

June 26, 2017



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): 2-03923-1-1C-BCTS-0617-4.3.e
2-03923-1-1P-BCTS-0617-4.3.e
2-03923-1-1OS-BCTS-0617-4.3.e

The EMV Application Kernel has been tested on the following terminal

Terminal: Q80s
PinPad: 1P = SP20, 4.00.00
Operating System: IOS = Prolin Version 2.6

Renewal Date: 20-Mar-2020

Report ID Session 1: TEM1702115 - Beijing Unionpay Card Technology Co., Ltd. Shenzhen Branch

Kernel Checksum:

F7 92 3A D8

Configurations Checksums:

Config	Vendor Config ID	Terminal	Checksum
1C	uAttNSigNNC	25	6C 90 3B 12

PIN Pads Checksums:

PinPad	Checksum
1P	87 6A 52 ED

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

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

(continued)	1C									
Completion Processing										
Forced Online	No									
Forced Acceptance	No									
Advices	Yes									
Issuer Referrals	No									
Batch Data Capture	Yes									
Online Data Capture	Yes									
Default TDOL	Yes									
Exception Handling										
POS Entry Mode	80									
Miscellaneous										
PIN Pad	Yes									
Amount and PIN on same keypad	No									
ICC/Magstripe Reader Combined	No									
If Combined, is Magstripe read first?	n/a									
Supports account type selection	Yes									
Supports 'on fly' script processing	No									
Issuer Script device limit > 128 bytes	No									
If limit > 128, value supported?										
Internal Date Management	Yes									
Does the terminal support Receipt?	Yes									

Attachment 1

Specific Terms and Conditions to the Letter of Approval

Restriction:

None