

January 23, 2025

Mr. James Tsai

Castles Technology Co., Ltd.

6F., No. 207-5, Sec. 3, Beixin Rd., Xindian District

New Taipei City 23143

TAIWAN, PROVINCE OF CHINA

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

**EMV Application Kernel:**      **CBM-EMV Version v1.0.10**

**Approval Number(s):**      **2-05392-1-1C-FIME-0524-4.4b**  
**2-05392-1-2C-FIME-0524-4.4b**  
**2-05392-1-3C-FIME-0524-4.4b**  
**2-05392-1-4C-FIME-0524-4.4b**  
**2-05392-1-5C-FIME-0524-4.4b**  
**2-05392-1-6C-FIME-0524-4.4b**  
**2-05392-2-7C-FIMT-0125-4.4b**  
**2-05392-2-8C-FIMT-0125-4.4b**  
**2-05392-2-9C-FIMT-0125-4.4b**  
**2-05392-2-10C-FIMT-0125-4.4b**  
**2-05392-2-11C-FIMT-0125-4.4b**  
**2-05392-2-12C-FIMT-0125-4.4b**  
**2-05392-2-13C-FIMT-0125-4.4b**  
**2-05392-2-14C-FIMT-0125-4.4b**  
**2-05392-2-15C-FIMT-0125-4.4b**  
**2-05392-3-16C-FIMT-0125-4.4b**  
**2-05392-3-17C-FIMT-0125-4.4b**  
**2-05392-3-18C-FIMT-0125-4.4b**  
**2-05392-3-19C-FIMT-0125-4.4b**  
**2-05392-3-20C-FIMT-0125-4.4b**  
**2-05392-3-21C-FIMT-0125-4.4b**  
**2-05392-3-22C-FIMT-0125-4.4b**  
**2-05392-1-1P-FIME-0524-4.4b**  
**2-05392-2-2P-FIMT-0125-4.4b**  
**2-05392-1-1OS-FIME-0524-4.4b**

The EMV Application Kernel has been tested on the following terminal

**Terminal:** **V1P-BR**  
**PinPad:** **1P = VEGA3000 UltraLite, PCIPAD v1.0.0 - PIN pad is valid for configuration(s): 1C, 2C, 3C, 4C, 5C, 6C, 7C, 8C, 9C, 10, 11, 12, 13, 14, 15, 17, 18, 21, 22**  
**2P = V1P-BR, CTOS, 32-bit Version v1.0.0 - PIN pad is valid for configuration(s): 1C, 2C, 3C, 4C, 5C, 6C, 7C, 8C, 9C, 10, 12, 13, 14, 15, 17, 18, 21, 22**  
**Operating System:** **1OS = CTOS, 32-bit Version v1.0.0**

**Renewal Date:** **30-Apr-2028**

**Report ID**      Session 1: **C24REP00-364 Version 1.0 - FIME EMEA**  
 Session 2: **T24REP00-776-1 Version v1.0 - FEIMA Ltd. Taiwan branch**  
 Session 3: **T24REP00-776-2 Version v1.0 - FEIMA Ltd. Taiwan branch**

**Kernel Checksum:**

F1E75C298B6E00F039135425D9F9E6435EC3C0B5
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**Configurations Checksums:**

