

# CipherLab

## User Guide

### HF RFID Configuration

For Android Mobile Computer

RS30

RS31

RS35

RS36

RS50

RS51

HERA51

9700A

RK95

RK25

RK26

Version 1.01



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# RELEASE NOTES

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Version	Date	Notes
1.01	Oct. 03, 2023	Add the new supported device models
1.00	Sep. 12, 2018	Initial release

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## INTRODUCTION

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***HF RFID Configuration*** is a NFC application which is for reading and writing NFC tags and RFID compatible chips by putting the NFC tag/ RFID chip close to the NFC detecting area of your device. Also, user can control how the NFC reader works by settings in ***HF RFID Configuration*** and enabling it.

***HF RFID Configuration*** supports English, Traditional Chinese, Simplified Chinese, and Japanese based on your device system language.

### FEATURES

- ▶ Supports CipherLab Android mobile computers:
  - Android 4.4 KitKat (RS30)
  - Android 6.0 Marshmallow (9700A & RS31)
  - Android 7.0 Nougat (RS31 & RK25)
  - Android 8.0 Oreo (RS51 & HERA51)
  - Android 9.0 Pie (RK25 & RK95)
  - Android 10 (RS35)
  - Android 11 (RK25, RS35, RS51 & HERA51)
  - Android 12 (RK26, RK95 & RS36)
- ▶ Supports importing and exporting settings to configuration files
- ▶ Supports reading and writing data to NFC tag/ RFID chip
- ▶ Supports English, Traditional Chinese, Simplified Chinese, and Japanese.

# Chapter 1

## GETTING STARTED

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This chapter guides to the launch of HF RFID Configuration and the user interface of HF RFID Configuration main screen.


### IN THIS CHAPTER

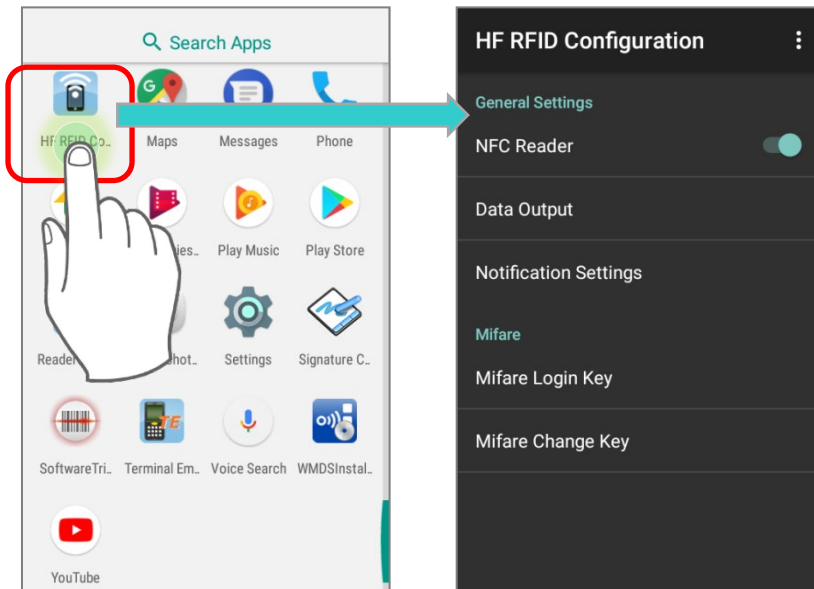
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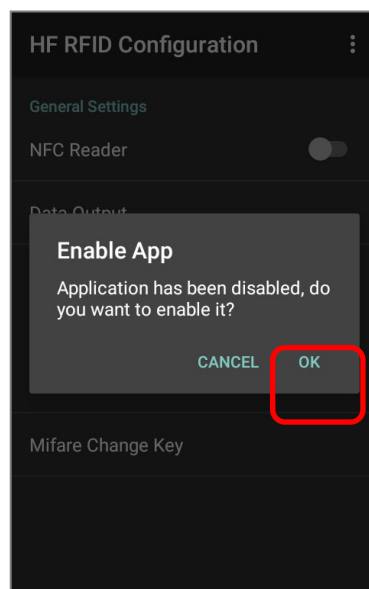
### 1.1 LAUNCH HF RFID CONFIGURATION

**HF RFID Configuration** is a built-in app for users to read and write NFC tags and RFID chips.

Please go to App Drawer (All Applications), and tap on **HF RFID Configuration** icon  to launch it.



