

August 30, 2022

Mr. Guoqiang Chen

China Electronic Financial Equipment Systems (Shenzhen) Co., Ltd.

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Shenzhen 518103

CHINA

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

**EMV Application Kernel: 45ATM Version GST 001-608213**

**Approval Number(s): 2-05030-1-1S-BCTC-0822-4.3k  
2-05030-1-1P-BCTC-0822-4.3k  
2-05030-1-1OS-BCTC-0822-4.3k**

The EMV Application Kernel has been tested on the following terminal

**Terminal: HT-2845-SR**  
**PinPad: 1P = ZDH01, HWPIN STE40341907**  
**Operating System: 1OS = Windows 10 Version 1607**

**Renewal Date: 22-Jun-2026**

**Report ID Session 1: TEMV221SQ1T Version V1.0 - Beijing Unionpay Card Technology Co., Ltd  
(Bank Card Test Center)**

**Kernel Checksum:**

02148397
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**Configuration Checksum:**

Config	Vendor Config ID	Terminal	Checksum
1S		14	0000C53B

**PIN Pads Checksums:**

PinPad	Checksum
1P	4C3B8AC0

Dear Mr. Chen:

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](http://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	Value Supported
<b>Card Data Input Capability</b>	
Manual Key Entry	No
Magnetic Stripe	Yes
IC with Contacts	Yes
<b>CVM Capability</b>	
Plaintext PIN for ICC Verification	No
Enciphered PIN for online Verification	Yes
Signature (Paper)	No
Enciphered PIN for offline Verification	No
No CVM Required	No
SB185	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
<b>Security Capability</b>	
Static Data Authentication and Dynamic Data Authentication	No
Card Capture	Yes
Combined Dynamic Data Authentication / Application Cryptogram Generation	No
<b>Transaction Type Capability</b>	
Cash	Yes
Goods	No
Services	No
Cash Back	No
Inquiry	No
Transfer	No
Payment	No
Administrative	No
Cash Deposit	No
<b>Terminal Data Input Capability</b>	
Does terminal have keypad	Yes
Numeric Keys	Yes
Alphabetic and Special Character Keys	No
Command Keys	Yes
Function Keys	Yes
<b>Terminal Data Output Capability</b>	
Print, Attendant (Mandatory for terminals supporting signature)	No
Print, Cardholder	Yes
Display, Attendant (Mandatory for Attended terminals)	No
Display Cardholder	Yes

Terminal Capabilities	Value Supported
<b>Terminal Data Output Capability</b>	
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
<b>Application Selection</b>	
Support PSE selection Method	Yes
Support Cardholder Selection & Confirmation	Yes
Does Terminal have a preferred order of displaying applications	Yes
Does terminal perform partial AID selection	Yes
Does the terminal have multi language support	Yes
Does the terminal support the EMV Language Selection method	No
Does the terminal support the Common Character Set as defined in Annex B table 20 Book 4	Yes
<b>Selectable Kernel Configurations</b>	
Is your Multi-Configuration Kernel capable of dynamically selecting a configuration at the time of transaction	No
<b>Data Authentication</b>	
What is the maximum supported Certificate Authority Public Key Size (Mandatory for terminals supporting Data Authentication with minimal support for 248 bytes)	N/A
What exponents does the terminal support (Mandatory for terminals supporting Data Authentication, 3 and $2^{16}+1$ )	N/A
During data authentication does the terminal check validity for revocation of Issuer Public Key Certificate	No
When supporting certificate revocation, what is the Certificate Revocation List format?	N/A
Does the terminal contain a default DDOL (Mandatory for terminals supporting DDA)	No
Is operator action required when loading CA Public Key fails	No
CA Public Key verified with CA Public Key Check Sum	No
<b>Cardholder Verification Method</b>	
Terminal supports bypass PIN Entry	No
Terminal supports Subsequent bypass PIN Entry	No
Terminal supports Get Data for PIN Try Counter	No
Terminal supports Fail CVM	Yes
Are amounts known before CVM processing	Yes
<b>Terminal Risk Management</b>	
Floor Limit Checking (Mandatory for offline only terminals and offline terminals with online capability)	No
Random Transaction Selection (Mandatory for offline terminals with online capability, except when cardholder controlled)	No
Velocity Checking (Mandatory for offline only terminals and offline terminals with online capability)	No
Transaction Log	No
Exception File	No
Performance of Terminal Risk Management irrespective of AIP setting (expected behavior)	Yes