Config	Vendor Config ID	Terminal	Checksum
1C	Cfg12F8-1	12	61754985934F9E17DBC84884D12F091AAD859600
2C	Cfg22F8-3	22	3D9FFE991940E9126565A890CBBF34B58B80E460
3C	Cfg22F0-4	22	0626BF0F9B502A13AEC81A97DBA6FA8533CF64C0
4C	Cfg22D8-1	22	2D0665E34FA3FBB3412A7C2EDA5AF2AFE8DC40
5C	Cfg22D0-1	22	DA165E8D9690EC9E953F2E4FF4BA49E7ABC7A2C8
6C	Cfg25D0-2	25	8914289254614B800CF7E8FA100C2C015B325337
7C	Cfg22B8-3	22	956F2B42C4B1D04A51906BB6B69EC187CBE91693
8C	Cfg11F8-1	11	83D3955A73E6B8B137C5B85708FD4A9A0F8AC047
9C	Cfg25D8-3	25	32E8F11851A77A9BA4E69BD746FC32D6F92DE2FA
10C	Cfg22F8-1	22	E8974A9DCCF7D45D48BD4DA818E2848576816FDE
11C	Cfg22F8E-1	22	916906D3D8813E619F7159C5CF02F3548EA60806
12C	Cfg22B0-2	22	BE8433AA8EFD2A06A06482766081DA7353C5C4CD
13C	Cfg22F0-2	22	DADDFDE1586287E9E109B47193348F7DCF9FBD6D3
14C	Cfg25D8-1	25	3A51300DCD3ED2E523708ADD13C65EEE8BC024E2
15C	Cfg25D0-1	25	0C3783EF46158B957D8B799627012E68B6AA2DB4
16C	Cfg2508-1	25	1C9375F00B610000937E4F649C0C5A8CDF53DB74
17C	Cfg25D8-2	25	D1FF47FAF8F3EED3B8C7D07BFC8A4B0835928013
18C	Cfg22F0-3	22	801225097B77040174E7DB88D81CD98B932301A7
19C	Cfg2208-1	22	D1E5D7E351B3BB891837F7E312B1D173C0CB8643
20C	Cfg2228-1	22	80758BE347F3153B1ECB431199053B50B98C73A7
21C	Cfg12F0-1	12	5167DDB61403F3E2B15E236D1FE61B4801D69E08
22C	Cfg2598-1	25	C26F52CCC7FF3A7C3F3C30A45E526AD185211494

**PIN Pads Checksums:**

PinPad	Checksum
1P	1135D9142DD124619E912D9FD34ECCFAEAF99D6
2P	

Dear Mr. Tsai:

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 4.4 of October 2022.

EMVCo hereby grants your Application EMVCo Type Approval for Terminal Level 2, based on the requirements stated in the EMV 4.4 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](http://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.*

Authorised by Frédéric Fortin  
Terminal Testing Group Chair  
EMVCo, LLC

**Note:**

**The Random Number Generator and the Cryptographic Functions are part of the EMV specifications. This Contact Level 2 Kernel utilizes a specific Hardware component in the tested terminal to generate random numbers and/or Cryptographic Functions. To be EMV compliant, this Contact Level 2 Kernel shall be used in conjunction with terminals having this specific Hardware component.**

<b>Terminal Capabilities</b>	<b>1C</b>	<b>2C</b>	<b>3C</b>	<b>4C</b>	<b>5C</b>	<b>6C</b>	<b>7C</b>	<b>8C</b>	<b>9C</b>	<b>10C</b>
<b>Card Data Input Capability</b>										
Terminal Type	12	22	22	22	22	25	22	11	25	22
Manual Key Entry	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
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
<b>CVM Capability</b>										
Plaintext PIN	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Online Enciphered PIN	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Signature (Paper)	Yes	Yes	Yes	No	No	No	Yes	Yes	No	Yes
Offline Enciphered PIN (RSA)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No CVM	Yes	Yes	No	Yes	No	No	Yes	Yes	Yes	Yes
Offline Enciphered PIN (ECC)	No	No	No	No	No	No	No	No	No	No
Biometric	No	No	No	No	No	No	No	No	No	No
Offline Finger	No	No	No	No	No	No	No	No	No	No
Online Finger	No	No	No	No	No	No	No	No	No	No
Offline Facial	No	No	No	No	No	No	No	No	No	No
Online Facial	No	No	No	No	No	No	No	No	No	No
Offline Palm	No	No	No	No	No	No	No	No	No	No
Online Palm	No	No	No	No	No	No	No	No	No	No
Offline Iris	No	No	No	No	No	No	No	No	No	No
Online Iris	No	No	No	No	No	No	No	No	No	No
Offline Voice	No	No	No	No	No	No	No	No	No	No
Online Voice	No	No	No	No	No	No	No	No	No	No
<b>Security Capability</b>										
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 3	Mode 1	Mode 1	Mode 1	Mode 1	Mode 1	Mode 1	Mode 3	Mode 1	Mode 1
XDA	No	No	No	No	No	No	No	No	No	No
<b>Transaction Type Capability</b>										
Tran Type - Cash	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	Yes
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	Yes	Yes	Yes	No	Yes	Yes	No	Yes
Tran Type - Inquiry	Yes	Yes	No	No	Yes	No	No	Yes	No	No
Tran Type - Transfer	Yes	Yes	No	No	Yes	No	No	Yes	No	No
Tran Type - Payment	Yes	Yes	No	No	Yes	No	No	Yes	No	No
Tran Type - Admin	Yes	Yes	No	No	Yes	No	No	No	No	No
Tran Type - Cash Deposit	Yes	Yes	No	No	Yes	No	No	Yes	No	No
<b>Terminal Data Input Capability</b>										
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

