

July 10, 2025

Mr. James Tsai

Castles Technology Co., Ltd.

6F., No. 207-5, Sec. 3, Beixin Rd., Xindian District

New Taipei City 23143

TAIWAN, PROVINCE OF CHINA

Re: EMVCo Letter of Approval - Contact Terminal Level 2 - Restricted Renewal

EMV Application Kernel: CBM-EMV Version v1.0.6

Approval Number(s):
2-04782-1-1C-ICTK-1220-4.3i
2-04782-1-2C-ICTK-1220-4.3i
2-04782-1-5C-ICTK-1220-4.3i
2-04782-2-14C-ICTK-1220-4.3i
2-05616-1-1P-ICTK-0725-4.4c
2-04782-1-1OS-ICTK-1220-4.3i

The EMV Application Kernel has been tested on the following terminal

Terminal: SATURN1000

PinPad: 1P = SATURN1000, CTOS v1.0.0 - PIN pad is valid for configuration(s): 1C, 2C, 5C

Operating System: IOS = CTOS, 32-bit Version v1.0.0

Expiry Date: 01-Jan-2028

Report ID Session 1: EDT25036 Version 1.0 - Bureau Veritas ICTK Co., Ltd.

Kernel Checksum:

67AF3ECF0E65839EAEB09BF8987CDC3534BFE223

Configurations Checksums:

Config	Vendor Config ID	Terminal	Checksum
1C	Cfg12F8-1	12	8466CB934A4BA19E49FF69136D97F0CF39141A94
2C	Cfg22B8-3	22	AE5672BD6772B623CC201581574D896862402CF6
3C	Cfg22F8-1	22	89E8685CFC6243F2F8B2C295B84968A366CAF1A4
4C	Cfg2228-1	22	1CC598C09EE4980F5F72FCF029007F03F0735659

PIN Pads Checksums:

PinPad	Checksum
1P	

Dear Mr. Tsai:

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 4.4 of October 2022.

EMVCo hereby grants your Application EMVCo Type Approval for Terminal Level 2 Restricted Renewal, 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. According to EMVCo Restricted Renewal policy the extension to the original Type Approval is granted until the Expiry Date mentioned in this letter. At the end of that additional validity period the Application Kernel will expire and cannot be submitted for another renewal.

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 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	2C	3C	4C						
Card Data Input Capability										
Terminal Type	12	22	22	22						
Manual Key Entry	Yes	Yes	Yes	Yes						
Magnetic Stripe	Yes	Yes	Yes	Yes						
IC with Contacts	Yes	Yes	Yes	Yes						
CVM Capability										
Plaintext PIN	Yes	Yes	Yes	No						
Online Enciphered PIN	Yes	No	Yes	No						
Signature (Paper)	Yes	Yes	Yes	Yes						
Offline Enciphered PIN (RSA)	Yes	Yes	Yes	No						
No CVM	Yes	Yes	Yes	Yes						
Offline Enciphered PIN (ECC)	No	No	No	No						
Biometric	No	No	No	No						
Offline Finger	No	No	No	No						
Online Finger	No	No	No	No						
Offline Facial	No	No	No	No						
Online Facial	No	No	No	No						
Offline Palm	No	No	No	No						
Online Palm	No	No	No	No						
Offline Iris	No	No	No	No						
Online Iris	No	No	No	No						
Offline Voice	No	No	No	No						
Online Voice	No	No	No	No						
Security Capability										
SDA & DDA	Yes	Yes	Yes	Yes						
Card Capture	No	No	No	No						
CDA	Mode 3	Mode 1	Mode 1	Mode 1						
XDA	No	No	No	No						
Transaction Type Capability										
Tran Type - Cash	Yes	Yes	Yes	Yes						
Tran Type - Goods	Yes	Yes	Yes	Yes						
Tran Type - Services	Yes	Yes	Yes	Yes						
Tran Type - Cash Back	Yes	Yes	Yes	Yes						
Tran Type - Inquiry	Yes	No	No	No						
Tran Type - Transfer	Yes	No	No	No						
Tran Type - Payment	Yes	No	No	No						
Tran Type - Admin	Yes	No	No	No						
Tran Type - Cash Deposit	Yes	No	No	No						
Terminal Data Input Capability										
Keypad	Yes	Yes	Yes	Yes						
Numeric Keys	Yes	Yes	Yes	Yes						
Alpha and Special Character Keys	Yes	Yes	Yes	Yes						
Command Keys	Yes	Yes	Yes	Yes						
Function Keys	Yes	Yes	Yes	Yes						

