TMK Local Injection Manual

20180129	Add version control	FSP
20230104	Add Q2 screenshot	FSP

1. Introduction

TMK Local Injection System is a pre-installed application in Key injection device(a special device to inject key, usually is wizarpos 1 or wizarpos Q2), payment managers can use this terminal to inject keys to normal terminals, the Key injection device can store Keys from PC side or manual inputting, it also can inject keys to normal terminals from PC side or from local storage.

2. Functions

2.1. Login & Idle
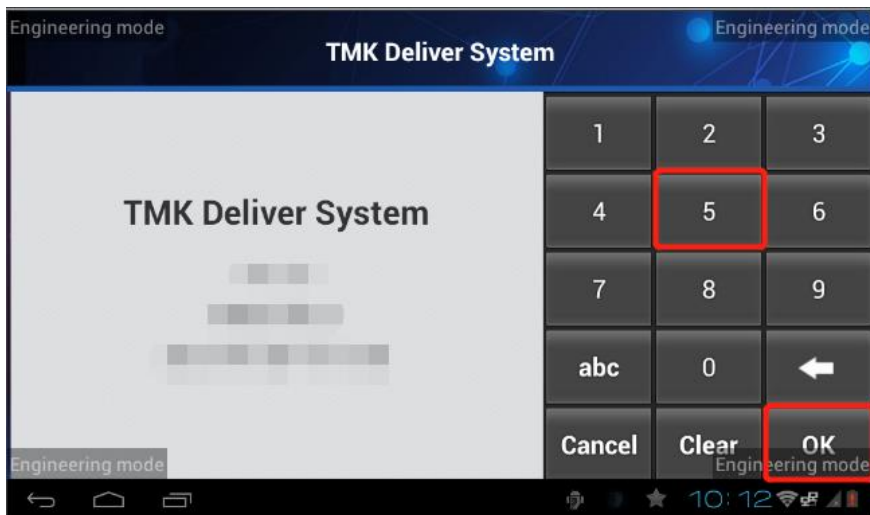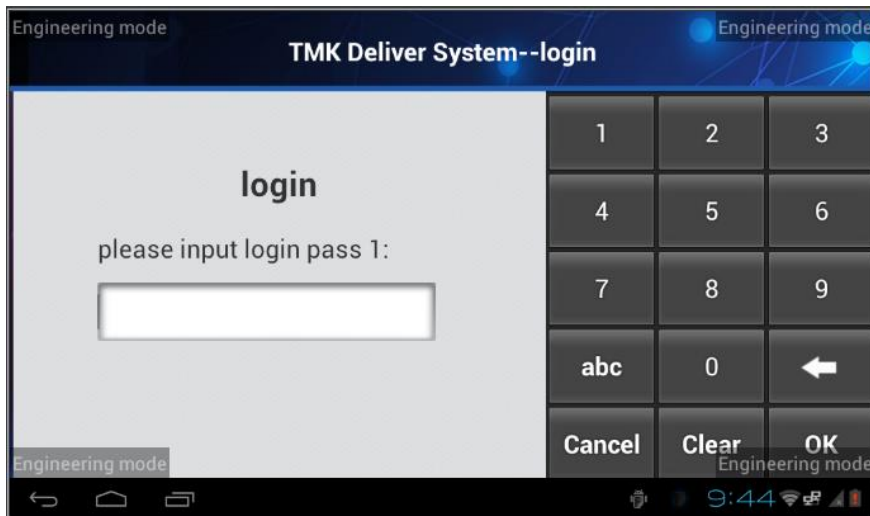
Two login passwords required when you start app.
Default login password1: **11111111**
Default login password2: **22222222**

After verifying password successfully, TMK Deliver System will enter IDLE page which displays version info.
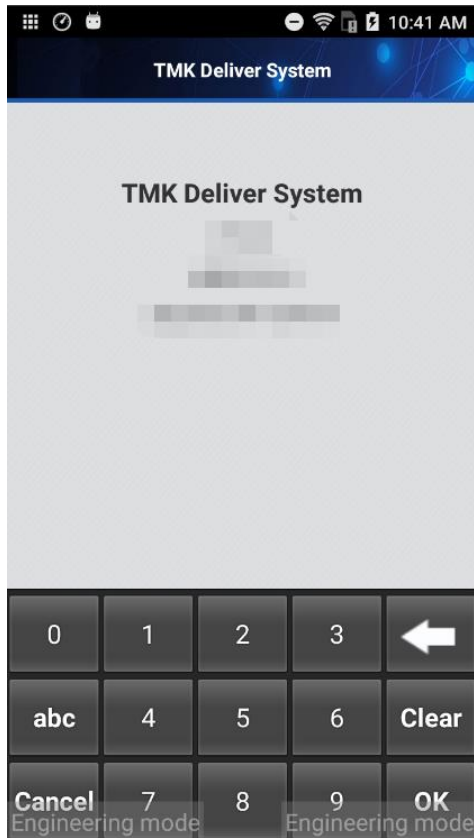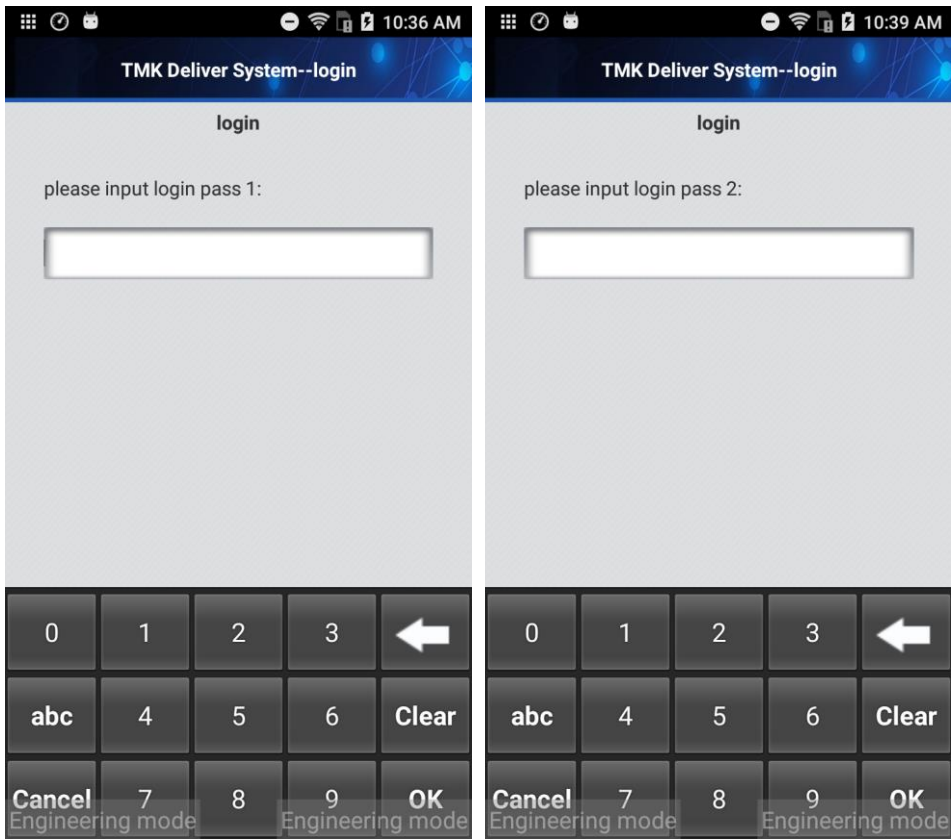User can go to '**system manage**' menu (**press button '5'**) or '**deliver**' menu (**press button 'OK'**) from **IDLE** page.

