



July 12, 2005

Alistair Brightman  
Korala Associates Limited (KAL)  
John Cotton Building  
10-14 Sunnyside, Edinburgh EH75RA  
United Kingdom

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

**Approval Number:** 21911 0705 400 20 RFI  
**EMV Application Kernel:** Kalignite EMV Kernel 1.1  
**As Tested In**  
**Terminal:** The Kalignite Software Platform on Windows XP  
**PinPad:** n/a  
**Terminal Type:** 14  
**Report ID:** 2KORA-RP71138JD02-RFI  
**Vendor Config ID:** SK

Dear Alistair Brightman:

EMVCo, LLC ("EMVCo"), a Delaware limited liability company, has received your request for Level 2 type approval for the EMV Application Kernel (hereafter referred to as Application) identified above. In connection with your request, we have reviewed test file number 2KORA-RP71138JD02-RFI, w generated by RFI Global Services.

After assessing such file, EMVCo has found reasonable evidence that the submitted samples of the above referenced Application Kernel sufficiently conform to EMV 2000 Integrated Circuit Card, Specifications for Payment Systems version 4.0 December 2000.

EMVCo hereby (a) grants your Application Kernel EMVCo Type Approval for Terminal Level 2, based on the requirements stated in the EMV 4.0 Specifications, and (b) agrees to include your Application Kernel in EMVCo's approved Application Kernel 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 interface modules published on the EMVCo website ([www.emvco.com](http://www.emvco.com)).

Korala Associates Limited (KAL)

***This Letter of Approval is effective on dispatch from EMVCo..***

EMVCo, LLC, a Delaware limited liability company

By:   
Name: David Mierzwa  
Title: EMVCo Type Approval Secretariat

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<b>Terminal Capabilities-4.x</b>	<b>Value</b>	<b>Comment</b>
<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	Yes	
<b>Security Capability</b>		
Static Data Authentication (Mandatory for offline capable terminals supporting DDA)	No	
Dynamic Data Authentication (Mandatory for offline capable terminals supporting CDA)	No	
Card Capture	Yes	
Combined Dynamic Data Authentication/Application Cryptogram Generation	No	
<b>Additional Terminal Capabilities</b>		
<b>Transaction Type Capability</b>		
Cash	Yes	
Goods	Yes	
Services	Yes	
Cash Back	Yes	
Inquiry	Yes	
Transfer	Yes	
Payment	Yes	
Administrative	Yes	
Cash Deposit	Yes	
<b>Terminal Data Input Capability</b>		
Does terminal have a keypad? (If keypad is supported the terminal shall support one or more of the following key types)	Yes	
Numeric Keys	Yes	
Alphabetic and Special Character Keys	No	
Command Keys	No	
Function Keys	Yes	

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<b>Terminal Data Output Capability</b>		
Print, Attendant (Mandatory for Attended terminals)	No	
Print, Cardholder	Yes	
Display Attendant (Mandatory for terminals supporting signature)	No	
Display Cardholder	Yes	
Code Table 10	Yes	
Code Table 9	Yes	
Code Table 8	Yes	
Code Table 7	Yes	
Code Table 6	Yes	
Code Table 5	Yes	
Code Table 4	Yes	
Code Table 3	Yes	
Code Table 2	Yes	
Code Table 1	Yes	

<b>Application Selection</b>	<b>Value</b>	<b>Comment</b>
Support PSE selection Method	Yes	
Support Cardholder Confirmation	No	
Does the terminal have a preferred order of displaying applications. List the correct order if applicable	No	
Does Terminal Support Parital AID	Yes	
Does Terminal have Multi Language Support? And if so, what are the languages supported?	Yes	en fr de es
Does the terminal support the Common Character Set as defined in Annex B Table 20 Book 4	Yes	

<b>Data Authentication</b>	<b>Value</b>	<b>Comment</b>
What is the maximum supported Certificate Authority Public Key Size in bytes	248	
What Exponents does the terminal support (Mandatory for terminals supporting Data Authentication)	3 and 2^16+1	
During Data authentication does the terminal check validity for revocation of Issuer Public Key Certificate	No	
Does the Terminal contain a DDOL (Mandatory for terminals supporting DDA)	No	

<b>Cardholder Verification Method</b>	<b>Value</b>	<b>Comment</b>
Terminal supports 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	

