

October 01, 2018



Howard Zong

ID TECH

10721 Walker Street

Cypress CA 90630-4720

UNITED STATES OF AMERICA

Re: *EMVCo Letter of Approval - Contact Terminal Level 2*

EMV Application Kernel: EMV Common Gen 2 L2 Version V1.20.038

Approval Number(s):

- 2-04257-1-1C-BCTC-0818-4.3g
- 2-04257-1-2C-BCTC-0818-4.3g
- 2-04257-1-3C-BCTC-0818-4.3g
- 2-04257-1-4C-BCTC-0818-4.3g
- 2-04257-1-5C-BCTC-0818-4.3g
- 2-04257-1-6C-BCTC-0818-4.3g
- 2-04257-1-7C-BCTC-0818-4.3g
- 2-04257-1-8C-BCTC-0818-4.3g
- 2-04257-1-9C-BCTC-0818-4.3g
- 2-04257-1-10C-BCTC-0818-4.3g
- 2-04257-2-11C-BCTC-0818-4.3g
- 2-04257-2-12C-BCTC-0818-4.3g
- 2-04257-2-13C-BCTC-0818-4.3g
- 2-04257-2-14C-BCTC-0818-4.3g
- 2-04257-2-15C-BCTC-0818-4.3g
- 2-04257-2-16C-BCTC-0818-4.3g
- 2-04257-2-17C-BCTC-0818-4.3g
- 2-04257-2-18C-BCTC-0818-4.3g
- 2-04257-2-19C-BCTC-0818-4.3g
- 2-04257-2-20C-BCTC-0818-4.3g
- 2-04257-3-21C-BCTC-0918-4.3g
- 2-04257-4-22C-BCTC-1018-4.3g
- 2-04257-4-23C-BCTC-1018-4.3g
- 2-04257-1-1P-BCTC-0818-4.3g
- 2-04257-1-1OS-BCTC-0818-4.3g

The EMV Application Kernel has been tested on the following terminal

Terminal: VP5300
PinPad: 1P = SmartPIN L100, SmartPIN L100 firmware version: 1.01.007 - PIN pad is valid for configuration(s): 1C, 2C, 3C, 4C, 5C, 6C, 7C, 8C, 9C, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23
Operating System: 1OS = uC/OS-III Version V3.06.02

Renewal Date: 18-Jul-2022

Report ID Session 1: TEMV1802015 Version V1.0 - Beijing Unionpay Card Technology Co., Ltd (Bank Card Test Center)
Session 2: TEMV1802015 Version V1.0 - Beijing Unionpay Card Technology Co., Ltd (Bank Card Test Center)
Session 3: TEMV1802022 Version V1.0 - Beijing Unionpay Card Technology Co., Ltd (Bank Card Test Center)
Session 4: TEMV1802024 Version V1.0 - Beijing Unionpay Card Technology Co., Ltd (Bank Card Test Center)

Kernel Checksum:

68ae4f72ccf61c135ddce7ef83c5a9baffbf8825
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Configurations Checksums:

Config	Vendor Config ID	Terminal	Checksum
1C	1C	22	bdf4c4d083f94f52808f117de49de63284c3490f
2C	2C	21	b430ceb9fe858b00b8b27d6f56ef40d42f0eaf8a
3C	3C	25	5a40969877d6ff95e86582414f5b096f3d74f900
4C	4C	25	f10cfc402b54925b46c9ac63f912c5cbc096a1b9
5C	5C	21	dad6aed81e9375043a1dbef84c193fe863b2ed7f
6C	6C	22	5127d43fdf4a99e8ee3b838a94fa1964075c1396
7C	7C	25	72a6e0af60e96e7cf8f476a38bfd008bc8646c95
8C	8C	22	b516e7238cd23a7755b25d9043217ee5ba38f9e4
9C	9C	21	10fdbc171b98e0925536a78eccdc84ef22b9d65a
10C	10C	25	68d5b4e90925acc595cafcc20de86ae920755a92
11C	11C	21	e722266484109e552172c413fa7f1dec396877cf
12C	12c	22	2e9bc008316919f1097f6ab1120551e45d5ba1d9
13C	13C	25	bee94087d595e92e0e59119d5add0119f28460a0
14C	14C	25	6690824b3bd1dd425c187fc4e2c6fe4afe66625a
15C	15C	22	f003e1f9090d38b6d177659980b3816cf1079ed5
16C	16C	22	9cf00163da3e306f2fadd58b623c7b6297704491
17C	17C	21	7cf40dfbb4af3a3df6256f84607ba810f3861019
18C	18C	21	16f59852ff8fa527feef7c89048126560b278d3c
19C	19C	22	691a109f5cbc41fada32a933ee5c945752b95432
20C	20C	14	87de1244f5130817b6041e756432118a42fc95fa
21C	21C	21	D66FCEB8896664D64B2ADDC86C19A5C76BDFA9B0
22C	22C	21	D01B226A812DBF62C0BF80656F5A29C3EB950E18
23C	23C	25	FE5A00D16EDB7B1D17781C19475A8579D1CEBD34