TMK Deliver System on wizarpos 1:

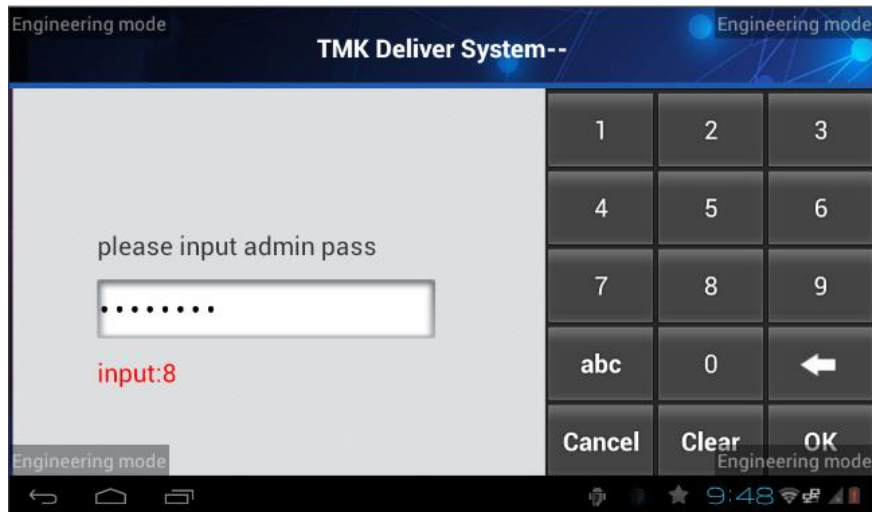(IDLE page)

TMK Deliver System on wizarpos Q2:
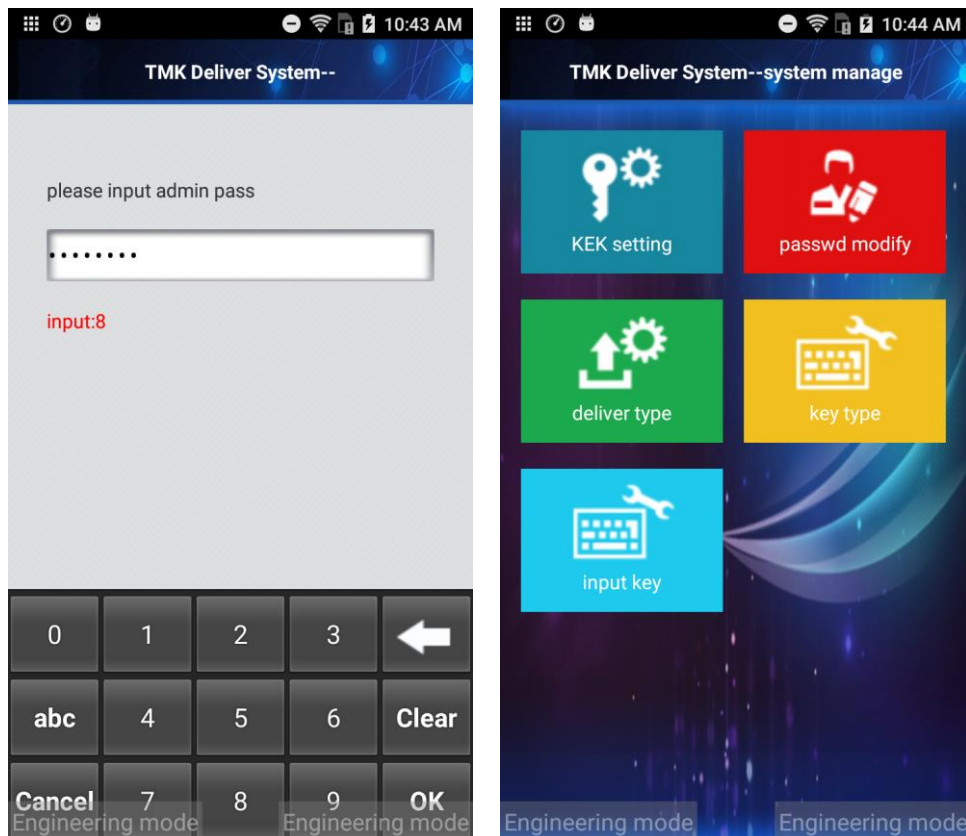

(IDLE page)

2.2. System Manage Menu

Press keyboard **button '5'** in IDLE page to manage the key injection parameter.
Default admin password: **87654321**

TMK Deliver System on wizarpos 1:

TMK Deliver System on wizarpos Q2:

2.2.1. KEK setting

KEK full name is Key Encryption Key, used to encrypt master keys, it will be used when you want to inject keys from PC side or load keys from PC side, so KEK no need to be set when user want to inject keys which were inputted on Key injection device manually.

KEK Setting should be completed in these two situations:
- Loading key from PC
- Online delivery.

KEK Setting contains two components setting, every component setting will request password.
Default component password:
Component 1 password: 88888888
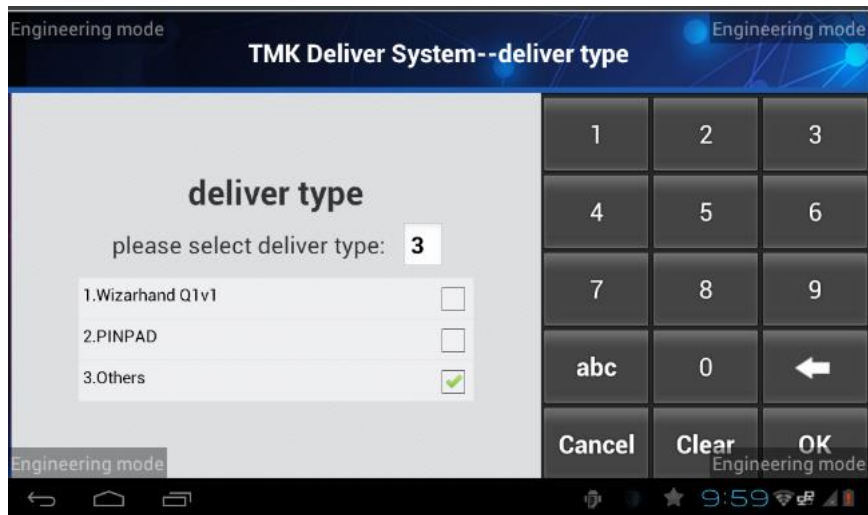Component 2 password: 99999999

2.2.2. Deliver type

Deliver type setting indicate the target terminal type you want to inject.
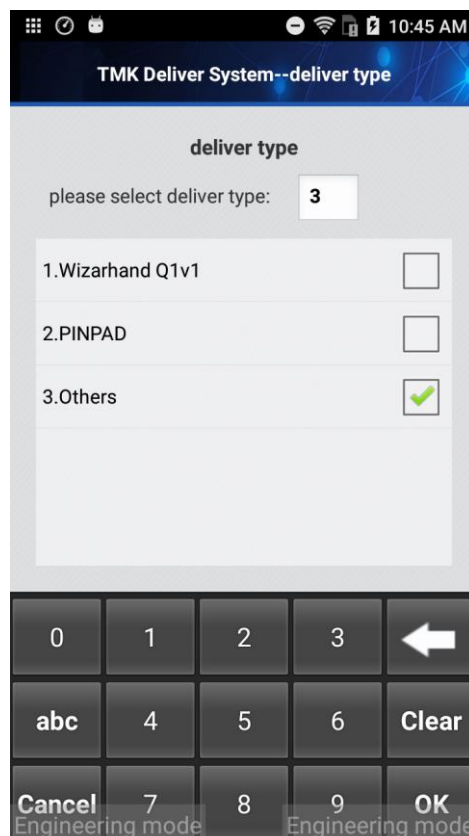
It contains 3 choices:

