



**USA Debit
EMV™ Test Card Set**

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Powered by B2»

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Revision History

Version	Date	Updated By	Revisions
5.50	August 25, 2016	B2PS	Initial document release
6.00	February 21, 2017	B2PS	<ul style="list-style-type: none">• TC01 - PAN, Expiry Date, discretionary data changed.• “MasterCard” changed to “Mastercard”
7.00	October 4, 2018	B2PS	<ul style="list-style-type: none">• All cards - Tags 82, 9F07, 9F69 expanded & interpreted• DNA card TC01 - Expiry date changed to 25/12• Visa card TC02 - Expiry date changed to 22/12

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CAUTION

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

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

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

Chapter 1 - B2 USA Debit Test Card Set Profiles

This USA Debit Test Card Set contains three cards with one card from each of the following card brands.



	Test Card 01	Test Card 02	Test Card 03
Brand	DNA	Visa	Mastercard
Type	Debit	Debit	Debit
Description	Debit Network Alliance	Visa Debit: <ul style="list-style-type: none"> • U.S. Common Debit • Global Debit 	Mastercard Debit: <ul style="list-style-type: none"> • U.S. Common Debit • Global Debit
IIN	-	476173	541333
AID	A0000006200620	A00000980840, A00000031010	A00000042203, A00000041010
PAN	4000 0000 0000 0028	4761 7390 0101 0135	5413 3300 8909 9130
Expiry Date	12/2025	12/2022	12/2022
Service Code	201	201	201
Interface	Contact, MSR	Contact, MSR	Contact, MSR
CVM	See card definition	See card definition	See card definition
Approval Amount	\$10.00	\$10.00	\$20.00
Issuer Country Code	840 - USA	840 – USA	840 – USA
Application Currency Code	840 - USD	840 – USD	840 - USD
Language	'en' – English	'en' – English	'en' – English
Card Version	v7.0	v6.0	v5.0

1.1 Test Card 01 – DNA, Debit, English, USA, USD

A Debit Network Alliance debit 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 Cardholder Verification Method List - AID (A0000006200620)

Cardholder Verification Method List ('0201 0204 0203 1F03')			
CVM	Verification Method	Conditions	If unsuccessful
1	Online PIN	Unattended Cash	Fail
2	Online PIN	Manual Cash	Fail
3	Online PIN	Terminal supports CVM type	Fail
4	No CVM required	Always	Fail

1.1.2 Application Tag data

* Tag value changes with card usage

Tag	Element name	Data	Card v7.0
50	Application Label	44 4E 41 - 'DNA'	
57	Track 2 Data [Discover]	40 00 00 00 00 00 00 00 28 D2 51 22 01 56 78 00 00 00 35 1F	
5A	Application Primary Account Number (PAN)	40 00 00 00 00 00 00 28	
5F 20	Cardholder Name	55 53 41 20 44 45 42 49 54 2F 54 45 53 54 20 43 41 52 44 20 30 31 20 20 20 20 - 'USA DEBIT/TEST CARD 01'	
5F 24	Application Expiration Date	25 12 31	
5F 25	Application Effective Date	17 02 01	
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 06 20 06 20	
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 02 01 02 04 02 03 1F 03	
94	Application File Locator (AFL)	08 01 01 00 18 01 02 01	

Tag	Element name	Data	Card v7.0
9F 07	Application Usage Control	FF 00 BYTE 1: b8 - Domestic cash trans. valid b7 - Int'l cash transactions valid b6 - Domestic goods valid b5 - International goods valid b4 - Domestic services valid b3 - International services valid b2 - ATMs valid b1 - non-ATM terminals valid BYTE 2: b8 - Domestic cashback NOT allowed b7 - International cashback NOT allowed	
9F 08	Application Version Number	00 01	
9F 0D	Issuer Action Code - Default	F0 40 E4 28 00	
9F 0E	Issuer Action Code - Denial	00 10 00 00 40	
9F 0F	Issuer Action Code - Online	F0 68 FC F8 00	
9F 10	Issuer Application Data [DPAS]	xx xx xx xx xx xx xx xx *	
9F 11	Issuer Code Table Index	01	
9F 12	Application Preferred Name	44 65 62 69 74 - 'Debit'	
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 4D	Transaction Log Entry	0B 0A	
9F 4F	Transaction Log Format	9F 02 06 5F 2A 02 9A 03 9F 36 02 9F 34 03 9F 52 06 9F 1A 02 95 05 9C 01 8A 02 9F 37 04 9F 03 06 9F 53 08 9F 66 04 9F 71 02 9F 6C 02	
C1	Application Configuration Options [DPAS]	15 60	
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	
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 1F 22 0B 00	

1.2 Test Card 02 – Visa, Dual AID, Debit, English, USA, USD

A Visa debit card with two AIDs both referencing a single funding account, Issuer Country Code of 'USA' and Currency Code of 'USD'. Both AIDs reference a single funding account.

