



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

Version 1.00

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Powered by B2»

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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 - Moneris UAT EMV Test Card Set Profiles

This Moneris UAT EMV Test Card Set contains 5 cards with one card from each of the following card brands.



	VISA	MASTERCARD	INTERAC
Brand	Visa	Mastercard	Interac
Type	Credit	Credit	Debit
AID	A0000000031010	A0000000041010	A0000002771010
PAN	4761 7390 0101 0119	5413 3300 8960 4111	1967 3028 3901 8644
Expiry Date	12/2022	12/2022	12/2022
Service Code	201	201	220
Interface	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	124 – Canada	840 – USA	124 – Canada
Application Currency Code	124 – CAD	840 – USD	124 – CAD
Language(s)	'en' – English	'fr' – French	'enfr' – English, French
Card Version	1	1	1

	AMEX	DISCOVER
Brand	American Express	Discover
Type	Credit	Credit
AID	A000000025010402	A0000001523010
PAN	3742 450027 71003	6510 0000 0000 0024
Expiry Date	12/2024	12/2023
Service Code	201	201
Interface	Contact, Contactless, MSR	Contact, Contactless, MSR
CVM	See card definition	See card definition
Approval Amount	\$1.03	\$79.00
Issuer Country Code	840 – USA	840 – USA
Application Currency Code	840 – USD	840 – USD
Language(s)	'en' - English	'en' - English
Card Version	1	1

1.1 VISA – DI, Credit, English, Canada, CAD

A Dual Interface Visa credit card with Issuer Country Code of ‘Canada’ and Currency Code of ‘CAD’.

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

1.1.1 Cardholder Verification Method List (Contact) - AID AID A0000000031010

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

1.1.2 Application Tag data (Contact I/F, online)

* Tag value changes with card usage

Tag	Element name	Data	Card v1.x
50	Application Label	56 49 53 41 20 43 52 45 44 49 54 - 'VISA CREDIT'	
57	Track 2 Equivalent Data	47 61 73 90 01 01 01 19 D2 21 22 01 11 43 80 44 00 00 0F	
5A	Application Primary Account Number (PAN)	47 61 73 90 01 01 01 19	
5F 20	Cardholder Name	4D 4F 4E 45 52 49 53 2F 56 49 53 41 20 20 20 20 20 20 20 20 20 20 20 20 20 - 'MONERIS/VISA'	
5F 24	Application Expiration Date	22 12 31	
5F 25	Application Effective Date	xx xx xx *	
5F 28	Issuer Country Code	01 24 - CAN	
5F 2D	Language Preference	65 6E - 'en' (English)	
5F 30	Service Code	02 01	
5F 34	Application PAN Sequence Number	01	
82	Application Interchange Profile [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 - Use by Visa NOT supported b7 - Is NOT Mobile handset	
84	Dedicated File (DF) Name	A0 00 00 00 03 10 10	
8C	Card Risk Management Data Object List 1 (CDOL1)	9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04	
8D	Card Risk Management Data Object List 2 (CDOL2)	8A 02 9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04	
8E	Cardholder Verification Method (CVM) List	00 00 00 00 00 00 00 00 00 42 01 5E 03 41 03 1F 03	
8F	Certification Authority Public Key Index	92	

