January 23, 2014

S.G. Jung
BITEL CO., LTD
11F Yohyun BD 242-29,
Nonhyun-dong Gangnam-ku,

Seoul 135-830
South Korea

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

| | |
|---|---|
| *EMV Application Kernel:* | **BOSEMVL2_V44 Version V44** |
| *Approval Number(s):* | **2-02722-1-1S-CEM-0114-4.3.c** |
| | **2-02722-1-1OS-CEM-0114-4.3.c** |

The EMV Application Kernel has been tested on the following terminal

| | |
|---|---|
| *Terminal:* | **IC5100** |
| *PinPad:* | **n/a** |
| *Operating System:* | **1OS = BITEL OS (custom made) Version V43** |

| | |
|---|---|
| *Report ID* | Session 1: **2_BTL_K6030_13_03_CEM - CETECOM MOVON Ltd** |

*Approved Configurations:*

| Config | Vendor Config ID | Terminal | Checksum |
|---|---|---|---|
| 1S | | 22 | 38 F5 2A 6A 43 FD B2 13 |

*Renewal Date:*  **23-Jan-2017**


Dear  S.G. Jung:


EMVCo, LLC ("EMVCo"), a Delaware limited liability company, has received your request for Level 2 terminal type approval for the EMV Application Kernel (hereafter refered 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 4.3 of November 2011.

EMVCo hereby (a) grants your Application EMVCo Type Approval for Terminal Level 2, based on the requirements stated in the EMV 4.3 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).


BITEL CO., LTD

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

| Terminal Capabilities | Value Supported |
|---|---|
| **Application Selection** | |
| Support PSE selection Method | Yes |
| Support Cardholder Confirmation | Yes |
| Does Terminal have a preferred order of displaying applications | No |
| Does terminal perfom partial AID selection | Yes |
| Does the terminal have multi language support | No |
| 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 |
| **Selectable Kernel Configurations** | |
| Is your Multi-Configuration Kernel capable of dynamically selecting a configuration at the time of transaction | No |
| **Data Authentication** | |
| What is the maximun supported Certificate Authority Public Key Size (Mandatory for terminals supporting Data Authentication with minimal support for 248 bytes) | 248 |
| What exponents does the terminal support (Mandatory for terminals supporting Data Authentication, 3 and 2^16+1) | 3 and 2^16+1 |
| During data authentication does the terminal check validity for revocation of Issuer Public Key Certificate | Yes |
| When supporting certificate revocation, what is the Certificate Revocation List format? | RID+KeyIndex+CSN+exponent+bits+modulus |
| Does the terminal contain a default DDOL (Mandatory for terminals supporting DDA) | Yes |
| Is operator action required when loading CA Public Key fails | No |
| CA Public Key verified with CA Public Key Check Sum | Yes |
| **Cardholder Verification Method** | |
| Terminal supports bypass PIN Entry | Yes |
| Terminal supports Subsequent  bypass PIN Entry | Yes |
| Terminal supports Get Data for PIN Try Counter | Yes |
| Terminal supports Fail CVM | Yes |
| Are amounts known before CVM processing | No |
| **Terminal Risk Management** | |
| Floor Limit Checking (Mandatory for offline only terminals and offline terminals with online capability) | Yes |
| Random Transaction Selection (Mandatory for offline terminals with online capability, except when cardholder controlled) | Yes |
| Velocity Checking (Mandatory for offline only terminals and offline terminals with online capability) | Yes |
| Transaction Log | Yes |
| Exception File | Yes |
| Performance of Terminal Risk Management irrespective of AIP setting (expected behavior) | Yes |

| Terminal Capabilities | Value Supported |
|---|---|

**Terminal Action Analysis**

| | |
|---|---|
| Does the terminal support Terminal Action Codes | No |
| Can the values of the Terminal Action Codes be changed | No |
| Can the Terminal Action Codes be deleted or disabled?<br>If yes what are the default TAC values supported?<br>(according to Book 3 Section 10.7)         TAC Denial:<br>TAC Online:<br>TAC Default: | No |
| How does Offline Only Terminal process Default Action Codes prior to First Generate AC?<br>(Offline Only Terminal shall support one option) | No |
| How does online only terminal process TAC/IAC-Default when unable to go online? (Online Only Terminal shall support one option) | No |
| Device capable of detecting CDA failure before Terminal Action Analysis | No |

**Completion Processing**

| | |
|---|---|
| Transaction Forced Online Capability | Yes |
| Transaction Forced Acceptance Capability | No |
| Does terminal Support advices | No |
| Does the terminal support Issuer initiated Voice Referrals | Yes |
| Does the terminal support Batch Data Capture | Yes |
| Does the terminal support Online Data Capture | No |
| Does the terminal support a Default TDOL | Yes |

**Exception Handling**

| | |
|---|---|
| What is the POS Entry Mode value when IC cannot be read and the transaction falls back using Magstripe (Mandatory for attended terminals) | 0x92 |

**Miscellaneous**

| | |
|---|---|
| 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 | No |
| 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 | NA |
| Does the terminal support Internal Date Management | No |

**Checksum**

| | |
|---|---|
| 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) | 38 F5 2A 6A 43 FD B2 13 |

# Attachment 1
# Specific Terms and Conditions to the Letter of Approval

Restriction:

**None**