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<b>Terminal Risk Management</b>	<b>Value</b>	<b>Comment</b>
Floor Limit Checking	Yes	
Random Transaction Selection (Mandatory for terminals with offline/online capabilities)	No	
Velocity Checking	Yes	
Transaction Log	No	
Exception File	No	
Performance of Terminal Risk Management based on AIP setting?	No	
<b>Terminal Action Analysis</b>	<b>Value</b>	<b>Comment</b>
Does terminal support the Terminal Action Codes	Yes	
<i>Offline Only terminals must answer yes to either one of the following questions:</i>		
Does Offline Only Terminal process Default Action Codes prior to First Generate AC	No	
Does Offline Only Terminal process Default Action Codes after First Generate AC	No	
<b>Completion Processing</b>	<b>Value</b>	<b>Comment</b>
Transaction Forced Online Capability	No	
Transaction Force Acceptance Capability	No	
Does Terminal Support Advices	No	
Does terminal Support Issuer initiated Voice Referrals	No	
Does terminal Support Card initiated Voice Referrals	No	
Does Terminal Support Batch Data Capture (Mandatory for Offline Capable Terminals)	No	
Does Terminal Support Online Data Capture	Yes	
Does Terminal Support a Default TDOL	Yes	
<b>Exception Handling</b>	<b>Value</b>	<b>Comment</b>
What is the POS Entry Mode value when IC cannot be read and the transaction falls back using magstripe (Mandatory for attended terminals)	n/a	
<b>Miscellaneous</b>	<b>Value</b>	<b>Comment</b>
Is the terminal equipped with a PINPAD	Yes	
Is the amount and PIN entered at the same keypad?	No	
Is the ICC/Magstripe Reader combined?	Yes	
if Combined, is Magstripe read first?	Yes	



**EMVCO Type Approval Contract**  
**Terminal Level 2**



**Exhibit A – General Terms & Conditions**

**A.1 Incorporation by Reference of the Contract For EMVCo Terminal Level 2 Type Approval**

The Letter of Approval issued by EMVCo, together with any attachments thereto and these General Terms and Conditions to the Letter of Approval (the "General Terms and Conditions"), (collectively, the "Letter of Approval") incorporate by reference all terms of that certain Contract for EMVCo Terminal Level 2 Type Approval ("Contract for Approval") between you ("EMV Application Kernel Provider") and EMVCo, including, but not limited to, definitions, restrictions on assignment, applicability to successors and assigns, choice of law, choice of venue, prevailing party award of attorneys' fees, and notices. In addition, all terms that survive termination under Section 13.3 of the Contract for Approval shall also survive termination of the Letter of Approval. To the extent that the terms of the Letter of Approval conflict with the terms of the Contract for Approval, the terms of the Letter of Approval shall prevail.

**A.2 Term**

The Letter of Approval is effective upon dispatch from EMVCo, and is subject to the termination provisions in these General Terms and Conditions and those contained in the Contract for Approval (the "Term").

**A.3 Permitted Publicity Regarding Approval**

**A.3.1 EMVCo Publication of List of EMV Application Kernels**

EMV Application Kernel Provider hereby expressly agrees that EMVCo may publish the identification of the approved EMV Application Kernel and/or Terminal containing EMV Application Kernels and EMV Application Kernel Provider's contact information in a publicly available list to be maintained by EMVCo. EMV Application Kernel Provider, at its sole expense, shall provide any information necessary to ensure that all such information provided to EMVCo is accurate. In the event the Letter of Approval is terminated, EMVCo will immediately have the right to remove the EMV Application Kernel Provider from such publicly available list.

**A.3.2 EMV Application Kernel Provider's Representations Regarding EMV Application Kernel**

EMVCo hereby grants EMV Application Kernel Provider a limited permission to represent that its EMV Application Kernel and/or Terminals which contain its EMV Application Kernel are EMVCo Level 2 type approved in its publicity or with documentation accompanying each such EMV Application Kernel and/or Terminal containing EMV Application Kernels. Such permission is subject to EMV Application Kernel Provider's strict compliance with the terms of this Section A.3.2, as such compliance is judged by EMVCo in

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its sole discretion. In the event EMV Application Kernel Provider's publicity or documentation does not comply with the terms of this Section A.3.2, in the sole judgement of EMVCo, the limited permission granted herein may be immediately revoked by EMVCo, and EMV Application Kernel Provider, at its sole cost, shall correct, recall and/or destroy all such communications as directed by EMVCo. Any publicity or documentation from EMV Application Kernel Provider stating that its EMV Application Kernel and/or Terminals containing EMV Application Kernels are "EMVCo Level 2 type approved" may be made and distributed, provided that:

