Prolin Terminal Manager Operating Guide

V 2.0.1

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Revision History

Date	Version	Note	Author
2012-09-26	V1.0.0	The first issue.	Prolin team
2012-10-24	V1.0.1	Update modules.	Prolin team
2013-10-24	V2.0.0	Rewrite TM by XUI+XCB, adopts multi-language support with the dictionary mode.	Prolin Team
2013-10-31	V2.0.1	Modify some interface.	Prolin Team

Contents

1 Terminal Manager

1.1 Introduction

Terminal Manager, TM for short. It is an application program, which is based on Prolin system, run on S800, S300, S900 and D200, and it has the following modules.

System Configuration. It is the entrance of configurations parameters.

Module Detection. It provides modules to detect the main functions of POS machine.

USB Download. It supports downloading applications and data files.

Terminal Information. It includes system information and system state.

Crash Report. Export the related information of the abnormal termination application to the U SB.

PED module. The entrance of PED management.

1.2 Interface style

TM using the full screen to automatically adapt the different models, according to the different screen heights, it can display the maximum items as possible. The interface shows as below:

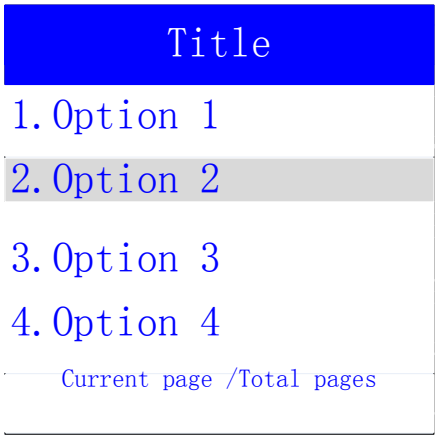

Figure 1.1

The TM menu will load menu items according to the function module. For menu completeness, most of the screenshots get from S800; some screenshots of touch screen are adopted from S300 and S900.

When displays the setting items, there will be an asterisk (*) displayed in front of the current option.

1.3 General Operation

After starting the TM, it will enter the main interface, shows as follow.

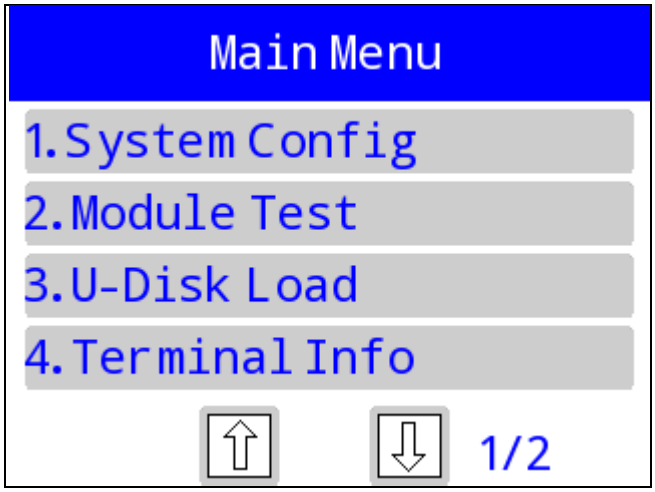

Figure 1.2

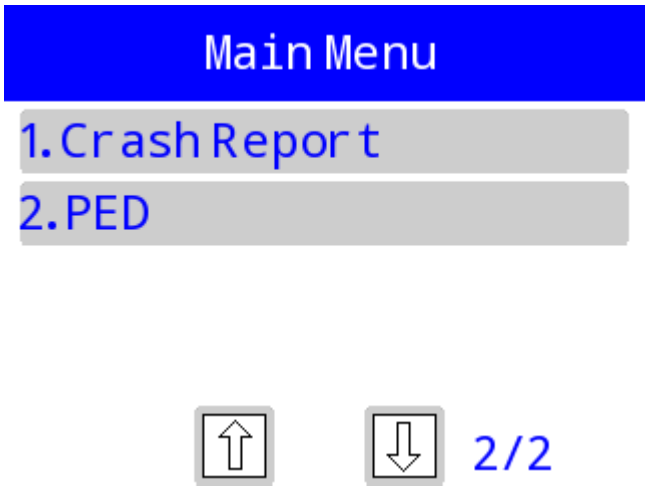

Figure 1.3

In generally, the menu page is arranged by numbers which begins with 1. If needs to enter an option, users can press the corresponding number key on the keypad, for touch screen models, directly click the options on the screen. In additional, press 【Cancel】to back to the previous menu, press "⇧" or "⇩" to turn pages.

When inputting network address, if it is "192.168.12.0", the format must be written as "192.168.012.000", or it will prompt "Invalid Addr", then should press 【Enter】 to back to input address.

TM selects characters in a rotation way, for example, the KEY 【1】contains 4 characters of "1QZ.", press KEY 【1】 in succession and the interval is not more than 2 seconds, it can circularly display "1QZ.1qz.". If want to input two characters in succession by the same key, the interval between the two inputs should be 2 seconds, but the different characters of different keys without waiting. In addition, press KEY 【#】can input most of characters.

The character value of each key show in the table below:

Table 1

Screen buttons	Character value
1	1QZ.qz
2	2ABCabc
3	3DEFdef
4	4GHIghi
5	5JKLjkl

6	6MNOmno
7	7PRSprs
8	8TUVtuv
9	9WXYwxy
#	#*,:+-=?$%!@~^()|/[]{}<>”\’`

After inputting character string, press 【Enter】 to confirm the inputs, it will pop up warnings if the string length is invalid, then users can press 【Enter】to back to the input page, or press 【Cancel】to cancel operations.

Users can input password in digital and character modes. In digital mode can only input numeric character, but in character mode can input all characters. Be attention, in character mode, it is similar to input the non-password characters. But each input bit will display as plaintext before the character is complete, and it will display as cipher text at the end of inputting.

If press 【Cancel】 when displays main menu, it will pop up a prompt window, as the following figure:

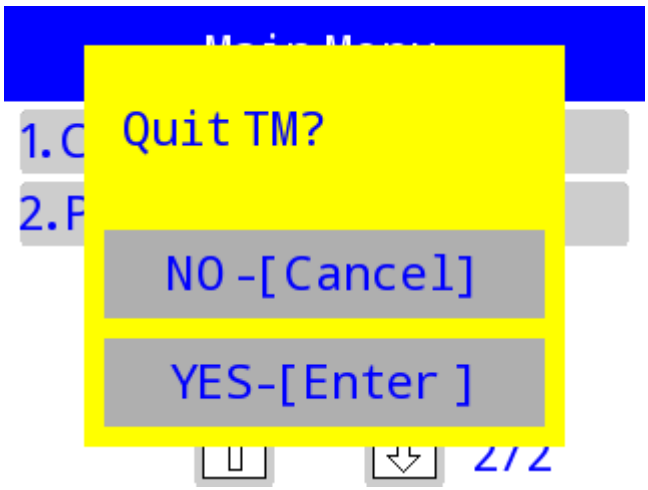

Figure 1.4

Press 【Enter】 to exit TM, and press 【Cancel】 to return the main menu.

1.4 Error prompt

The error messages are divided into two forms, one is popping up a window to prompt the user, such as length of input character is insufficient, window shows as Figure 1.5. For details, refers to Table 2.

Table 1

Error	scenario
Deficiency	In case of inputting password, digits, and characters
Pwd Not Match	In case of inputting password
Set Fail! Try Again?	In case of setting date and time
Invalid Addr	In case of inputting invalid IP address

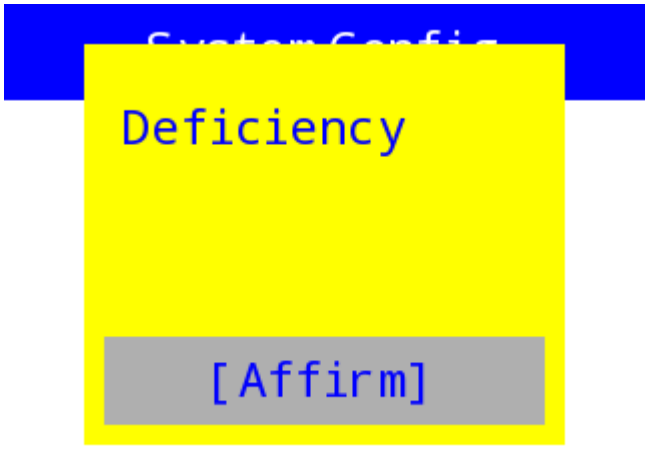

Figure 1.5

Another way to notify the users is by return code and error reason, such as the error message occurred in test process, as shown in Figure 1.6. All errors are accompanied by a sharp warning tone.

Table 2

Return code list:

Type	Value(Decimal)
General return value	-1000~-1999
System function	-2200~-2299

Power management	-2300~-2399
Encryption & Decryption	-2400~-2499
Font	-2500~-2599
LED display	-2600~-2699
Magnetic card reader	-2700~-2799
ICC reader	-2800~-2899
RF reader	-2900~-2999
Communication port	-3000~-3099
MODEM	-3100~-3299
IP network configuration	-3300~-3399
USB	-3400~-3499
PED	-3800~-3899

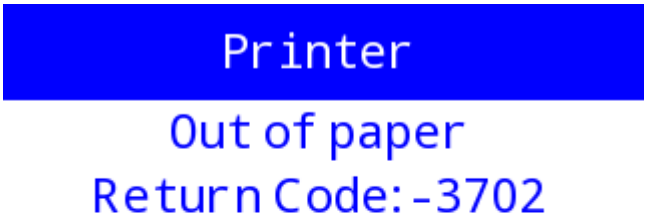

Figure 1.6

2 System Configuration

2.1 Enter the System Config

System configuration is the most important module in TM; it is the entrance to configure the parameters of each module.

It needs to input password to enter [System Config] for the first time. Length of password should be 6 ~ 8 bits, and the default is “123456”, users can change it by the following step: [1.System Config] -> [1.System Setting] -> [4.Password], and then set a new password.

