TMK Deliver System Usage

20210129	Add version control	FSP	

1. Introduction

TMK Deliver System is a pre-installed application in Key POS(a special device to inject key), payment managers can use this terminal to inject keys to normal terminals, the key POS 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 (<mark>press button '5'</mark>) or 'deliver' menu (<mark>press</mark> button 'OK') from IDLE page.

Engineering mode TMK Deliver System	nlogin	Engin	eering mode
	1	2	3
login please input login pass 1:	4	5	6
please input login pass 1.	7	8	9
	abc	0	ŧ
Engineering mode	Cancel	Clear	OK eering mode
Ω Ω	1	9:44	╡╤╉ <u>∦</u> ┋

Engineering mode TMK Deliver SystemI	ogin	Engin	eering mode
	1	2	3
login please input login pass 2:	4	5	6
	7	8	9
	abc	0	+
Engineering mode	Cancel	Clear Engin	OK eering mode
	÷	\$ 9:47	∕≈₽ /1



(IDLE page)

2.2. System Manage Menu

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

Engineering mode	TMK Deliver System	-/	Engin	eering mode
		1	2	3
nlosso input admir	2222	4	5	6
please input admir	Tpass	7	8	9
input:8		abc	0	ŧ
Engineering mode		Cancel	Clear Engin	OK eering mode
ý Ó Ē		ŵ	\$ 9:48	3╤₫⊿∥



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 needn't to be set when user want to inject keys which were inputted on Key POS 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; Deliver type should be set correctly before injecting keys. It contains 3 choices:

1.	'Wizarhand Q1v1'	Target POS is old product model of Q1.
2.	'PINPAD'	Target is external PINPAD

3. 'Others'

Target POS is Q2, Q3 or other new products.

Engineering mode TMK Deliver Systemdeli	ver type	Engin	eering mode
	1	2	3
deliver type please select deliver type: 3	4	5	6
1.Wizarhand Q1v1	7	8	9
2.PINPAD	abc	0	+
Engineering mode	Cancel	Clear Engin	OK eering mode
	រភ្នំ៖ 🕡	\$ 9:59	€\$# <u>4</u>

2.2.3. Key type

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

Engineering mode TMK Deli	ver Systemk	ey type	Engin	eering mode
key type please select key type:	1	1	2	3
1.MASTER KEY(3DES)		4	5	6
2.DUKPT-IPEK		7	8	9
3.TRANSMISSION KEY		· ·	0	9
4.MASTER KEY(AES)		abc	0	4
5.MASTER KEY(SM4)		auc	U	
6.DUKPT-BDK		Cancel	Clear	ок
Engineer7:HSM:KEY(DES)		clanoch		eering mode
		市 食	0 1:15	S†₽ ∡∎

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 POS 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 POS 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 POS 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



Support change 'administrator password', 'deliver password', 'login password' and 'component password'.

2.3. Key injection Menu

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



key injection menu

2.3.1. Key load

KEK should be set before use 'Key Load'.

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

- 1. Key POS 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 POS;



ingineering mode TMK Delive	er Systemkey load	Engin	eering mod
	1	2	3
key load	4	5	6
receiving data	7	8	9
-22	abc	0	+
ngineering mode	Cancel	Clear	OK eering mod
	9.*		

- 4. Key Tool on PC should load KEY files correctly.
- 5. Click 'Key Offline Load' on PC to send keys to Key POS.

	TID	TMK CIPHERTEXT	KCV	KEK IDX	TMK IDX	Serial port	COM14	3
-	52008122	6C92EC57DA63552E43ADF8A122359B8F	EBD180	00	01	Baud rate	9600	
	52008114	142E91DFC6CE0A1E2CBDAD304A88045B	3C045D	00	01	Verify bit	8	
	52008106	F3948534AC2031D1461B5FB4F05122B5	ACD409	00	01	Data bit	1	
	51056847	5125AF8EE5A8FA8DEA468FCCBDDB9A17	E69663	00	01	Stop bit	1	
	51047261	7A78BC249A40D8D5D1149D76BD45F229	C21255	00	01	KEK Index	0	
						Key offl	ine loa	d
		2.Load key files correctly.				Clear k	ey files	i.
						Key offl	ine loa	d
						Key online	e delive	ry

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

2.3.2. Offline deliver

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 KeyPOS.