1. 'Wizarhand Q1v1'   Target POS is old product model of Q1.
2. 'PINPAD'   Target is external PINPAD
3. 'Others'   "Others" mean target POS is wizarpos Q2,
                        wizarposQ3 and other models.
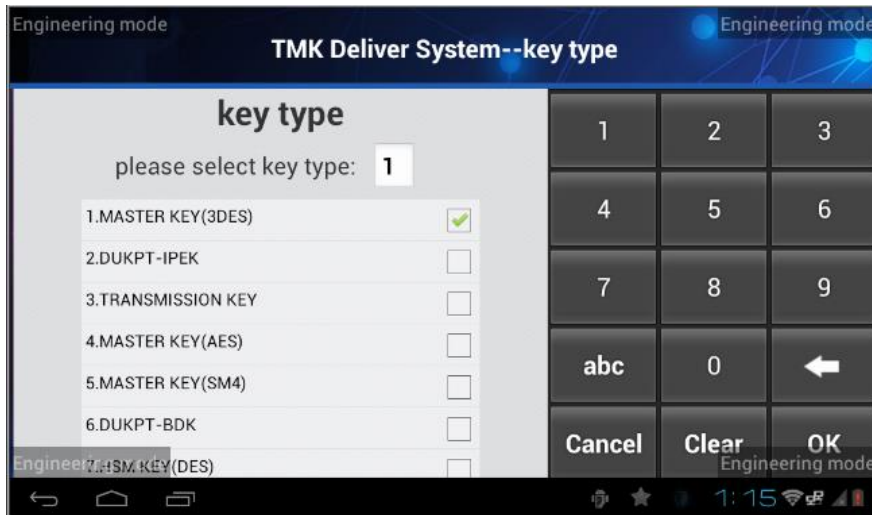
TMK Deliver System on wizarpos 1:

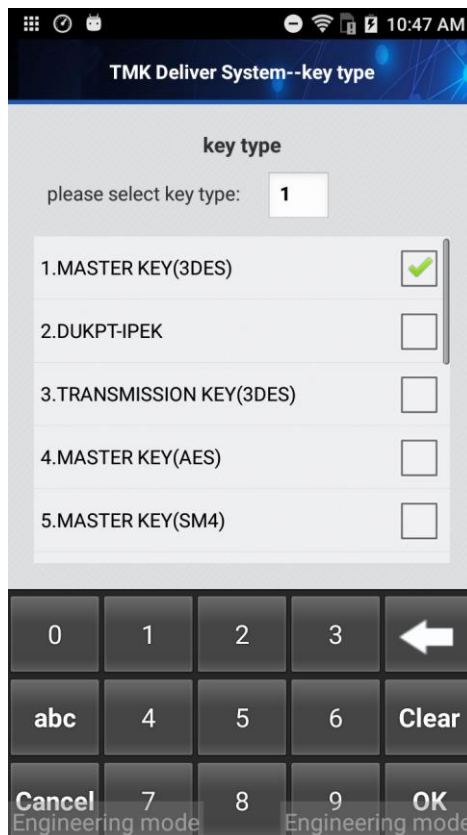**TMK Deliver System on wizarpos Q2:**

2.2.3. Key type

TMK Deliver System support different key types to inject.
Key type should be set correctly before injecting keys.

TMK Deliver System on wizarpos 1:

TMK Deliver System on wizarpos Q2:

2.2.4. Input key

During inputting key, it will request inputting MID, TID, KSI, or KID up to key type.
Notice '**key type**' should be set before '**input key**'.

MID and TID is merchant id and terminal id to index different keys, the value can be any if you don't have MID or TID, but they should be remembered to when you input. Key injection device Request MID, TID when key type is:
- MASTER KEY(3DES)
- DUKPT-IPEK
- TRANSMISSION KEY
- MASTER KEY(AES)
- MASTER KEY(SM4)

KSI is used to index different BDKs, it is first 10 digits of KSN.
Key injection device Request KSI when key type is:
- DUKPT-BDK

KID is used when you want to inject HSM KEYs, KID is 4 digits.
Input KID when key type is:
- HSM KEY(DES)
- HSM KEY(3DES)
- HSM KEY(AES)
- HSM KEY(SM4)

Then Key injection device will request inputting Key Components and display check value to verify if the input is correct.

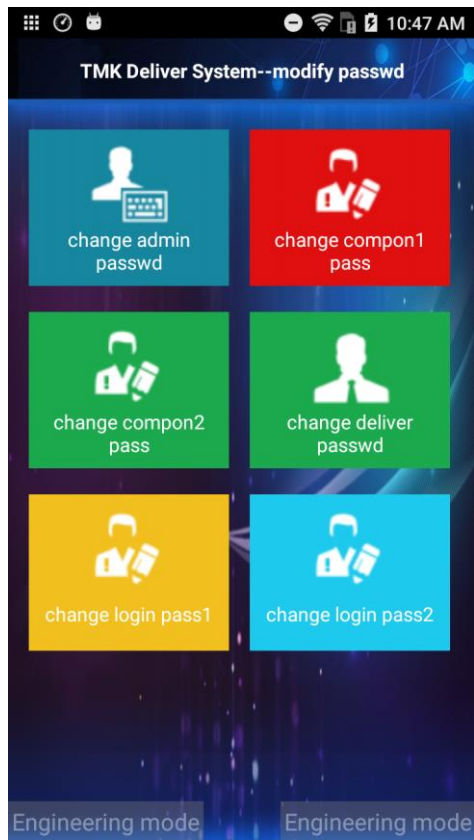After that, user can use 'offline deliver' to inject the keys.

2.2.5. Passwd modify

TMK Deliver System support change 'administrator password', 'deliver password', 'login password' and 'component password'.

TMK Deliver System on wizarpos 1:

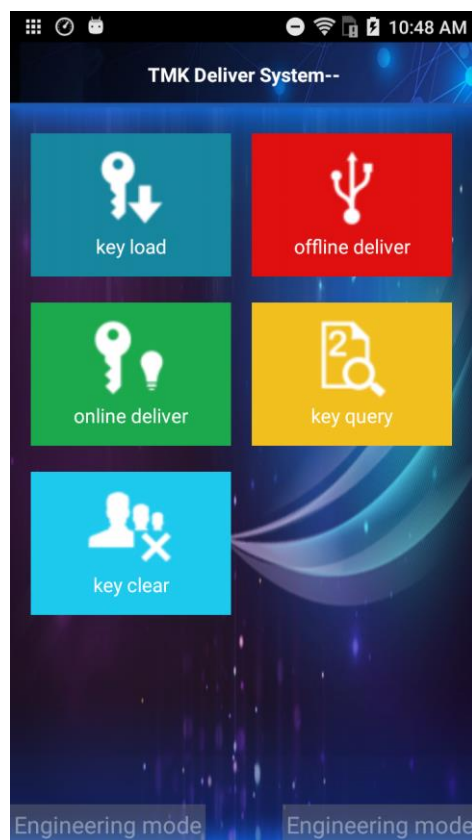**TMK Deliver System on wizarpos Q2:**

2.3. Key injection Menu

Press 'OK' or 'Cancel ' in IDLE page to enter key injection menu.

TMK Deliver System on wizarpos 1:

key injection menu

TMK Deliver System on wizarpos Q2:

key injection menu

2.3.1. Key load (not applicable for TMK Deliver System on Q2)

KEK should be set before use 'Key Load'.

