September 17, 2024

Dr. Thor LU

Fujian LANDI Commercial Equipment Co.,Ltd

5th & 6th Floor, Building 3A, Area A, Software Park

No. 89, Software Avenue, Gulou District

Fuzhou 350003

China

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

EMV Application Kernel:	**libEMVContact Version 1.2.0**
Approval Number(s):	**2-05472-1-1C-BCTS-0924-4.4b**
	2-05472-1-1P-BCTS-0924-4.4b
	2-05472-1-1OS-BCTS-0924-4.4b

The EMV Application Kernel has been tested on the following terminal

Terminal:	**P20**
PinPad:	**1P = P20, RockOS Android Edition 1.0 - PIN pad is valid for configuration(s): 1C**
Operating System:	**1OS = RockOS Android Edition Version 1.0**

Renewal Date:	**27-Aug-2028**
Report ID	Session 1: **TEMV243XJ1T Version V1.0 - Beijing Unionpay Card Technology Co., Ltd. Shenzhen Branch**

Kernel Checksum:

972D491C418AEC82FBB66D6C4A46440113CF72C9

Configurations Checksums:

Config	Vendor Config ID	Terminal	Checksum
1C	Baseline	22	18F59D346BE534BF451CB515BBF36B22D6779124

PIN Pads Checksums:

PinPad	Checksum
1P	972D491C418AEC82FBB66D6C4A46440113CF72C9

Dear Dr. LU:

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 4.4 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).

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 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									
Card Data Input Capability										
Terminal Type	22									
Manual Key Entry	Yes									
Magnetic Stripe	Yes									
IC with Contacts	Yes									
CVM Capability										
Plaintext PIN	Yes									
Online Enciphered PIN	Yes									
Signature (Paper)	Yes									
Offline Enciphered PIN (RSA)	Yes									
No CVM	Yes									
Offline Enciphered PIN (ECC)	No									
Biometric	No									
Offline Finger	No									
Online Finger	No									
Offline Facial	No									
Online Facial	No									
Offline Palm	No									
Online Palm	No									
Offline Iris	No									
Online Iris	No									
Offline Voice	No									
Online Voice	No									
Security Capability										
SDA & DDA	Yes									
Card Capture	No									
CDA	Mode 1									
XDA	No									
Transaction Type Capability										
Tran Type - Cash	Yes									
Tran Type - Goods	Yes									
Tran Type - Services	Yes									
Tran Type - Cash Back	Yes									
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									

(continued)	1C								
Terminal Data Output Capability									
Print, Attendant	Yes								
Print, Cardholder	No								
Display, Attendant	Yes								
Display, Cardholder	No								
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								
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+Index+ Serial Number								
Default DDOL	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								

(continued)	1C									
Terminal Action Analysis										
Terminal Action Codes supported	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?	Normal									
Completion Processing										
Forced Online	Yes									
Forced Acceptance	Yes									
Voice Referrals Initiated by Issuer	Yes									
Default TDOL	Yes									
Default TDOL not configured	Yes									
Exception Handling										
POS Entry Mode	80									
Miscellaneous										
Amount and PIN on same keypad	Yes									
ICC/Magstripe Reader Combined	No									
Supports account type selection	Yes									
Supports 'on fly' script processing	No									
Issuer Script device limit > 128 bytes	Yes									
If limit > 128, value supported?	0									
Internal Date Management	Yes									
Does the terminal support Receipt?	Yes									

Attachment 1
Specific Terms and Conditions to the Letter of Approval

Restriction:

None

Conditions:

This product is not able to handle transaction date beyond the 19th of January 2038