2.3.3. Online deliver

KEK should be set before use 'Online deliver'. Online deliver is to inject keys from PC to target POS directly, it needs PC, Key POS 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 here.

Engineering mode	MK Deliver Systemkey	y query	engin	eering mode
key query	DUKPT-B •	1	2	3
001. KSI:9500030000	KCV:1591EA90	4	5	6
		7	8	9
		abc	0	ŧ
Engineering mode		Cancel	Clear Engin	OK eering mode
		ŵ 🔍	\$ 9:50)†¢⊈∡∎

2.3.5. Key clear

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

3. Device connection

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'.



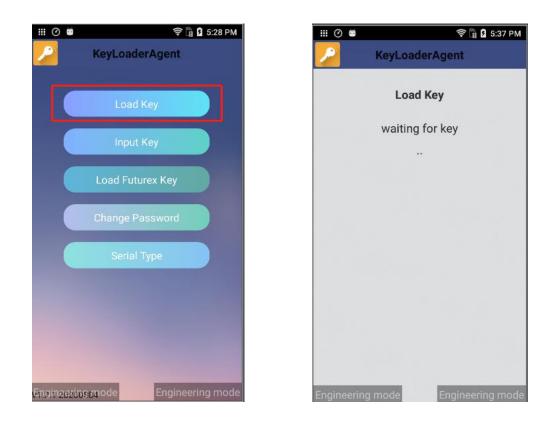
4. Key injection steps

4.1. Inject keys from PC

- 1. Connect Key POS to PC through DB9 cable or USB-To-DB9 Serial cable.
- 2. Connect target POS to Key POS through USB cable.
- 3. Make sure KEK was set correctly on Key POS. See KEK setting
- Open 'Key Loader Agent' on target POS and start waiting keys. Key Loader Agent is an application embed in target POS, Key Loader Agent path: System Setting -> About POS -> POS Configuration Make sure Administrator state is 'Login', password: 99999999, then open application and press 'Load Key'.

# O 🛢	🗣 🖥 🖬 5:27 PM
POS Configuration	
Administrator Login The administrator has logged out	
Remote Management	
Soft SIM Settings	
Merchant Self Test	
App Market	
Print Density Set print density lower	
Scan mode Camera Mode	DH
Load key	
Enginocióng anadoagemen En	gineering mode

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POS Configuration	
Auministrator Logout	
The administrator has logged in	
Modify password	
Remote Management	
Soft SIM Settings	
Merchant Self Test	
App Market	
Print Density	
Set print density:lower	
Scan mode	Off
Camera Mode	
Load key	
gineering mode Er	gineering noc



 Start 'online deliver' function on Key POS and enter waiting page. Default deliver password: 00000000



Engineering mode TMK Deliver Sy	vstemkey deliver	engin	eering mode
	1	2	3
key deliver	4	5	6
receiving data	7	8	9
	abc	0	+
Engineering mode	Cancel	Clear	OK leering mode
5 6 6	9 *	5:42	⊇ @ d? _1 ∎

6. **On PC TMK Tool**, load key files then use 'Key online delivery' to inject one key.