PIN Pads Checksums:

PinPad	Checksum
1P	E7BE45C2B0F769B1CFA49A1CED4C16F3FFEAE6D0

Dear Howard Zong:

EMVCo, LLC ("EMVCo"), a Delaware limited liability company, has received your request for Level 2 terminal type approval for the EMV Application Kernel identified above (hereafter referred to as the "Application"). In connection with your request, we have reviewed all test file number(s) listed above.

After assessing such file(s), EMVCo has found reasonable evidence that the submitted samples of the above referenced Application sufficiently conform to EMV Integrated Circuit Card Specifications for Payment Systems, Version 4.3 of November 2011.

EMVCo hereby grants your Application EMVCo Type Approval for Terminal Level 2, based on the requirements stated in the EMV 4.3 Specifications. Please note that EMVCo may publish this letter and publicly identify your Application as an approved Application, including in EMVCo's published list of approved Applications.

EMVCo's grant to your Application is subject to and specifically incorporates (i) the General Terms and Conditions to the Letter of Approval enclosed as Exhibit A, and (ii) the Specific Terms and Conditions to the Letter of Approval attached hereto as Attachment 1. Because EMVCo's grant is subject to such limitations, including certain events of termination, you and any third parties should confirm that such approval is current and has not been terminated by referring to the list of approved Applications published on the EMVCo website (www.emvco.com).

Please note that EMVCo makes certain logos available for use in connection with an Application that has received EMVCo approval. To obtain permission to use the "EMV Approved" certification mark, please contact EMVCo to request a license agreement.

This Letter of Approval is valid while the approval number is posted on the EMVCo website.

EMVCo, LLC, a Delaware limited liability company

By:

Name: Frédéric Fortin

Title: EMVCo Terminal Type Approval Chair

Note:

The Random Number Generator is part of the EMV specifications. This Contact Level 2 Kernel utilizes specific Hardware device in the tested terminal to generate random numbers. To be EMV compliant, this Contact Level 2 Kernel shall be used in conjunction with Terminal Type having this specific Hardware.