Terminal Capabilities	Value Supported
<b>Terminal Action Analysis</b>	
Does the terminal support Terminal Action Codes	Yes
Can the Terminal Action Codes be deleted or disabled? If yes what are the default TAC values supported? (according to Book 3 Section 10.7)	No
TAC Denial:	
TAC Online:	
TAC Default:	
How does Offline Only Terminal process Default Action Codes prior to First Generate AC? (Offline Only Terminal shall support one option)	N/A
How does online only terminal process TAC/IAC-Default when unable to go online?	Skipped
<b>Completion Processing</b>	
Transaction Forced Online Capability	No
Transaction Forced Acceptance Capability	No
Does terminal Support advices	No
Does the terminal support Issuer initiated Voice Referrals	No
Does the terminal support Batch Data Capture	Yes
Does the terminal support Online Data Capture	No
Does the terminal support a Default TDOL	Yes
If a Default TDOL is supported, can this default TDOL be not configured (or not loaded) in the terminal	No
Default TDOL TVR bit set before or after the 1st Generate AC Terminal Action Analysis	Before
<b>Exception Handling</b>	
What is the POS Entry Mode value when IC cannot be read and the transaction falls back using Magstripe (Mandatory for attended terminals)	05
<b>Miscellaneous</b>	
Is the terminal equipped with a PIN Pad	Yes
Is the amount and PIN entered at the same keypad	Yes
Is the ICC/Magstripe Reader combined	Yes
If Combined ICC/Magstripe reader is supported, is Magstripe read first	No
Does the terminal support account type selection	No
Does the terminal support 'on fly' script processing (not recommended behavior)	No
Is the Issuer Script device limit greater than 128 bytes	No
If the Issuer Script device limit is greater than 128 bytes, what is the value supported	
Does the terminal support Internal Date Management	Yes
Is the Level 2 Contact Kernel Random Generator using the algorithm described in SB144	Yes
If the Level 2 Contact Kernel Random Generator is not using the algorithm described in SB144, is this function PCI approved	n/a
If the Level 2 Contact Kernel Random Generator is not using the algorithm described in SB144, describe the function (such as algorithm used, etc)	
Is the Level 2 Contact Kernel Software dependent on the Terminal Hardware	No
If answer to previous question is Yes, describe the function and the Hardware	
Are the Cryptographic functions (RSA, Hash, etc) of the Level 2 Contact Kernel Software dependent on the Terminal Hardware	No
If answer to previous question is Yes, describe the Hardware	
Is any other functions of the Level 2 Contact Kernel Software dependent on the Terminal Hardware	No
If answer to previous question is Yes, describe the functions and the Hardware	

Terminal Capabilities	Value Supported
<b>Miscellaneous</b>	
Does the terminal support Receipt (by printing or any electronic means)?	Yes
Does the terminal store declined transactions?	No
List the Currency Codes supported as for ISO 4217	156
Does the terminal support the Application Selection Registered Proprietary Data (ASRPD)?	No
List the Language(s) supported as for ISO 639 (minimum one shall be declared, and up to 4 if Multiple Languages are supported)	EN ZH
Can the Kernel be configured so the data object 'Terminal Risk Management Data' '9F1D' is absent or configured with no value (00 is a value)?	No
Can the Transaction Sequence Counter (TSC) be personalized to any value?	No
If answer to previous question is Yes, what is the Maximum Value of the Transaction Sequence Counter?	
<b>Checksum</b>	
Does the product comply with the Checksum rules as defined in Contact Terminal Level 2 administrative process	Yes
This is an Initial submission or Subsequent submission or renewal of the original approved product prior to the effective date of checksum rules (cf Terminal Type Approval Bulletin No. 134)	n/a
Configuration Checksum (Static Kernel only)	0000C53B

# **Attachment 1**

## **Specific Terms and Conditions to the Letter of Approval**

Restriction:

**None**