- (a) the complete and correct identification of the EMV Application Kernel and/or Terminal containing EMV Application Kernels is clearly stated;
- (b) the EMV Application Kernel and/or Terminal containing EMV Application Kernels has been approved by all regulatory authorities, when such an approval is required by applicable law or regulation;
- (c) EMV Application Kernel Provider verifies on an ongoing basis that all individual EMV Application Kernels and/or Terminals containing EMV Application Kernels are and will be in conformance with the EMV Specifications, and with the EMV Application Kernel samples upon which EMVCo granted the Letter of Approval;
- (d) the EMV Application Kernel produced by the EMV Application Kernel Provider or its suppliers or agents are materially identical to the EMV Application Kernel samples that were submitted and tested (except for minor changes to the EMV Application Kernel that have no ability to affect compliance with the EMV Specifications);
- (e) all written communications referring to EMVCo approval shall contain the following legend:

"EMVCo approval of the interface module (EMV Application Kernel) contained in this Terminal shall mean only that the EMV Application Kernel has been tested in accordance and for sufficient conformance with the EMV Specifications, Version 3.1.1, as of the date of testing. EMVCo approval is not in any way an endorsement or warranty regarding the completeness of the approval process or the functionality, quality or performance of any particular product or service. EMVCo does not warrant any products or services provided by third parties, including, but not limited to, the producer or provider of the EMV Application Kernel and EMVCo approval does not under any circumstances include or imply any product warranties from EMVCo, including, without limitation, any implied warranties of **merchantability, fitness for purpose, or non-infringement**, all of which are

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**Exhibit A – General Terms & Conditions**

expressly disclaimed by EMVCo. All rights and remedies regarding products and services which have received EMVCo approval shall be provided by the party providing such products or services, and not by EMVCo and EMVCo accepts no liability whatsoever in connection therewith."; and

- (f) the EMV Application Kernel Provider's use of EMVCo's trade name, trademarks, service marks, logos, designs or other indicia of origin strictly complies with Section A.4.5 below.

Such permission shall immediately terminate upon the termination or revocation of the Letter of Approval for any reason. EMV Application Kernel Provider shall refrain from any misleading advertisement and shall advise its clients and customers against making misleading statements concerning the approved status of the EMV Application Kernel or Terminals containing the EMV Application Kernel. For the purpose of this clause, a misleading advertisement shall include any statement that may lead a client or customer to believe that the scope of EMV Application Kernel type approval is more broad than stated in the Letter of Approval or is for an EMV Application Kernel that has yet to be approved by EMVCo. EMV Application Kernel Provider shall not make any other statements, disclosures, or representations regarding the approval of the EMV Application Kernel and/or Terminals containing EMV Application Kernels except as expressly provided by the Letter of Approval.

**A.3.3 Label on all Terminal Products**

If so required by EMVCo, EMV Application Kernel Provider shall and shall require its suppliers, agents, clients, and customers with respect to all Terminals containing its EMV Application Kernel, to attach a certificate of conformity in the manner and with the content required by EMVCo from time to time.

EMVCo, in its sole discretion, may require a distinctive mark or label, visibly affixed to all Terminals indicating that the EMV Application Kernel has been approved, in which case EMVCo shall provide the template of such label to EMV Application Kernel Provider.

EMV Application Kernel Provider shall advise its suppliers, agents, clients, and customers that the approved status of the EMV Application Kernel shall be void if the product is not installed or serviced according to its guidelines. EMV Application Kernel Provider shall also inform its clients and customers that the approved status of a the EMV Application Kernel cannot be inferred from the approved status of one of its components.

**A.3.4 Representations by EMV Application Kernel Provider's Clients and Customers**

EMV Application Kernel Provider may permit its clients and customers to make the same statements and representations EMV Application Kernel Provider is authorized to make



**Exhibit A – General Terms & Conditions**

under the Letter of Approval if and only if EMV Application Kernel Provider takes reasonable steps to insure that such clients and customers adhere to the terms of the Letter of Approval.