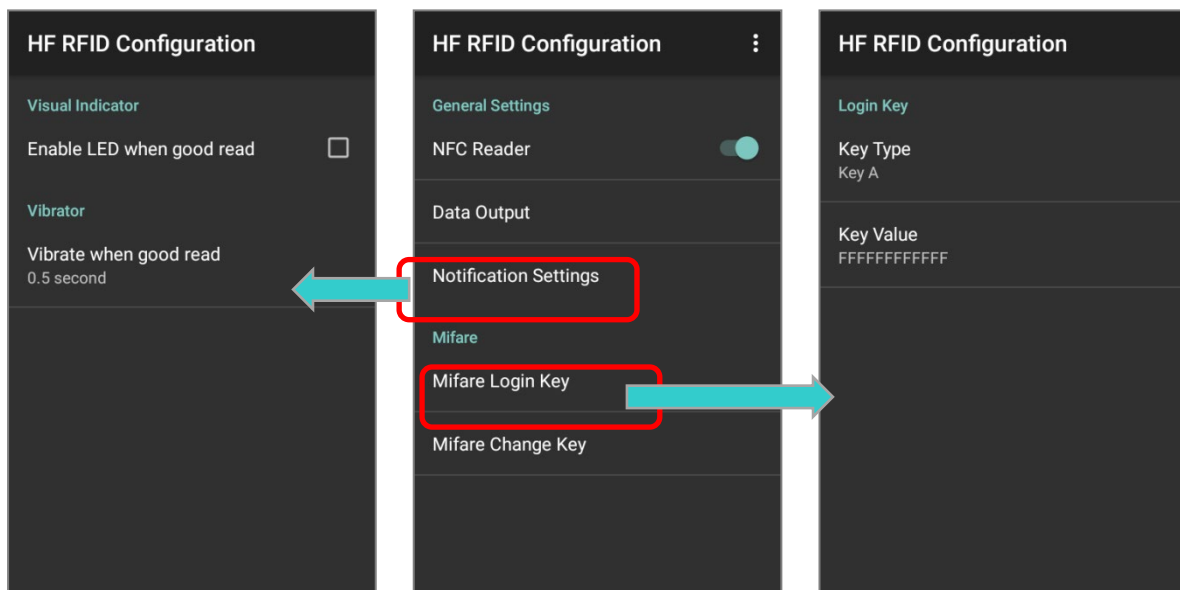
For the first time to launch **HF RFID Configuration**, a pop-up window appears to confirm whether to enable **HF RFID Configuration** or not. Tap on “**OK**” to continue, or “**CANCEL**” to directly exit the application.



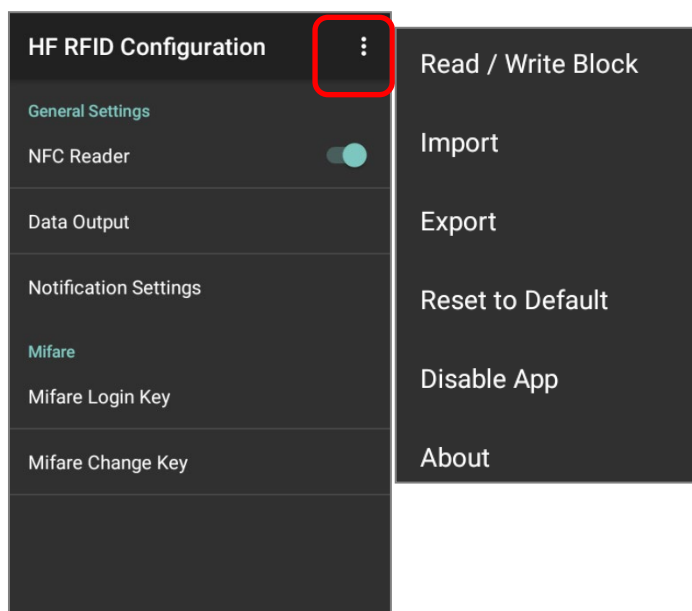


## 1.2 MAIN SCREEN

The main screen of **HF RFID Configuration** lists “**General Settings**” & “**Mifare**” two categories, tap on the item under its category for more options:



Tap on the more button on the right side of the action bar to open the more settings menu:



## Chapter 2

### GENERAL SETTINGS

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This chapter specifies how to enable/disable NFC reader of your device, the settings of the output data of the read NFC tags/ RFID chips, and the notification for good read.

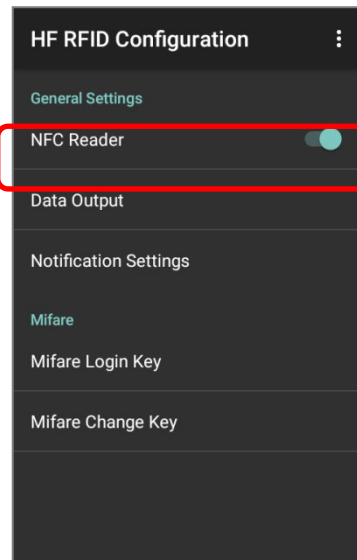
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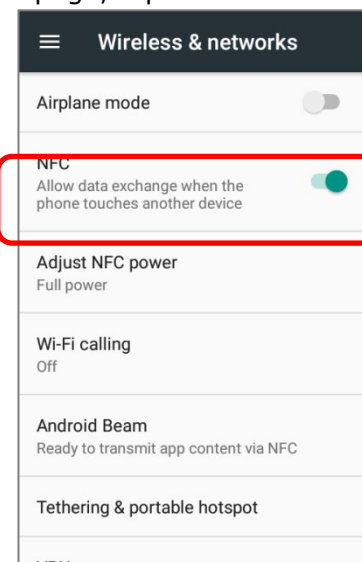
## 2.1 NFC READER

**Near field communications (NFC)** uses close proximity (4 cm or less) to establish radio communication through electromagnetic fields. With NFC enabled, the mobile computer can collect information from NFC tags, exchange information with other NFC supported devices, and even change information on the NFC tag if authorized.



To enable NFC Reader, simply switch on **NFC Reader** under “**General Settings**”, or:

- 1) On the mobile computer, go to **App Drawer (All Application) | Settings**  | **More** 
- 2) On the **Wireless & networks** page, tap on the NFC switch to enable it.



