

March 09, 2018

Aileen Liu

PAX Computer Technology (Shenzhen) Co., Ltd.
4/F., No.3 Building, Software Park, 2nd Central
Science-Tech Road, High-Tech Industrial Park
Guangdong
Shenzhen 518057
CHINA

Re: EMVCo Letter of Approval - Contact Terminal Level 2

EMV Application Kernel: F EMV LIB Version 650

Approval Number(s):
2-04149-1-1C-BCTS-0318-4.3f
2-04149-1-2C-BCTS-0318-4.3f
2-04149-1-3C-BCTS-0318-4.3f
2-04149-1-4C-BCTS-0318-4.3f
2-04149-1-5C-BCTS-0318-4.3f
2-04149-1-1OS-BCTS-0318-4.3f

The EMV Application Kernel has been tested on the following terminal

Terminal: A80
PinPad: n/a
Operating System: 1OS = PayDroid Version 1.0

Renewal Date: 30-Jan-2022

Report ID Session 1: TEMV1702187 - Beijing Unionpay Card Technology Co., Ltd. Shenzhen Branch

Kernel Checksum:

F7 92 3A D8

Configurations Checksums:

Config	Vendor Config ID	Terminal	Checksum
1C	Cfg_NNC	22	77 95 45 A4
2C	Cfg_NoSig	22	CD D0 BA 70
3C	uAttOnIP	25	7B 0E 9C 15
4C	uAttNSigNOnIP	25	A4 90 CB 42
5C	uAttNSigNNC	25	BD 56 A1 0A

Dear Aileen Liu:

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

(continued)	1C	2C	3C	4C	5C					
Application Selection										
PSE	Yes	Yes	Yes	Yes	Yes					
Cardholder Confirmation	Yes	Yes	Yes	Yes	Yes					
Preferred display order	No	No	No	No	No					
Partial AID Selection	Yes	Yes	Yes	Yes	Yes					
Multi language	Yes	Yes	Yes	Yes	Yes					
EMV Language Selection method	Yes	Yes	Yes	Yes	Yes					
Common Character Set	Yes	Yes	Yes	Yes	Yes					
Data Authentication										
MAX CA Public key	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					
Revocation of Issuer PK Certificate	Yes	Yes	Yes	Yes	Yes					
Certificate Revocation List Format	RID+CA Public Key Index + Certificate Serial Numbe	RID+CA Public Key Index + Certificate Serial Numbe	RID+CA Public Key Index + Certificate Serial Numbe	RID+CA Public Key Index + Certificate Serial Numbe	RID+CA Public Key Index + Certificate Serial Numbe					
Default DDOL	Yes	Yes	Yes	Yes	Yes					
Manual act. when CA PK loading fails	Yes	Yes	No	No	No					
CA PK verified with check sum	Yes	Yes	Yes	Yes	Yes					
Cardholder Verification Method										
Bypass PIN Entry	Yes	Yes	No	No	No					
Subsequent Bypass PIN Entry	Yes	Yes	No	No	No					
Get Data for PIN Try Counter	Yes	Yes	Yes	Yes	Yes					
Fail CVM	Yes	Yes	Yes	Yes	Yes					
Amount known before CVM proces.	Yes	Yes	Yes	Yes	Yes					
Terminal Risk Management										
Floor Limit Checking	Yes	Yes	Yes	Yes	Yes					
Random Transaction Selection	Yes	Yes	Yes	Yes	Yes					
Velocity Checking	Yes	Yes	Yes	Yes	Yes					
Transaction Log	Yes	Yes	Yes	Yes	Yes					
Exception File	Yes	Yes	No	No	Yes					
TRM irrespective of AIP setting (expected behavior)	Yes	Yes	Yes	Yes	Yes					
Terminal Action Analysis										
Terminal Action Codes supported	Yes	Yes	Yes	Yes	Yes					
TAC can be changed	Yes	Yes	Yes	Yes	Yes					
TAC can be deleted or disabled	Yes	Yes	Yes	Yes	Yes					
How does offline only Terminal process Default Action Codes?	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					

(continued)	1C	2C	3C	4C	5C					
Completion Processing										
Forced Online	Yes	Yes	No	No	No					
Forced Acceptance	Yes	Yes	No	No	No					
Advices	Yes	Yes	Yes	No	Yes					
Voice Referrals Initiated by Issuer	Yes	Yes	No	No	No					
Batch Data Capture	Yes	Yes	No	Yes	Yes					
Online Data Capture	Yes	Yes	Yes	Yes	Yes					
Default TDOL	Yes	Yes	Yes	Yes	Yes					
Exception Handling										
POS Entry Mode	92	92	92	92	92					
Miscellaneous										
PIN Pad	Yes	Yes	Yes	Yes	Yes					
Amount and PIN on same keypad	Yes	Yes	Yes	Yes	Yes					
ICC/Magstripe Reader Combined	No	No	No	No	No					
If Combined, is Magstripe read first?	n/a	n/a	n/a	n/a	n/a					
Supports account type selection	Yes	Yes	Yes	Yes	Yes					
Supports 'on fly' script processing	No	No	No	No	No					
Issuer Script device limit > 128 bytes	No	No	No	No	No					
If limit > 128, value supported?										
Internal Date Management	Yes	Yes	Yes	Yes	Yes					
Does the terminal support Receipt?	Yes	Yes	Yes	Yes	Yes					

Attachment 1

Specific Terms and Conditions to the Letter of Approval

Restriction:

None