(continued)	1C	2C	3C	4C	5C	6C	7C	8C	9C	10C
<b>Terminal Data Output Capability</b>										
Print, Attendant	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	Yes
Print, Cardholder	No	No	No	No	No	Yes	No	No	Yes	No
Display, Attendant	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	Yes
Display, Cardholder	No	No	No	No	No	Yes	No	No	Yes	No
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
<b>Application Selection</b>										
PSE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cardholder Confirmation	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Preferred display order	Yes	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
<b>Data Authentication</b>										
MAX CA Public key	248	248	248	248	248	248	248	248	248	248
Exponents	3 and 2 <sup>16</sup> +1	3 and 2 <sup>16</sup> +1	3 and 2 <sup>16</sup> +1	3 and 2 <sup>16</sup> +1	3 and 2 <sup>16</sup> +1	3 and 2 <sup>16</sup> +1	3 and 2 <sup>16</sup> +1	3 and 2 <sup>16</sup> +1	3 and 2 <sup>16</sup> +1	3 and 2 <sup>16</sup> +1
Revocation of Issuer PK Certificate	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Certificate Revocation List Format	RID(5B)+CA PKI(1B)+CS N(3B)	RID(5B)+CA PKI(1B)+CS N(3B)	RID(5B)+CA PKI(1B)+CS N(3B)	RID(5B)+CA PKI(1B)+CS N(3B)	RID(5B)+CA PKI(1B)+CS N(3B)	RID(5B)+CA PKI(1B)+CS N(3B)	RID(5B)+CA PKI(1B)+CS N(3B)	RID(5B)+CA PKI(1B)+CS N(3B)	RID(5B)+CA PKI(1B)+CS N(3B)	RID(5B)+CA PKI(1B)+CS N(3B)
Default DDOL	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<b>Cardholder Verification Method</b>										
Bypass PIN Entry	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	Yes
Subsequent Bypass PIN Entry	No	No	No	No	No	No	Yes	No	No	No
Get Data for PIN Try Counter	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
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
<b>Terminal Risk Management</b>										
Floor Limit Checking	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Random Transaction Selection	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Velocity Checking	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Transaction Log	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Exception File	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
TRM irrespective of AIP setting (expected behavior)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

(continued)	1C	2C	3C	4C	5C	6C	7C	8C	9C	10C
<b>Terminal Action Analysis</b>										
Terminal Action Codes supported	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
TAC can be deleted or disabled	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
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?	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Normal	N/A	N/A
<b>Completion Processing</b>										
Forced Online	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	Yes
Forced Acceptance	Yes	No	No	No	No	No	Yes	Yes	No	Yes
Voice Referrals Initiated by Issuer	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	Yes
Default TDOL	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Default TDOL not configured	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<b>Exception Handling</b>										
POS Entry Mode	8x	8x	8x	8x	8x	8x	8x	8x	8x	8x
<b>Miscellaneous</b>										
Amount and PIN on same keypad	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
ICC/Magstripe Reader Combined	No	No	No	No	No	No	No	No	No	No
Supports account type selection	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No
Supports 'on fly' script processing	No	No	No	No	No	No	No	No	No	No
Issuer Script device limit > 128 bytes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
If limit > 128, value supported?	1024	1024	1024	1024	1024	1024	1024	1024	1024	1024
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