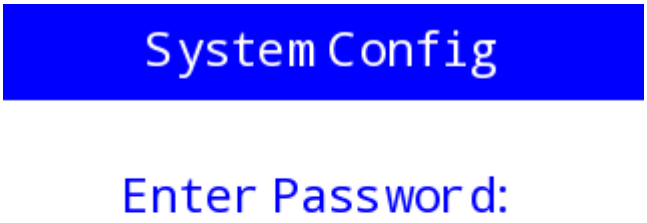

Figure 2.1

2.2 Function Modules

After entering [System Config], interface shows as below:

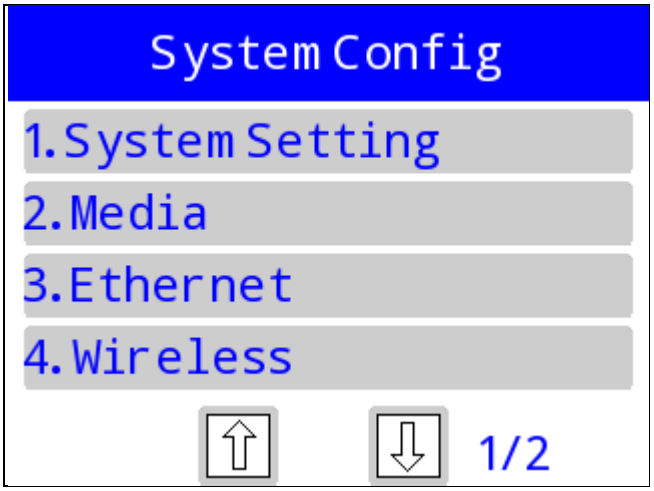

Figure 2.2

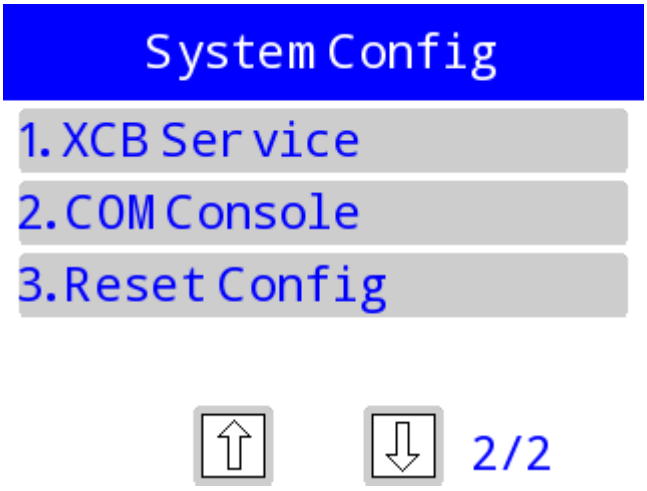

Figure 2.3

2.2.1 System setting

Enter [1.System Setting]; it contains settings of date&time, system language, UI layout and password.

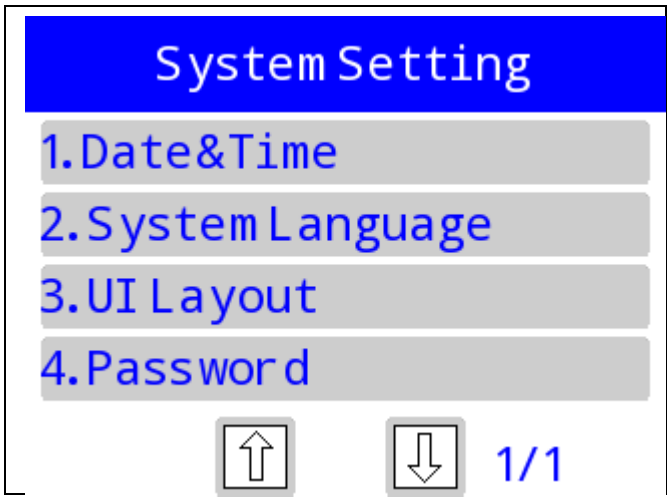

Figure 2.4

2.2.1.1 Date&Time

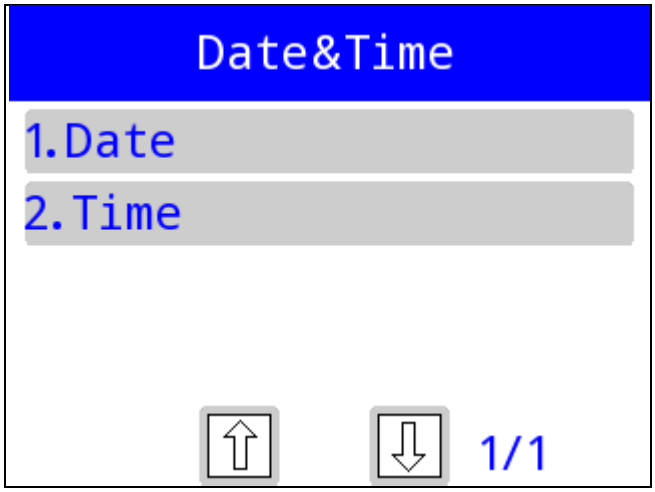

Figure 2.5

Enter [1. Date], it will prompt the current date and the format is ” YYYYMMDD”, “YYYY” represents year, “MM” represents month, “DD” represents day. If the input is invalid, it will prompt “Set failed, try again?” Press 【Enter】to try again, and press 【Cancel】 to return the Date&Time menu. It will display the current system time if settings are successful.

Figure 2.6

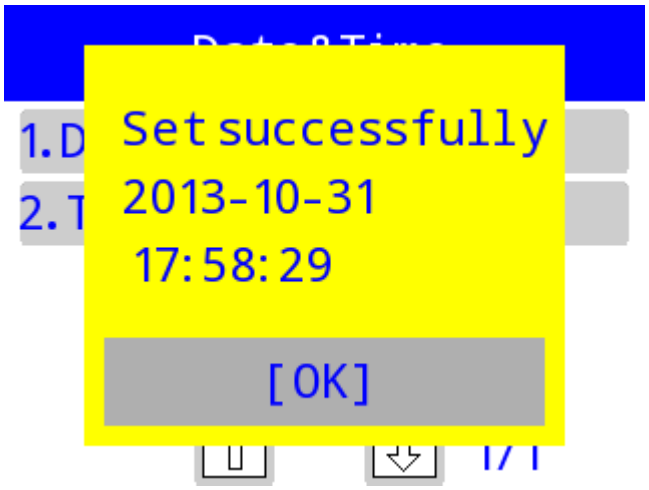

Figure 2.7

Enter [2. Time], it will prompt the current time and time format is ” HHMMSS”, “HH” represents hour, “MM” represents minute, “SS” represents second. If the input is invalid, it will prompt “Set failed, try again?” The following operations can refer to [1. Date].

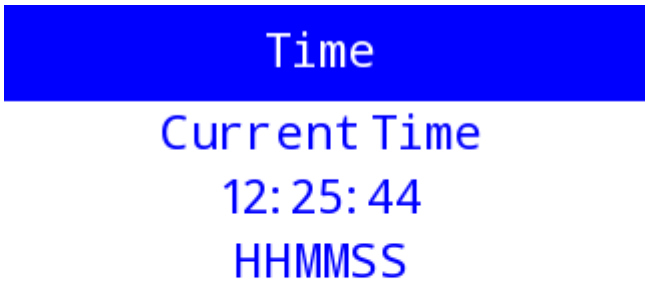

Figure 2.8

2.2.1.2 System Language

TM supports multiple languages, including English, Simplified Chinese and Traditional Chinese. The default is English. Enter [System Language], interface displays as below:

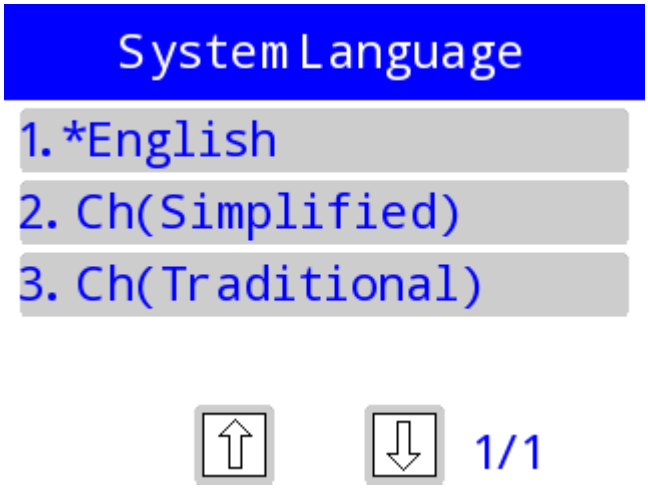

Figure 2.9

2.2.1.3 UI Layout

TM supports different interface styles, including black text on a white background, blue text on yellow background, blue text on white background, red text on white background. The default is blue text on white background. Enter [UI Layout], displays as below:

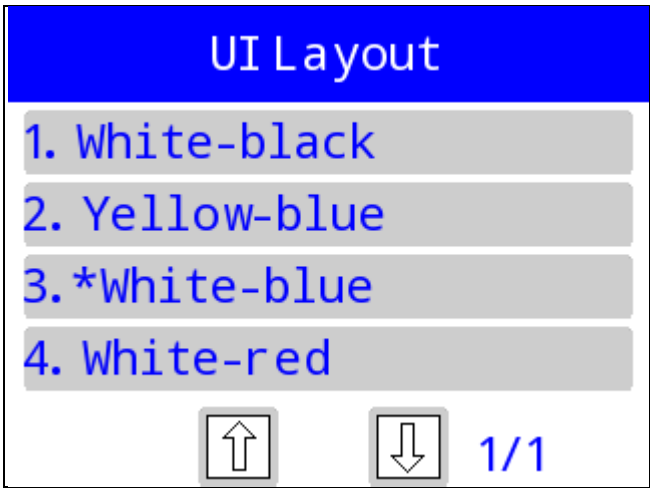

Figure 2.10

2.2.1.4 Password

Password is used for entering the TM system configuration. The valid operating password is composed of 6 ~ 8 digits.

Firstly, enter the original password,

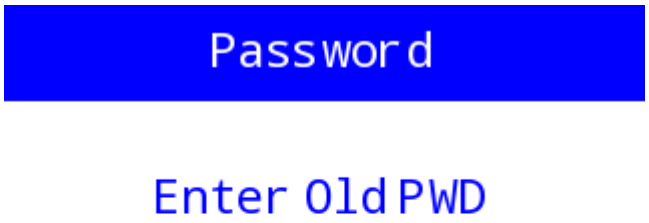

Figure 2.11

If the match is successful, users is allowed to input the new password,

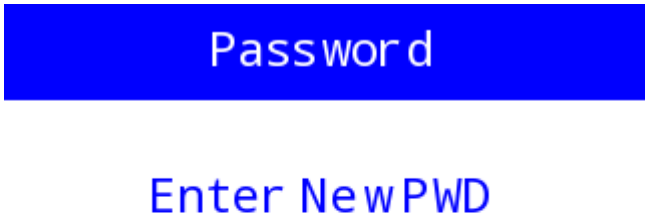

Figure 2.12

Re-enter the new password,

Figure 2.13

If they match, it will prompt set successfully, or it is failed.

2.2.2 Media

This module consists of brightness, keytone, volume, key backlight and touch screen calibration (Not applicable to S800).

