

May 02, 2023

Mr. IL-YONG HAN
HANMEGA Co.,Ltd.
211, DaeRyung Techno Town 3
115, Gasan digital 2-ro, Geumcheon-gu
Seoul 08505
KOREA, REPUBLIC OF

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

EMV Application Kernel: HANMEGA WIN EMV Kernel Version 4.3.K

Approval Number(s):
2-05194-1-1C-CETM-0523-4.3k
2-05194-1-2C-CETM-0523-4.3k
2-05194-1-3C-CETM-0523-4.3k
2-05194-1-1P-CETM-0523-4.3k
2-05194-1-1OS-CETM-0523-4.3k

The EMV Application Kernel has been tested on the following terminal

Terminal: LSK2500

PinPad: 1P = EPP-B5, HANMEGA EPP FIRMWARE and V05.08.00 - PIN pad is valid for configuration(s): 1C, 2C, 3C

Operating System: 1OS = Windows10(64bit) Version 10.0

Renewal Date: 28-Apr-2027

Report ID Session 1: 2_HANM_K6014_23_01_CEM Version 1.0 - CETECOM Limited

Kernel Checksum:

53f48dad

Configurations Checksums:

Config	Vendor Config ID	Terminal	Checksum
1C	CONF21	21	cf14f7fe
2C	CONF14	14	1c8ae4a1
3C	CONF24	24	192cf757

PIN Pads Checksums:

PinPad	Checksum
1P	b398a16b

Dear Mr. HAN:

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

Terminal Capabilities	1C	2C	3C							
Card Data Input Capability										
Terminal Type	21	14	24							
Manual Key Entry	No	No	No							
Magnetic Stripe	Yes	Yes	Yes							
IC with Contacts	Yes	Yes	Yes							
CVM Capability										
Plaintext PIN	Yes	No	No							
Online Enciphered PIN	Yes	Yes	Yes							
Signature (Paper)	Yes	No	No							
Offline Enciphered PIN	Yes	No	No							
No CVM	Yes	No	No							
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	No	No							
Card Capture	No	No	No							
CDA	Mode 1	No	No							
Transaction Type Capability										
Tran Type - Cash	Yes	Yes	Yes							
Tran Type - Goods	Yes	No	No							
Tran Type - Services	Yes	No	No							
Tran Type - Cash Back	No	No	No							
Tran Type - Inquiry	No	Yes	Yes							
Tran Type - Transfer	No	Yes	Yes							
Tran Type - Payment	No	No	No							
Tran Type - Admin	No	No	No							
Tran Type - Cash Deposit	No	No	No							
Terminal Data Input Capability										
Keypad	Yes	Yes	Yes							
Numeric Keys	Yes	Yes	Yes							
Alpha and Special Character Keys	No	No	No							
Command Keys	No	No	No							
Function Keys	Yes	Yes	Yes							

(continued)	1C	2C	3C							
Terminal Data Output Capability										
Print, Attendant	Yes	No	No							
Print, Cardholder	No	Yes	Yes							
Display, Attendant	Yes	No	No							
Display, Cardholder	No	Yes	Yes							
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	No	No							
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									
Exponents	3 and 2 ¹⁶ +1									
Revocation of Issuer PK Certificate	Yes	No	No							
Certificate Revocation List Format	RID, CAPK Index, CSN									
Default DDOL	Yes	No	No							
Manual act. when CA PK loading fails	No	No	No							
CA PK verified with check sum	Yes	No	No							
Cardholder Verification Method										
Bypass PIN Entry	Yes	No	No							
Subsequent Bypass PIN Entry	No	No	No							
Get Data for PIN Try Counter	Yes	No	No							
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	No	No	No							
Velocity Checking	No	No	No							
Transaction Log	No	No	No							
Exception File	No	No	No							
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?	Skipped	Skipped	Skipped							
Completion Processing										
Forced Online	No	No	No							
Forced Acceptance	No	No	No							
Advices	No	No	No							
Voice Referrals Initiated by Issuer	Yes	No	No							
Batch Data Capture	No	No	No							
Online Data Capture	Yes	Yes	Yes							
Default TDOL	Yes	Yes	Yes							
Default TDOL not configured	No	No	No							
Exception Handling										
POS Entry Mode	02	02	02							
Miscellaneous										
Amount and PIN on same keypad	Yes	Yes	Yes							
ICC/Magstripe Reader Combined	Yes	Yes	Yes							
If Combined, is Magstripe read first?	No	No	No							
Supports account type selection	No	Yes	Yes							
Supports 'on fly' script processing	Yes	No	No							
Issuer Script device limit > 128 bytes	Yes	Yes	Yes							
If limit > 128, value supported?	256	256	256							
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