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

1.2.1 Cardholder Verification Method List - Global AID (A0000000031010)

Cardholder Verification Method List ('0201 4204 1E04 0205 5E00 4200 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	Online PIN	Purchase with Cashback	Fail
5	Signature (paper)	Always	Next CVM
6	Online PIN	Always	Next CVM
7	No CVM required	Always	Fail

1.2.2 Application Tag data

* Tag value changes with card usage

Tag	Element name	Data	Card v6.0
42	Issuer Identification Number (IIN)	47 61 73	
50	Application Label	56 49 53 41 20 44 45 42 49 54 - 'VISA DEBIT'	
57	Track 2 Equivalent Data	47 61 73 90 01 01 01 35 D2 21 22 01 19 55 94 58 00 00 0F	
5A	Application Primary Account Number (PAN)	47 61 73 90 01 01 01 35	
5F 20	Cardholder Name	55 53 41 20 44 45 42 49 54 2F 54 45 53 54 20 43 41 52 44 20 30 32 20 20 20 20- 'USA DEBIT/TEST CARD 02'	
5F 24	Application Expiration Date	22 12 31	
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	
5F 55	Issuer Country Code (alpha2 format)	55 53	
82	Application Interchange Profile [VSDC]	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: b8 - Mag-stripe mode NOT supported b7 - Is NOT Mobile handset	
84	Dedicated File (DF) Name	A0 00 00 00 03 10 10	
87	Application Priority Indicator	01	
8C	Card Risk Management Data Object List 1 (CDOL1)	9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04	

Tag	Element name	Data	Card v6.0
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 91 0A	
8E	Cardholder Verification Method (CVM) List	00 00 00 00 00 00 00 00 02 01 42 04 1E 04 02 05 5E 00 42 00 1F 00	
94	Application File Locator (AFL)	08 02 02 00 08 03 04 02	
9F 07	Application Usage Control	FF 80 BYTE 1: b8 - Domestic cash trans. valid b7 - Int'l cash transactions valid b6 - Domestic goods valid b5 - International goods valid b4 - Domestic services valid b3 - International services valid b2 - ATMs valid b1 - non-ATM terminals valid BYTE 2: b8 - Domestic cashback allowed b7 - International cashback NOT allowed	
9F 08	Application Version Number	00 96	
9F 0D	Issuer Action Code - Default	FC 50 AC 88 00	
9F 0E	Issuer Action Code - Denial	00 00 00 00 00	
9F 0F	Issuer Action Code - Online	FC 70 BC 98 00	
9F 10	Issuer Application Data [VSDC]	06 01 0A 03 A0 90 00	
9F 11	Issuer Code Table Index	01	
9F 12	Application Preferred Name	56 69 73 61 20 44 65 62 69 74 - 'Visa Debit'	
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 06 05	
9F 44	Application Currency Exponent	02	
9F 4A	Static Data Authentication Tag List	82	
9F 4F	Transaction Log Format	9F 02 06 5F 2A 02 9A 03 9F 36 02 9F 1A 02 95 05 9C 01 9F 27 01	
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 56	Issuer Authentication Indicator [VSDC]	00	
9F 57	Issuer Country Code [VSDC]	08 40 - USA	
BF 55	Contactless Counters Data Template		
BF 56	Counters Data Template		
BF 57	International Counters Data Template		
BF 58	Amounts Data Template		
BF 59	Profile Controls Template	DF 11 0B 10 00 00 00 00 00 00 00 00 00 00 DF 12 0B 20 00 00 00 00 00 00 00 00 00 00	
BF 5A	AIP/AFL Entries Template	DF 11 0B 18 00 08 08 02 02 00 08 03 04 02 DF 12 0F 18 00 0C 08 02 02 00 08 03 03 01 08 05 05 01	
BF 5B	Application Internal Data Template	DF 01 02 C0 00 DF 02 01 F1	

1.2.3 Cardholder Verification Method List - U.S. Common AID (A000000980840)

Cardholder Verification Method List ('0201 0004 0205 4200 1F00')			
CVM	Verification Method	Conditions	If unsuccessful
1	Online PIN	Unattended Cash	Fail
2	Fail CVM Processing	Manual Cash	Fail
3	Online PIN	Purchase with Cashback	Fail
4	Online PIN	Always	Next CVM
5	No CVM Required	Always	Fail