## 2.2 DATA OUTPUT

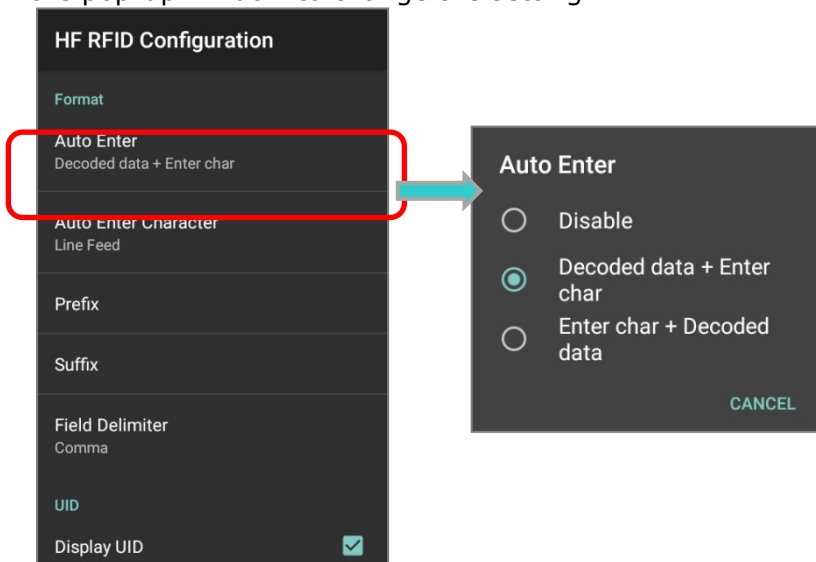
### 2.2.1 FORMAT

Please tap on each item under “**Format**” to set the format of output data of the NFC tags:

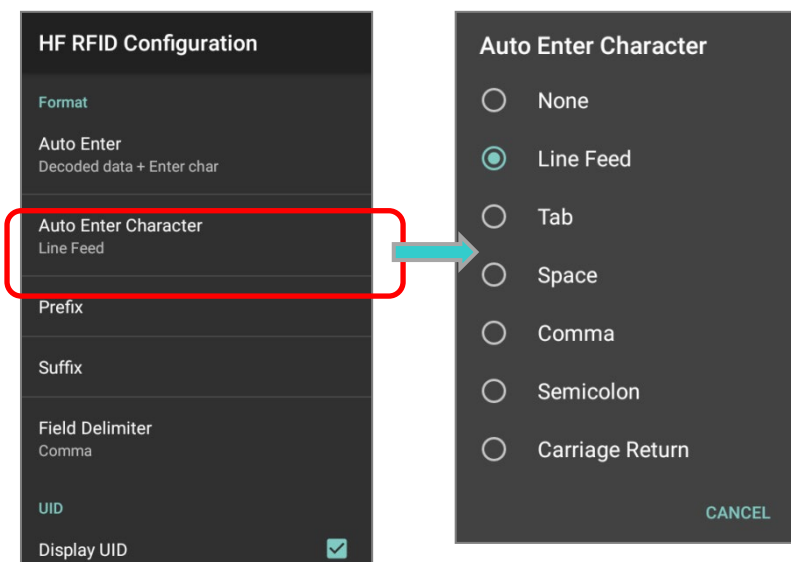
#### AUTO ENTER / AUTO ENTER CHARACTER

“**Auto Enter**” is to adds an ENTER character before or after each string of decoded data. The ENTER character can be defined in the “**Auto Enter character**” below. This function saves the trouble of pressing a confirmation key to accept each string of decoded data.

Tap to open the pop-up window to change the setting:

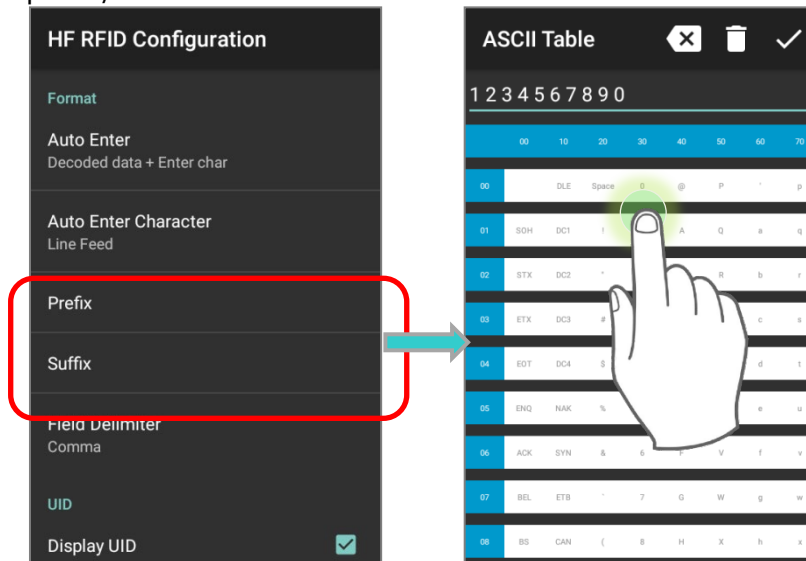


“**Auto Enter Character**” is to adds a key code before or after the decoded data. If “**Auto Enter**” is enabled, select the ENTER character to send:

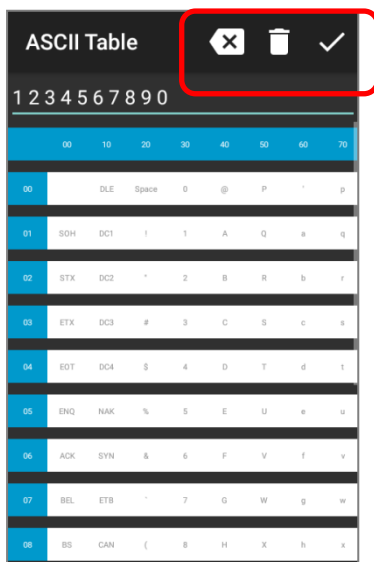


## PREFIX / SUFFIX

"**Prefix**" is to affixes 0 to 10 characters to the left of the output data whereas "**Suffix**" is to affixes 0 to 10 characters to the right of the output data. Tap to open a character table for entering the prefix/suffix.