Tag	Element name	Data	Card 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 04 01 B0 01 01 00	
9F 07	Application Usage Control	FF 80 BYTE 1: b8 - Domestic cash transactions 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- Terminals other than ATMs valid BYTE 2: b8 - Domestic cashback 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	00 00	
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 v1.x
9F 46	ICC Public Key Certificate	0C 36 3D 79 09 6F A1 54 50 C5 99 CD F7 85 BC D6 87 E1 CC 2C 44 52 45 22 69 11 0F 60 AE 87 7C 76 2B 24 90 02 C0 04 FB 27 85 37 FC 1F 8B C1 5E 61 EF 8D 0C D1 39 0D C5 11 B2 C0 20 E0 D0 B0 06 C9 D4 61 9A 26 D1 F8 62 11 5B 1E 7C 2A 54 C9 50 7E F0 89 33 4D 02 3C 5C FE 5F 4A D0 AF 6E AD E4 92 75 DC 1E 31 5A 4E 4D AD FA D2 FB 7B 9B BE 2A C4 26 B3 70 5F BD 85 DE 45 7B F0 5B 56 D8 62 F4 9D C3 93 DC 58 81 16 33 94 E9 56 31 E5 23 E6 0B 9C 10 FA E6 D4 58 ED F3 3E 05 2E 79 B8 05 C3 78 D1 A3 AC 07 9A D2 29 A2 53 8E 53 B6 B3 C1 A8 72 DE	
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	5C C9 5F 04 F6 BC C9 74 E3 36 A9 0E 33 BF CC 5C D1 63 B1 1C AA 8C 07 FC 65 1D 00 97 D3 47 84 9C 3B 83 74 10 02 01 BD 1D 58 03 E5 09 BB 07 E6 99 AB 41 4E 0C 7F 6E E6 27 4E 67 32 73 EF 85 D5 A9 7F 20 11 65 CD CA 59 E3 A5 4B 09 19 44 47 18 1C 06 16 0E 92 80 4D 2A AB 91 90 64 28 8D CB 3F 06 19 EB FA 49 4F 83 8D 49 42 2A 33 C7 10 8D 5E A0 1B 18 C5 16 34 81 4B BA DD 07 B5 12 69 3F F1 28	
9F 51	Application Currency Code [VSDC]	01 24 - CAD	
9F 52	Application Default Action [VSDC VIS 1.5]	C0 30 00 00 00 00	
9F 53	Consecutive Transaction Limit (International) [VSDC]	03	
9F 54	Cumulative Total Transaction Amount Limit [VSDC]	00 00 00 02 00 00	
9F 56	Issuer Authentication Indicator [VSDC]	80	
9F 57	Issuer Country Code [VSDC]	01 24 - CAN	
9F 58	Consecutive Transaction Counter Limit [VSDC]	03	
9F 59	Consecutive Transaction Counter Upper Limit [VSDC]	07	
9F 5C	Cumulative Total Transaction Amount Upper Limit [VSDC]	00 00 00 04 00 00	
9F 5E	Consecutive Transaction International Upper Limit [VSDC]	07	
9F 68	Card Additional Processes [qVSDC VCPS 2.1]	44 00 10 00	
9F 72	Consecutive Transaction Limit (International-Country) [VSDC]	03	
BF 55	Contactless Counters Data Template	DF 11 01 01 DF 21 01 03 DF 31 01 07	
BF 56	Counters Data Template	DF 11 01 01 DF 21 01 03 DF 31 01 07	
BF 57	International Counters Data Template	DF 11 01 01 DF 21 01 03 DF 31 01 07 DF 51 01 04 DF 61 01 03	
BF 58	Amounts Data Template	DF 11 06 00 00 00 01 00 02 DF 21 06 00 00 00 02 00 00 DF 31 06 00 00 00 04 00 00	
BF 5B	Application Internal Data Template	DF 01 02 00 00	

