December 28, 2021

Byeonsoo Yoo

Al Solution

691-4, Mia-dong, Gangbuk-gu

Seoul 142-100

KOREA, REPUBLIC OF

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

EMV Application Kernel: **KOAMTAC-EMV_KERNEL Version V3.5.51**

Approval Number(s): **2-04950-1-1C-ICTK-1221-4.3j**

2-04950-1-1OS-ICTK-1221-4.3j

The EMV Application Kernel has been tested on the following terminal

Terminal: **SLED-mPOS**

PinPad: **n/a**

Operating System: **1OS = KOAMTAC-EMBEDED 32bit(ARM) Version V 1.0**

Renewal Date: **16-Dec-2025**

Report ID   Session 1: **EDT21005 Version 1.0 - ICTK Co., Ltd.**

Kernel Checksum:

C999205CD1CDE573E3571A34790F67E26DF04327

Configurations Checksums:

Config	Vendor Config ID	Terminal	Checksum
1C	Config 1	22	8E0FD1597F577AA17692B6A1E87DBA12C29C5ED0

Dear Byeonsoo Yoo:

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 Type Approval Chair

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.

Terminal Capabilities	1C									
Card Data Input Capability										
Terminal Type	22									
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	Yes									
SB185	Yes									
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									
Transaction Type Capability										
Tran Type - Cash	No									
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	No									
Command Keys	Yes									
Function Keys	No									

(continued)	1C								
Terminal Data Output Capability									
Print, Attendant	No								
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	No								
EMV Language Selection method	No								
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+CAPK Index+Cert S/N								
Default DDOL	Yes								
Manual act. when CA PK loading fails	Yes								
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	No								
Exception File	No								
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?	N/A									
Completion Processing										
Forced Online	Yes									
Forced Acceptance	No									
Advices	No									
Voice Referrals Initiated by Issuer	Yes									
Batch Data Capture	Yes									
Online Data Capture	Yes									
Default TDOL	Yes									
Default TDOL not configured	No									
Exception Handling										
POS Entry Mode	80									
Miscellaneous										
Amount and PIN on same keypad	No									
ICC/Magstripe Reader Combined	No									
If Combined, is Magstripe read first?	No									
Supports account type selection	No									
Supports 'on fly' script processing	No									
Issuer Script device limit > 128 bytes	Yes									
If limit > 128, value supported?	256									
Internal Date Management	Yes									
Does the terminal support Receipt?	No									

Attachment 1
Specific Terms and Conditions to the Letter of Approval

Restriction:

None