TID	TMK CIPHERTEXT	кси	KEK IDX	TMK IDX	Serial port	COM14	3
52008122	6C92EC57DA63552E43ADF8A122359B8F	EBD180	00	01	Baud rate	9600	
52008114	142E91DFC6CE0A1E2CBDAD304A88045B	3C045D	00	01	Verify bit	8	
52008106	F3948534AC2031D1461B5FB4F05122B5	ACD409	00	01	Data bit	1	
51056847	5125AF8EE5A8FA8DEA468FCCBDDB9A17	E69663	00	01	Stop bit	1	
51047261	7A78BC249A40D8D5D1149D76BD45F229	C21255	00	01	KEK Index	0	3
					Key offl Key online		

7. After injecting key success, Key POS will print receipt and display success message. Key Loader Agent also will display success message.

4.2. Inject keys from KeyPOS

Make sure the keys already exist in Key POS if you want to use 'offline deliver' to inject keys.

There two ways to save keys into Key POS:

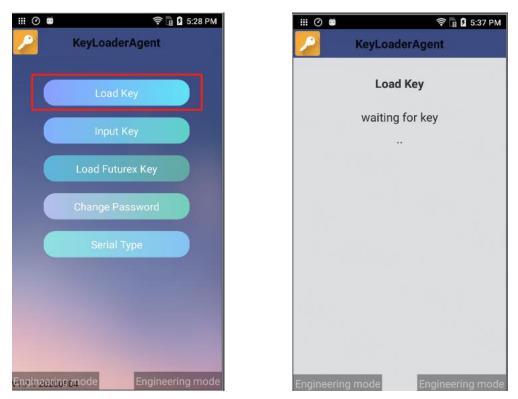
- 1. Input key manually, See section 2.2.4 Input key
- 2. Load keys from PC side, See section 2.3.1 Key load

Then follow below steps to inject key:

- 1. Connect target POS to Key POS through USB cable.
- Open 'Key Loader Agent' on target POS and start waiting keys. Key Loader Agent is an application embed in target POS, Key Loader Agent path: System Setting -> About POS -> POS Configuration Make sure Administrator state is 'Login', password: 99999999, then open application and press 'Load Key'.

:0 0	🕸 🔓 🕄 5:27 PM
POS Configuratio	on
Administrator Logir The administrator has log	
Remote Manageme	ent
Soft SIM Settings	
Merchant Self Test	
App Market	
Print Density Set print density lower	
Scan mode Camera Mode	Off
Load key	
เป็นเป็นเราะหลังคุณค	men Engineering mod

0	🛜 🔓 🛿 5:36 P
POS Configuration	
Aummistrator Logout The administrator has logge	d in
Modify password	
Remote Management	
Soft SIM Settings	
Merchant Self Test	
App Market	
Print Density Set print density:lower	
Scan mode Camera Mode	Off
Load key	



- 3. Press 'offline deliver' on Key POS, deliver password: 00000000
- 4. Input key message to find the key on Key POS, it maybe MID & TID, KSI or KIN according to different key type.
- 5. Input another key message of the key according to different key type.

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

Engineering mode TMK Deliver Syste	mkey delive	r	Engineer	ing mode
	1	2	3	4
key deliver please input DID:	5	6	7	8
	9	0	A	В
	С	D	E	F
Engineering mode	+	Clear	Cancel Engineer	OK ing mode
5 6 6		të 💿 🖄	2:319	F dR 🦽 🗎

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'.

Engineering mode TMK Deliv	rer Systemk	ey deliver	Engin	eering mode
lan dellara		1	2	3
key deliver please select dukpt key usage: 1		4	5	6
1.PinKey	. 🖌	7	8	9
2.MacKey				
3.DataKey		abc	0	+
4.Reserved				0.00
Engineering mode		Cancel	Clear	OK eering mode
		19 A	12:27	\$₽.41

6. Input key index on Key POS, the key index indicates key slot of HSM on target POS, range from 0-49.

Engineering mode TMK Deliver Syste	mkey deliver	Engin	eering mode
	1	2	3
key deliver please input key index: D	4	5	6
	7	8	9
	abc	0	+
Engineering mode	Cancel	Clear	OK eering mode
r 0 8	9 🛧	12:49	\$\$\$

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