In this character table, you can:



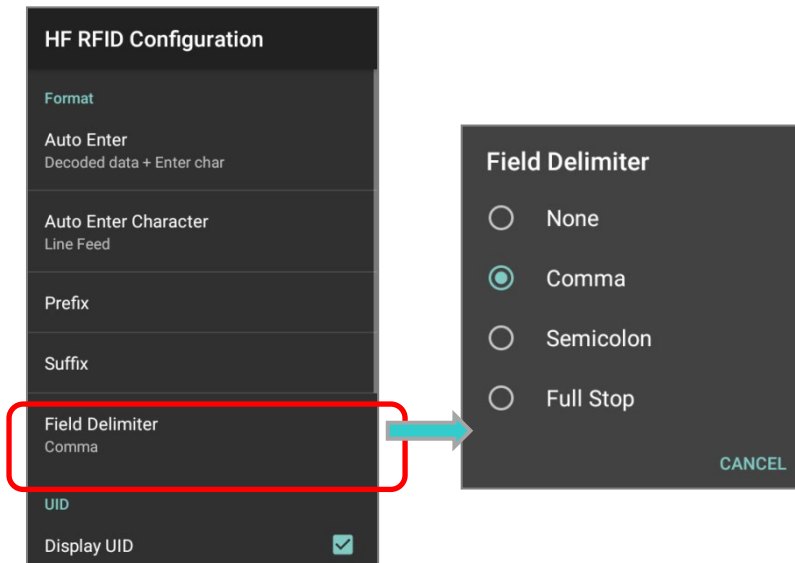
Item	Description
	Tap to delete the last character you input.
	Tap to delete all the character you input.
	Tap to apply.

### Note:

Both prefixes and suffixes containing invisible characters are supported.

### FIELD DELIMITER

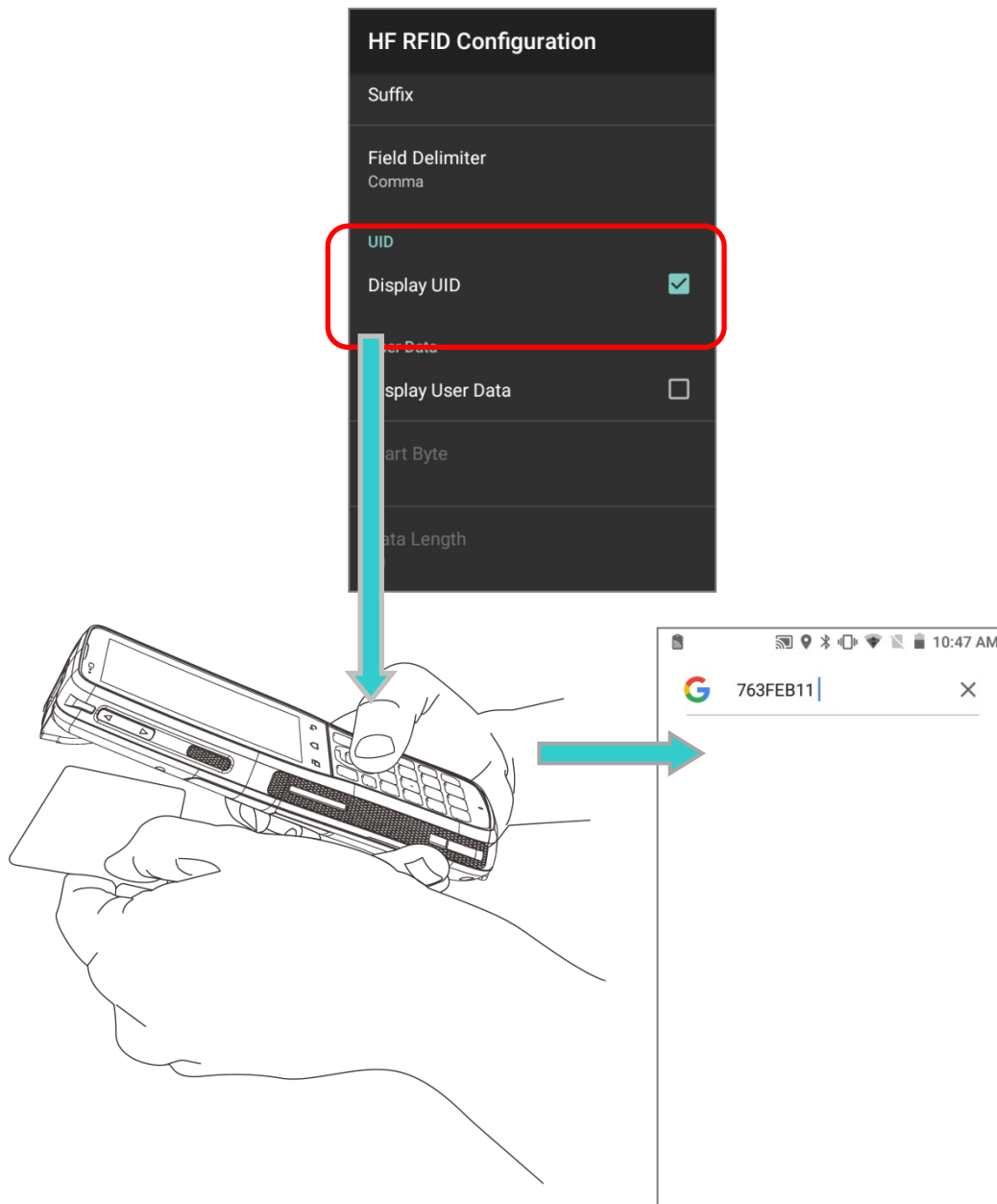
“**Field Delimiter**” is to set the delimiter to separate the output data. Tap to open the pop-up window to select the delimiter to set.