Terminal Capabilities	1C	2C	3C	4C	5C	6C	7C	8C	9C	10C
Card Data Input Capability										
Terminal Type	22	21	25	25	21	22	25	22	21	25
Manual Key Entry	No	No	No	No	No	No	No	No	No	No
Magnetic Stripe	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
IC with Contacts	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
CVM Capability										
Plaintext PIN	Yes	No	Yes	No	No	Yes	Yes	No	No	No
Online Enciphered PIN	Yes	No	Yes	No	No	Yes	Yes	No	No	No
Signature (Paper)	Yes	Yes	No	No	Yes	Yes	No	No	No	No
Offline Enciphered PIN	Yes	No	Yes	No	No	Yes	Yes	No	No	No
No CVM	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Security Capability										
SDA & DDA	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Card Capture	No	No	No	No	No	No	No	No	No	No
CDA	Mode 1	Mode 1	Mode 1	Mode 1	Mode 1	Mode 1	Mode 1	Mode 1	Mode 1	Mode 1
Transaction Type Capability										
Tran Type - Cash	Yes	Yes	No	No	Yes	Yes	No	Yes	Yes	No
Tran Type - Goods	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Tran Type - Services	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Tran Type - Cash Back	Yes	Yes	No	No	Yes	Yes	No	Yes	Yes	No
Tran Type - Inquiry	No	No	No	No	No	No	No	No	No	No
Tran Type - Transfer	No	No	No	No	No	No	No	No	No	No
Tran Type - Payment	No	No	No	No	No	No	No	No	No	No
Tran Type - Admin	No	No	No	No	No	No	No	No	No	No
Tran Type - Cash Deposit	No	No	No	No	No	No	No	No	No	No
Terminal Data Input Capability										
Keypad	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Numeric Keys	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Alpha and Special Character Keys	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Command Keys	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Function Keys	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Terminal Data Output Capability										
Print, Attendant	Yes	Yes	No	No	Yes	Yes	No	Yes	Yes	No
Print, Cardholder	No	No	Yes	Yes	No	No	Yes	No	No	Yes
Display, Attendant	Yes	Yes	No	No	Yes	Yes	No	Yes	Yes	No
Display, Cardholder	No	No	Yes	Yes	No	No	Yes	No	No	Yes
Code Table 10	No	No	No	No	No	No	No	No	No	No
Code Table 9	No	No	No	No	No	No	No	No	No	No
Code Table 8	No	No	No	No	No	No	No	No	No	No
Code Table 7	No	No	No	No	No	No	No	No	No	No
Code Table 6	No	No	No	No	No	No	No	No	No	No
Code Table 5	No	No	No	No	No	No	No	No	No	No
Code Table 4	No	No	No	No	No	No	No	No	No	No
Code Table 3	No	No	No	No	No	No	No	No	No	No
Code Table 2	No	No	No	No	No	No	No	No	No	No
Code Table 1	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

(continued)	1C	2C	3C	4C	5C	6C	7C	8C	9C	10C
Application Selection										
PSE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cardholder Confirmation	Yes	Yes	Yes	No	No	No	No	Yes	Yes	Yes
Preferred display order	No	No	No	No	No	No	No	No	No	No
Partial AID Selection	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Multi language	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
EMV Language Selection method	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Common Character Set	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Data Authentication										
MAX CA Public key	248	248	248	248	248	248	248	248	248	248
Exponents	3 and 2 ^{*16+1}	3 and 2 ^{*16+1}	3 and 2 ^{*16+1}	3 and 2 ^{*16+1}	3 and 2 ^{*16+1}	3 and 2 ^{*16+1}	3 and 2 ^{*16+1}	3 and 2 ^{*16+1}	3 and 2 ^{*16+1}	3 and 2 ^{*16+1}
Revocation of Issuer PK Certificate	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Certificate Revocation List Format	RID/CA PK Index Cert SN	RID/CA PK Index Cert SN	RID/CA PK Index Cert SN	RID/CA PK Index Cert SN	RID/CA PK Index Cert SN	RID/CA PK Index Cert SN	RID/CA PK Index Cert SN	RID/CA PK Index Cert SN	RID/CA PK Index Cert SN	RID/CA PK Index Cert SN
Default DDOL	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Manual act. when CA PK loading fails	No	No	No	No	No	No	No	No	No	No
CA PK verified with check sum	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cardholder Verification Method										
Bypass PIN Entry	Yes	No	No	No	No	Yes	No	No	No	No
Subsequent Bypass PIN Entry	Yes	No	No	No	No	Yes	No	No	No	No
Get Data for PIN Try Counter	Yes	No	Yes	No	No	Yes	Yes	No	No	No
Fail CVM	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Amount known before CVM proces.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Terminal Risk Management										
Floor Limit Checking	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Random Transaction Selection	Yes	No	Yes	Yes	No	Yes	Yes	Yes	No	Yes
Velocity Checking	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Transaction Log	Yes	No	Yes	Yes	No	Yes	Yes	Yes	No	Yes
Exception File	No	No	No	No	No	No	No	No	No	No
TRM irrespective of AIP setting (expected behavior)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Terminal Action Analysis										
Terminal Action Codes supported	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
TAC can be deleted or disabled	No	No	No	No	No	No	No	No	No	No
How does offline only Terminal process Default Action Codes?	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
How does online only terminal process TAC/IAC-Default when unable to go online?	Normal	Skipped	Normal	Normal	Skipped	Normal	Normal	Normal	Skipped	Normal