1.1.3 Application Tag data (CL I/F, online)

* Tag value changes with card usage

Tag	Element name	Data	Card v1.x
50	Application Label	56 49 53 41 20 43 52 45 44 49 54 -	'VISA CREDIT'
57	Track 2 Equivalent Data	47 61 73 90 01 01 01 19 D2 21 22 01 11 43 80 44 00 00 0F	
5A	Application Primary Account Number (PAN)	47 61 73 90 01 01 01 19	
5F 24	Application Expiration Date	22 12 31	
5F 2D	Language Preference	65 6E - 'en' (English)	
5F 34	Application PAN Sequence Number	01	
82	Application Interchange Profile [VCPS]	20 00 BYTE 1: b7 - Offline SDA (online Auth) NOT supported b6 - Offline DDA supported BYTE 2: b8 - MSD NOT supported b7 - Is Mobile handset b6 - Is Contactless transaction	
84	Dedicated File (DF) Name	A0 00 00 00 03 10 10	
8F	Certification Authority Public Key Index	92	
90	Issuer Public Key Certificate	3C 96 F7 65 8F BC 29 A2 02 F1 91 46 BD E9 21 66 B0 F6 22 1B BC CB 02 E3 26 71 0B 9E 22 9D 16 FA E9 AD 0C 87 4C 06 85 91 6E 19 F0 E3 26 93 EE 20 1B CE 23 59 50 9A 6D 65 72 F8 EC 3F C3 73 12 6B 34 3F 9C B8 15 3D 61 B7 EA B2 D4 2D E1 9D 56 08 31 85 A0 3D D1 4C 26 8D 40 DF 08 35 C5 5E AB FA 38 ED 28 BC E4 2C D0 01 3D A9 4F 80 05 18 B7 53 C2 46 EF FB A0 8F D2 02 9B AD 5D FC F0 DA F0 7B 7D 80 1C 46 5F FD 25 2C 70 B9 21 53 B3 30 D9 5D CA 2F A1 FA AE 2D 01 68 A4 EA 8B 47 5C D8 05 DC 32 AA 96 4C 17 BF CD 2C D5 D0 30 9A B0 EA 76 1B	
92	Issuer Public Key Remainder	50 DA 20 DD A8 95 3B 69 3F ED 84 36 68 31 BA 1E EA 97 F7 8F 79 2A CF 8C B9 8F DF 01 49 A7 B7 8F DA 1C 49 67	
94	Application File Locator (AFL)	10 04 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 *	
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	Card v1.x
9F 46	ICC Public Key Certificate	9D F9 C0 8B 40 75 78 CA 5D BC 42 B6 FD BB 32 B9 2D 10 F0 07 DA 0A 01 FE F9 9E A5 0B 9B 9A 6C BC 44 04 1F EC 15 5A 78 DB E4 90 82 88 14 D8 A2 16 7E BA D8 9C 00 D9 BC 7E 91 64 4F 99 BC BA AB 80 ED FA 8D 07 85 51 B6 C1 BC 02 54 61 E1 92 38 62 AC 8A 29 1F D4 EB DA 5D 9C CF 56 04 E3 0C C5 6C 80 6B 90 37 95 28 C2 BC B5 51 3A FC 68 0D FA 49 4E 27 D2 B5 78 2E 05 69 B4 8A 1F B6 AC 3A 64 F3 0E 86 A7 96 3C 3E 6C E7 FB C5 77 82 95 8A 00 B2 BC 64 A1 0A AC E0 92 0D 0F 3E 4B DA EB 8D 17 60 73 F4 75 DF 8C 6C 59 26 1B 05 46 18 55 9F D5 BB	
9F 47	ICC Public Key Exponent	03	
9F 4A	Static Data Authentication Tag List	82	
9F 4B	Signed Dynamic Application Data	42 B3 68 BD 0F DA EC 08 EE 34 8D 9C 7A 42 D1 83 A3 C4 51 CF BC 7E BC 77 11 5E A8 A3 3D BE B5 F3 BB E7 C9 27 F1 37 49 5F CA 09 63 86 FD 4D 6D BC 42 5A E0 44 C7 BF 19 35 21 82 48 FF 37 1C 65 4E 26 11 D4 9D A2 26 9C 58 DF 3B EC 6B BC 6F 83 92 1B 22 81 FE 54 39 9A E2 7A 6F 55 7E 79 0D 15 6E 63 FD 9C 74 FA F8 35 03 A5 D4 0F 16 B1 31 BE 8E 39 15 15 3B B7 1E B1 E1 D6 C0 96 DF FB 22 D4 A2	
9F 51	Application Currency Code [VSDC]	01 24 - CAD	
9F 52	Application Default Action [VSDC VIS 1.5]	C0 30 00 00 00 00	
9F 53	Consecutive Transaction Limit (International) [VSDC]	03	
9F 54	Cumulative Total Transaction Amount Limit [VSDC]	00 00 00 02 00 00	
9F 56	Issuer Authentication Indicator [VSDC]	80	
9F 57	Issuer Country Code [VSDC]	01 24 - CAN	
9F 58	Consecutive Transaction Counter Limit [VSDC]	03	
9F 59	Consecutive Transaction Counter Upper Limit [VSDC]	07	
9F 5A	Application Program Identifier	31 01 24 01 24	
9F 5C	Cumulative Total Transaction Amount Upper Limit [VSDC]	00 00 00 04 00 00	
9F 5E	Consecutive Transaction International Upper Limit [VSDC]	07	
9F 68	Card Additional Processes [qVSDC VCPS 2.1]	44 00 10 00	