<b>Terminal Capabilities</b>	<b>11C</b>	<b>12C</b>	<b>13C</b>	<b>14C</b>	<b>15C</b>	<b>16C</b>	<b>17C</b>	<b>18C</b>	<b>19C</b>	<b>20C</b>
<b>Card Data Input Capability</b>										
Terminal Type	22	22	22	25	25	25	25	22	22	22
Manual Key Entry	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes
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
<b>CVM Capability</b>										
Plaintext PIN	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	No
Online Enciphered PIN	Yes	No	Yes	Yes	Yes	No	Yes	Yes	No	No
Signature (Paper)	Yes	Yes	Yes	No	No	No	No	Yes	No	Yes
Offline Enciphered PIN (RSA)	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	No
No CVM	Yes	No	No	Yes	No	Yes	Yes	No	Yes	Yes
Offline Enciphered PIN (ECC)	No	No	No	No	No	No	No	No	No	No
Biometric	No	No	No	No	No	No	No	No	No	No
Offline Finger	No	No	No	No	No	No	No	No	No	No
Online Finger	No	No	No	No	No	No	No	No	No	No
Offline Facial	No	No	No	No	No	No	No	No	No	No
Online Facial	No	No	No	No	No	No	No	No	No	No
Offline Palm	No	No	No	No	No	No	No	No	No	No
Online Palm	No	No	No	No	No	No	No	No	No	No
Offline Iris	No	No	No	No	No	No	No	No	No	No
Online Iris	No	No	No	No	No	No	No	No	No	No
Offline Voice	No	No	No	No	No	No	No	No	No	No
Online Voice	No	No	No	No	No	No	No	No	No	No
<b>Security Capability</b>										
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 3	Mode 1	Mode 1
XDA	No	No	No	No	No	No	No	No	No	No
<b>Transaction Type Capability</b>										
Transaction Type - Cash	Yes	No	No	No	No	No	No	Yes	Yes	Yes
Transaction Type - Goods	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Transaction Type - Services	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Transaction Type - Cash Back	Yes	No	No	No	No	No	No	Yes	Yes	Yes
Transaction Type - Inquiry	No	No	No	No	No	No	No	No	No	No
Transaction Type - Transfer	No	No	No	No	No	No	No	No	No	No
Transaction Type - Payment	No	No	No	No	No	No	No	No	No	No
Transaction Type - Admin	No	No	No	No	No	No	No	No	No	No
Transaction Type - Cash Deposit	No	No	No	No	No	No	No	No	No	No
<b>Terminal Data Input Capability</b>										
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