(continued)	1C	2C	3C	4C	5C	6C	7C	8C	9C	10C
Completion Processing										
Forced Online	Yes	No	No	No	No	Yes	No	Yes	No	No
Forced Acceptance	No	No	No	No	No	No	No	No	No	No
Advices	No	No	No	No	No	No	No	No	No	No
Voice Referrals Initiated by Issuer	Yes	Yes	No	No	Yes	Yes	No	Yes	Yes	No
Batch Data Capture	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Online Data Capture	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Default TDOL	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Exception Handling										
POS Entry Mode	0x80	0x80	0x80	0x80	0x80	0x80	0x80	0x80	0x80	0x80
Miscellaneous										
Amount and PIN on same keypad	No	No	No	No	No	No	No	No	No	No
ICC/Magstripe Reader Combined	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
If Combined, is Magstripe read first?	No	No	No	No	No	No	No	No	No	No
Supports account type selection	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Supports 'on fly' script processing	No	No	No	No	No	No	No	No	No	No
Issuer Script device limit > 128 bytes	No	No	No	No	No	No	No	No	No	No
If limit > 128, value supported?										
Internal Date Management	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Does the terminal support Receipt?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Terminal Capabilities	11C	12C	13C	14C	15C	16C	17C	18C	19C	20C
Card Data Input Capability										
Terminal Type	21	22	25	25	22	22	21	21	22	14
Manual Key Entry	No	No	No	No	No	No	No	No	No	No
Magnetic Stripe	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
IC with Contacts	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
CVM Capability										
Plaintext PIN	No	No	Yes	Yes	Yes	Yes	No	No	Yes	No
Online Enciphered PIN	No	No	Yes	Yes	Yes	Yes	No	No	No	Yes
Signature (Paper)	No	No	No	No	Yes	Yes	Yes	No	Yes	No
Offline Enciphered PIN	No	No	Yes	Yes	Yes	Yes	No	No	Yes	No
No CVM	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Security Capability										
SDA & DDA	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	No
Card Capture	No	No	No	No	No	No	No	No	No	No
CDA	Mode 1	Mode 1	Mode 1	Mode 1	Mode 1	Mode 1	No	No	Mode 1	No
Transaction Type Capability										
Transaction Type - Cash	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Transaction Type - Goods	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Transaction Type - Services	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Transaction Type - Cash Back	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No
Transaction Type - Inquiry	No	No	No	No	No	No	No	No	No	Yes
Transaction Type - Transfer	No	No	No	No	No	No	No	No	No	Yes
Transaction Type - Payment	No	No	No	No	No	No	No	No	No	Yes
Transaction Type - Admin	No	No	No	No	No	No	No	No	No	Yes
Transaction Type - Cash Deposit	No	No	No	No	No	No	No	No	No	Yes
Terminal Data Input Capability										
Keypad	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Numeric Keys	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Alpha and Special Character Keys	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Command Keys	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Function Keys	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Terminal Data Output Capability										
Print, Attendant	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No
Print, Cardholder	No	No	Yes	Yes	No	No	No	No	No	Yes
Display, Attendant	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No
Display, Cardholder	No	No	Yes	Yes	No	No	No	No	No	Yes
Code Table 10	No	No	No	No	No	No	No	No	No	No
Code Table 9	No	No	No	No	No	No	No	No	No	No
Code Table 8	No	No	No	No	No	No	No	No	No	No
Code Table 7	No	No	No	No	No	No	No	No	No	No
Code Table 6	No	No	No	No	No	No	No	No	No	No
Code Table 5	No	No	No	No	No	No	No	No	No	No
Code Table 4	No	No	No	No	No	No	No	No	No	No
Code Table 3	No	No	No	No	No	No	No	No	No	No
Code Table 2	No	No	No	No	No	No	No	No	No	No
Code Table 1	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