Tag	Element name	Data	Card v1.x
9F 69	Card Authentication Related Data [qVSDC]	01 44 0E 6E B5 28 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 NOT 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]	28 00	
9F 6E	Form Factor Indicator [qVSDC]	20 70 00 00	
9F 72	Consecutive Transaction Limit (International-Country) [VSDC]	03	
BF 55	Contactless Counters Data Template	DF 11 01 01 DF 21 01 03 DF 31 01 07	
BF 56	Counters Data Template	DF 11 01 00 DF 21 01 03 DF 31 01 07	
BF 57	International Counters Data Template	DF 11 01 00 DF 21 01 03 DF 31 01 07 DF 51 01 03 DF 61 01 03	
BF 58	Amounts Data Template	DF 11 06 00 00 00 01 00 02 DF 21 06 00 00 00 02 00 00 DF 31 06 00 00 00 04 00 00	
BF 5B	Application Internal Data Template	DF 01 02 00 00	

1.2 MASTERCARD – DI, Credit, French, USA, USD

A Dual Interface 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 Cardholder Verification Method List (Contact) - AID A0000000041010

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

1.2.2 Application Tag data (Contact I/F, online)

* Tag value changes with card usage

Tag	Element name	Data	Card v1.x
50	Application Label	4D 41 53 54 45 52 43 41 52 44 -	
57	Track 2 Equivalent Data	‘MASTERCARD’	
5A	Track 2 Equivalent Data	54 13 33 00 89 60 41 11 D2 21 22 01	
5A	Application Primary Account Number (PAN)	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	54 13 33 00 89 60 41 11	
5F 20	Cardholder Name	4D 4F 4E 45 52 49 53 2F 54 65 73 74	
5F 20	Cardholder Name	20 43 61 72 64 20 30 32 20 20 20 20	
5F 20	Cardholder Name	20 20 - ‘MONERIS/MASTERCARD’	
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	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	
82	Application Interchange Profile [M/Chip, PayPass]	BYTE 1:	
82	Application Interchange Profile [M/Chip, PayPass]	b7 - Offline SDA NOT supported	
82	Application Interchange Profile [M/Chip, PayPass]	b6 - Offline DDA supported	
82	Application Interchange Profile [M/Chip, PayPass]	b5 - Cardholder verification supported	
82	Application Interchange Profile [M/Chip, PayPass]	b2 - On device Cardholder verification NOT supported	
82	Application Interchange Profile [M/Chip, PayPass]	b1 - Combined DDA / GEN AC supported	
82	Application Interchange Profile [M/Chip, PayPass]	BYTE 2:	
82	Application Interchange Profile [M/Chip, PayPass]	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	
8C	Card Risk Management Data Object List 1 (CDOL1)	2A 02 9A 03 9C 01 9F 37 04 9F 35 01	
8C	Card Risk Management Data Object List 1 (CDOL1)	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	
8E	Cardholder Verification Method (CVM) List	41 03 5E 03 1F 03	
8F	Certification Authority Public Key Index	FA	