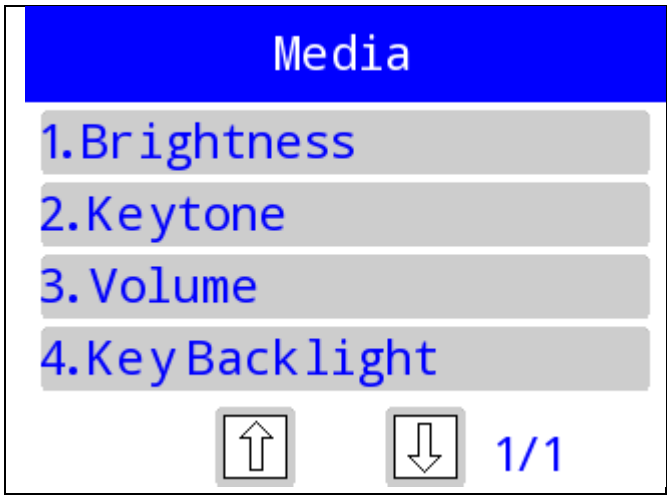

Figure 2.14

2.2.2.1 Brightness

Enter [1.Brightness], the valid value ranges from 1 to 10, and the default value is 8, the interface shows as below:

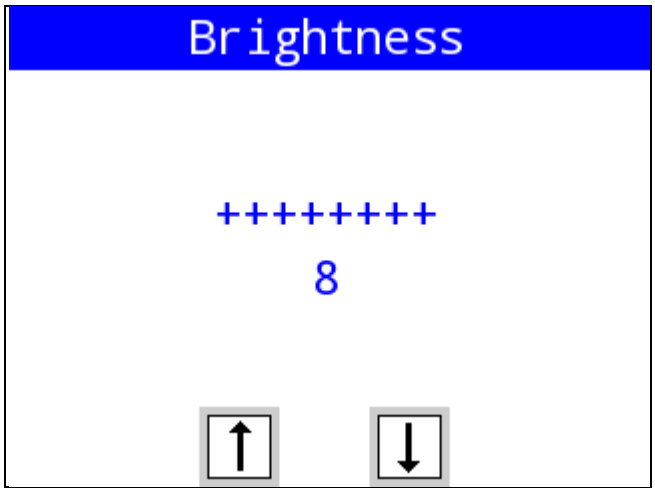

Figure 2.15

For touch-screen models, the operation of turning pages up or down is complete by touching "↑" and "↓" on the screen, "↑" means increase, and "↓" means reduce. For S800, pressing the corresponding keys on the keypad. Volume setting is similar.

2.2.2.2 Keytone

[2.Keytone] is used to switch on/off the keytone.

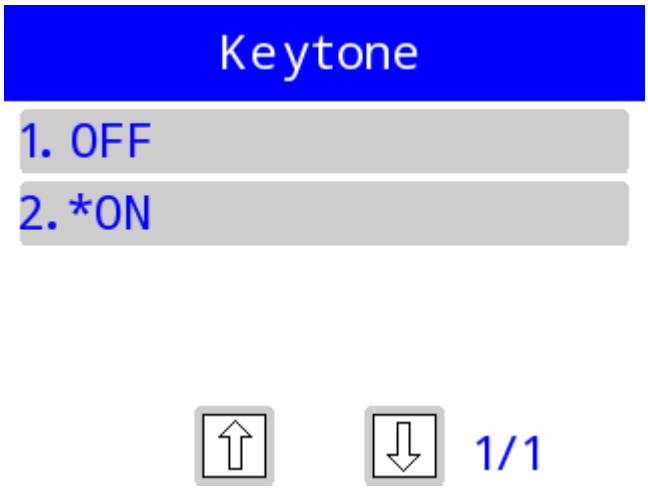

Figure 2.16

2.2.2.3 Volume

[3.Volume] is used to set audio volume, the valid value ranges from 1 to 4, and the default value is 1.

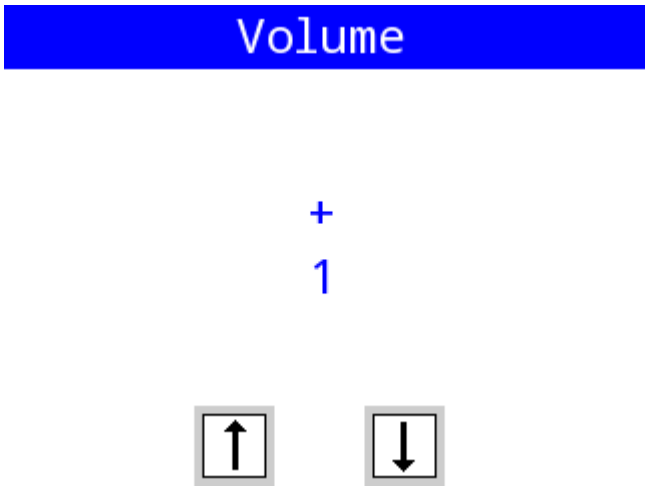

Figure 2.17

2.2.2.4 Key Backlight

[4.Key Backlight] provides menu items for users to turn on/off the key backlight, and it is off by default.

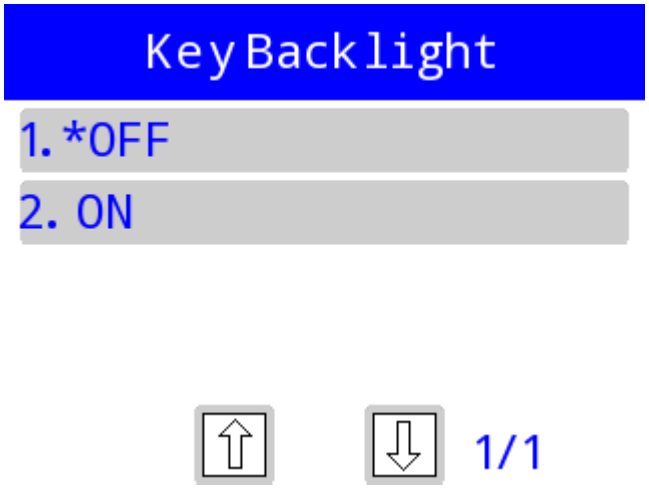

Figure 2.18

2.2.2.5 TS Calibration

[TS Calibration] is effective on touch screen. Do the calibration by clicking the moving '[+]' area on the screen.

Figure 2.19

After calibration, back to the 【Media】interface, if wants to test the calibration, please follow the step: Module Detection -> Touchscreen.

2.2.3 Ethernet

It is effective for the models with Ethernet module. And including DHCP, Static IP and Transfer Rate. Interface shows as follow:

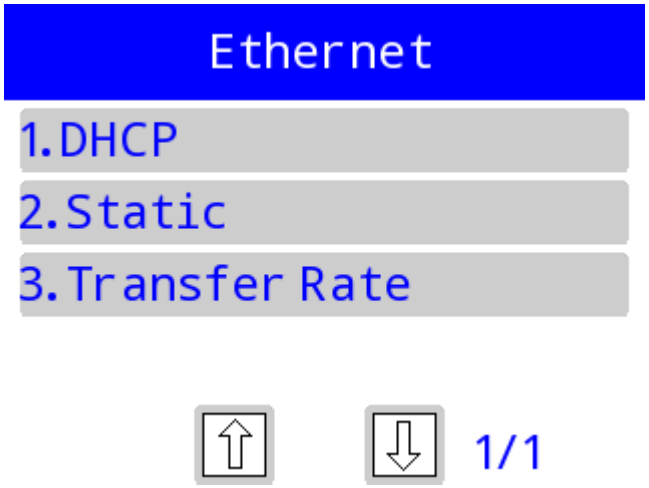

Figure 2.20

2.2.3.1 DHCP

Enter [DHCP]; the system will obtain the Dynamic IP. If wants to stop the process, press 【Cancel】 and return. The successful interface is shown as below:

Figure 2.21

2.2.3.2 Static

Enter [2.Static]; the main menu contains settings of IP, subnet mask, gateway, and Master DNS. Users can enter to see the current settings.

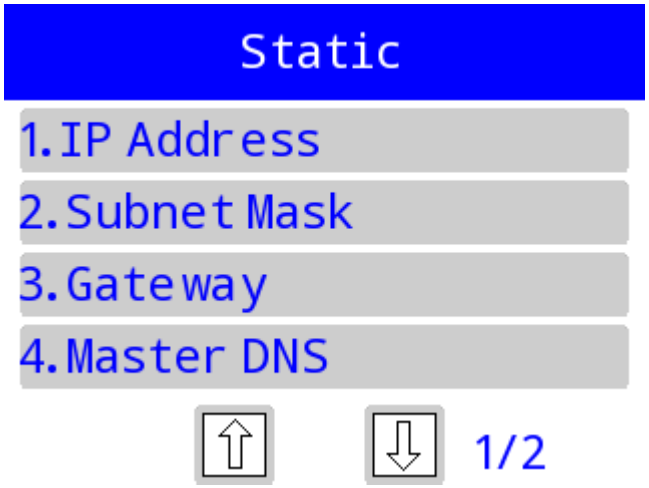

Figure 2.22

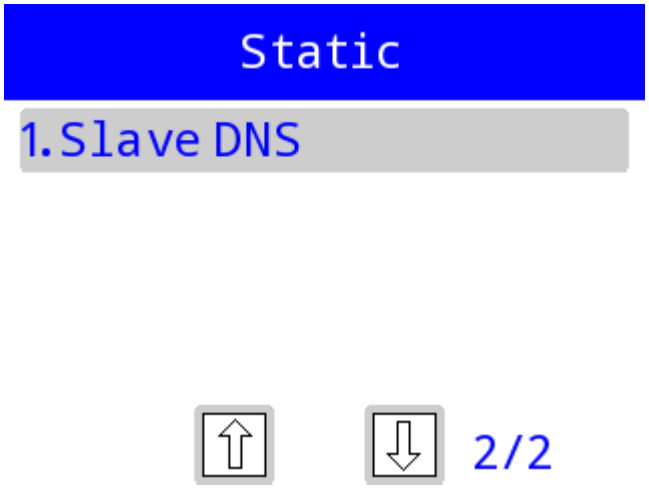

Figure 2.23

2.2.3.3 Transfer Rate

[3.Transfer Rate], shows as follow:

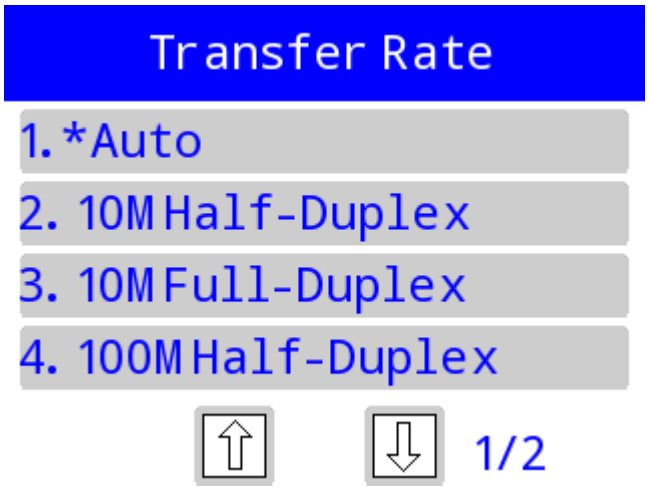

Figure 2.24

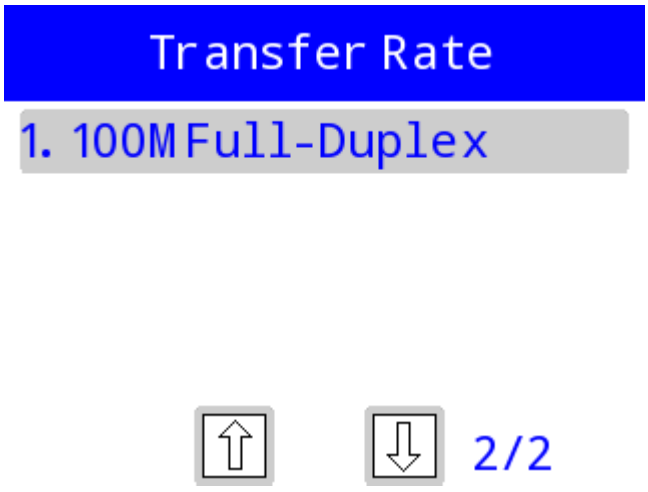

Figure 2.25

2.2.4 Wireless

It is effective for the models with wireless module.