Key Load function is used to get keys from PC side, then save them in Key injection device.
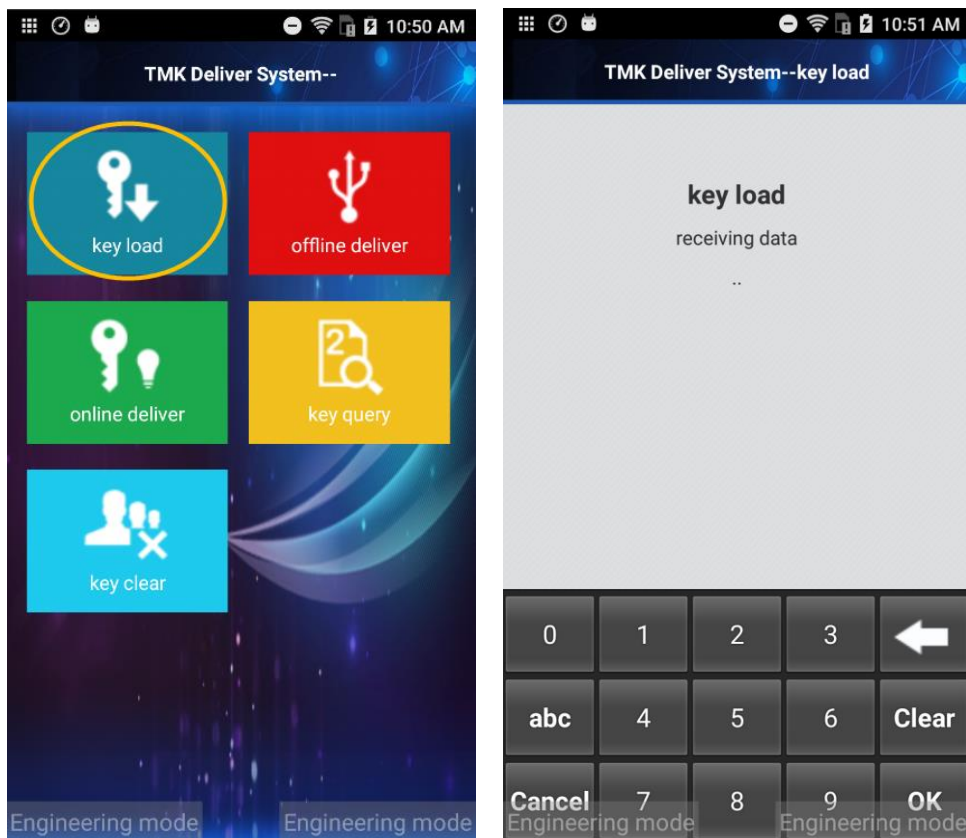
Refer to following steps:

1. Key injection device should be connected to PC through DB9 Serial Cable or USB-To-DB9 Serial cable.
2. Key Tool on PC should open correct serial port.
3. Press 'key load' button to enter serial receiving stage on Key injection device.

TMK Deliver System on wizarpos 1:

TMK Deliver System on wizarpos Q2:

4. Key Tool on PC should load KEY files correctly.
5. Click '**Key Offline Load**' on Key Tool to send keys to Key injection device.

After loading keys, you can check the keys in '**Key Query**' page.
Then operator can use 'offline deliver' to select keys and inject it to target POS.

2.3.2. Offline Injection

Offline deliver is to inject the keys which be inputted or loaded before.
Offline deliver will request inputting deliver password, and other information (which was inputted during 'Input Key') to locate key.
Default deliver password: 00000000

Refer to section 4.2 Inject keys from .

2.3.3. Online Injection (not applicable for TMK Deliver System on Q2)

KEK should be set before use 'Online deliver'. See KEK setting
Online deliver is to inject keys from PC to target POS directly, it needs PC, Key injection device and target POS all connected through serial cable.
Default deliver password: 00000000
See section 4.1 Inject keys from PC

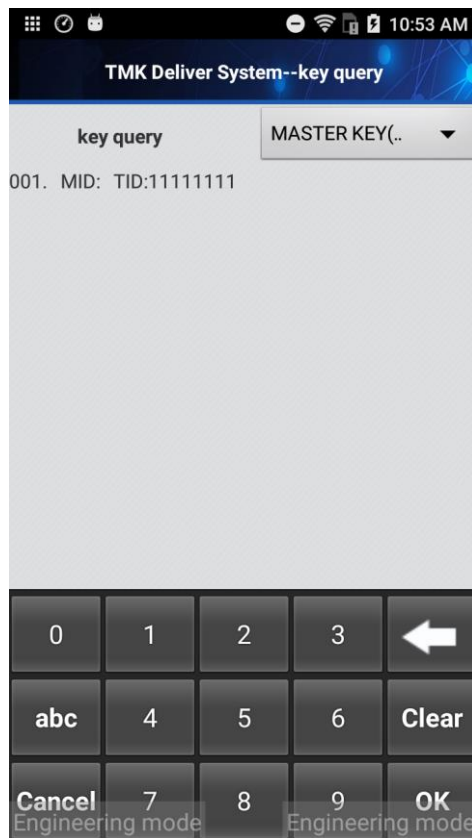## 2.3.4. Key query

All keys input before an be displayed under 'key query' menu.

TMK Deliver System on wizarpos 1:

TMK Deliver System on wizarpos Q2:


2.3.5. Key clear

This function will clear all keys has been input or loaded before.

3. Device connection

TMK Deliver System on wizarpos 1:
If the deliver type is 'PINPAD', PINPAD cable should be inserted into 'RJ11 LINE2'.
Other deliver types need connect target POS to USB TYPE A port.

DB9 SERIAL PORT is used to connect to PC when use 'key load' or 'online deliver'.