(continued)	11C	12C	13C	14C	15C	16C	17C	18C	19C	20C
<b>Terminal Data Output Capability</b>										
Print, Attendant	Yes	Yes	Yes	No	No	No	No	Yes	Yes	Yes
Print, Cardholder	No	No	No	No	No	No	No	No	No	No
Display, Attendant	Yes	Yes	Yes	No	No	No	No	Yes	Yes	Yes
Display, Cardholder	No	No	No	Yes	Yes	Yes	Yes	No	No	No
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
<b>Application Selection</b>										
PSE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cardholder Confirmation	Yes	Yes	Yes	Yes	Yes	Yes	Yes	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
<b>Data Authentication</b>										
MAX CA Public key	248	248	248	248	248	248	248	248	248	248
Exponents	3 and 2 <sup>16</sup> +1	3 and 2 <sup>16</sup> +1	3 and 2 <sup>16</sup> +1	3 and 2 <sup>16</sup> +1	3 and 2 <sup>16</sup> +1	3 and 2 <sup>16</sup> +1	3 and 2 <sup>16</sup> +1	3 and 2 <sup>16</sup> +1	3 and 2 <sup>16</sup> +1	3 and 2 <sup>16</sup> +1
Revocation of Issuer PK Certificate	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes
Certificate Revocation List Format	RID(5B)+CA PKI(1B)+CS N(3B)	RID(5B)+CA PKI(1B)+CS N(3B)	RID(5B)+CA PKI(1B)+CS N(3B)	RID(5B)+CA PKI(1B)+CS N(3B)	RID(5B)+CA PKI(1B)+CS N(3B)			RID(5B)+CA PKI(1B)+CS N(3B)	RID(5B)+CA PKI(1B)+CS N(3B)	RID(5B)+CA PKI(1B)+CS N(3B)
Default DDOL	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<b>Cardholder Verification Method</b>										
Bypass PIN Entry	Yes	Yes	Yes	No	No	No	No	Yes	No	No
Subsequent Bypass PIN Entry	No	No	No	No	No	No	No	No	No	No
Get Data for PIN Try Counter	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	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
<b>Terminal Risk Management</b>										
Floor Limit Checking	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Random Transaction Selection	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Velocity Checking	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Transaction Log	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Exception File	Yes	No	No	Yes	No	No	No	Yes	Yes	Yes
TRM irrespective of AIP setting (expected behavior)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes



(continued)	11C	12C	13C	14C	15C	16C	17C	18C	19C	20C
<b>Terminal Action Analysis</b>										
Terminal Action Codes supported	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
TAC can be deleted or disabled	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
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?	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>Completion Processing</b>										
Forced Online	Yes	No	No	No	No	No	No	Yes	Yes	Yes
Forced Acceptance	Yes	No	No	No	No	No	No	Yes	Yes	Yes
Voice Referrals Initiated by Issuer	Yes	Yes	Yes	No	No	No	No	Yes	Yes	Yes
Default TDOL	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Default TDOL not configured	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<b>Exception Handling</b>										
POS Entry Mode	8x	8x	8x	8x	8x	8x	8x	8x	8x	8x
<b>Miscellaneous</b>										
Amount and PIN on same keypad	No	Yes	Yes	Yes	Yes	No	Yes	Yes	No	No
ICC/Magstripe Reader Combined	No	No	No	No	No	No	No	No	No	No
Supports account type selection	No	No	No	No	No	No	No	No	No	No
Supports 'on fly' script processing	No	No	No	No	No	No	No	No	No	No
Issuer Script device limit > 128 bytes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
If limit > 128, value supported?	1024	1024	1024	1024	1024	1024	1024	1024	1024	1024
Internal Date Management	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Does the terminal support Receipt?	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes

<b>Terminal Capabilities</b>	<b>21C</b>	<b>22C</b>								
<b>Card Data Input Capability</b>										
Terminal Type	12	25								
Manual Key Entry	Yes	No								
Magnetic Stripe	Yes	Yes								
IC with Contacts	Yes	Yes								
<b>CVM Capability</b>										
Plaintext PIN	Yes	Yes								
Online Enciphered PIN	Yes	No								
Signature (Paper)	Yes	No								
Offline Enciphered PIN (RSA)	Yes	Yes								
No CVM	No	Yes								
Offline Enciphered PIN (ECC)	No	No								
Biometric	No	No								
Offline Finger	No	No								
Online Finger	No	No								
Offline Facial	No	No								
Online Facial	No	No								
Offline Palm	No	No								
Online Palm	No	No								
Offline Iris	No	No								
Online Iris	No	No								
Offline Voice	No	No								
Online Voice	No	No								
<b>Security Capability</b>										
SDA & DDA	Yes	Yes								
Card Capture	No	No								
CDA	Mode 1	Mode 1								
XDA	No	No								
<b>Transaction Type Capability</b>										
Transaction Type - Cash	Yes	No								
Transaction Type - Goods	Yes	Yes								
Transaction Type - Services	Yes	Yes								
Transaction Type - Cash Back	Yes	No								
Transaction Type - Inquiry	Yes	No								
Transaction Type - Transfer	Yes	No								
Transaction Type - Payment	Yes	No								
Transaction Type - Admin	Yes	No								
Transaction Type - Cash Deposit	Yes	No								
<b>Terminal Data Input Capability</b>										
Keypad	Yes	Yes								
Numeric Keys	Yes	Yes								
Alpha and Special Character Keys	Yes	Yes								
Command Keys	Yes	Yes								
Function Keys	Yes	Yes								