## 2.2.2 UID

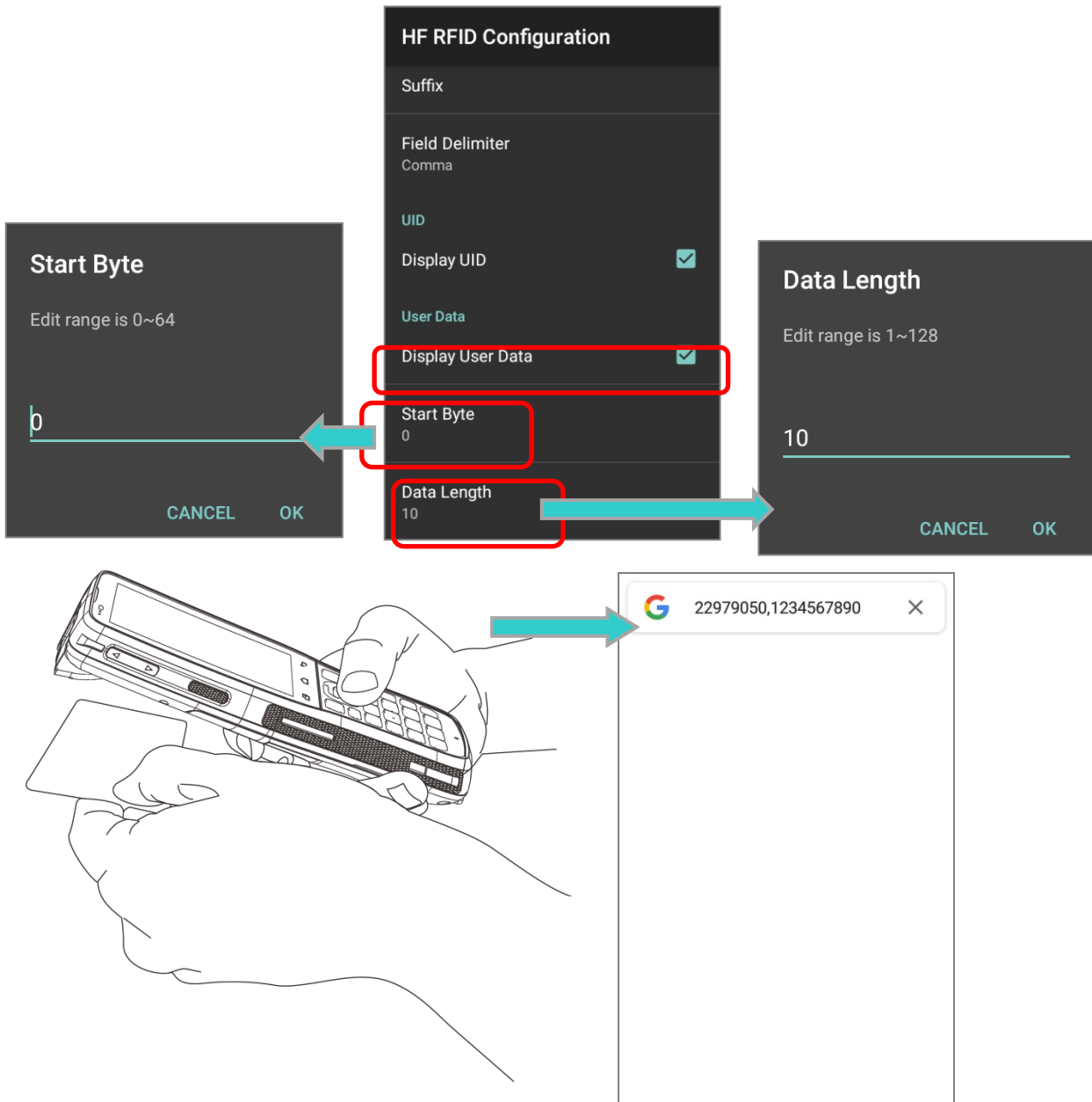
UID is an unique identifier number which burned-in during the manufacturing process of NFC tags/ RFID chips.

Tick or untick the checkbox of “**Display UID**” to enable/ disable outputting the UID of the RFID tag to read. The default setting is enable.