POWER JACK

ETHERNET

HDMI

2×RJ11

DB9 SERIAL PORT

MIC

AUDIO OUTPUT

MINI USB

2×USB TYPE A

POWER SWICH
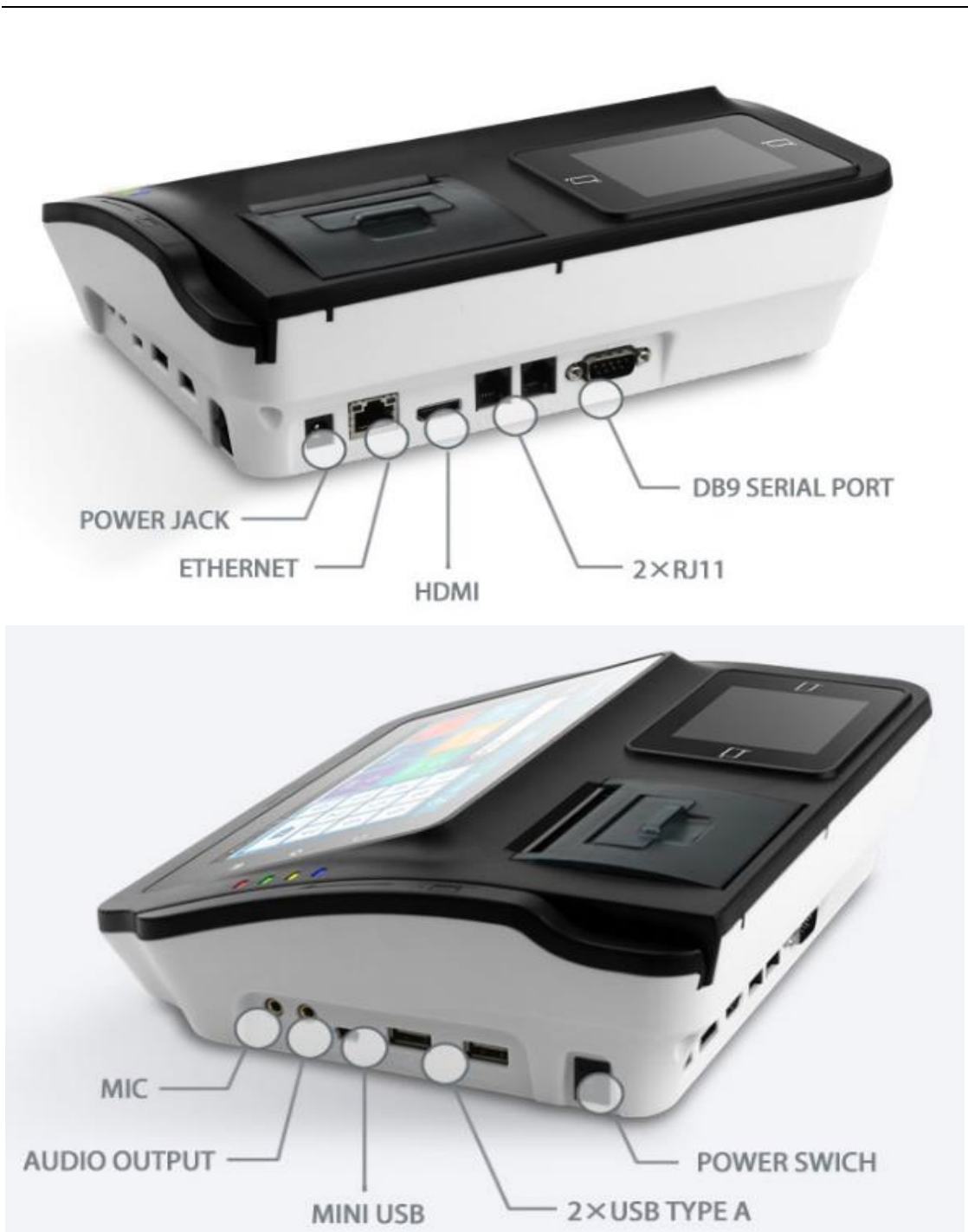
**TMK Deliver System on wizarpos Q2:**

Target POS should be connected to OTG/TYPE A port through USB cable.