**A.3.5 Requirements Upon Termination**

If the Letter of Approval is terminated for any reason, (i) EMV Application Kernel Provider shall immediately cease any publicity or advertising regarding the Terminal Type approval permitted under this Section A.3, (ii) EMV Application Kernel Provider shall take reasonable steps to insure that its clients and customers cease publicity not in conformance with the Letter of Approval, and (iii) EMV Application Kernel Provider shall take reasonable steps to insure that any label or document associated with a Terminal indicating EMV Application Kernel approval shall be removed or eliminated as soon as reasonably possible by EMV Application Kernel Provider or EMV Application Kernel Provider's suppliers, agents, clients, and customers, if such label or document was required pursuant to Section A.3.3 above.

**A.4 EMV Application Provider's Ongoing Requirements**

**A.4.1 Ongoing Compliance; Certified Quality System**

During the Term of the Letter of Approval, EMV Application Kernel Provider shall ensure that (i) all Terminals are produced (A) so that they are materially identical with the EMV Application Kernel samples that were submitted for Type Approval Testing and (B) in conformance with EMV Specifications, and (ii) such EMV Application Kernels and/or Terminals containing EMV Application Kernels remain in conformity after installation and maintenance. Any change in the EMV Application Kernel that generates a different behavior of the EMV Application Kernel with respect to the EMV Specifications and EMV Application Kernel Provider's Implementation Conformance Statement, in EMVCo's sole discretion, will be considered a major modification subject to a requirement of new type approval testing, as stated in Section 6.5 of the Contract for Approval.

**A.4.2 Change Control**

EMV Application Kernel Provider shall keep a record of all changes to the EMV Application Kernel, and shall implement an identification system to properly identify all changes with version numbers or any equivalent method. EMV Application Kernel Provider shall maintain records to trace the serial number of a Terminal to its type version.



## Exhibit A – General Terms & Conditions

### A.4.3 Recordkeeping Requirements

#### A.4.3.1 Generally

EMV Application Kernel Provider shall record, keep, and maintain all records necessary to demonstrate compliance with Section A.4.1 above, and shall require any agents who are involved in the manufacturing of any Terminals to also record, keep, and maintain such records.

#### A.4.3.2 Complaint Records

EMV Application Kernel Provider and its agents shall record, keep, and maintain records relating to any complaint made by any third party with respect to the EMV Application Kernel or a Terminal. These records shall show clearly and in reasonable detail what problem was encountered and any corrective action undertaken.

#### A.4.3.3 Other Recordkeeping Requirements

All records made in application of the Letter of Approval, including, but not limited to the Contract for Approval, shall be kept and maintained by EMV Application Kernel Provider.

#### A.4.3.4 Length of Retention of Records; Availability

All records specified in his Letter of Approval shall be maintained for a period of three (3) years following the termination of the Letter of Approval, and shall be available to EMVCo and auditors conducting an audit pursuant to Section A.5.2 below during normal business hours.

### A.4.4 Change of Name

EMV Application Kernel Provider shall inform EMVCo promptly in writing of any change in its name, address, the commercial brand name of an approved EMV Application Kernel or the identification system for the Terminals.

### A.4.5 Trademark Usage

EMV Application Kernel Provider shall only use EMVCo's trade name, trademarks, service marks, logos, designs or other indicia of origin in strict compliance with EMVCo's trademarks guidelines and usage policies published on the EMVCo website ([www.emvco.com](http://www.emvco.com)), as such may be amended from time to time.

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**Exhibit A – General Terms & Conditions**

**A.5 Monitoring by EMVCo**

**A.5.1 EMV Application Kernel Monitoring by EMVCo**

EMVCo retains the right, in its sole discretion, to retest and perform additional tests on the EMV Application Kernel and/or associated devices as described in Sections 2.6 and 2.7 of the Contract for Approval, in which case EMV Application Kernel Provider shall supply the needed samples free of charge if not already available and functioning within the Laboratory's premises, and shall pay the Laboratory (in advance when requested by EMVCo) all expenses related to such testing. EMVCo may choose the samples for such retesting. EMV Application Kernel Provider may not claim or be entitled to receive compensation for any extra costs incurred as a result of such testing and retesting.