(continued)	11C	12C	13C	14C	15C	16C	17C	18C	19C	20C
Application Selection										
PSE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cardholder Confirmation	No	No	Yes	No	Yes	No	No	No	Yes	Yes
Preferred display order	No	No	No	No	No	No	No	No	No	No
Partial AID Selection	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Multi language	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
EMV Language Selection method	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Common Character Set	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Data Authentication										
MAX CA Public key	248	248	248	248	248	248			248	
Exponents	3 and 2 ^{*16+1}	3 and 2 ^{*16+1}	3 and 2 ^{*16+1}	3 and 2 ^{*16+1}	3 and 2 ^{*16+1}	3 and 2 ^{*16+1}			3 and 2 ^{*16+1}	
Revocation of Issuer PK Certificate	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	No
Certificate Revocation List Format	RID/CA PK Index Cert SN	RID/CA PK Index Cert SN	RID/CA PK Index Cert SN	RID/CA PK Index Cert SN	RID/CA PK Index Cert SN	RID/CA PK Index Cert SN			RID/CA PK Index Cert SN	
Default DDOL	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	No
Manual act. when CA PK loading fails	No	No	No	No	No	No	No	No	No	No
CA PK verified with check sum	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	No
Cardholder Verification Method										
Bypass PIN Entry	No	No	Yes	Yes	No	No	No	No	Yes	No
Subsequent Bypass PIN Entry	No	No	Yes	Yes	No	No	No	No	Yes	No
Get Data for PIN Try Counter	No	No	Yes	Yes	Yes	Yes	No	No	Yes	No
Fail CVM	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Amount known before CVM proces.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Terminal Risk Management										
Floor Limit Checking	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Random Transaction Selection	No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	No
Velocity Checking	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Transaction Log	No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	No
Exception File	No	No	No	No	No	No	No	No	No	No
TRM irrespective of AIP setting (expected behavior)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Terminal Action Analysis										
Terminal Action Codes supported	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
TAC can be deleted or disabled	No	No	No	No	No	No	No	No	No	No
How does Offline Only Terminal process Default Action Codes?	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
How does online only terminal process TAC/IAC-Default when unable to go online?	Skipped	Normal	Normal	Normal	Normal	Normal	Skipped	Skipped	Normal	Skipped

(continued)	11C	12C	13C	14C	15C	16C	17C	18C	19C	20C
Completion Processing										
Forced Online	No	Yes	No	No	Yes	Yes	No	No	Yes	No
Forced Acceptance	No	No	No	No	No	No	No	No	No	No
Advices	No	No	No	No	No	No	No	No	No	No
Voice Referrals Initiated by Issuer	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No
Batch Data Capture	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Online Data Capture	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Default TDOL	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Exception Handling										
POS Entry Mode	0x80	0x80	0x80	0x80	0x80	0x80	0x80	0x80	0x80	0x80
Miscellaneous										
Amount and PIN on same keypad	No	No	No	No	No	No	No	No	No	No
ICC/Magstripe Reader Combined	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
If Combined, is Magstripe read first?	No	No	No	No	No	No	No	No	No	No
Supports account type selection	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Supports 'on fly' script processing	No	No	No	No	No	No	No	No	No	No
Issuer Script device limit > 128 bytes	No	No	No	No	No	No	No	No	No	No
If limit > 128, value supported?										
Internal Date Management	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Does the terminal support Receipt?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Terminal Capabilities	21C	22C	23C							
Card Data Input Capability										
Terminal Type	21	21	25							
Manual Key Entry	No	No	No							
Magnetic Stripe	No	Yes	Yes							
IC with Contacts	Yes	Yes	Yes							
CVM Capability										
Plaintext PIN	Yes	Yes	Yes							
Online Enciphered PIN	Yes	No	No							
Signature (Paper)	Yes	Yes	No							
Offline Enciphered PIN	Yes	Yes	Yes							
No CVM	Yes	Yes	Yes							
Security Capability										
SDA	Yes	Yes	Yes							
Card Capture	No	No	No							
CDA	Mode 1	Mode 1	Mode 1							
Transaction Type Capability										
Transaction Type - Cash	Yes	Yes	No							
Transaction Type - Goods	Yes	Yes	Yes							
Transaction Type - Services	Yes	Yes	Yes							
Transaction Type - Cash Back	Yes	Yes	No							
Transaction Type - Inquiry	No	No	No							
Transaction Type - Transfer	No	No	No							
Transaction Type - Payment	No	No	No							
Transaction Type - Admin	No	No	No							
Transaction Type - Cash Deposit	No	No	No							
Terminal Data Input Capability										
Keypad	Yes	Yes	Yes							
Numeric Keys	Yes	Yes	Yes							
Alpha and Special Character Keys	Yes	Yes	Yes							
Command Keys	Yes	Yes	Yes							
Function Keys	Yes	Yes	Yes							
Terminal Data Output Capability										
Print, Attendant	Yes	Yes	No							
Print, Cardholder	No	No	Yes							
Display, Attendant	Yes	Yes	No							
Display, Cardholder	No	No	Yes							
Code Table 10	No	No	No							
Code Table 9	No	No	No							
Code Table 8	No	No	No							
Code Table 7	No	No	No							
Code Table 6	No	No	No							
Code Table 5	No	No	No							
Code Table 4	No	No	No							
Code Table 3	No	No	No							
Code Table 2	No	No	No							
Code Table 1	Yes	Yes	Yes							