4. Key injection steps

## 4.1. Inject keys from PC (not applicable for TMK Deliver System on Q2)

1. Connect Key injection device to PC through DB9 cable or USB-To-DB9 Serial cable.
2. Connect target POS to Key injection device through USB cable.
3. Make sure KEK was set correctly on Key injection device. See KEK setting
4. Open 'Key injection device Agent' on target POS and start waiting keys.
   Key injection device Agent is an application embed in target POS,
   Path: **System Setting -> About POS -> POS Configuration -> Load key**
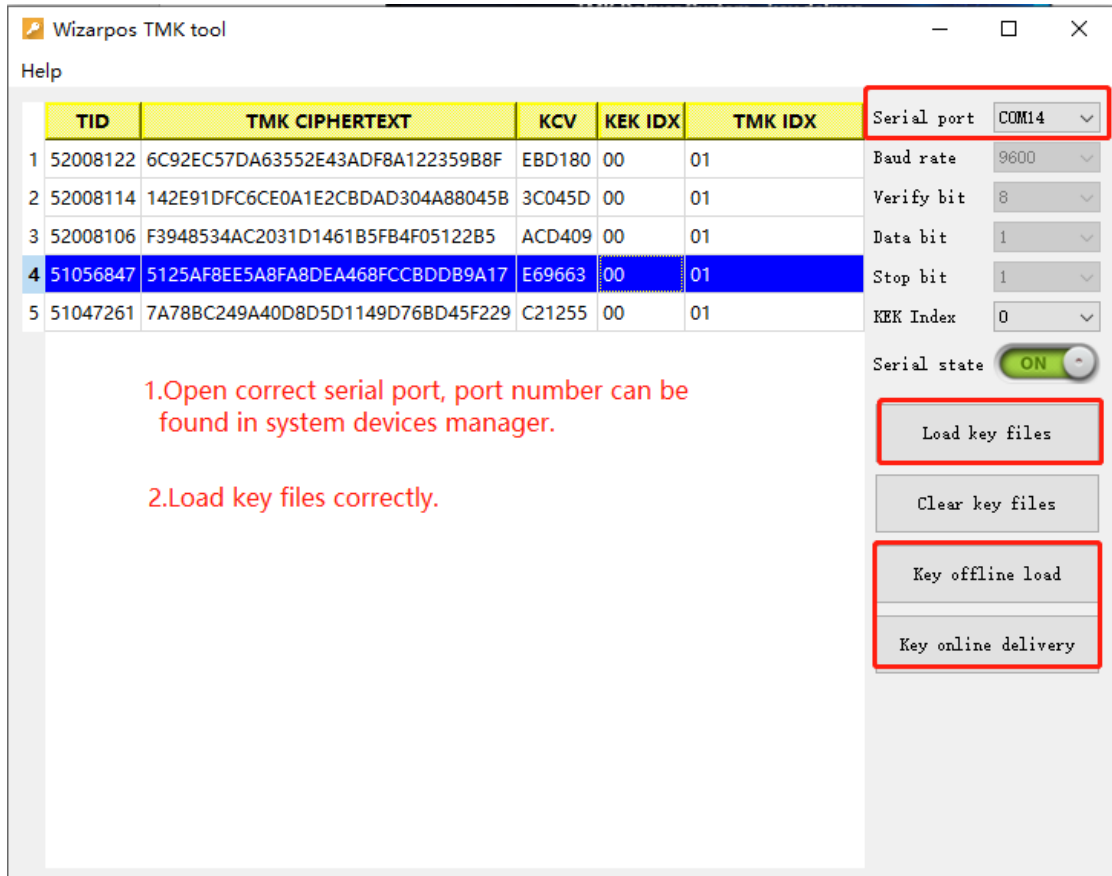   Make sure Administrator state is 'Login', password: 99999999, then open application and press 'Load Key'.
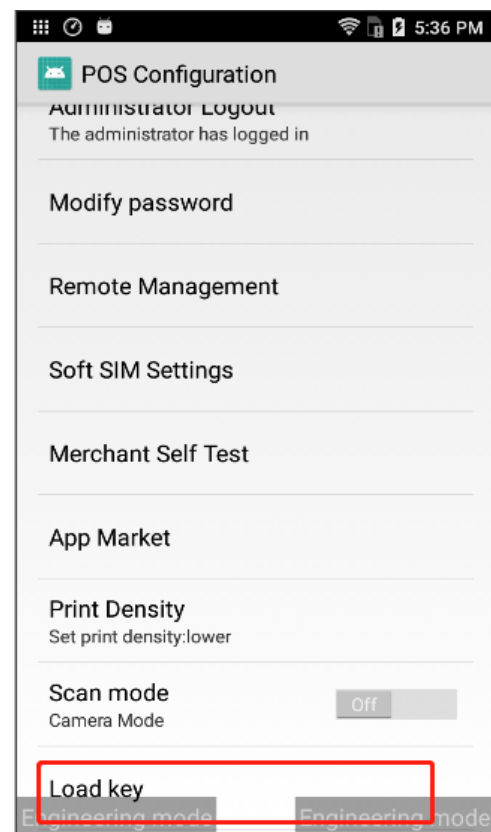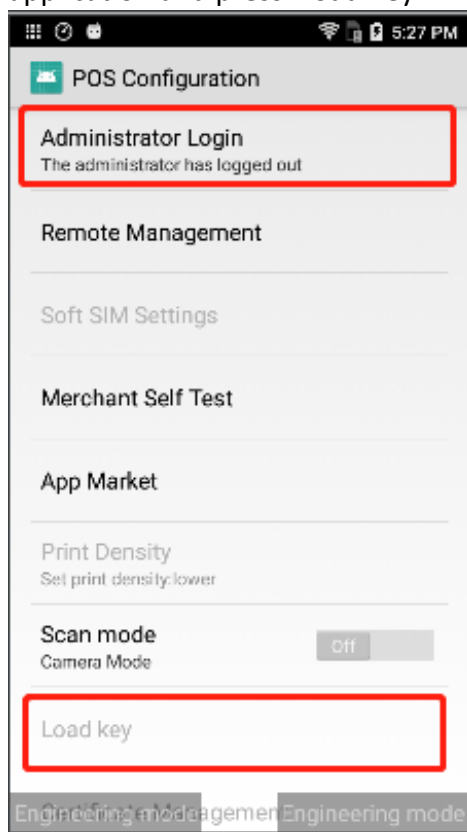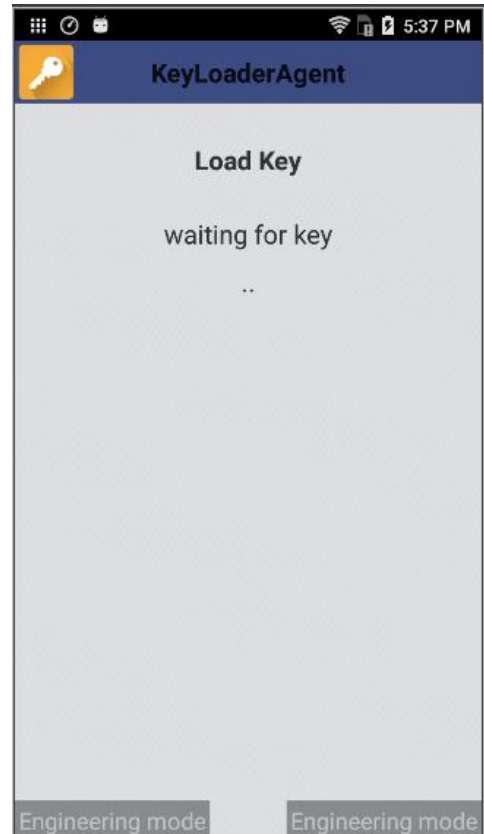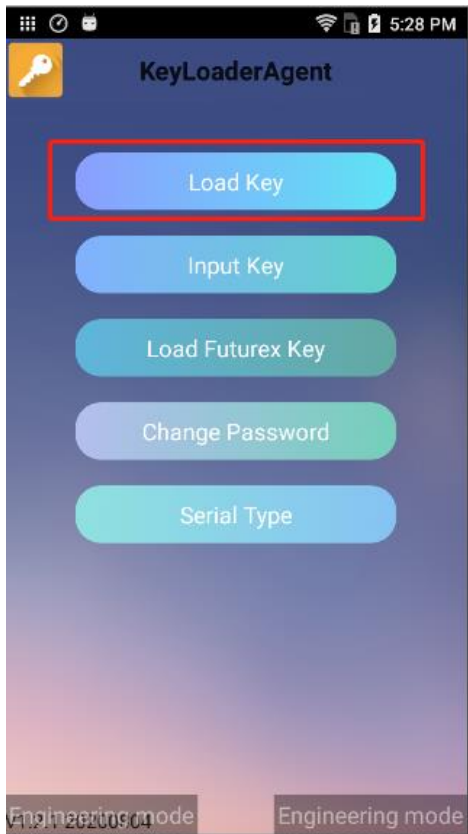
5. Start 'online deliver' function on Key injection device and enter waiting page.
   Default deliver password: 00000000
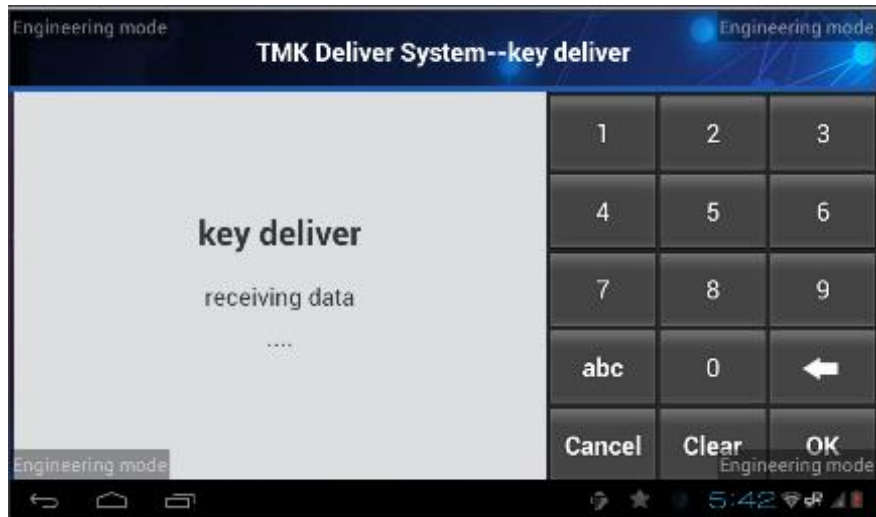
6. <mark>On PC TMK Tool</mark>, load key files then use '**Key online delivery**' to inject one key.

7. After injecting key success, Key injection device will print receipt and display success message. Key injection device Agent also will display success message.
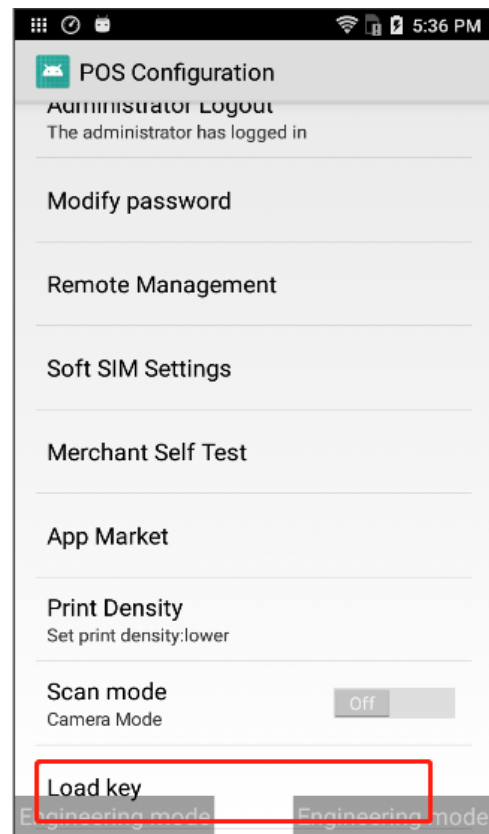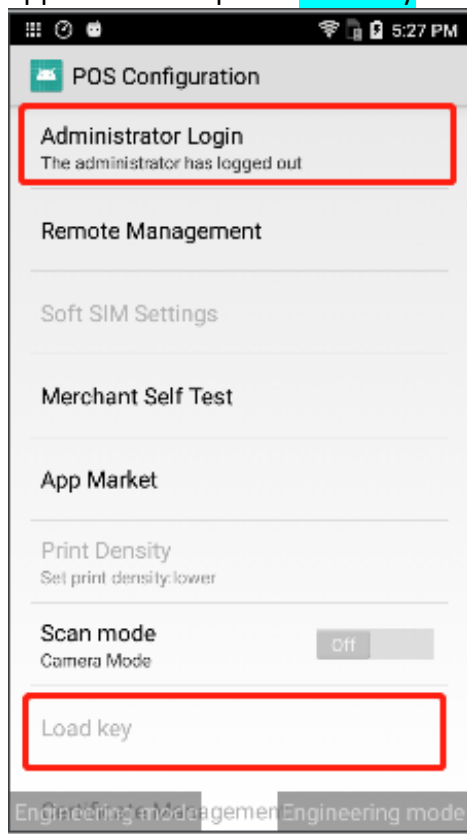
4.2. Inject keys from Key injection device