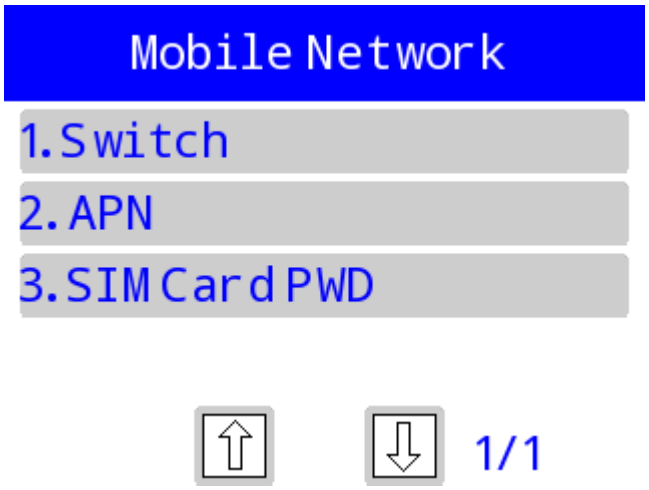

Figure 2.26

[1.Switch] is used to open or disable GPRS/WCDMA module, it prompts the current status and signal strength.

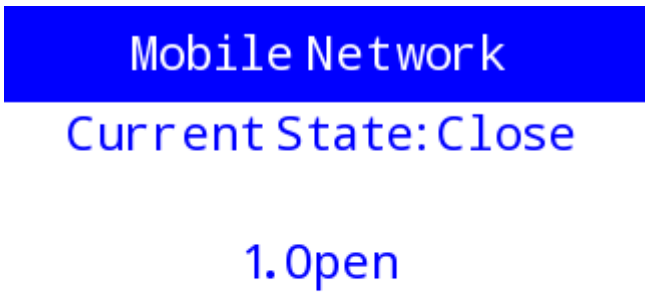

Figure 2.27

[2.APN] is to set the APN, APN username and password display in character mode. Each interface will also prompt the original value. If the parameters changed, it will be effective after reboot.

Set the new APN,

Figure 2.28

Set the new APN User name and password.

Figure 2.29

Figure 2.30

[3.SIM Card PWD] provides the entrance for users to set the password of SIM card.

Figure 2.31

2.2.5 XCB Service

This menu provides kinds of XCB channel and function of closing service. XCB is used for downloading and debugging service, more details please refer to 'XCB Operating Guide'.

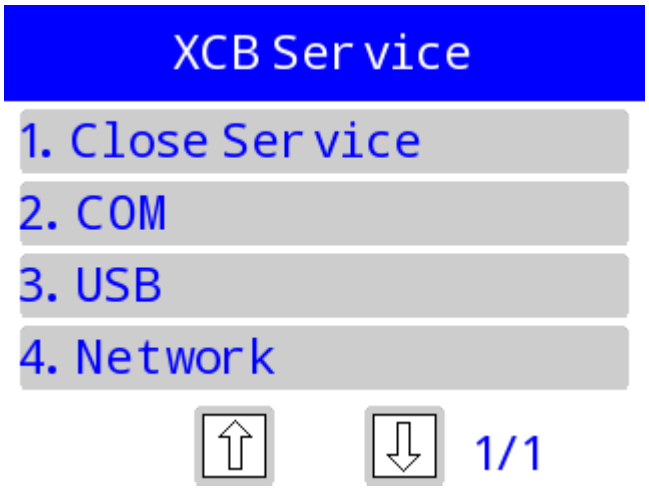

Figure 2.32

2.2.6 COM Console

It used to open and close the COM console with Debug version, so it could be used in the serial port downloading or other modules. But it is not available to the Release version.

If the current status of console is close, when select open, it can take effect without a system reboot, but it must be restarted when select close.

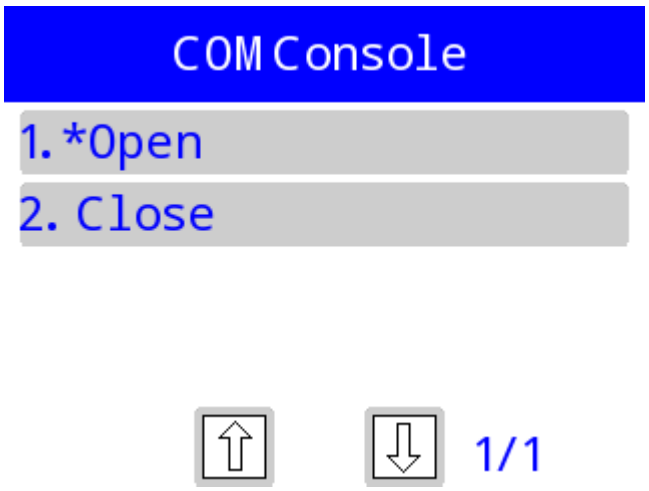

Figure 2.33

2.2.7 Restore Factory Settings

Restore all the system parameters to default values.

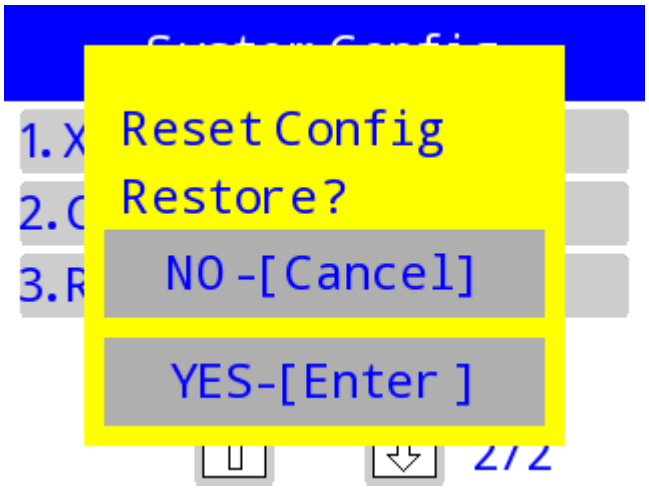

Figure 2.34

3 Module Detection

Module Detection is used to test the main function modules in machine. Interface shows as below:

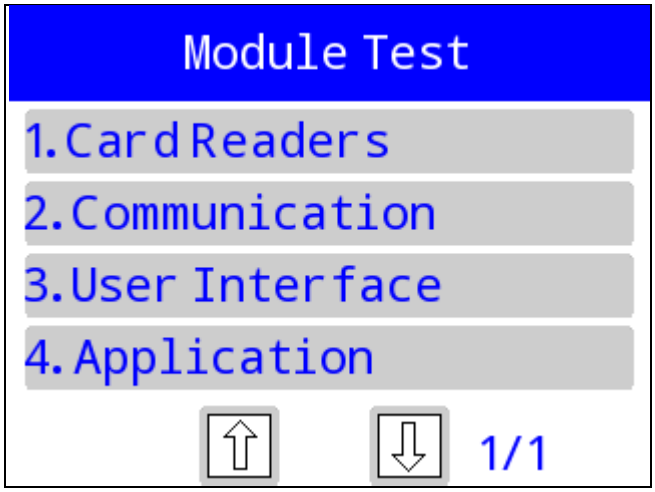

Figure 3.1

3.1 Card Readers

It contains detection of Magnetic card reader, ICC reader and RF reader. Enter [1. Card Readers], interface show as follow:

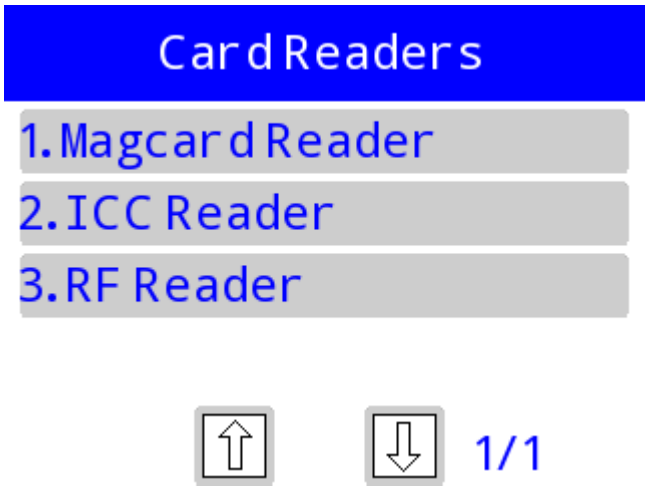

Figure 3.2

Select magnetic card reader or RF reader, it prompts 'Please Swipe…' it will stay in waiting status till press【Cancel】to quit. If the system detected the magnetic card or RF, it will read or exchange the card data. If the operation is failed, the system will return the error code.

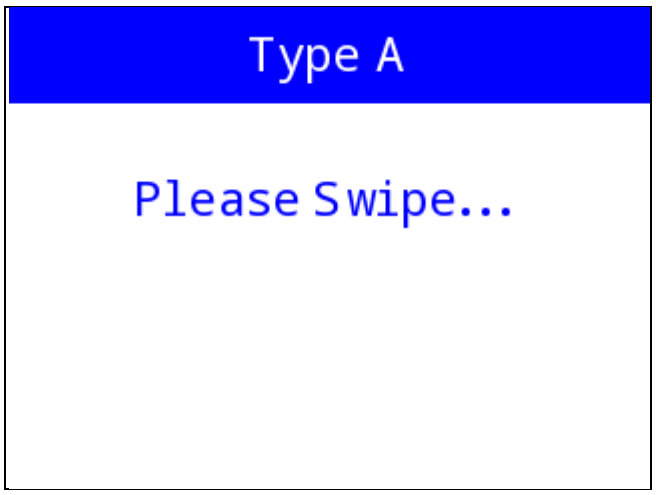

Figure 3.3

Magnetic card detection is used to read track information and return track status. TM will prompt the right track, and then automatically and sequentially display part of the data and data length of each track.