### 2.2.3 USER DATA

Tick or untick the checkbox of "**Display User Data**" to determine whether outputting the user data of the RFID tag to read. By ticking "**Display User Data**", you can further set the "**Start Byte**" and "**Data Length**":



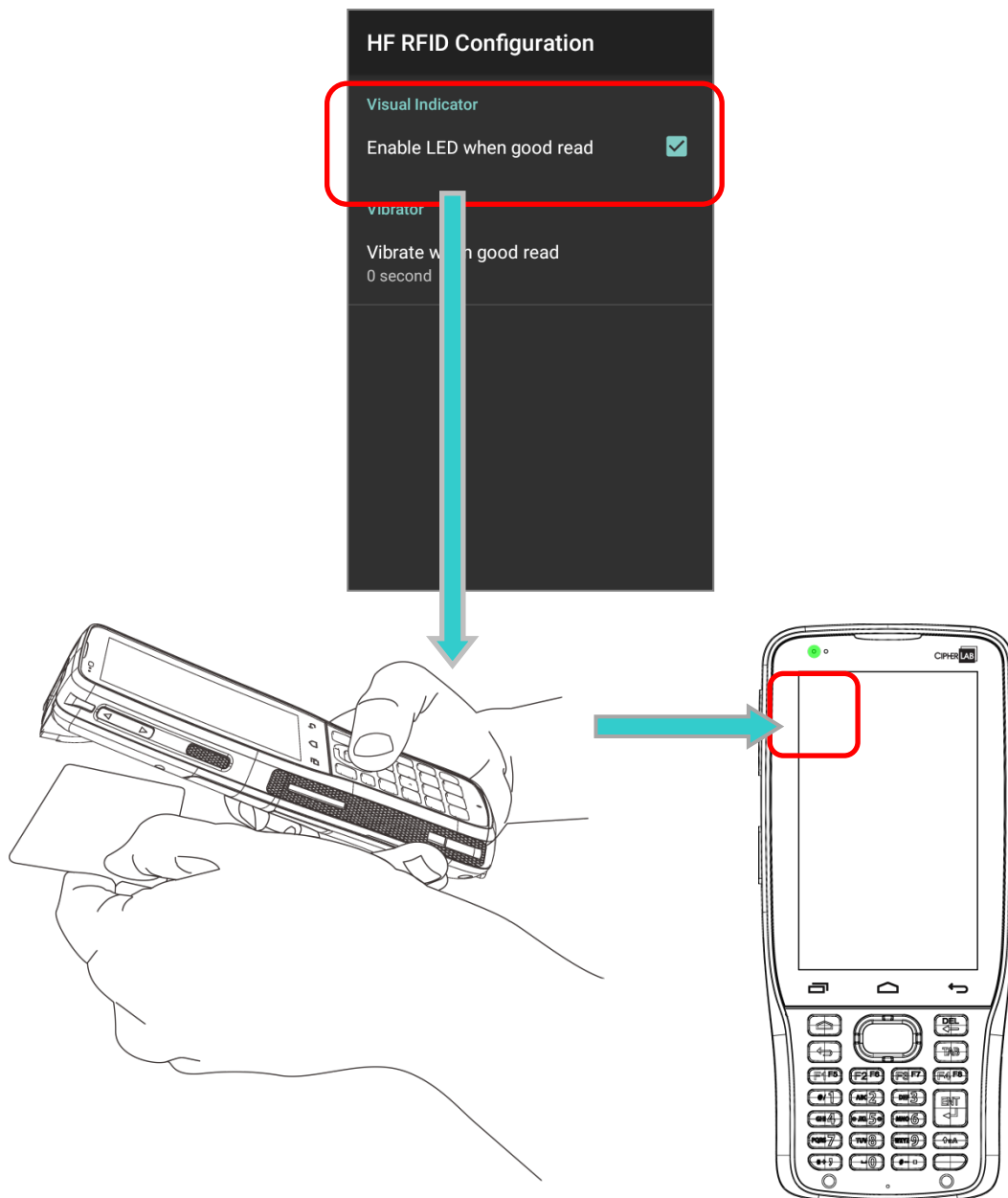


## 2.3 NOTIFICATION SETTINGS

Except of notification sound for “good read”, you can also set LED indicator and vibration as “good read” notification.

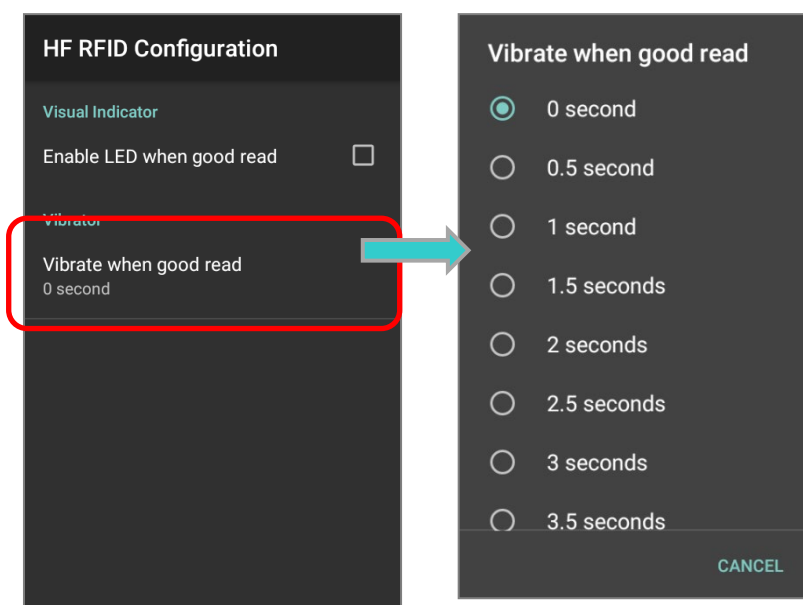
### 2.3.1 VISUAL INDICATOR

Tick the checkbox of “**Enable LED when good read**”, and the LED indicator in the front panel will light up as green for about 1 second to signal “good read” when a NFC tags/RFID chip has been read. The default setting is disable.