Make sure the keys already exist in key injection device if you want to use 'offline deliver' to inject keys.
**There two ways to save keys into Key injection device:**
1. **Input key manually, See section 2.2.4 Input key**
2. **Load keys from PC side, See section 2.3.1 Key load**

Then follow below steps to inject key:

1. Connect target POS to Key injection device through USB cable.
2. Open 'Key Loader Agent' on target POS and start waiting keys.
   Key Loader Agent is an application embed in target POS,
   Path: **System Setting -> About POS -> POS Configuration -> Load Key**
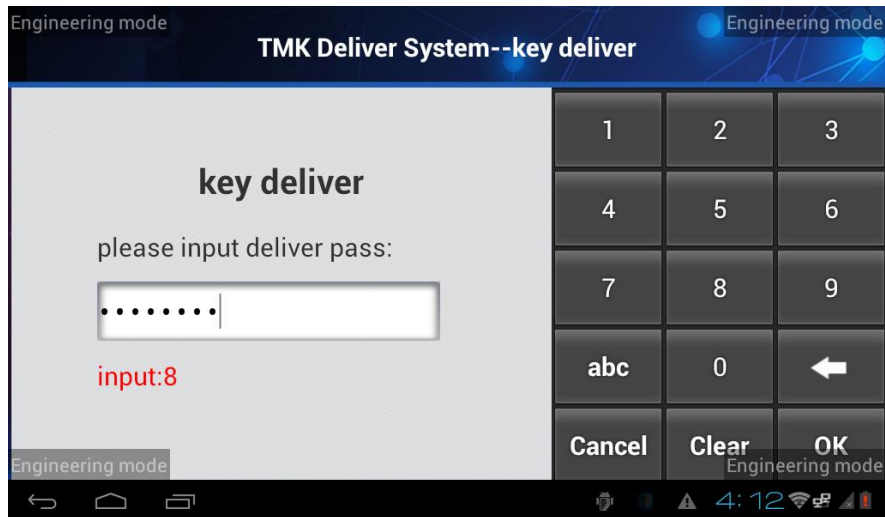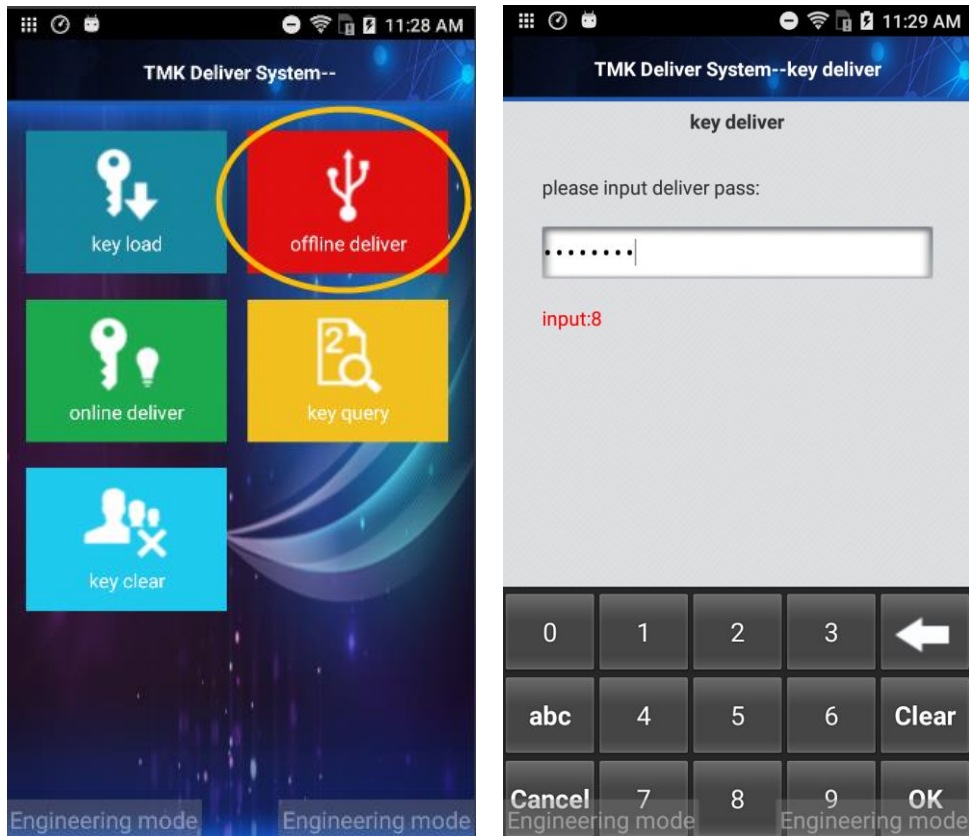   Make sure Administrator state is 'Login', password: 99999999, then open application and press 'Load Key'.
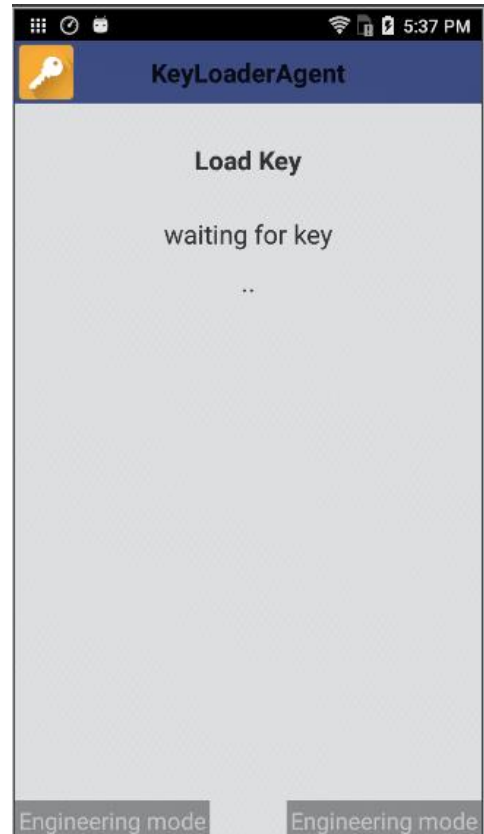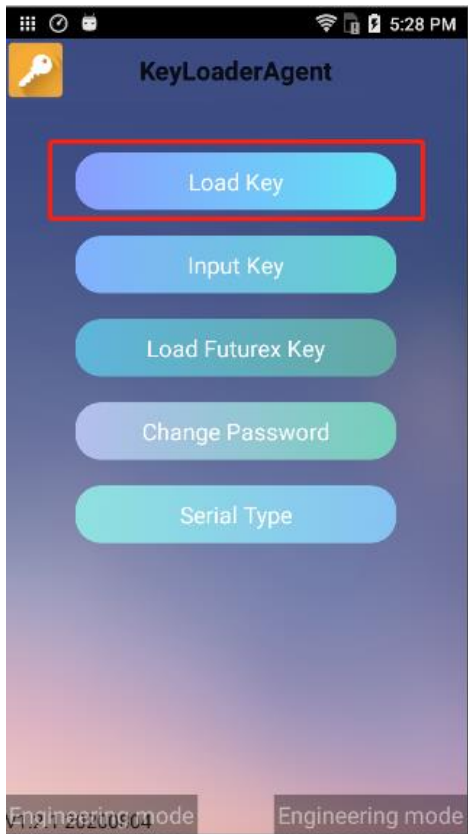
3. Press '**offline deliver**' on Key injection device, deliver password: 00000000
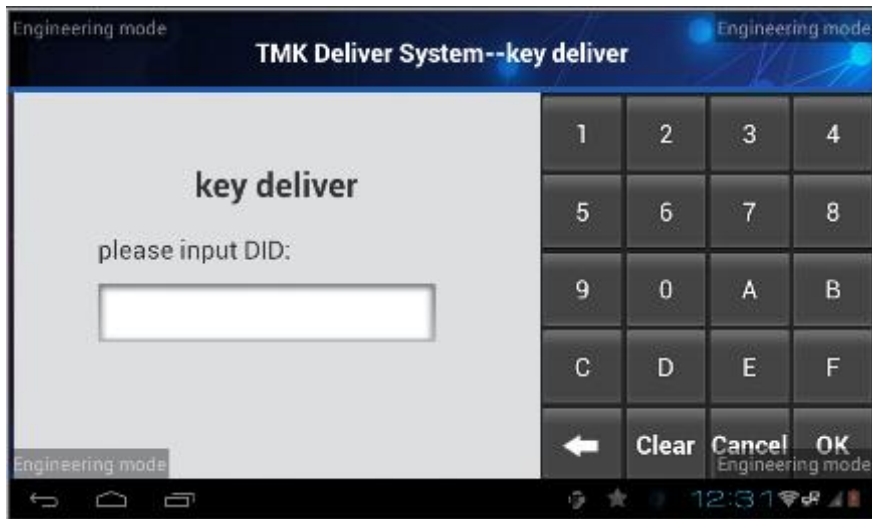
**TMK Deliver System on wizarpos 1:**

