June 14, 2023

Fei Gao

Dspread Technology (Beijing) Inc

Rm. 407, B12C, #10 (Universal Business Park)

Jiuxianqiao Road, Chaoyang District

Beijing P10001

CHINA

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

EMV Application Kernel:　　**D60 EMV L2 Kernel Version V1.0**

Approval Number(s):　　　**2-05214-1-1C-BCTC-0623-4.3k**

　　　　　　　　　　　　2-05214-1-2C-BCTC-0623-4.3k

　　　　　　　　　　　　2-05214-1-3C-BCTC-0623-4.3k

　　　　　　　　　　　　2-05214-1-1OS-BCTC-0623-4.3k

The EMV Application Kernel has been tested on the following terminal

　　　Terminal:　　　**D60 version 1.0**

　　　PinPad:　　　 **n/a**

　　　Operating System:　　**1OS = Lark Version V1332**

Renewal Date:　　　　**05-Jun-2027**

Report ID　　　　Session 1: **TEMV2329F1T Version V1.0 - Beijing Unionpay Card Technology Co., Ltd (Bank Card Test Center)**

Kernel Checksum:

5506D932

Configurations Checksums:

Config	Vendor Config ID	Terminal	Checksum
1C	C1	22	8DD0B990
2C	C2	22	E776B023
3C	C3	22	92C03897

Dear Fei Gao:

      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 refered 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 Testing Group Chair

Note:

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

Terminal Capabilities	1C	2C	3C						
Card Data Input Capability									
Terminal Type	22	22	22						
Manual Key Entry	Yes	Yes	No						
Magnetic Stripe	Yes	Yes	No						
IC with Contacts	Yes	Yes	Yes						
CVM Capability									
Plaintext PIN	Yes	Yes	No						
Online Enciphered PIN	Yes	No	No						
Signature (Paper)	Yes	Yes	Yes						
Offline Enciphered PIN	Yes	Yes	No						
No CVM	Yes	Yes	Yes						
SB185	No	No	No						
Offline Finger	No	No	No						
Online Finger	No	No	No						
Offline Facial	No	No	No						
Online Facial	No	No	No						
Offline Palm	No	No	No						
Online Palm	No	No	No						
Offline Iris	No	No	No						
Online Iris	No	No	No						
Offline Voice	No	No	No						
Online Voice	No	No	No						
Security Capability									
SDA & DDA	Yes	Yes	Yes						
Card Capture	No	No	No						
CDA	Mode 1	Mode 1	Mode 1						
Transaction Type Capability									
Tran Type - Cash	Yes	Yes	Yes						
Tran Type - Goods	Yes	Yes	Yes						
Tran Type - Services	Yes	Yes	Yes						
Tran Type - Cash Back	Yes	Yes	Yes						
Tran Type - Inquiry	Yes	Yes	Yes						
Tran Type - Transfer	Yes	Yes	Yes						
Tran Type - Payment	Yes	Yes	Yes						
Tran Type - Admin	Yes	Yes	Yes						
Tran Type - Cash Deposit	Yes	Yes	Yes						
Terminal Data Input Capability									
Keypad	Yes	Yes	No						
Numeric Keys	Yes	Yes	No						
Alpha and Special Character Keys	Yes	Yes	No						
Command Keys	Yes	Yes	No						
Function Keys	Yes	Yes	No						

(continued)	1C	2C	3C							
Terminal Data Output Capability										
Print, Attendant	Yes	Yes	Yes							
Print, Cardholder	No	No	No							
Display, Attendant	Yes	Yes	Yes							
Display, Cardholder	No	No	No							
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							
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	No	No	No							
EMV Language Selection method	No	No	No							
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+CAPK Index+Certificate SN	RID+CAPK Index+Certificate SN	RID+CAPK Index+Certificate SN							
Default DDOL	Yes	Yes	Yes							
Manual act. when CA PK loading fails	Yes	Yes	Yes							
CA PK verified with check sum	Yes	Yes	Yes							
Cardholder Verification Method										
Bypass PIN Entry	Yes	Yes	Yes							
Subsequent Bypass PIN Entry	No	No	No							
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	Yes	Yes	Yes							
Velocity Checking	Yes	Yes	Yes							
Transaction Log	Yes	Yes	Yes							
Exception File	Yes	Yes	Yes							
TRM irrespective of AIP setting (expected behavior)	Yes	Yes	Yes							

(continued)	1C	2C	3C							
Terminal Action Analysis										
Terminal Action Codes supported	Yes	Yes	Yes							
TAC can be deleted or disabled	Yes	Yes	Yes							
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?	Normal	Normal	Normal							
Completion Processing										
Forced Online	Yes	Yes	Yes							
Forced Acceptance	No	No	No							
Advices	Yes	Yes	Yes							
Voice Referrals Initiated by Issuer	Yes	Yes	Yes							
Batch Data Capture	Yes	Yes	Yes							
Online Data Capture	Yes	Yes	Yes							
Default TDOL	Yes	Yes	Yes							
Default TDOL not configured	Yes	Yes	Yes							
Exception Handling										
POS Entry Mode	92	92	92							
Miscellaneous										
Amount and PIN on same keypad	Yes	Yes	No							
ICC/Magstripe Reader Combined	No	No	No							
If Combined, is Magstripe read first?	No	No	No							
Supports account type selection	Yes	Yes	No							
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