1.2.4 Application Tag data

* Tag value changes with card usage

Tag	Element name	Data	Card v6.0
42	Issuer Identification Number (IIN)	47 61 73	
50	Application Label	55 53 20 44 45 42 49 54 - 'US DEBIT'	
57	Track 2 Equivalent Data	47 61 73 90 01 01 01 35 D2 21 22 01 19 55 94 58 00 00 0F	
5A	Application Primary Account Number (PAN)	47 61 73 90 01 01 01 35	
5F 20	Cardholder Name	55 53 41 20 44 45 42 49 54 2F 54 45 53 54 20 43 41 52 44 20 30 32 20 20 20 20 - 'USA DEBIT/TEST CARD 02'	
5F 24	Application Expiration Date	22 12 31	
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	
5F 55	Issuer Country Code (alpha2 format)	55 53	
82	Application Interchange Profile [VSDC]	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: b8 - Mag-stripe mode NOT supported b7 - Is NOT Mobile handset	
84	Dedicated File (DF) Name	A0 00 00 00 98 08 40	
87	Application Priority Indicator	02	
8C	Card Risk Management Data Object List 1 (CDOL1)	9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04	
8D	Card Risk Management Data Object List 2 (CDOL2)	8A 02 9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04 91 0A	
8E	Cardholder Verification Method (CVM) List	00 00 00 00 00 00 00 00 02 01 00 04 02 05 42 00 1F 00	
94	Application File Locator (AFL)	08 02 02 00 08 03 03 01 08 05 05 01	

Tag	Element name	Data	Card v6.0
9F 07	Application Usage Control	AB 80 BYTE 1: b8 - Domestic cash trans. valid b7 - Int'l cash transactions NOT valid b6 - Domestic goods valid b5 - International goods NOT valid b4 - Domestic services valid b3 - International services NOT valid b2 - ATMs NOT valid b1 - non-ATM terminals valid BYTE 2: b8 - Domestic cashback allowed b7 - International cashback NOT allowed	
9F 08	Application Version Number	00 96	
9F 0D	Issuer Action Code - Default	FC 50 AC 88 00	
9F 0E	Issuer Action Code - Denial	00 00 00 00 00	
9F 0F	Issuer Action Code - Online	FC 70 BC 98 00	
9F 10	Issuer Application Data [VSDC]	06 01 0A 03 A0 90 00	
9F 11	Issuer Code Table Index	01	
9F 12	Application Preferred Name	55 53 20 44 65 62 69 74 - 'US Debit'	
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 06 05	
9F 44	Application Currency Exponent	02	
9F 4A	Static Data Authentication Tag List	82	
9F 4F	Transaction Log Format	9F 02 06 5F 2A 02 9A 03 9F 36 02 9F 1A 02 95 05 9C 01 9F 27 01	
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 56	Issuer Authentication Indicator [VSDC]	00	
9F 57	Issuer Country Code [VSDC]	08 40 - USA	
BF 55	Contactless Counters Data Template		
BF 56	Counters Data Template		
BF 57	International Counters Data Template		
BF 58	Amounts Data Template		
BF 59	Profile Controls Template	DF 11 0B 10 00 00 00 00 00 00 00 00 00 00 DF 12 0B 20 00 00 00 00 00 00 00 00 00 00	
BF 5A	AIP/AFL Entries Template	DF 11 0B 18 00 08 08 02 02 00 08 03 04 02 DF 12 0F 18 00 0C 08 02 02 00 08 03 03 01 08 05 05 01	
BF 5B	Application Internal Data Template	DF 01 02 C0 00 DF 02 01 F1	

1.3 Test Card 03 – Mastercard, Dual AID, Debit, English, USA, USD

A Mastercard debit card with two AIDs both referencing a single funding account, Issuer Country Code of 'USA' and Currency Code of 'USD'.