### 2.3.2 VIBRATOR

You can set vibration as the notification for successfully reading RFID tags. Tap on “***Vibrate when good read***” and select the vibration period form 0 second to 4 seconds. The default setting is 0 second.



# Chapter 3

## MIFARE

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This chapter introduce about the Mifare settings function of HF RFID Configuration.

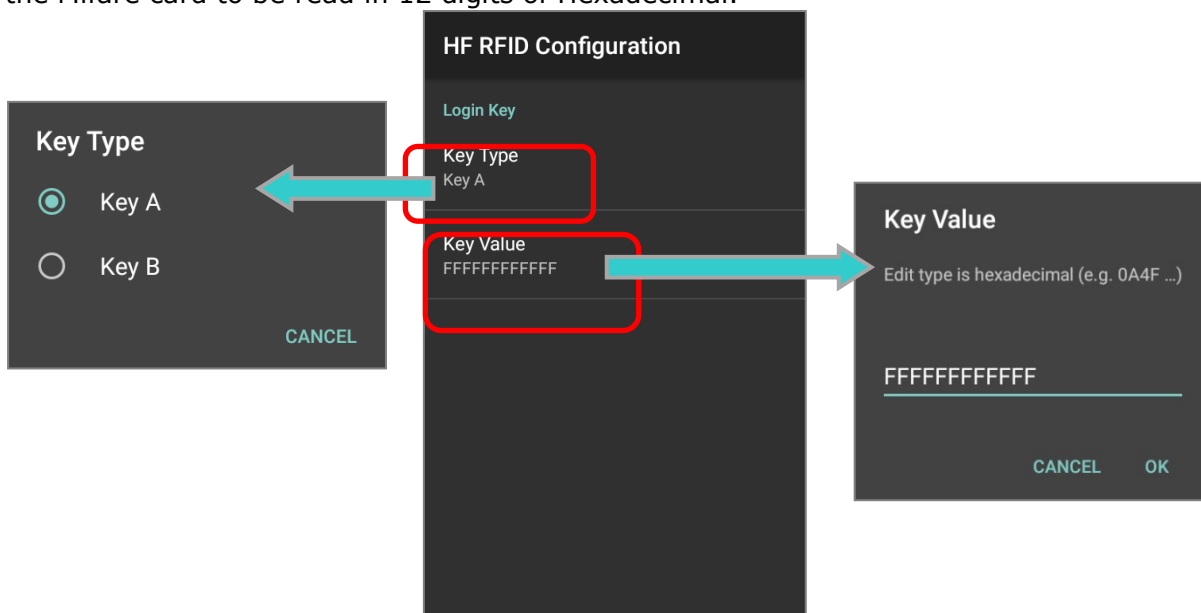
### IN THIS CHAPTER


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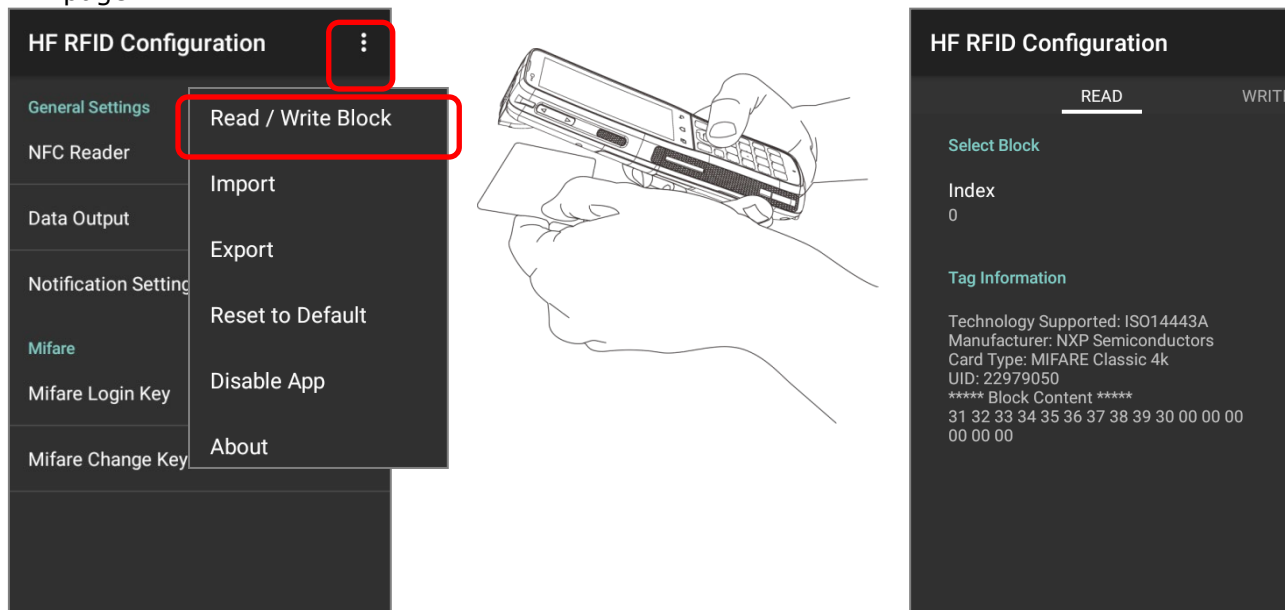
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### 3.1 MIFARE LOGIN KEY

Mifare login key is for authentication into a sector of a mifare card. Tap on "**Key Type**" to select from **Key A** and **Key B**, and then tap on "**Key Value**" to input the correct key value of the Mifare card to be read in 12 digits of Hexadecimal.