(continued)	21C	22C	23C							
Application Selection										
PSE	Yes	Yes	Yes							
Cardholder Confirmation	Yes	Yes	Yes							
Preferred display order	No	No	No							
Partial AID Selection	Yes	Yes	Yes							
Multi language	Yes	Yes	Yes							
EMV Language Selection method	Yes	Yes	Yes							
Common Character Set	Yes	Yes	Yes							
Data Authentication										
MAX CA Public key	248	248	248							
Exponents	3 and 2 ¹⁶ +1	3 and 2 ¹⁶ +1	3 and 2 ¹⁶ +1							
Revocation of Issuer PK Certificate	Yes	Yes	Yes							
Certificate Revocation List Format	RID/CA PK Index Cert SN	RID/CA PK Index Cert SN	RID/CA PK Index Cert SN							
Default DDOL	Yes	Yes	Yes							
Manual act. when CA PK loading fails	No	No	No							
CA PK verified with check sum	Yes	Yes	Yes							
Cardholder Verification Method										
Bypass PIN Entry	No	Yes	Yes							
Subsequent Bypass PIN Entry	No	Yes	Yes							
Get Data for PIN Try Counter	Yes	Yes	Yes							
Fail CVM	Yes	Yes	Yes							
Amount known before CVM proces.	Yes	Yes	Yes							
Terminal Risk Management										
Floor Limit Checking	Yes	Yes	Yes							
Random Transaction Selection	No	No	Yes							
Velocity Checking	Yes	Yes	Yes							
Transaction Log	No	No	Yes							
Exception File	No	No	No							
TRM irrespective of AIP setting (expected behavior)	Yes	Yes	Yes							
Terminal Action Analysis										
Terminal Action Codes supported	Yes	Yes	Yes							
TAC can be deleted or disabled	No	No	No							
How does Offline Only Terminal process Default Action Codes?	N/A	N/A	N/A							
How does online only terminal process TAC/IAC-Default when unable to go online?	Skipped	Skipped	Normal							

(continued)	21C	22C	23C							
Completion Processing										
Forced Online	No	No	No							
Forced Acceptance	No	No	No							
Advices	No	No	No							
Voice Referrals Initiated by Issuer	Yes	Yes	No							
Batch Data Capture	No	Yes	Yes							
Online Data Capture	Yes	Yes	Yes							
Default TDOL	Yes	Yes	Yes							
Exception Handling										
POS Entry Mode	0x80	0x80	0x80							
Miscellaneous										
Amount and PIN on same keypad	No	No	No							
ICC/Magstripe Reader Combined	No	Yes	Yes							
If Combined, is Magstripe read first?	No	No	No							
Supports account type selection	Yes	Yes	Yes							
Supports 'on fly' script processing	No	No	No							
Issuer Script device limit > 128 bytes	No	No	No							
If limit > 128, value supported?										
Internal Date Management	Yes	Yes	Yes							
Does the terminal support Receipt?	Yes	Yes	Yes							

Attachment 1

Specific Terms and Conditions to the Letter of Approval

Restriction:

None