(continued)	1C	2C	3C	4C						
Terminal Data Output Capability										
Print	Yes	Yes	Yes	Yes						
Display	Yes	Yes	Yes	Yes						
Code Table 10	No	No	No	No						
Code Table 9	No	No	No	No						
Code Table 8	No	No	No	No						
Code Table 7	No	No	No	No						
Code Table 6	No	No	No	No						
Code Table 5	No	No	No	No						
Code Table 4	No	No	No	No						
Code Table 3	No	No	No	No						
Code Table 2	No	No	No	No						
Code Table 1	Yes	Yes	Yes	Yes						
Application Selection										
PSE	Yes	Yes	Yes	Yes						
Cardholder Confirmation	Yes	Yes	Yes	Yes						
Preferred display order	Yes	No	No	No						
Partial AID Selection	Yes	Yes	Yes	Yes						
Multi language	Yes	Yes	Yes	Yes						
EMV Language Selection method	Yes	Yes	Yes	Yes						
Common Character Set	Yes	Yes	Yes	Yes						
Data Authentication										
Revocation of Issuer PK Certificate	Yes	Yes	Yes	Yes						
Certificate Revocation List Format	RID(5B)+CA PKI(1B)+CS N(3B)	RID(5B)+CA PKI(1B)+CS N(3B)	RID(5B)+CA PKI(1B)+CS N(3B)	RID(5B)+CA PKI(1B)+CS N(3B)						
Default DDOL	Yes	Yes	Yes	Yes						
Cardholder Verification Method										
Bypass PIN Entry	Yes	Yes	Yes	No						
Subsequent Bypass PIN Entry	No	Yes	No	No						
Get Data for PIN Try Counter	Yes	Yes	Yes	No						
Fail CVM	Yes	Yes	Yes	Yes						
Amount known before CVM proces.	Yes	Yes	Yes	Yes						
Terminal Risk Management										
Floor Limit Checking	Yes	Yes	Yes	Yes						
Random Transaction Selection	Yes	Yes	Yes	Yes						
Velocity Checking	Yes	Yes	Yes	Yes						
Transaction Log	Yes	Yes	Yes	Yes						
Exception File	Yes	Yes	Yes	Yes						
TRM irrespective of AIP setting (expected behavior)	Yes	Yes	Yes	Yes						

(continued)	1C	2C	3C	4C						
Terminal Action Analysis										
Terminal Action Codes supported	Yes	Yes	Yes	Yes						
TAC can be deleted or disabled	Yes	Yes	Yes	Yes						
How does offline only Terminal process Default Action Codes?	N/A	N/A	N/A	N/A						
How does online only terminal process TAC/IAC-Default when unable to go online?	N/A	N/A	N/A	N/A						
Completion Processing										
Forced Online	Yes	Yes	Yes	Yes						
Forced Acceptance	Yes	Yes	Yes	Yes						
Voice Referrals Initiated by Issuer	Yes	Yes	Yes	Yes						
Default TDOL	Yes	Yes	Yes	Yes						
Default TDOL not configured	Yes	Yes	Yes	Yes						
Exception Handling										
POS Entry Mode	8x	8x	8x	8x						
Miscellaneous										
Amount and PIN on same keypad	Yes	Yes	Yes	Yes						
ICC/Magstripe Reader Combined	No	No	No	No						
Supports account type selection	No	Yes	No	No						
Supports 'on fly' script processing	No	No	No	No						
Issuer Script device limit > 128 bytes	Yes	Yes	Yes	Yes						
If limit > 128, value supported?	1024	1024	1024	1024						
Internal Date Management	Yes	Yes	Yes	Yes						
Does the terminal support Receipt?	Yes	Yes	Yes	Yes						

Attachment 1

Specific Terms and Conditions to the Letter of Approval

Restriction:

None

Conditions:

SB272 is not supported. Kernel treats year 'YY' associated with Application Expiration and Certificate Expiration dates in the range of 50-99 as 1950-1999. Contact Vendor for more information.