ICC reader detection contains detection of user card and SAM card. Interface is shown as below:

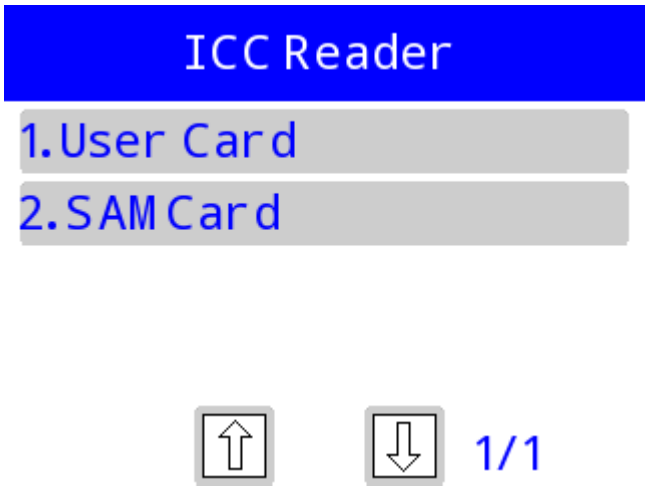

Figure 3.4

Enter [1.User Card], if the machine has been inserted a card, it will be detected, otherwise it will prompt “Pls insert card”. IC detection is used to initialize the card communication and interactive the common command, it will prompt “Exchange Data Well” and “Card test Done” when detection is successful, otherwise, it will prompt error code.

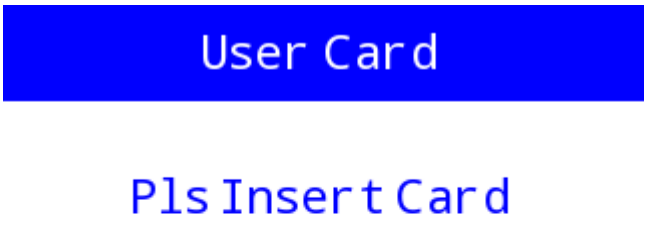

Figure 3.5

Enter [2.SAM Card], TM will automatically read the 1, 2, 3 card slot, if the drive does not exist, it will show “NO”, it will prompt "ERR" when reads errors, if reading successfully it will display "OK".

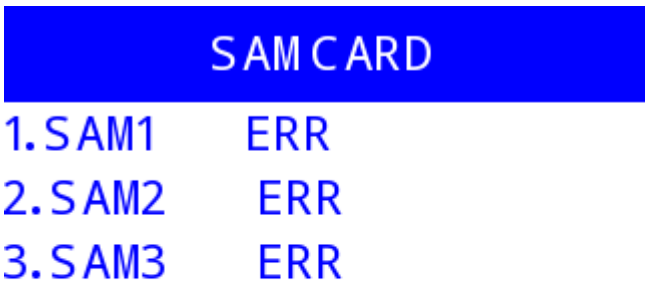

Figure 3.6

If slots prompt “ERR”, press the number key which corresponding to serial number to check the error code.

RF card detection including A card, B card, Felica card and M1card.The interface of [3.RF card] shows as below:

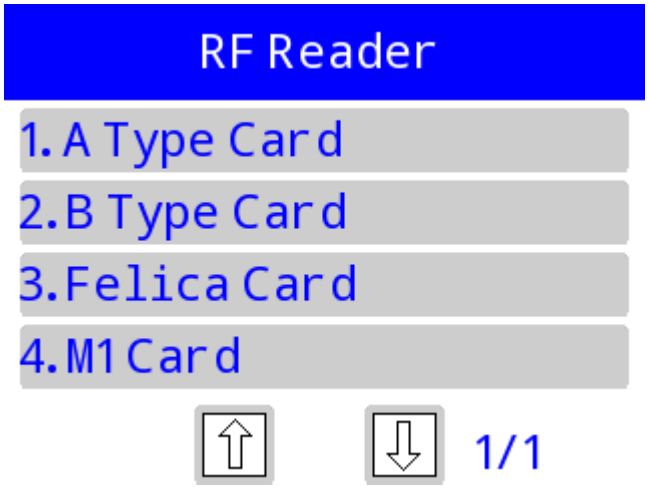

Figure 3.7

The operation of RF card detection is similar to Magnetic card.

3.2 Communication

Communication detection includes Modem module, Wireless module, and Ethernet module. Interface shows as follow:

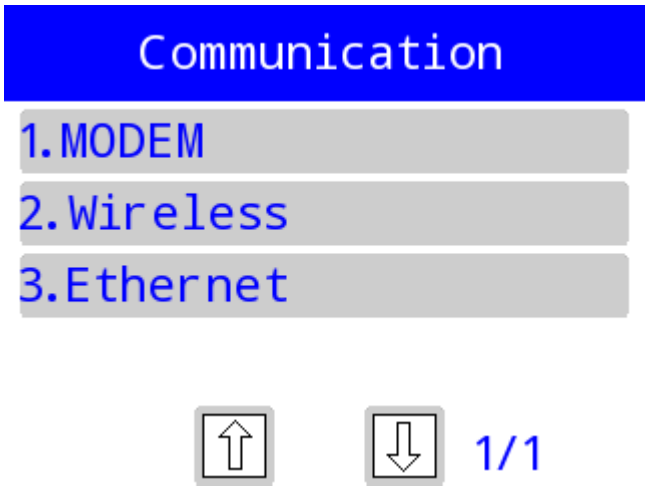

Figure 3.8

3.2.1 Modem

Input the test parameters before the Modern test, it will prompt error code when occurs error.

Enter [1.MODEM]; select the synchronous or asynchronous mode.

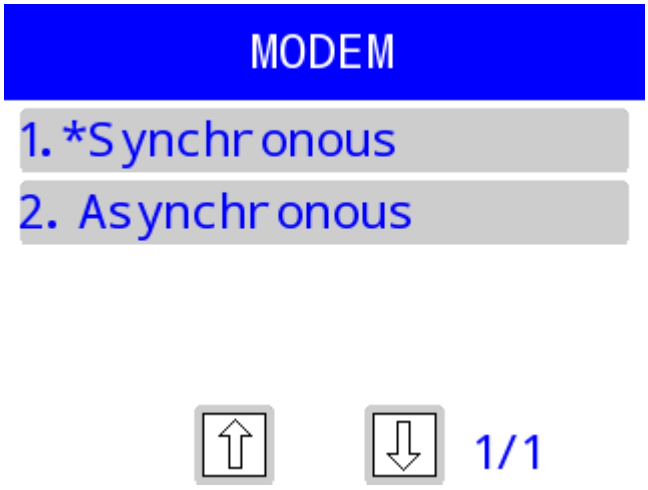

Figure 3.9

Then set the communication rate. For synchronous mode, TM provides three baud rates (1200, 2400, and 9600) for detection. It also provides the baud rate of 57600 in asynchronous mode.

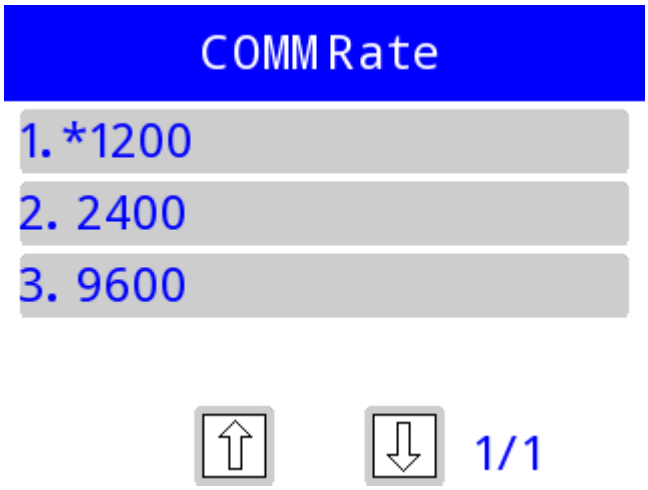

Figure 3.10

Thirdly, set the timeout, and the valid range is 0~300(unit: second).

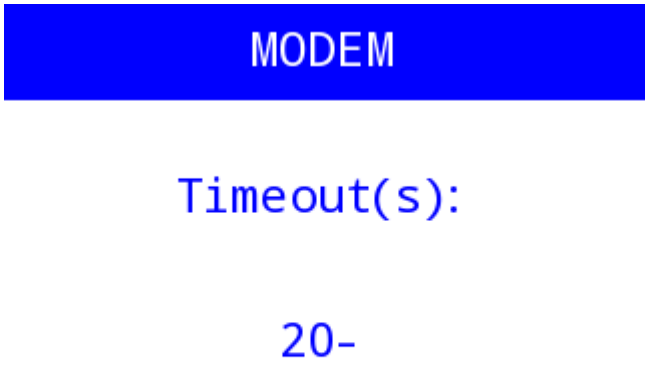

Figure 3.11

Finally, input the phone number in character mode, and the number consist of 1~13 digits.

Figure 3.12

Dial Times. The valid range is 1~255.

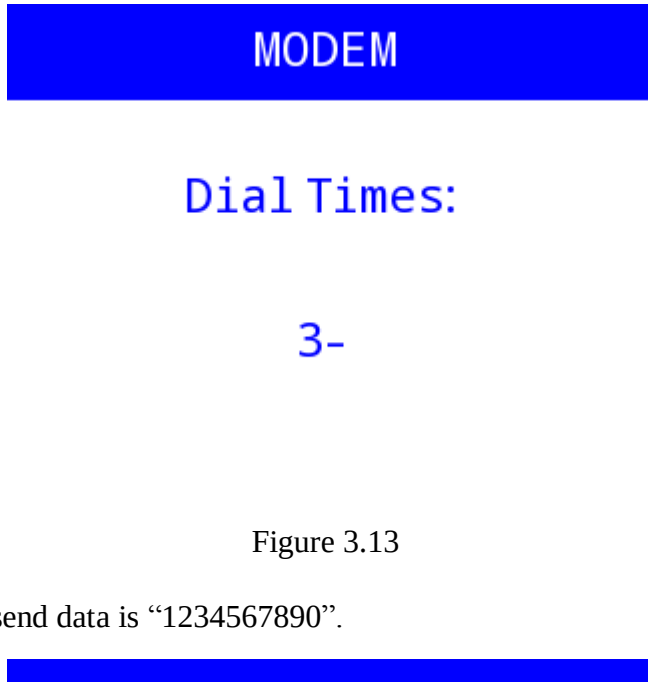

Figure 3.13

Send Times, and the send data is “1234567890”.