Tag	Element name	Data	Card v1.x
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 40 BYTE 1: b8 - Domestic cash transactions 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- Terminals other than ATMs valid BYTE 2: b8 - Domestic cashback NOT allowed b7 - International cashback 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	08 40 - USD	
9F 44	Application Currency Exponent	02	
9F 46	ICC Public Key Certificate	4C C5 A1 4B 8F B8 AF 30 5A 17 7D E8 FD 48 1E B5 E6 63 26 CE 7D D2 EC A3 B3 C8 C7 DF 1F 59 64 C4 50 EE F7 45 30 E8 8E C2 B6 E3 BB 31 71 55 45 C4 C2 3C 3A 42 67 B8 D4 ED 52 D5 74 E2 0A E8 23 16 51 C3 62 80 18 65 7D C0 67 BA 79 A5 16 A7 97 C2 1E 09 1B 13 38 90 1A 90 4E 2F 2E FC E6 05 8A 24 D2 FB BF 44 22 F4 1E A5 D3 D0 06 18 08 75 0A 1B	
9F 47	ICC Public Key Exponent	03	
9F 48	ICC Public Key Remainder	6F 6E AF 51 52 1D 4E E0 A9 22 0F 7D C5 F1 F7 04 89 92 8F E5 1B D1 73 5A 2D E2 F0 D3 15 27 B1 DB B6 B5 62 00 A9 C3 EA 61 46 3F	

Tag	Element name	Data	Card 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	BB 06 73 65 6E 44 8D 77 4B 83 A3 5C 21 49 09 9D 87 A7 E5 E9 E5 4F DE 57 32 FC E2 26 DC 0C 9F 0E D2 3D F4 83 43 53 5A 7A 3F 64 55 C2 B4 2F C9 3C DA 24 82 FA 8E DB 77 EE F5 E1 DD 0F 3A F0 9C EC B8 FA E9 4D 05 8A FC 13 0F 74 18 F8 36 AD FA E6 C3 59 2F CA AC A2 18 9B 3D A2 07 9F 93 62 5C 56 32 5F 3C F1 DE 4F C2 A7 97 E4 E4 6E FC E2 18 29	
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 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 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	
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 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]	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	

1.2.3 Cardholder Verification Method List (CL) - AID A0000000041010

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

1.2.4 Application Tag data (CL I/F, online)

* Tag value changes with card usage

Tag	Element name	Data	Card v1.x
50	Application Label	4D 41 53 54 45 52 43 41 52 44 - 'MASTERCARD'	
56	Track 1 Equivalent Data [Mastercard]	42 35 34 31 33 33 33 30 30 38 39 36 30 34 31 31 31 5E 20 2F 5E 32 32 31 32 32 30 31 30	
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	08 40 - USA	
5F 2D	Language Preference	66 72 - 'fr' (French)	
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 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	

Tag	Element name	Data	Card v1.x
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	
9F 07	Application Usage Control	FF 40 BYTE 1: b8 - Domestic cash transactions 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- Terminals other than ATMs valid BYTE 2: b8 - Domestic cashback NOT allowed b7 - International cashback allowed	
9F 08	Application Version Number	00 02	
9F 0D	Issuer Action Code - Default	B4 50 80 80 00	
9F 0E	Issuer Action Code - Denial	00 00 00 00 00	
9F 0F	Issuer Action Code - Online	B4 70 80 80 00	
9F 10	Issuer Application Data [M/Chip 4]	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 43 61 72 64 - 'MasterCard'	
9F 14	Lower Consecutive Offline Limit	03	
9F 17	Personal Identification Number (PIN) Try Counter	09	
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 46	ICC Public Key Certificate	1D B9 5C 50 F5 C9 DD 98 0E 5C 9D BC B4 B1 E3 BB 00 34 77 DC D2 F0 C6 A1 BD FA 20 36 B6 01 8C BB E9 3B 14 F8 07 19 F0 CF 74 28 3F 11 EF 66 D8 C3 7B 6F 26 F9 A6 5A D7 02 62 20 4A 62 01 25 8E 63 88 34 1F F6 FE 59 D3 4D 1F 45 1A F5 63 0C BE F4 27 AF A5 CE 67 BA 27 9F 86 E5 78 68 2B F3 CC F8 3D 74 D1 C1 9D A8 CF A3 79 A0 93 00 CC 02 46 AA	
9F 47	ICC Public Key Exponent	03	
9F 48	ICC Public Key Remainder	6F 6E AF 51 52 1D 4E E0 A9 22 0F 7D C5 F1 F7 04 89 92 8F E5 1B D1 73 5A 2D E2 F0 D3 15 27 B1 DB B6 B5 62 00 A9 C3 EA 61 46 3F	
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]	84 DA	
9F 61	CVC3track2 [Mastercard]	F9 B5	
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	

