63 F1 70 F6 48 DB 1B 90 F7 18 BA 75 47 E5 B3 BD 71 E6 82 63 B6 30 B7 6C 7D FA 3C 10 3C CD 98 1D 89 66 8C 45 75 04 99 F5 79 E0 2B EF AE 7B 34 39 99 71 30 D3 39 1B 2B 6D 44 62 DB 53 F6 74 75 22 89 25 3C 80 A3 E3 B1 EC 79 9E 7E D6 A7 76 91 8E 72 89 B1 52 3D 06 14 CF AB D6 FA 2B DE 09 0E 8C 2A 65 C2 D9 56 D8 9D 84 FC 22 60 D1 B6 25	
94	Application File Locator (AFL)	08 01 04 00 10 01 05 03	
9F 07	Application Usage Control	FF 00 BYTE 1: b8 - Domestic cash trans. valid b7 - Int'l cash transactions valid b6 - Domestic goods valid b5 - International goods valid b4 - Domestic services valid b3 - International services valid b2 - ATMs valid b1 - non-ATM terminals valid BYTE 2: b8 - Domestic cashback NOT allowed b7 - International cashback NOT allowed	
9F 08	Application Version Number	00 02	
9F 0D	Issuer Action Code - Default	FC F8 FC F8 00	
9F 0E	Issuer Action Code - Denial	00 00 00 00 00	
9F 0F	Issuer Action Code - Online	FC F8 FC F8 00	
9F 10	Issuer Application Data [InteracFlash]	xx 01 xx *	
9F 13	Last Online Application Transaction Counter (ATC) Register	xx xx *	
9F 17	Personal Identification Number (PIN) Try Counter	09	
9F 27	Cryptogram Information Data (CID)	80	
9F 32	Issuer Public Key Exponent	01 00 01	
9F 36	Application Transaction Counter (ATC)	xx xx *	
9F 38	Processing Options Data Object List (PDOL)	9F 59 03 9F 5A 01 9F 02 06 9F 1A 02 5F 2A 02 9F 37 04 9F 58 01	
9F 42	Application Currency Code	01 24 - CAD	

Tag	Element name	Data	v1.x
9F 44	Application Currency Exponent	02	
9F 46	ICC Public Key Certificate	12 95 E6 9A 54 07 60 53 92 A2 19 DA F5 57 67 F5 25 C2 7B 7B 9E 59 3C 05 5F AB 85 B1 B8 BC 73 8C AF EA 5A 19 5E BD 1C B5 82 09 44 A3 28 8B 07 F2 17 52 6D DE 56 28 33 25 54 19 66 62 09 3E 57 BA D7 CC FE 5A 1F 92 85 1D 54 48 5E D5 E9 B5 E8 57 0E 4E 2B D4 9D 82 B0 BE 8E B7 EF 2D 63 29 54 05 61 34 A4 BC 39 A6 22 F4 C6 E2 FC 4C 4F 5B C6 71 A2 D3 46 D0 34 06 64 6E CA 51 1F 8B F3 00 9B C0 18 1E E0 3D B2 7E 26 A2 52 8A 24 10 AA 57 0E 87	
9F 47	ICC Public Key Exponent	03	
9F 48	ICC Public Key Remainder	84 01 23 B6 8D 9E B4 4C 7C 5D 57 27 24 22 12 03 D3 E6 AD 2C DD 13 7B EB CF 11	
9F 4A	Static Data Authentication Tag List	82	
9F 4D	Transaction Log Entry	0B 0A	
9F 4F	Transaction Log Format	9F 02 06 5F 2A 02 9A 03 9F 36 02 9F 1A 02 95 05 9C 01 8A 02	
9F 62	Card Product Code [InteracFlash]	00 01	
9F 63	Card Transaction Information [InteracFlash]	00 10 00 00	
DF 62	Application Selection Flag [Canada]	80 80	

* Tag value changes with card usage

1.5 Test Card 05 – Maestro, U.S. Debit, English, USA, USD

A Maestro debit card with Issuer Country Code of 'USA' and Currency Code of 'USD'.