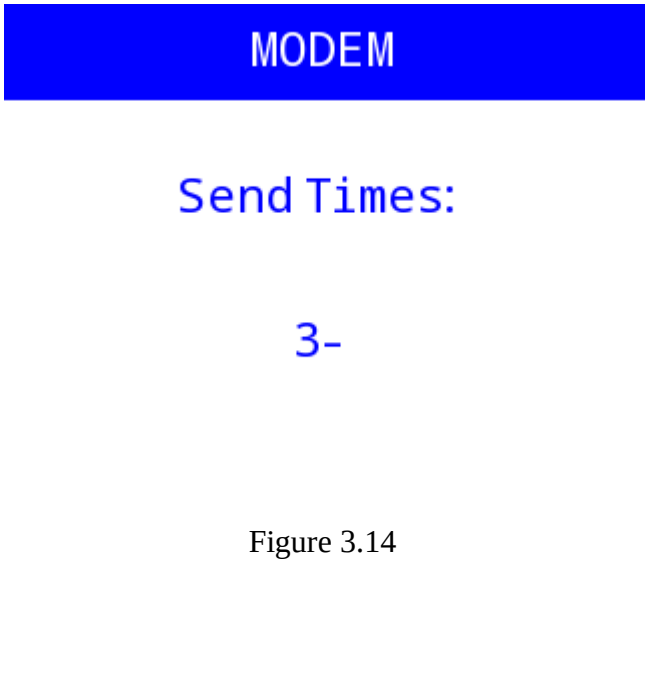

Figure 3.14

3.2.2 Wireless

Wireless network detection is used to check the connection status of GPRS or WCDMA.

When the system detected it has already logged on GPRS, then it only needs to input timeout and IP address of the remote host. Otherwise, it needs to enter APN, user name and password.

Input access point name, the length should be 1~20.

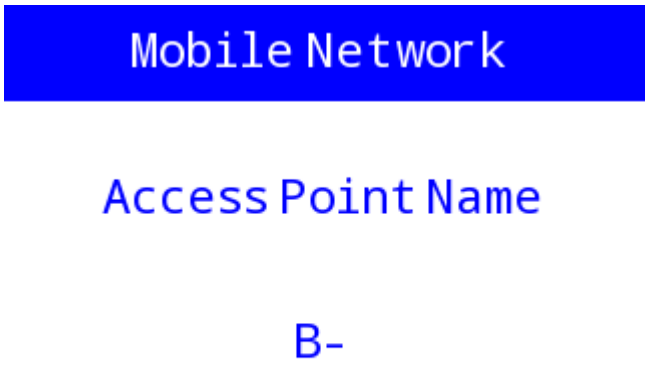

Figure 3.15

Input user name, the length should be 1~20 bits.

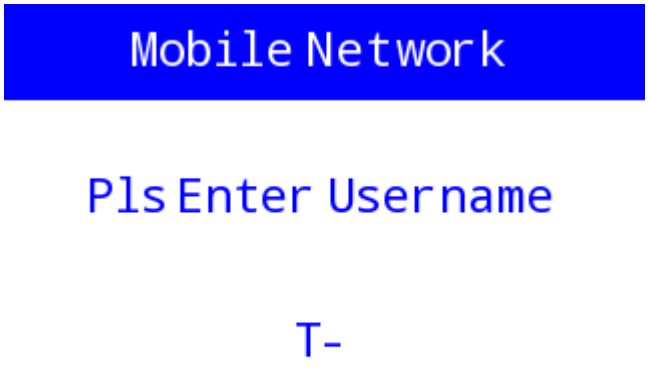

Figure 3.16

Input password, the length should be 1~8 bits.

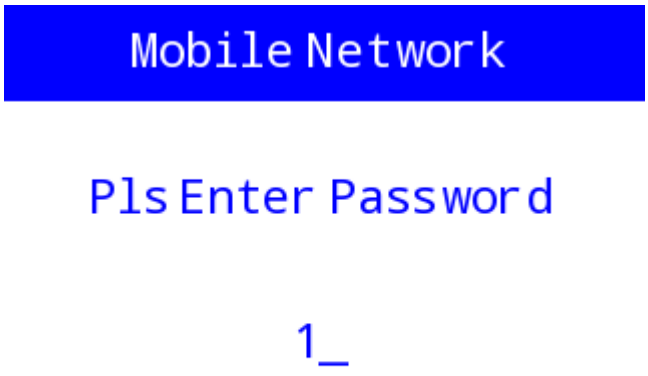

Figure 3.17

Input destination IP address,

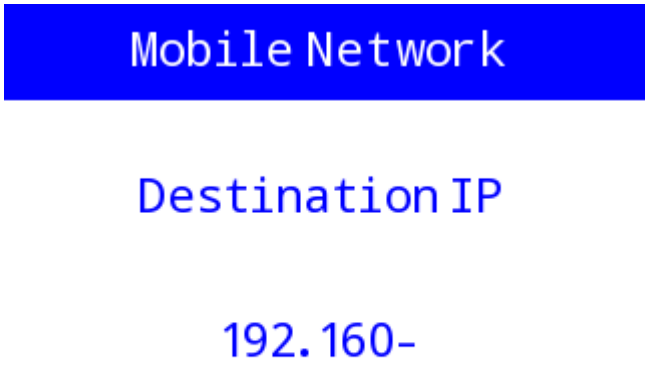

Figure 3.18

Doing the detection after completed the above settings, and it will prompt error code when occurs error.

3.2.3 Ethernet

Input ping host IP address, timeouts and PING duration. Timeouts is ranged from 3000ms to 3600000ms. It will prompt error code when occurs PING timeout, and calculate the PING times at the same time. It will not complete the PING operation until the duration is end.

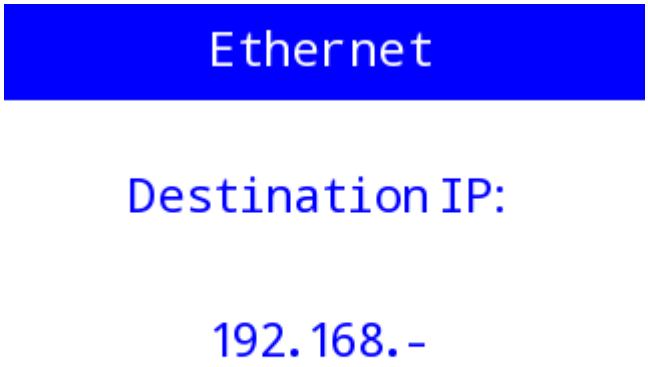

Figure 3.19

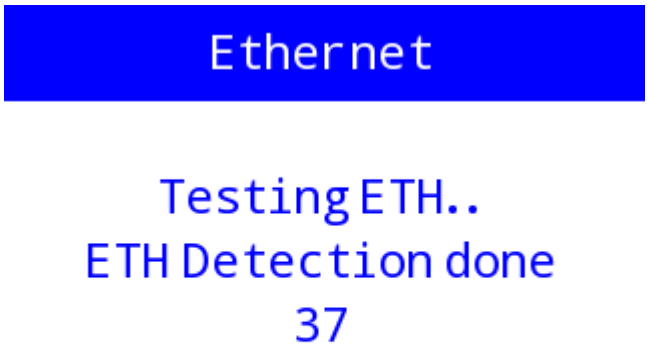

Figure 3.20

That figure represents the number of successful PING test during the duration.

3.3 User interface

It includes the tests of LCD display, touch screen (except S800), printer, keyboard and speaker.

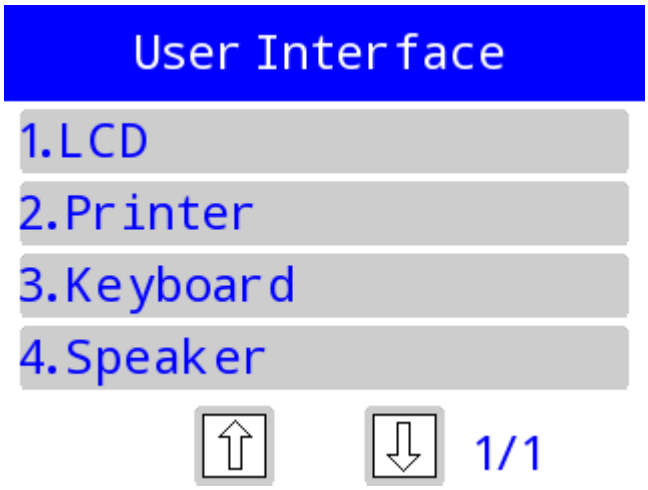

Figure 3.21

3.3.1 LCD test

LCD test is completed by displaying different colors on test the screen. Press【Confirm】or【Cancel】to exit the test, and press other keys to laterally move the color blocks.

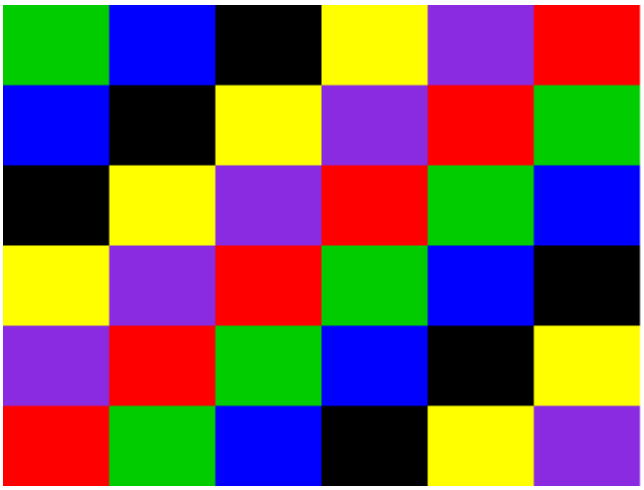

Figure 3.22

3.3.2 Touch screen test

Display a whiteboard in full screen, and then test it by scribble on it.

3.3.3 Printer

Open the printer and detect various status of it. If the test is successful, print the system information otherwise prompts the error code and reasons.

3.3.4 Keyboard

Press a key and get its key value displayed on the screen. Press key 【1】 for twice and the interval should not be more than 1 second, then will exit the test.

Figure 3.23

3.3.5 Speaker

Users can play an audio file to detect the speaker performance and status. It will prompt error code when occurs error.

4 USB Download

There must be a download task file (system.list) in the USB, the format is as follow:

system.list Example

#Download aip:

[appx] ***# x is a natural number, the same system.list file arranged in ascending order and it is unique.***

package=xxx.aip

#Download appdata:

[appx]

id=DEMOAPP ***# The main application id must be MAINAPP***

appdata1=file1

appdata2=file2

.....

appdata*N*=file*N* ***#N=1,2,3,….***

#Download aup:

[appx]

upgrade1=xxxx.aup

upgrade2=xxx2.aup

.....

upgradeN=xxxx-11.aup ***#N=1,2,3,….***

#Download opk files：

[ipkg-install]

file1=xxx.opk

file2 = xxxx.opk

…...

fileN=xxxxxx.opk ***#N=1,2,3,….***

#Uninstall applications

[app-remove]

app1=APP1ID ***#Application id;***

app2=APP2ID

.....

appN=APPNID ***#N=1,2,3,….***

#Uninstall opk package:

[ipkg-remove]

pkg1=file1

pkg2=file2

pkgN=fileN ***#N=1,2,3,….***

 # PUK files：

[us_puk]

puk0=key1.sig

puk1=key2.sig

```
.....
puk8=key9.sig
```

Note: the USB download and serial port download which support by TM, is adopt the way of running XCB service on the POS terminal, and then waiting for communication and downloads with the PC tool, it needs to configure in the system settings menu. Details about XCB, please refer to the related document.