Tag	Element name	Data	Card v1.x
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 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]	19 50 00	
C5	Card Issuer Action Code - Online [Mastercard]	39 FB 00	
C6	Counters [Mastercard]	00 04 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 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	
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 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	
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	

1.3 INTERAC – DI, Debit, Eng/Fre, Canada, CAD

A Dual Interface Interac debit card with Issuer Country Code of 'Canada' and Currency Code of 'CAD'.

The recommended transaction amount to generate a host approval is \$10.

1.3.1 Cardholder Verification Method List (Contact) - AID A0000002771010

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

1.3.2 Application Tag data (Contact I/F, online)

* Tag value changes with card usage

Tag	Element name	Data	Card v1.x
50	Application Label	49 6E 74 65 72 61 63	'INTERAC'
57	Track 2 Equivalent Data	19 67 30 28 39 01 86 44 D2 21 22 20 08 97 74 00 00 00 1F	
5A	Application Primary Account Number (PAN)	19 67 30 28 39 01 86 44	
5F 20	Cardholder Name	4D 4F 4E 45 52 49 53 2F 54 65 73 74 20 43 61 72 64 20 30 33 20 20 20 20 20 20 - 'MONERIS/INTERAC'	
5F 24	Application Expiration Date	22 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	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 Authenticate command b1 - Combined DDA / GEN AC NOT supported BYTE 2: b8 - Mag-stripe mode NOT supported b7 - Is NOT Mobile phone	
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 01 03 02 03	
94	Application File Locator (AFL)	08 01 02 00 10 01 01 00	

Tag	Element name	Data	Card v1.x
9F 07	Application Usage Control	FF 00 BYTE 1: b8 - Domestic cash transactions 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- Terminals other than ATMs 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 E8 FC 98 00	
9F 0E	Issuer Action Code - Denial	00 00 00 00 00	
9F 0F	Issuer Action Code - Online	FC E8 FC 98 00	
9F 10	Issuer Application Data [InteracFlash]	15 01 85 04 40 B9 00 00 00 00 B0 00 00 00 00 00 00 00 00 00 00 00	
9F 13	Last Online Application Transaction Counter (ATC) Register	xx xx *	
9F 17	Personal Identification Number (PIN) Try Counter	09	
9F 26	Application Cryptogram (AC)	xx xx xx xx xx xx xx xx *	
9F 27	Cryptogram Information Data (CID)	80	
9F 36	Application Transaction Counter (ATC)	xx xx *	
9F 38	Processing Options Data Object List (PDOL)	9F 02 06 9F 1A 02 5F 2A 02 9F 37 04	
9F 42	Application Currency Code	01 24 - CAD	
9F 44	Application Currency Exponent	02	
9F 4D	Transaction Log Entry	0B 0A	
9F 4F	Transaction Log Format	9F 02 06 5F 2A 02 9A 03 9F 36 02 9F 1A 02 95 05 9C 01 8A 02	
9F 62	Card Product Code [InteracFlash]	00 01	
9F 70	Form Factor Indicator [InteracFlash]	00	
DF 62	Application Selection Flag [Canada]	80 80	

1.3.3 Cardholder Verification Method List (CL) - AID A0000002771010

Cardholder Verification Method List('0203 1F03)			
CVM	Verification Method	Conditions	If unsuccessful
1	Online PIN	Terminal supports CVM type	Fail
2	NO CVM required	Terminal supports CVM type	Fail

1.3.4 Application Tag data (CL I/F, online)

* Tag value changes with card usage

Tag	Element name	Data	Card v1.x
50	Application Label	49 6E 74 65 72 61 63 - 'Interac'	
57	Track 2 Equivalent Data	19 67 30 28 39 01 86 44 D2 21 22 20 08 97 74 00 00 00 1F	
5A	Application Primary Account Number (PAN)	19 67 30 28 39 01 86 44	
5F 20	Cardholder Name	4D 4F 4E 45 52 49 53 2F 54 65 73 74 20 43 61 72 64 20 30 33 20 20 20 20 20 20 - 'MONERIS/INTERAC'	
5F 24	Application Expiration Date	22 12 31	
5F 25	Application Effective Date	xx xx xx	

