



December 10, 2010

Igor Soukhostavsky
TT, Ltd (Terminal Technologies)
8 Yunosty
Zelenograd
124482 Moscow
Russia

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

EMV Application Kernel: **emvlib 1.5**

Approval Number(s): **2-01991-1-1C-RFI-1210-4.2.b**
2-01991-1-2C-RFI-1210-4.2.b
2-01991-1-1OS-RFI-1210-4.2.b

The EMV Application Kernel has been tested on the following terminal

Terminal: **YARUS C2100**
PinPad: **n/a**
Operating System: **1OS = Linux Version 2.6**

Report ID Session 1: **2TETE-RP76385JD01A-RFI - RFI Global Services**

Approved Configurations:

Config	Vendor Config ID	Terminal	Checksum
1C	POS	22	C3 E4 C7 FC
2C	UPT	25	B0 04 95 D8

Renewal Date: 10-Dec-2013

Dear Igor Soukhostavsky:

EMVCo, LLC ("EMVCo"), a Delaware limited liability company, has received your request for Level 2 terminal type approval for the EMV Application Kernel (hereafter referred to as Application) identified above. 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 Kernel sufficiently conform to EMV Integrated Circuit Card Specifications for Payment Systems, Version 4.2 of June 2008.

EMVCo hereby (a) grants your Application EMVCo Type Approval for Terminal Level 2, based on the requirements stated in the EMV 4.2 Specifications, and (b) agrees to include your Application Kernel in EMVCo's approved Application list.

EMVCo's grant to your Application Kernel 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 Application Kernels published on the EMVCo website (www.emvco.com).

TT, Ltd (Terminal Technologies)

This Letter of Approval is effective on dispatch from EMVCo.

EMVCo, LLC, a Delaware limited liability company

By:

Name: Arnaud du Chéné

Title: EMVCo Terminal Type Approval

Terminal Capabilities	1C	2C								
Card Data Input Capability										
Terminal Type	22	25								
Manual Key Entry	Yes	Yes								
Magnetic Stripe	Yes	Yes								
IC with Contacts	Yes	Yes								
CVM Capability										
Plaintext PIN	Yes	No								
Online Enciphered PIN	Yes	Yes								
Signature (Paper)	Yes	No								
Offline Enciphered PIN	Yes	No								
No CVM	No	No								
Security Capability										
SDA and DDA	Yes	Yes								
Card Capture	No	No								
CDA	Yes	Yes								
Transaction Type Capability										
Tran Type - Cash	Yes	Yes								
Tran Type - Goods	Yes	Yes								
Tran Type - Services	Yes	Yes								
Tran Type - Cash Back	Yes	No								
Tran Type - Inquiry	Yes	Yes								
Tran Type - Transfer	Yes	Yes								
Tran Type - Payment	Yes	Yes								
Tran Type - Admin	Yes	Yes								
Tran Type - Cash Deposit	Yes	Yes								
Terminal Data Input Capability										
Keypad	Yes	Yes								
Numeric Keys	Yes	Yes								
Alpha and Special Character Keys	Yes	Yes								
Command Keys	Yes	Yes								
Function Keys	Yes	Yes								
Terminal Data Output Capability										
Print, Attendant	Yes	No								
Print, Cardholder	No	Yes								
Display, Attendant	Yes	No								
Display, Cardholder	No	Yes								
Code Table 10	No	No								
Code Table 9	No	No								
Code Table 8	No	No								
Code Table 7	No	No								
Code Table 6	No	No								
Code Table 5	No	No								
Code Table 4	No	No								
Code Table 3	No	No								
Code Table 2	No	No								
Code Table 1	Yes	Yes								

(continued)	1C	2C								
Application Selection										
PSE	Yes	Yes								
Cardholder Confirmation	Yes	Yes								
Preferred display order	Yes	Yes								
Partial AID Selection	Yes	Yes								
Multi language	No	No								
EMV Language Selection method	n/a	n/a								
Common Character Set	Yes	Yes								
Data Authentication										
MAX CA Public key	248	248								
Exponents	3 and 2 ¹⁶⁺¹	3 and 2 ¹⁶⁺¹								
Revocation of Issuer PK Certificate	Yes	Yes								
Certificate Revocation List Format	RID, CAPK Index, CSN	RID, CAPK Index, CSN								
Default DDOL	Yes	Yes								
Manual act. when CA PK loading fails	No	No								
CA PK verified with check sum	Yes	Yes								
Cardholder Verification Method										
Bypass PIN Entry	Yes	No								
Subsequent Bypass PIN Entry	Yes	No								
Get Data for PIN Try Counter	Yes	Yes								
Fail CVM	Yes	Yes								
Amount known before CVM proces.	Yes	Yes								
Terminal Risk Management										
Floor Limit Checking	Yes	Yes								
Random Transaction Selection	Yes	Yes								
Velocity Checking	Yes	Yes								
Transaction Log	Yes	Yes								
Exception File	Yes	Yes								
TRM irrespective of AIP setting (expected behavior)	Yes	Yes								
Terminal Action Analysis										
Terminal Action Codes supported	Yes	Yes								
TAC can be changed	n/a	n/a								
TAC can be deleted or disabled	Yes	Yes								
Default Act. Codes prior to 1stGenAC	n/a	n/a								
Default Action Codes after 1stGenAC	n/a	n/a								
TAC/IAC-Default skipped	n/a	n/a								
TAC/IAC-Default normal processing	n/a	n/a								
CDA failure detected prior TA Analysis	Yes	Yes								
Mode 1	No	No								
Mode 2	No	No								
Mode 3	Yes	Yes								
Mode 4	No	No								

(continued)	1C	2C								
Completion Processing										
Forced Online	Yes	No								
Forced Acceptance	Yes	No								
Advices	Yes	Yes								
Issuer Referrals	Yes	No								
Batch Data Capture	Yes	Yes								
Online Data Capture	Yes	Yes								
Default TDOL	Yes	Yes								
Exception Handling										
POS Entry Mode	80	80								
Miscellaneous										
PIN Pad	Yes	Yes								
Amount and PIN on same keypad	Yes	Yes								
ICC/Magstripe Reader Combined	No	Yes								
If Combined, is Magstripe read first?	No	No								
Supports account type selection	Yes	Yes								
Issuer Script device limit > 128 bytes	Yes	Yes								
If limit > 128, value supported?	256	256								
Internal Date Management	Yes	Yes								
Selectable Kernel Configurations										
Selectable Kernel Configurations	Yes	Yes								
(1) AID Amount Selection Criteria (CVM variation)										
Range Criteria X	n/a	n/a								
Range Criteria X and Y	n/a	n/a								
Range Criteria X per AID	n/a	n/a								
Range Criteria X and Y per AID	n/a	n/a								
(2) AID, Amount and Transaction Type Selection (CVM variation)										
Range Criteria X	n/a	n/a								
Range Criteria X and Y	n/a	n/a								
Range Criteria X per AID	n/a	n/a								
Range Criteria X and Y per AID	n/a	n/a								
(3) AID, Amount Selection (CVM and Terminal Type variation)										
Range Criteria X	n/a	n/a								
Range Criteria X and Y	n/a	n/a								
Range Criteria X per AID	n/a	n/a								
Range Criteria X and Y per AID	n/a	n/a								

Attachment 1

Specific Terms and Conditions to the Letter of Approval

Restrictions, if any:

None