TMK Deliver System on wizarpos Q2:

4. Input key message to find the key on Key injection device, it maybe MID & TID, KSI or KIN depending on different key type.

5. Input additional key message of the key depending on different key type.

When key type is **DUKPT-BDK**, it will request inputting **DID**, it's part of KSN.

TMK Deliver System on wizarpos 1:

TMK Deliver System on wizarpos Q2:
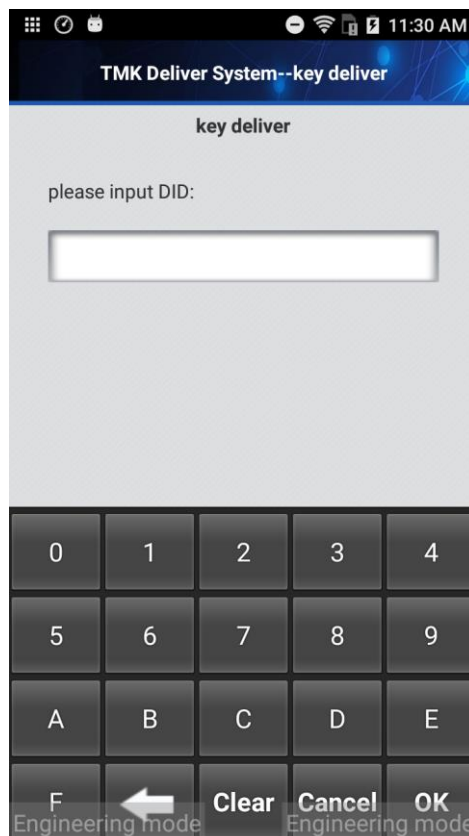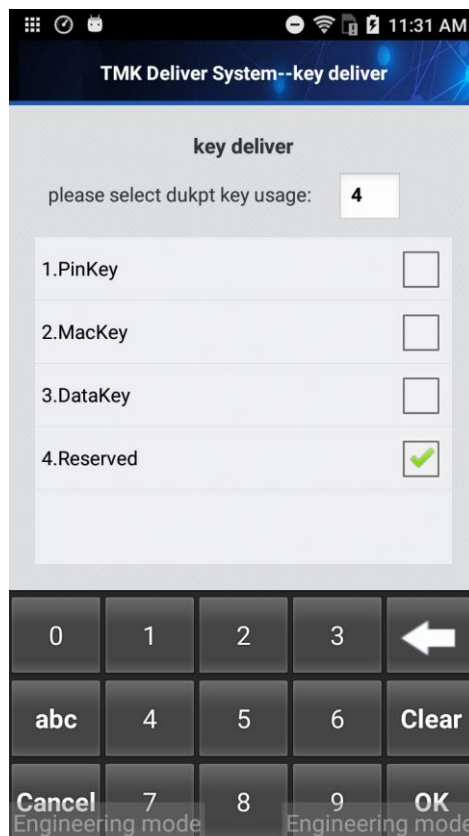

It will also request selecting key usage when the key type is **DUKPT-IPEK or DUKPT-BDK**, you can specify the key as PIN-Key, MAC-Key or Data-Key, or you can unspecify it to select '**Reserved'**, HSM of target POS will generate different keys comply with DUKPT2009 specification if you select '**Reserved'**.

TMK Deliver System on wizarpos 1:

TMK Deliver System on wizarpos Q2:

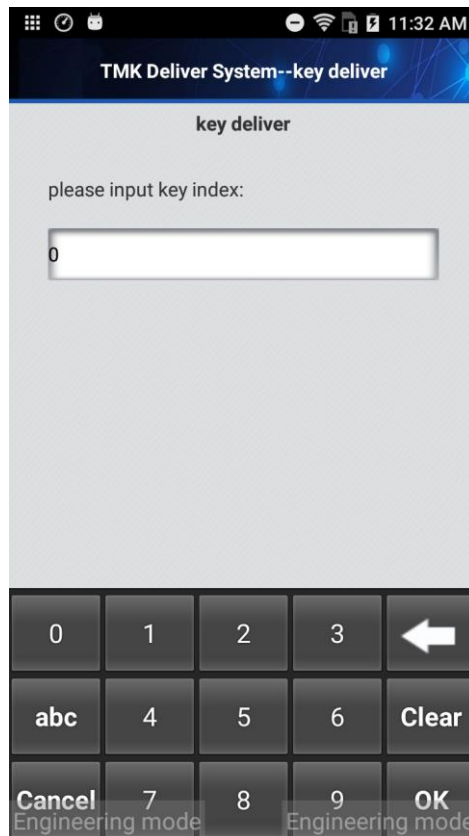6. Input key index on <mark>Key injection device</mark>, the key index indicates key slot of HSM on target POS, range from 0-49.

TMK Deliver System on wizarpos 1:

TMK Deliver System on wizarpos Q2:

7. Continue to confirm the key info and inject the key, after injecting key success, Key injection device will print receipt and display success message. Key injection device Agent also will display success message.

5. Recommended Usage

To provide high security during using TMK Deliver System, there have following suggestions of usage.

1. TMK Deliver System has two login passwords, there should have two key custodians to access the app.
2. When key custodians first access TMK Deliver System, the two default login passwords should be updated. See Passwd modify.
3. Every key custodian should only know his or her own login password and key components.
4. Every key component must have full key length which is same with completed key length.
5. Key injection device which installs TMK Deliver System should be placed in security room and forbidden network.
6. Every time key custodians use TMK Deliver System should be logged.