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

1.5.1 CVM List – AID A000000042203, Maestro (EMV)

Cardholder Verification Method List ('0205 4203 1F03)			
CVM	Verification Method	Conditions	If unsuccessful
1	Online PIN	Purchase with Cashback	Fail
2	Online PIN	Terminal supports CVM type	Next CVM
3	No CVM required	Terminal supports CVM type	Fail

1.5.2 Application Tag data (Contact)

Tag	Element name	Data	v1.x
42	Issuer Identification Number (IIN)	54 13 33	
50	Application Label	55 53 20 4D 41 45 53 54 52 4F - 'US MAESTRO'	
57	Track 2 Equivalent Data	54 13 33 00 89 09 91 30 D2 51 22 20 08 08 10 79 00 00 0F	
5A	Application Primary Account Number (PAN)	54 13 33 00 89 09 91 30	
5F 20	Cardholder Name	43 6C 6F 76 65 72 20 54 65 73 74 2F 43 61 72 64 20 30 35 20 20 20 20 20 20 20 - 'Clover Test/Card 05'	

Tag	Element name	Data	v1.x
5F 24	Application Expiration Date	25 12 31	
5F 25	Application Effective Date	xx xx xx *	
5F 28	Issuer Country Code	08 40 - USA	
5F 2D	Language Preference	65 6E - 'en' (English)	
5F 30	Service Code	02 20	
5F 34	Application PAN Sequence Number	13	
5F 55	Issuer Country Code (alpha2 format)	55 53 - 'US'	
82	Application Interchange Profile [M/Chip, PayPass]	18 00 BYTE 1: b7 - Offline SDA NOT supported b6 - Offline DDA NOT supported b5 - Cardholder verification supported b4 - Terminal risk mgmt to be performed b3 - Issuer authentication NOT supported via EXTERNAL AUTH command b2 - On device Cardholder verification NOT supported b1 - Combined DDA / GEN AC NOT supported BYTE 2: b8 - EMV Contactless NOT supported	
84	Dedicated File (DF) Name	A0 00 00 00 04 22 03	
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 02 05 42 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	v1.x
9F 07	Application Usage Control	FF C0 BYTE 1: b8 - Domestic cash trans. valid b7 - Int'l cash transactions valid b6 - Domestic goods valid b5 - International goods valid b4 - Domestic services valid b3 - International services valid b2 - ATMs valid b1 - non-ATM terminals valid BYTE 2: b8 - Domestic cashback allowed b7 - International cashback allowed	
9F 08	Application Version Number	00 02	
9F 0D	Issuer Action Code - Default	B0 50 9C 88 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 14 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	55 53 20 4D 61 65 73 74 72 6F - 'US Maestro'	
9F 14	Lower Consecutive Offline Limit	00	
9F 17	Personal Identification Number (PIN) Try Counter	01	
9F 1F	Track 1 Discretionary Data	30 36 32 39 33 30 34 32 33 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	81 06 25 67 98 88 06 1F 8B 9B 7B F2 84 68 66 C0 73 65 1F F1 82 12 95 59 F2 72 4B E1 84 BA 60 BB D0 FC 82 61 39 2C 36 22 9E B4 B7 72 F3 FC BD D9 0B 2F 90 8C 84 15 A7 0B 62 DD E4 D9 34 22 F6 52 8A A3 53 82 1E 2D 03 A5 18 F5 7B 40 92 0A F5 D5 37 6D 57 CB 07 BD E2 A9 06 CB 8A 6E 85 EA 16 EF 0D 15 83 28 58 75 86 8C 9B BF 08 56 5B 62 0E E2	
9F 47	ICC Public Key Exponent	03	
9F 48	ICC Public Key Remainder	7C DA D3 A5 02 C7 E8 17 43 C6 8C A6 CE 9E 48 E4 98 85 6B 51 F8 22 DF CC C7 6B 33 6E 08 F2 11 A1 F4 1B CE 39 B2 DD 51 AE CE 1B	
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	v1.x
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]	06 50 00	
C5	Card Issuer Action Code - Online [Mastercard]	06 FB 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]	08 40 - USA	
C9	CRM Currency Code [M/Chip4]	08 40 - USD	
CA	Lower Cumulative Offline Transaction Amount [M/Chip]	00 00 00 00 00 00	
CB	Upper Cumulative Offline Transaction Amount [M/Chip]	00 00 00 00 00 00	
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]	08 00 00	
D1	Currency Conversion Table [M/Chip]	08 40 00 01 00 08 40 00 01 00 08 40 00 01 00 08 40 00 01 00 08 40 00 01 00	
D3	Additional Check Table [Mastercard]	00 00 00 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF	
D5	Application Control [M/Chip]	82 00	
D6	Default ARPC Response Code [M/Chip4]	00 10	
D7	Application Control [PayPass M/Chip]	40 00 40	
DF 02	Security Limits Status [Mastercard]	00	

* Tag value changes with card usage

Chapter 2 - ASCII Character Conversion Chart

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