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

1.3.1 Cardholder Verification Method List - Global AID (A0000000041010)

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

1.3.2 Application Tag data

* Tag value changes with card usage

Tag	Element name	Data	Card v5.0
42	Issuer Identification Number (IIN)	54 13 33	
50	Application Label	44 45 42 49 54 20 4D 41 53 54 45 52 43 41 52 44 - 'DEBIT MASTERCARD'	
57	Track 2 Equivalent Data	54 13 33 00 89 09 91 30 D2 21 22 01 11 48 35 94 90 00 0F	
5A	Application Primary Account Number (PAN)	54 13 33 00 89 09 91 30	
5F 20	Cardholder Name	55 53 41 20 44 45 42 49 54 2F 54 45 53 54 20 43 41 52 44 20 30 33 20 20 20 20 - 'USA DEBIT/TEST CARD 03'	
5F 24	Application Expiration Date	22 12 31	
5F 25	Application Effective Date	16 04 01	
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	
5F 55	Issuer Country Code (alpha2 format)	55 53	
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 Auth command b2 - On device Cardholder verification NOT supported b1 - Combined DDA / GEN AC NOT supported BYTE 2: b8 - EMV mode NOT supported	
84	Dedicated File (DF) Name	A0 00 00 00 04 10 10	
87	Application Priority Indicator	01	
8C	Card Risk Management Data Object List 1 (CDOL1)	9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04 9F 35 01 9F 45 02 9F 4C 08 9F 34 03 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	

Tag	Element name	Data	Card v5.0
8E	Cardholder Verification Method (CVM) List	00 00 00 00 00 00 00 00 42 01 1E 03 42 03 1F 03	
94	Application File Locator (AFL)	08 01 01 00 10 01 02 02	
94	Application File Locator (AFL)	08 01 01 00 10 01 02 02	
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 Advance]	01 10 A0 00 01 24 00 00 01 02 00 00 00 00 00 00 00 FF	
9F 11	Issuer Code Table Index	01	
9F 12	Application Preferred Name	44 65 62 69 74 20 4D 61 73 74 65 72 43 61 72 64 - 'Debit Mastercard'	
9F 14	Counter 1 Lower Limit [Mastercard]	00	
9F 17	Personal Identification Number (PIN) Try Counter	01	
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 36	Application Transaction Counter (ATC)	xx xx *	
9F 42	Application Currency Code	08 40 - USD	
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 7E	Application Life Cycle Data [Mastercard]	04 10 0B 14 00 01 00 00 50 17 79 00 A0 00 00 00 04 10 10 00 00 00 00 00 00 00 00 00 00 80 00 88 01 06 A5 5A 00 00 00 00 00 00 00 00 00 00 00 00	
C3	Card Issuer Action Code (Contact) - Decline [M/Chip Advance]	00 00 00	
C4	Card Issuer Action Code (Contact) - Default [M/Chip Advance]	06 50 00	
C5	Card Issuer Action Code (Contact) - Online [M/Chip Advance]	06 FB 00	
C6	PIN Try Limit [M/Chip Advance]	01	
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]	06 50 00	

Tag	Element name	Data	Card v5.0
CE	Card Issuer Action Code (Contactless) - Online [M/Chip Advance]	06 FB 00	
CF	Card Issuer Action Code (Contactless) - Decline [M/Chip Advance]	00 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]	80 00 80 00 C6 00	
D6	Default ARPC Response Code [M/Chip Advance]	00 10	
D7	Application Control [M/Chip Advance]	80 00 80 00 C6 00	
D9	Application File Locator (Contactless)	08 01 01 00 10 01 01 01 10 03 03 01	
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 00 00 09 99 00 00 00 09 99 00 00 00 09 99 00 00 00 09 99 00 00 00	
DF 18	Accumulator 2 Lower Limit [Mastercard]	00 00 00 00 00 00	
DF 19	Accumulator 2 Upper Limit [Mastercard]	00 00 00 00 00 00	
DF 1A	Counter 1 Control (Contact) [M/Chip Advance]	C1	
DF 1B	Counter 1 Control (Contactless) [M/Chip Advance]	C1	
DF 1D	Counter 2 Control (Contact) [M/Chip Advance]	00	
DF 1E	Counter 2 Control (Contactless) [M/Chip Advance]	00	
DF 1F	Counter 2 Lower Limit [Mastercard]	00	
DF 21	Counter 2 Upper Limit [Mastercard]	00	
DF 22	MTA CVM (Contact) [M/Chip Advance]	00 00 00 00 00 00	
DF 23	MTA CVM (Contactless) [M/Chip Advance]	00 00 00 00 00 00	
DF 24	MTA Currency Code [M/Chip Advance]	09 99	
DF 25	MTA NoCVM (Contact) [M/Chip Advance]	00 00 00 00 00 00	
DF 26	MTA NoCVM (Contactless) [M/Chip Advance]	00 00 00 00 00 00	
DF 27	Number Of Days Offline Limit [M/Chip Advance]	00 00	
DF 28	Accumulator 1 CVR Dependency Data (Contact) [M/Chip Advance]	00 00 00	
DF 29	Accumulator 1 CVR Dependency Data (Contactless) [M/Chip Advance]	00 00 00	
DF 2A	Accumulator 2 CVR Dependency Data (Contact) [M/Chip Advance]	00 00 00	