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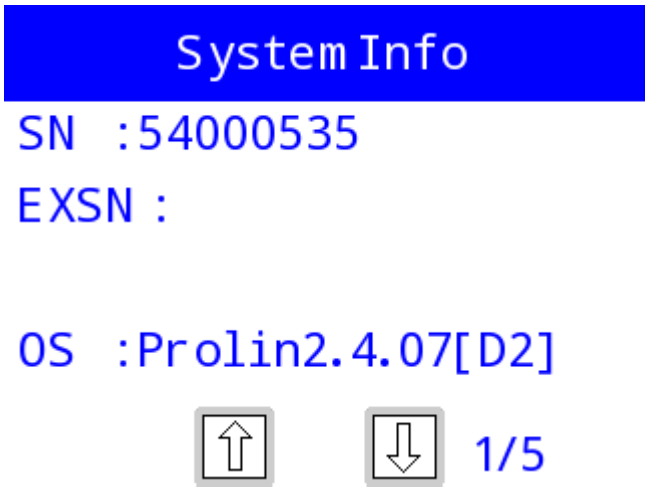
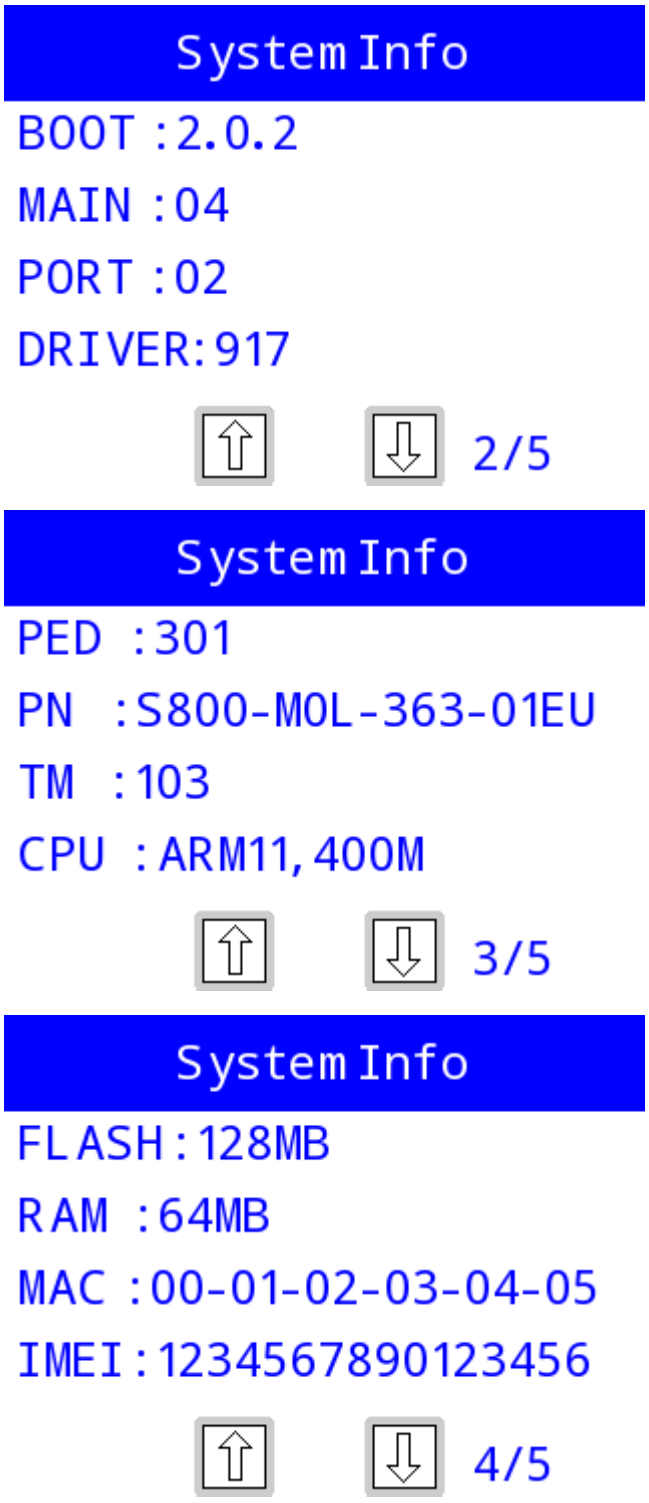
5 Terminal Information

This module is used to display the system and version information, shows as following figures.

It references the corresponding module to determine whether IMEI and MAC displays or not. If the security level of system is greater than 0, the OS information of Debug version will be added with [Dx], D represents the Debug version, x represents levels.




System Info
BOOT :2.0.2
MAIN :04
PORT :02
DRIVER:917
2/5
System Info
PED :301
PN :S800-M0L-363-01EU
TM :103
CPU :ARM11,400M
3/5
System Info
FLASH:128MB
RAM :64MB
MAC :00-01-02-03-04-05
IMEI:123456789012345
4/5

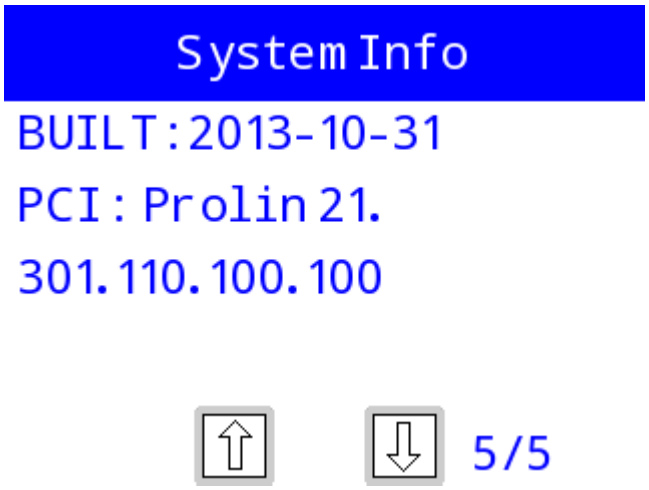


Figure 5.1

6Crash Report

Compatible with libcrash.so, it will generate some field information if the application terminates abnormally, including the Register states at that time. Users can export these information to the directory ‘tombstones/ XXXXXXXX-YYYYMMDD_hhmmss/ ’in USB by this function, ‘XXXXXXXX’ represents the serial number of POS; the suffix _hhmmss is time and date information.

The function only supports exporting to the USB.

7 PED

This module is the entrance of PED key management.

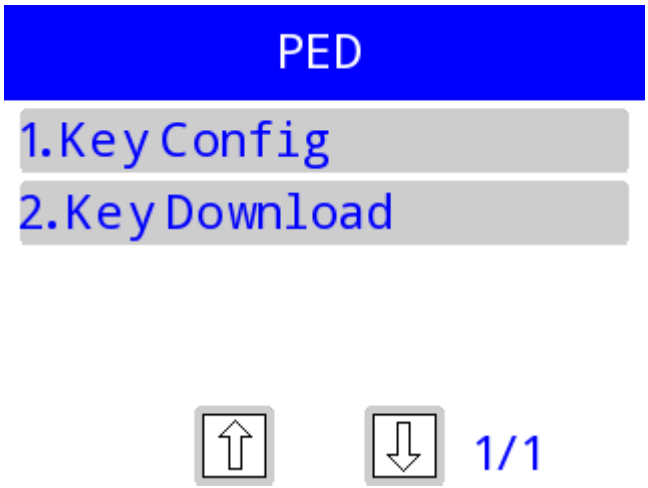


Figure 7.1

7.1 Key Config

Users must reset the password for the first time to enter [Key Config], the default password A and B are both “000000”

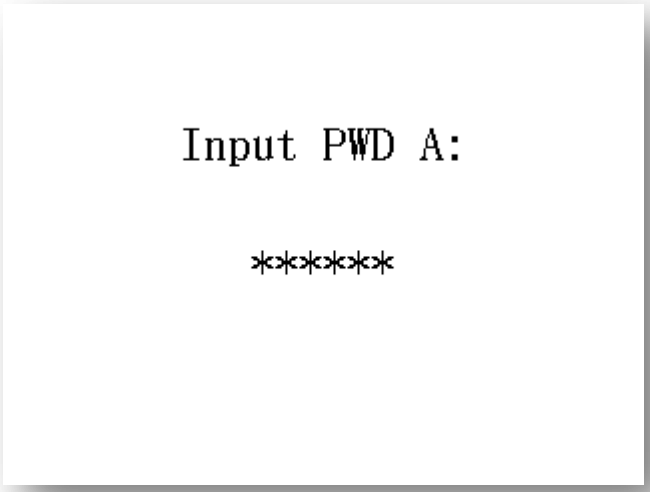


Figure 7.2

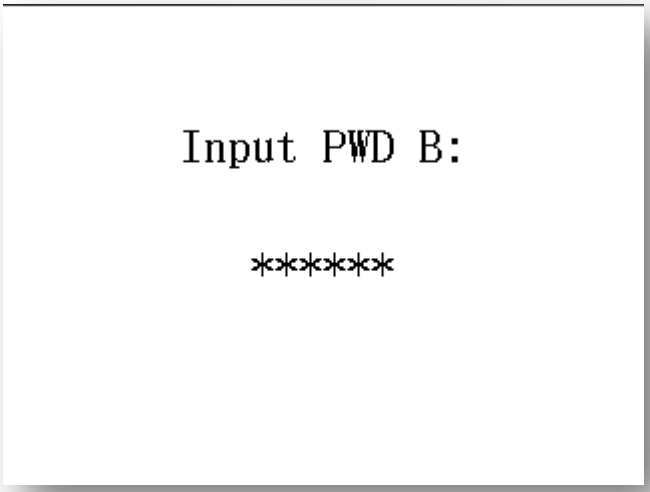


Figure 7.3

After input password A and B, interface shows as follow:

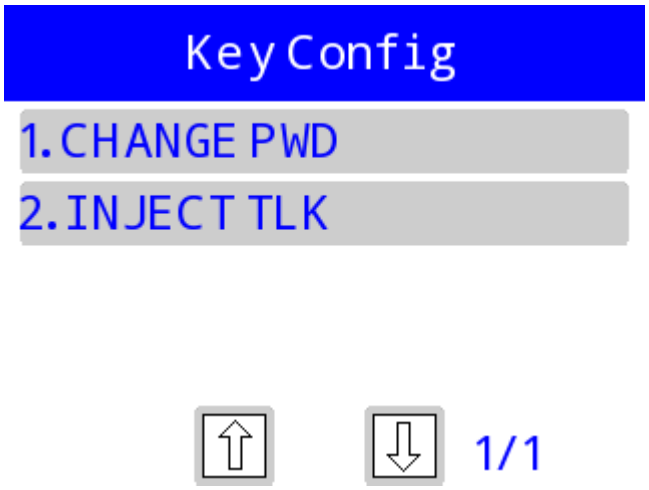


Figure 7.4

7.1.1 Change PWD

[CHANG PWD] is the entrance for users to modify administrator password. Interface shows as follow:

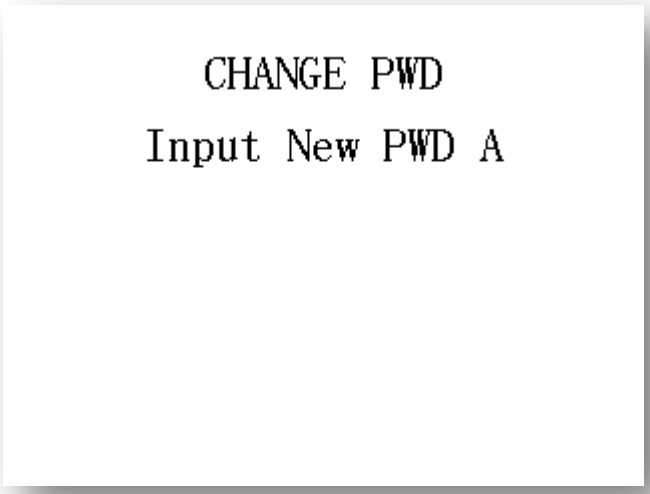


Figure 7.5

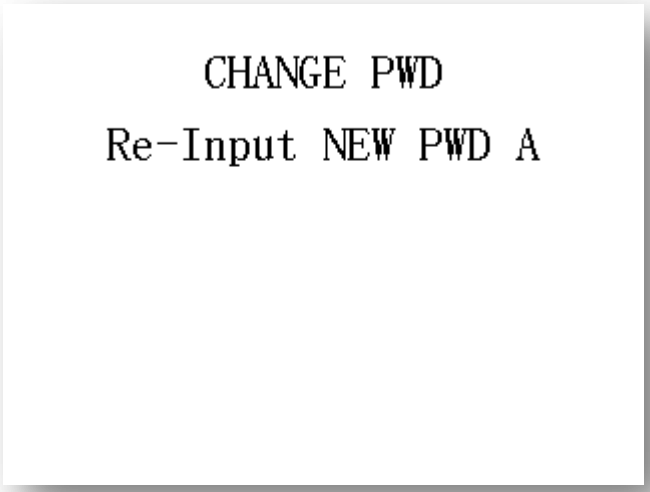


Figure 7.6

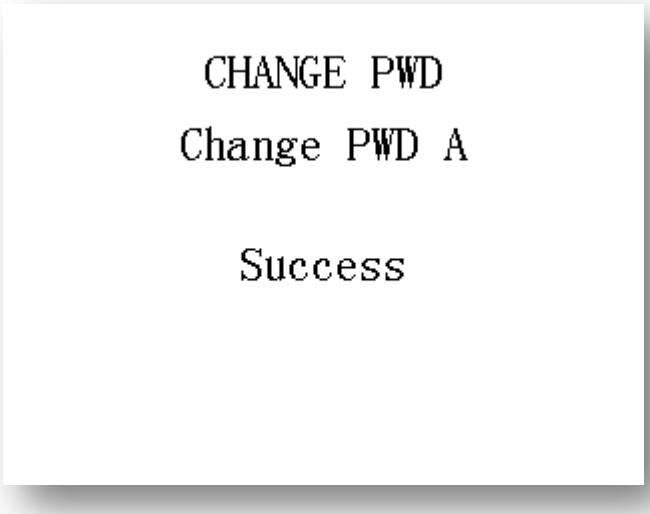


Figure 7.7

7.1.2 Inject TLK

Select the TLK length, press【1】for 16-bit, press【2】for 24-bit.

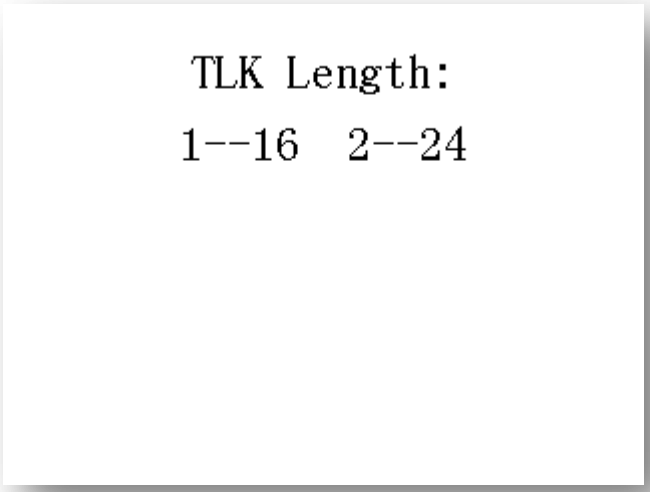


Figure 7.8

Input the part1 of TLK,

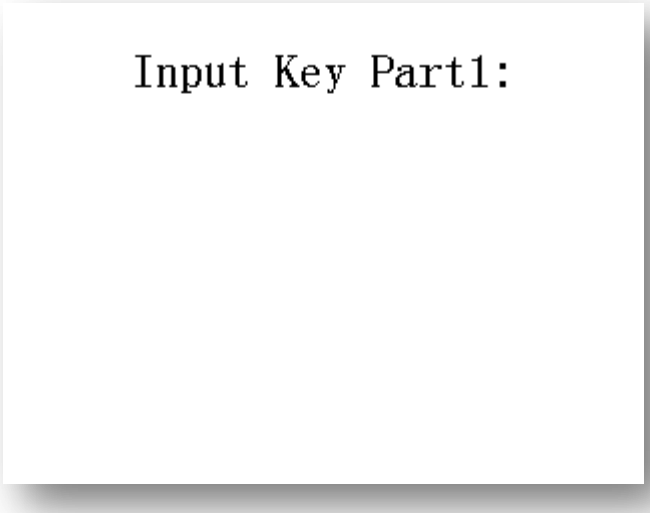


Figure 7.9

Input the part2 of TLK,

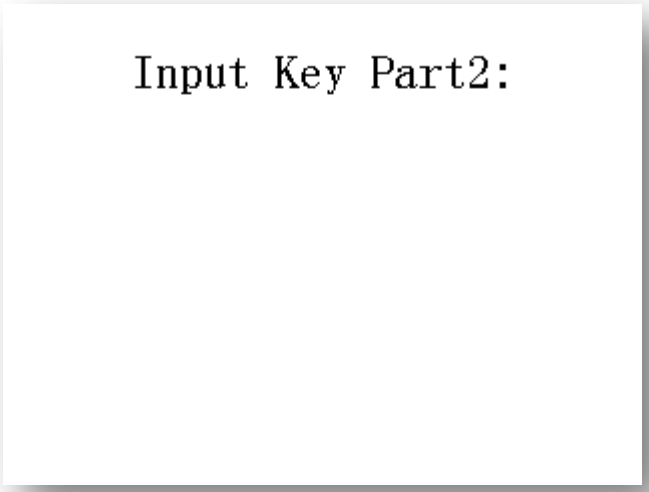


Figure 7.10

Confirm KCV value that injected into TLK is correct or not,

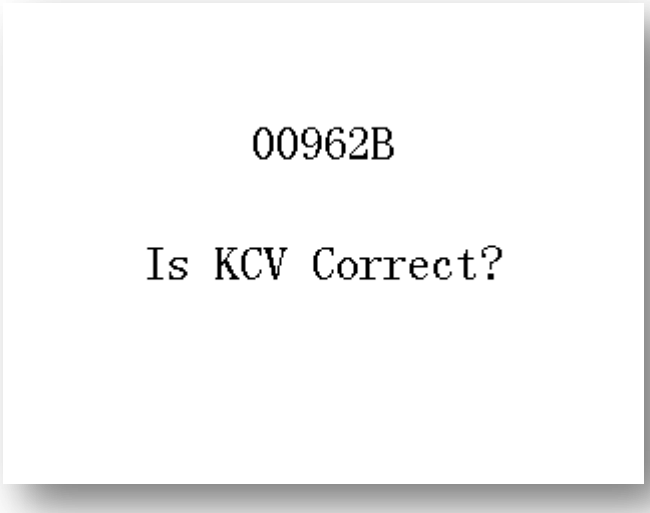


Figure 7.11

TLK injection succeeds.

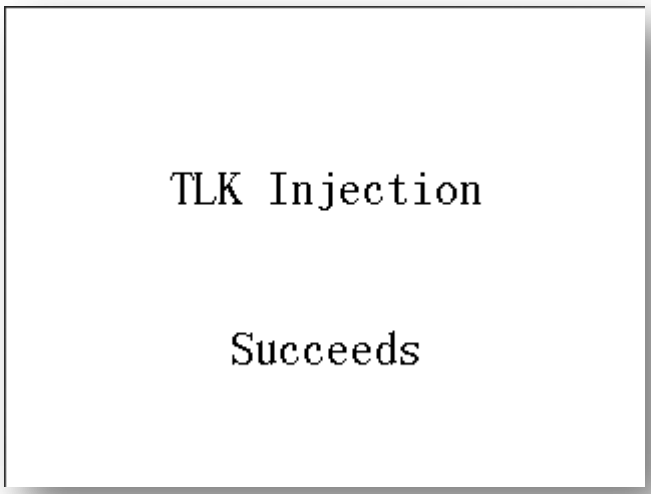


Figure 7.12

7.2 Download Key

Users can use the serial port and PC tools to download keys and format PED. If the Debug Console is currently in use, users are prompted as the figure below:

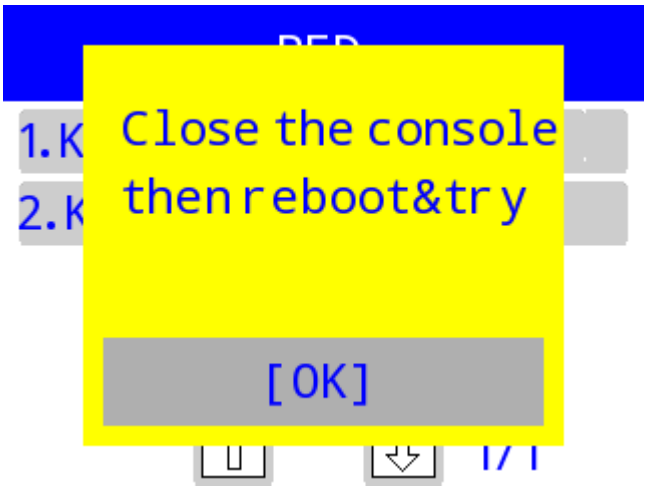


Figure 7.1

Prolin Terminal Manager Operating Guide

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