Tag	Element name	Data	Card v1.x
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	
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 mode 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 02 03 1F 03	
94	Application File Locator (AFL)	08 01 03 00	
9F 07	Application Usage Control	FF 00 BYTE 1: b8 - Domestic cash transactions 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 - Terminals other than ATMs 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 E8 FC 98 00	
9F 0E	Issuer Action Code - Denial	00 00 00 00 00	
9F 0F	Issuer Action Code - Online	FC E8 FC 98 00	
9F 10	Issuer Application Data [InteracFlash]	15 01 85 04 40 F9 00 40 00 00 B0 10 00 00 00 00 00 00 00 00 00	
9F 13	Last Online Application Transaction Counter (ATC) Register	xx xx *	
9F 17	Personal Identification Number (PIN) Try Counter	09	
9F 26	Application Cryptogram (AC)	xx xx xx xx xx xx xx xx *	
9F 27	Cryptogram Information Data (CID)	80	
9F 36	Application Transaction Counter (ATC)	xx xx *	
9F 38	Processing Options Data Object List (PDOL)	9F 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 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	

Tag	Element name	Data	Card v1.x
9F 70	Form Factor Indicator [InteracFlash]	00	

1.4 AMEX – DI, Credit, English, USA, USD

A Dual Interface Amex 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.

1.4.1 Cardholder Verification Method List (Contact)- AID A000000025010402

Cardholder Verification Method List(‘4201 5E03 4103 5F03 0000’)			
CVM	Verification Method	Conditions	If unsuccessful
1	Online PIN	Unattended Cash	Next CVM
2	Signature (paper)	Terminal supports CVM type	Next CVM
3	Offline Plaintext PIN	Terminal supports CVM type	Next CVM
4	NO CVM required	Terminal supports CVM type	Next CVM
5	Fail CVM Processing	Always	Fail

1.4.2 Application Tag data (Contact I/F, online)

* Tag value changes with card usage

Tag	Element name	Data	Card v1.x
50	Application Label	41 4D 45 52 49 43 41 4E 20 45 58 50 52 45 53 53 - ‘AMERICAN EXPRESS’	
57	Track 2 Equivalent Data	37 42 45 00 27 71 00 3D 24 12 20 11 50 21 23 45 00 00 0F	
5A	Application Primary Account Number (PAN)	37 42 45 00 27 71 00 3F	
5F 20	Cardholder Name	4D 4F 4E 45 52 49 53 2F 54 65 73 74 20 43 61 72 64 20 30 34 20 20 20 20 20 20 - ‘MONERIS/AMEX’	
5F 24	Application Expiration Date	24 12 31	
5F 25	Application Effective Date	xx xx xx	
5F 28	Issuer Country Code	08 40 - USA	
5F 2D	Language Preference	65 6E - ‘en’ (English)	
5F 30	Service Code	02 01	
5F 34	Application PAN Sequence Number	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 mode 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	

Tag	Element name	Data	Card v1.x
8E	Cardholder Verification Method (CVM) List	00 00 00 00 00 00 00 00 00 42 01 5E 03 41 03 5F 03 00 00	
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 transactions 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- Terminals other than 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 [AEIPS 4.2]	xx xx 01 xx xx xx xx *	
9F 11	Issuer Code Table Index	01	
9F 12	Application Preferred Name	41 6D 65 72 69 63 61 6E 20 45 78 70 72 65 73 73 - 'American Express'	
9F 13	Last Online Application Transaction Counter (ATC) Register	xx xx *	
9F 17	Personal Identification Number (PIN) Try Counter	09	
9F 26	Application Cryptogram (AC)	xx xx xx xx xx xx xx xx *	
9F 27	Cryptogram Information Data (CID)	80	
9F 36	Application Transaction Counter (ATC)	xx xx *	
9F 38	Processing Options Data Object List (PDOL)	9F 35 01	
9F 42	Application Currency Code	08 40 - USD	

