

December 14, 2021



Ms. Qian TONG  
GRG Banking Equipment Co., Ltd.  
9,11 Kelin Road, Science City  
High-tech Industrial Development Zone  
Guangzhou, China  
Guangzhou 510663  
CHINA

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

**EMV Application Kernel:** GrgEmvKernel Version 4.2.0.7

**Approval Number(s):**  
2-04920-1-1C-BCTS-1221-4.3j  
2-04920-1-2C-BCTS-1221-4.3j  
2-04920-1-3C-BCTS-1221-4.3j  
2-04920-1-1P-BCTS-1221-4.3j  
2-04920-1-2P-BCTS-1221-4.3j  
2-04920-1-1OS-BCTS-1221-4.3j  
2-04920-1-2OS-BCTS-1221-4.3j

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The EMV Application Kernel has been tested on the following terminal

**Terminal:** DT-7000

**PinPad:** 1P = EPP-004, YT2.480.0420 V3.00 - PIN pad is valid for configuration(s):  
1C, 2C, 3C  
2P = EPP-004A, YT2.480.0611 V1.05 - PIN pad is valid for configuration(s):  
1C, 2C, 3C

**Operating System:** 1OS = Windows 10 Version 10.0 64bits  
2OS = Windows 10 Version 10.0 32bits

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**Renewal Date:** 08-Nov-2025

**Report ID** Session 1: TEMV2145Q1T Version V1.0 - Beijing Unionpay Card Technology Co., Ltd.  
Shenzhen Branch

**Kernel Checksum:**

E1D1AB9E90F035C5BAF729A2D5C425907560C1D6
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**Configurations Checksums:**

Config	Vendor Config ID	Terminal	Checksum
1C	CFG1	14	201639799DC6DEF2A4FDBAA87026FD571D4543FB
2C	CFG2	14	E6B4CAE89449F753BF942F7C9161EEC23948EC03
3C	CFG3	14	75AAA7F9CC89A098BEA202B8FD1A21D982D39DC7

**PIN Pads Checksums:**

PinPad	Checksum
1P	N/A
2P	N/A

Dear Ms. TONG:

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

(continued)	1C	2C	3C							
<b>Terminal Data Output Capability</b>										
Print, Attendant	No	No	No							
Print, Cardholder	Yes	Yes	Yes							
Display, Attendant	No	No	No							
Display, Cardholder	Yes	Yes	Yes							
Code Table 10	Yes	Yes	Yes							
Code Table 9	Yes	Yes	Yes							
Code Table 8	Yes	Yes	Yes							
Code Table 7	Yes	Yes	Yes							
Code Table 6	Yes	Yes	Yes							
Code Table 5	Yes	Yes	Yes							
Code Table 4	Yes	Yes	Yes							
Code Table 3	Yes	Yes	Yes							
Code Table 2	Yes	Yes	Yes							
Code Table 1	Yes	Yes	Yes							
<b>Application Selection</b>										
PSE	Yes	Yes	Yes							
Cardholder Confirmation	Yes	Yes	Yes							
Preferred display order	No	No	No							
Partial AID Selection	Yes	Yes	Yes							
Multi language	Yes	Yes	Yes							
EMV Language Selection method	Yes	Yes	Yes							
Common Character Set	Yes	Yes	Yes							
<b>Data Authentication</b>										
MAX CA Public key	248	248								
Exponents	3 and 2 <sup>16</sup> +1	3 and 2 <sup>16</sup> +1								
Revocation of Issuer PK Certificate	Yes	Yes	No							
Certificate Revocation List Format	RID,CAPKI, CSN	RID,CAPKI, CSN								
Default DDOL	Yes	Yes	No							
Manual act. when CA PK loading fails	No	No	No							
CA PK verified with check sum	Yes	Yes	No							
<b>Cardholder Verification Method</b>										
Bypass PIN Entry	No	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							
<b>Terminal Risk Management</b>										
Floor Limit Checking	Yes	Yes	Yes							
Random Transaction Selection	No	No	No							
Velocity Checking	Yes	Yes	Yes							
Transaction Log	No	No	No							
Exception File	No	No	No							
TRM irrespective of AIP setting (expected behavior)	Yes	Yes	Yes							

(continued)	1C	2C	3C							
<b>Terminal Action Analysis</b>										
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							
<b>Completion Processing</b>										
Forced Online	No	No	No							
Forced Acceptance	No	No	No							
Advices	No	No	No							
Voice Referrals Initiated by Issuer	No	No	No							
Batch Data Capture	No	No	No							
Online Data Capture	Yes	Yes	Yes							
Default TDOL	Yes	Yes	Yes							
Default TDOL not configured	Yes	Yes	Yes							
<b>Exception Handling</b>										
POS Entry Mode	21	21	21							
<b>Miscellaneous</b>										
Amount and PIN on same keypad	Yes	Yes	Yes							
ICC/Magstripe Reader Combined	Yes	Yes	Yes							
If Combined, is Magstripe read first?	Yes	Yes	Yes							
Supports account type selection	Yes	Yes	Yes							
Supports 'on fly' script processing	No	No	No							
Issuer Script device limit > 128 bytes	No	No	No							
If limit > 128, value supported?										
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**