**A.5.2 Audits**

Upon thirty (30) days' prior written notice to EMV Application Kernel Provider, EMVCo may conduct an audit of EMV Application Kernel Provider's records and books of account (or records and books of other entities that are producing, installing, or maintaining Terminals) for the purpose of reviewing (i) EMV Application Kernel Provider's recordkeeping procedures with respect to customer complaints, (ii) complaints regarding the EMV Application Kernel or a Terminal, (iii) EMV Application Kernel Provider's conformity with the requirements of Section A.4.1 above, (iv) EMV Application Kernel Provider's records with respect to any changes to the EMV Application Kernel, and (v) any other records or documents required to be maintained under the Letter of Approval or the Contract for Approval. Any such audit shall be conducted (a) in a manner that will not unreasonably interfere with EMV Application Kernel Provider's operations, and (b) by an independent certified public accounting firm that executed a non-disclosure agreement with EMV Application Kernel Provider to protect the confidentiality of EMV Application Kernel Provider's records and other information. EMVCo may conduct an audit under this Section A.5.2 no more than once during any six (6) month period. EMVCo shall pay the auditor's fees for such audit; provided, however, that if any audit reveals EMV Application Kernel Provider is not complying with the terms of the Letter of Approval, EMV Application Kernel Provider shall promptly reimburse EMVCo for all reasonable expenses incurred to conduct the audit.

**A.6 EMV Application Kernel Provider's Representations and Warranties**

By accepting the Letter of Approval, the EMV Application Kernel Provider represents and warrants that

- (a) EMV Application Kernel Provider possesses full power and authority to enter into the Letter of Approval and to perform its obligations hereunder;

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**Exhibit A – General Terms & Conditions**

- (b) Upon execution, the Letter of Approval will be a legal, valid, and binding obligation of EMV Application Kernel Provider, enforceable against EMV Application Kernel Provider in accordance with its terms;
- (c) The EMV Application Kernel has been approved by relevant governmental and regulatory authorities, if such approval is required by applicable law; and
- (d) Production of the EMV Application Kernels and Terminals containing EMV Application Kernels will conform with EMV Specifications and will be materially identical to the EMV Application Kernels samples that were submitted and analyzed to generate the Test Results.

**A.7 Termination of Type Approval**

**A.7.1 Grounds for Termination**

EMVCo may terminate the Letter of Approval (i) if (A) EMV Application Kernel Provider does not abide by the terms of the Letter of Approval or EMV Application Kernel Provider's manufacturers, distributors, suppliers or agents take any action which, if taken by EMV Application Kernel Provider, would constitute a breach of the terms of the Letter of Approval, as judged by EMVCo in its sole discretion, and (B) EMV Application Kernel Provider does not perform effective corrective actions within five (5) business days after notice from EMVCo; or (ii) if the Contract for Approval is terminated, in which case termination of the Letter of Approval will occur simultaneously with the termination of the Contract for Approval. EMV Application Kernel Provider may immediately terminate the Letter of Approval by giving written notice to EMVCo. If the Letter of Approval is terminated, EMV Application Kernel Provider must reapply for EMV Application Kernel approval as provided in Section A.8 below.

**A.7.2 Effect of Termination on Contract For Approval**

The termination of the Letter of Approval shall not terminate the Contract for Approval unless (i) EMVCo terminates the Contract for Approval under its terms, or (ii) EMV Application Kernel Provider terminates the Contract for Approval under its terms.

**A.7.3 Survival**

The rights and obligations contained in Sections A.3, A.4, A.6, A.7.3, A.8, A.9, and A.10 shall survive termination of the Letter of Approval.

**A.8 Reapplication Following Termination**

Before the Letter of Approval is terminated by EMVCo, EMV Application Kernel Provider may apply to EMVCo for a renewal of the EMV Application Kernel approval. Such

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application will be reviewed by EMVCo only if EMV Application Kernel Provider satisfies the requirements of the Contract for Approval.

If EMV Application Kernel Provider applies for a renewal of the EMV Application Kernel approval, EMVCo retains the right, in its sole discretion, to change these General Terms and Conditions and the Specific Terms and Conditions if EMVCo issues a new letter of approval.

**A.9 Assignment**

The Letter of Approval may be assigned by EMV Application Kernel Provider upon EMV Application Kernel Provider's merger, consolidation, reorganization, reincorporation, dissolution or sale of all or substantially all of its assets only if the EMV Application Kernel Provider's proposed assignee agrees, in writing, to be bound by the Letter of Approval and the Contract for Approval. Except as stated herein, the Letter of Approval may not be assigned by EMV Application Kernel Provider without the prior written approval of EMVCo, which approval may be withheld for any reason. No consent to or notice of assignment is required in the case of EMVCo's merger, consolidation, reorganization, reincorporation, dissolution or sale of all or substantially all of its assets. EMVCo may freely assign the Letter of Approval for any reason.

Restrictions, if any: \_\_\_\_\_  
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