



June 10, 2019

Samuel Parr  
MagTek, Inc.  
1710 Apollo Court

Seal Beach CA 90740  
UNITED STATES OF AMERICA

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

**EMV Application Kernel: mDynamo L2 Kernel Version A**

**Approval Number(s):**  
2-03748-1-1C-FIME-1016-4.3.e  
2-03748-1-2C-FIME-1016-4.3.e  
2-03748-1-3C-FIME-1016-4.3.e  
2-03748-1-1OS-FIME-1016-4.3.e

The EMV Application Kernel has been tested on the following terminal

**Terminal: mDynamo**  
**PinPad: n/a**  
**Operating System: 1OS = mDynamo Version A**

**Expiry Date: 30-Sep-2023**

**Report ID Session 1: C19REP00-638 Version V1.0 - FIME EMEA**

**Kernel Checksum:**

fe5c8ee57c62aab8a5565c3d03016b6ff9ca2af4

**Configurations Checksums:**

Config	Vendor Config ID	Terminal	Checksum
1C	mDynamo C1	21	1d1fd777854a3480c6340abdfdf06526cbb7b9ba
2C	mDynamo C2	21	ec81eceb0f2c045c3c3594e0fdafdceb07a7363
3C	mDynamo C3	22	2f2c4bedb4ddcb2a5b747d67c8af5e3936eee24a

Dear Samuel Parr:

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 Restricted Renewal, 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. According to EMVCo Restricted Renewal policy the extension to the original Type Approval is granted for a period of three years. 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](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

**Note:**

**The Random Number Generator and the Cryptographic Functions are part of the EMV specifications. This Contact Level 2 Kernel utilizes specific Hardware device 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 Terminal Type having this specific Hardware.**

**While defined in EMV as a mandatory functionality, the "Voice Referrals Initiated by Issuer" feature has not been implemented in this kernel.**

<b>Terminal Capabilities</b>	<b>1C</b>	<b>2C</b>	<b>3C</b>							
<b>Card Data Input Capability</b>										
Terminal Type	21	21	22							
Manual Key Entry	No	No	No							
Magnetic Stripe	No	No	No							
IC with Contacts	Yes	Yes	Yes							
<b>CVM Capability</b>										
Plaintext PIN	No	No	No							
Online Enciphered PIN	No	No	No							
Signature (Paper)	Yes	Yes	Yes							
Offline Enciphered PIN	No	No	No							
No CVM	Yes	Yes	Yes							
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	No	Yes							
Card Capture	No	No	No							
CDA	Mode 1	No	Mode 1							
<b>Transaction Type Capability</b>										
Tran Type - Cash	No	No	No							
Tran Type - Goods	Yes	Yes	Yes							
Tran Type - Services	Yes	Yes	Yes							
Tran Type - Cash Back	Yes	Yes	Yes							
Tran Type - Inquiry	No	No	No							
Tran Type - Transfer	No	No	No							
Tran Type - Payment	Yes	Yes	Yes							
Tran Type - Admin	No	No	No							
Tran Type - Cash Deposit	No	No	No							
<b>Terminal Data Input Capability</b>										
Keypad	No	No	No							
Numeric Keys	No	No	No							
Alpha and Special Character Keys	No	No	No							
Command Keys	No	No	No							
Function Keys	No	No	No							

(continued)	1C	2C	3C							
<b>Terminal Data Output Capability</b>										
Print, Attendant	Yes	Yes	Yes							
Print, Cardholder	No	No	No							
Display, Attendant	Yes	Yes	Yes							
Display, Cardholder	Yes	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	Yes	Yes							
<b>Application Selection</b>										
PSE	Yes	Yes	Yes							
Cardholder Confirmation	Yes	Yes	Yes							
Preferred display order	Yes	Yes	Yes							
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	No	Yes							
Certificate Revocation List Format	RID, CAPK Index and CSN		RID, CAPK Index and CSN							
Default DDOL	Yes	No	Yes							
Manual act. when CA PK loading fails	No	No	No							
CA PK verified with check sum	Yes	Yes	Yes							
<b>Cardholder Verification Method</b>										
Bypass PIN Entry	No	No	No							
Subsequent Bypass PIN Entry	No	No	No							
Get Data for PIN Try Counter	No	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	Yes							
Velocity Checking	No	No	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	No	No	No							
How does offline only Terminal process Default Action Codes?										
How does online only terminal process TAC/IAC-Default when unable to go online?	Normal	Normal	N/A							
<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							
<b>Exception Handling</b>										
POS Entry Mode	Not Applicable	Not Applicable	Not Applicable							
<b>Miscellaneous</b>										
Amount and PIN on same keypad	No	No	No							
ICC/Magstripe Reader Combined	No	No	No							
If Combined, is Magstripe read first?	No	No	No							
Supports account type selection	No	No	No							
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**

Conditions:

- Voice Issuer Referral is not supported for the attended configurations,
- PAR is not supported by this Kernel.