Tag	Element name	Data	Card v5.0
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]	01	
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	
DF 40	Read Record Filter (Contactless) [M/Chip Advance]	00	
DF 41	DS Management Control [M/Chip Advance]	20	

1.3.3 Cardholder Verification Method List - U.S. Common AID (A000000042203)

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

1.3.4 Application Tag data

* Tag value changes with card usage

Tag	Element name	Data	Card v5.0
42	Issuer Identification Number (IIN)	54 13 33	
50	Application Label	55 53 20 44 45 42 49 54 - 'US DEBIT'	
57	Track 2 Equivalent Data	54 13 33 00 89 09 91 30 D2 21 22 01 11 48 35 94 90 00 0F	
5A	Application Primary Account Number (PAN)	54 13 33 00 89 09 91 30	
5F 20	Cardholder Name	55 53 41 20 44 45 42 49 54 2F 54 45 53 54 20 43 41 52 44 20 30 33 20 20 20 20 - 'USA DEBIT/TEST CARD 03'	
5F 24	Application Expiration Date	22 12 31	
5F 25	Application Effective Date	16 04 01	
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	
5F 55	Issuer Country Code (alpha2 format)	55 53	

Tag	Element name	Data	Card v5.0
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 Auth command b2 - On device Cardholder verification NOT supported b1 - Combined DDA / GEN AC NOT supported BYTE 2: b8 - EMV mode NOT supported	
84	Dedicated File (DF) Name	A0 00 00 00 04 22 03	
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 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 02 05 42 03 1F 03	
94	Application File Locator (AFL)	08 01 01 00 10 01 01 01 10 03 03 01	
94	Application File Locator (AFL)	08 01 01 00 10 01 01 01 10 03 03 01	
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 Advance]	01 10 A0 00 01 24 00 00 01 02 00 00 00 00 00 00 00 FF	
9F 11	Issuer Code Table Index	01	
9F 12	Application Preferred Name	55 53 20 44 65 62 69 74 - 'US Debit'	
9F 14	Counter 1 Lower Limit [Mastercard]	00	
9F 17	Personal Identification Number (PIN) Try Counter	01	
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 36	Application Transaction Counter (ATC)	xx xx *	
9F 42	Application Currency Code	08 40 - USD	
9F 4D	Transaction Log Entry	0B 0A	

Tag	Element name	Data	Card v5.0
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 7E	Application Life Cycle Data [Mastercard]	04 10 0B 14 00 01 00 00 50 17 79 00 A0 00 00 00 04 10 10 00 00 00 00 00 00 00 00 00 00 80 00 88 01 06 A5 5A 00 00 00 00 00 00 00 00 00 00 00 00	
C3	Card Issuer Action Code (Contact) - Decline [M/Chip Advance]	00 00 00	
C4	Card Issuer Action Code (Contact) - Default [M/Chip Advance]	06 50 00	
C5	Card Issuer Action Code (Contact) - Online [M/Chip Advance]	06 FB 00	
C6	PIN Try Limit [M/Chip Advance]	01	
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]	06 50 00	
CE	Card Issuer Action Code (Contactless) - Online [M/Chip Advance]	06 FB 00	
CF	Card Issuer Action Code (Contactless) - Decline [M/Chip Advance]	00 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]	80 00 80 00 C6 00	
D6	Default ARPC Response Code [M/Chip Advance]	00 10	
D7	Application Control [M/Chip Advance]	80 00 80 00 C6 00	
D9	Application File Locator (Contactless)	08 01 01 00 10 01 01 01 10 03 03 01	
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 00 00 09 99 00 00 00 09 99 00 00 00 09 99 00 00 00 09 99 00 00 00	
DF 18	Accumulator 2 Lower Limit [Mastercard]	00 00 00 00 00 00	
DF 19	Accumulator 2 Upper Limit [Mastercard]	00 00 00 00 00 00	
DF 1A	Counter 1 Control (Contact) [M/Chip Advance]	C1	
DF 1B	Counter 1 Control (Contactless) [M/Chip Advance]	C1	

Tag	Element name	Data	Card v5.0
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]	01	
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	
DF 40	Read Record Filter (Contactless) [M/Chip Advance]	00	
DF 41	DS Management Control [M/Chip Advance]	20	

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				