(continued)	21C	22C								
<b>Terminal Data Output Capability</b>										
Print, Attendant	Yes	No								
Print, Cardholder	No	No								
Display, Attendant	Yes	No								
Display, Cardholder	No	Yes								
Code Table 10	No	No								
Code Table 9	No	No								
Code Table 8	No	No								
Code Table 7	No	No								
Code Table 6	No	No								
Code Table 5	No	No								
Code Table 4	No	No								
Code Table 3	No	No								
Code Table 2	No	No								
Code Table 1	Yes	Yes								
<b>Application Selection</b>										
PSE	Yes	Yes								
Cardholder Confirmation	Yes	Yes								
Preferred display order	No	No								
Partial AID Selection	Yes	Yes								
Multi language	Yes	Yes								
EMV Language Selection method	Yes	Yes								
Common Character Set	Yes	Yes								
<b>Data Authentication</b>										
MAX CA Public key	248	248								
Exponents	3 and 2 <sup>16</sup> +1	3 and 2 <sup>16</sup> +1								
Revocation of Issuer PK Certificate	Yes	Yes								
Certificate Revocation List Format	RID(5B)+CA PKI(1B)+CS N(3B)	RID(5B)+CA PKI(1B)+CS N(3B)								
Default DDOL	Yes	Yes								
<b>Cardholder Verification Method</b>										
Bypass PIN Entry	Yes	No								
Subsequent Bypass PIN Entry	No	No								
Get Data for PIN Try Counter	Yes	Yes								
Fail CVM	Yes	Yes								
Amount known before CVM proces.	Yes	Yes								
<b>Terminal Risk Management</b>										
Floor Limit Checking	Yes	Yes								
Random Transaction Selection	Yes	Yes								
Velocity Checking	Yes	Yes								
Transaction Log	Yes	Yes								
Exception File	Yes	Yes								
TRM irrespective of AIP setting (expected behavior)	Yes	Yes								

(continued)	21C	22C								
<b>Terminal Action Analysis</b>										
Terminal Action Codes supported	Yes	Yes								
TAC can be deleted or disabled	Yes	Yes								
How does offline only Terminal process Default Action Codes?	N/A	N/A								
How does online only terminal process TAC/IAC-Default when unable to go online?	N/A	N/A								
<b>Completion Processing</b>										
Forced Online	Yes	No								
Forced Acceptance	Yes	No								
Voice Referrals Initiated by Issuer	Yes	No								
Default TDOL	Yes	Yes								
Default TDOL not configured	Yes	Yes								
<b>Exception Handling</b>										
POS Entry Mode	8x	8x								
<b>Miscellaneous</b>										
Amount and PIN on same keypad	Yes	Yes								
ICC/Magstripe Reader Combined	No	No								
Supports account type selection	No	No								
Supports 'on fly' script processing	No	No								
Issuer Script device limit > 128 bytes	Yes	Yes								
If limit > 128, value supported?	1024	1024								
Internal Date Management	Yes	Yes								
Does the terminal support Receipt?	Yes	Yes								

# **Attachment 1**

## **Specific Terms and Conditions to the Letter of Approval**

Restriction:

**None**