1.4.3 Cardholder Verification Method List (CL) - AID A000000025010402

Cardholder Verification Method List('4201 5E03 1F02 0000')			
CVM	Verification Method	Conditions	If unsuccessful
1	Offline 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
4	Fail CVM Processing	Always	Fail

1.4.4 Application Tag data (CL I/F, online)

* Tag value changes with card usage

Tag	Element name	Data	Card v1.x
50	Application Label	41 4D 45 52 49 43 41 4E 20 45 58 50 52 45 53 53 - 'AMERICAN EXPRESS'	
57	Track 2 Equivalent Data	37 42 45 00 27 71 00 3D 24 12 70 21 50 21 23 45 00 00 0F	
5A	Application Primary Account Number (PAN)	37 42 45 00 27 71 00 3F	
5F 20	Cardholder Name	4D 4F 4E 45 52 49 53 2F 54 65 73 74 20 43 61 72 64 20 30 34 20 20 20 20 20 20 - 'MONERIS/AMEX'	

Tag	Element name	Data	Card v1.x
5F 24	Application Expiration Date	24 12 31	
5F 25	Application Effective Date	xx xx xx	
5F 28	Issuer Country Code	08 40 - USA	
5F 2D	Language Preference	65 6E - 'en' (English)	
5F 30	Service Code	07 02	
5F 34	Application PAN Sequence Number	00	
82	Application Interchange Profile [Expresspay 2.0]	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 - Issuer supports EMV messages	
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 00 00	
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 [Expresspay 2.0]	xx xx 91 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)	B9 C7 86 06 D8 DB BA 1C	
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	08 40 - USD	

1.5 DISCOVER – DI, Credit, English, USA, USD

A Dual Interface Discover 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.

1.5.1 Cardholder Verification Method List (Contact)- AID A0000001523010

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

1.5.2 Application Tag data (Contact I/F, online)

* Tag value changes with card usage

Tag	Element name	Data	Card v1.x
50	Application Label	44 49 53 43 4F 56 45 52	'DISCOVER'
57	Track 2 Data [Discover]	65 10 00 00 00 10 00 24 10 00 07 49 00 00 0F	D2 31 22 01
5A	Application Primary Account Number (PAN)	65 10 00 00 00 10 00 24	
5F 20	Cardholder Name	4D 4F 4E 45 52 49 53 2F 54 65 73 74 20 43 61 72 64 20 30 35 20 20 20 20 20 20	'MONERIS/DISCOVER'
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 00 42 01 41 03 1F 03	
94	Application File Locator (AFL)	08 01 01 00 18 01 02 01	

Tag	Element name	Data	Card v1.x
9F 07	Application Usage Control	FF 00 BYTE 1: b8 - Domestic cash transactions 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- Terminals other than 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	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]	01 06 A0 00 09 80 00 00	
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	
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	

1.5.3 Cardholder Verification Method List (CL) - AID A000001523010

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
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1.5.4 Application Tag data (CL I/F, online)

* Tag value changes with card usage

Tag	Element name	Data	Card v1.x
50	Application Label	44 49 53 43 4F 56 45 52 20 43 4C -	'DISCOVER CL'
57	Track 2 Data [Discover]	65 10 00 00 00 10 00 24 D2 31 22 01 10 00 07 49 00 00 0F	
5A	Application Primary Account Number (PAN)	65 10 00 00 00 10 00 24	
5F 20	Cardholder Name	4D 4F 4E 45 52 49 53 2F 54 65 73 74 20 43 61 72 64 20 30 35 20 20 20 20 20 20 - 'MONERIS/DISCOVER'	
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 BYTE 2: RFU	
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 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 transactions 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 - Terminals other than 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	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]	01 15 20 88 00 00 00 00 30 00	
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 *	

Tag	Element name	Data	Card v1.x
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	
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	

Tag	Element name	Data	Card v1.x
DF 43	CL-Counter	00	
DF 44	CL-Cons Limit	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				