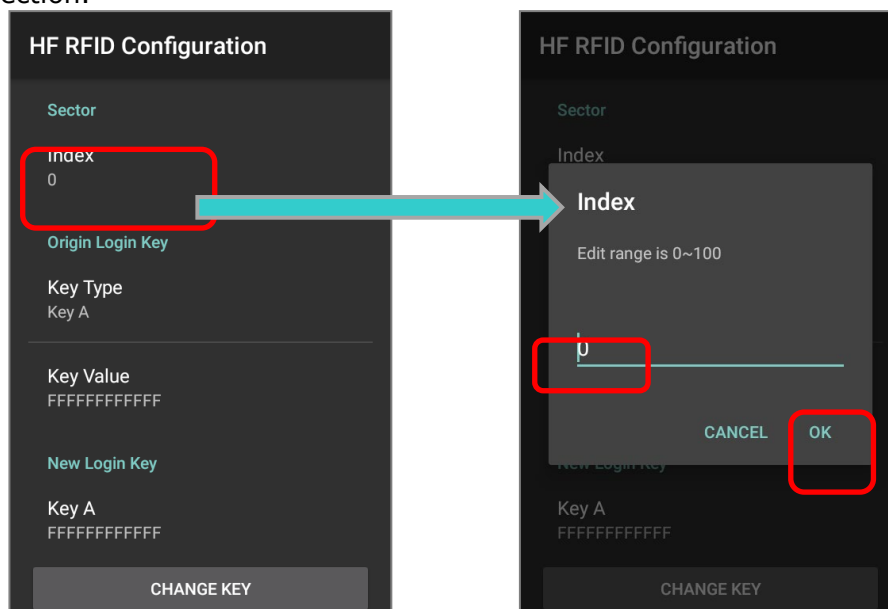
Tap on the more button  on the action bar to open **More Settings menu**, and select "**Read / Write Block**". Put the Mifare card close to the NFC detection area of your device to read it, and the information will be shown under "**Tag Information**" in "**Read / Write Block**" page.



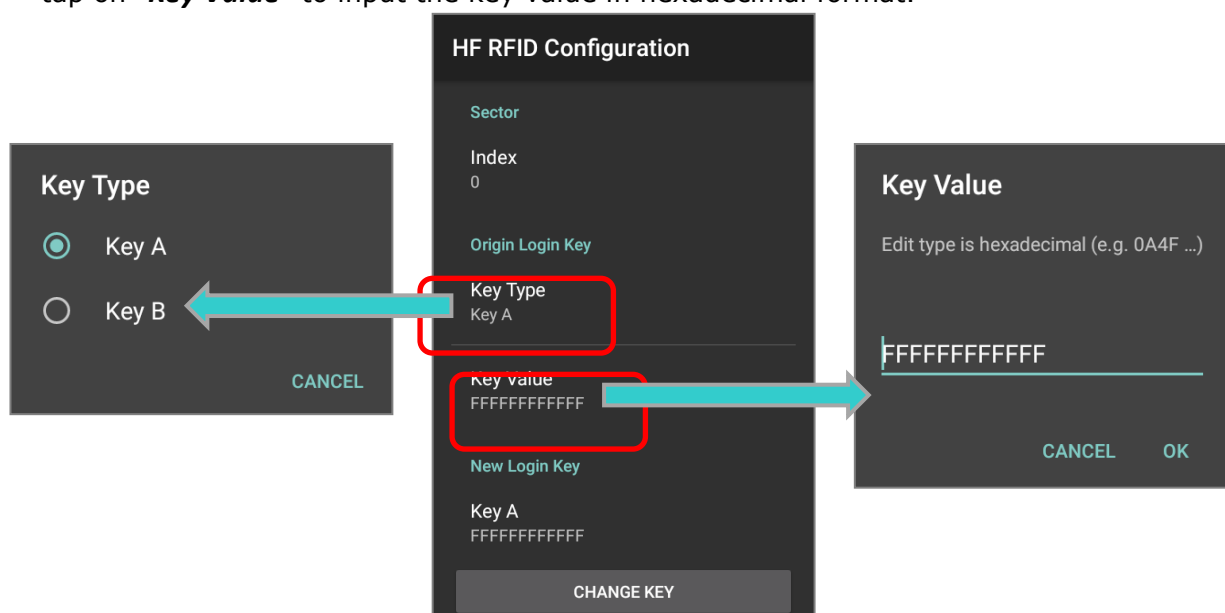
## 3.2 MIFARE CHANGE KEY

**"Mifare Change Key"** is for changing the Mifare login key. Tap on **"Mifare Change Key"** under **"Mifare"** in main screen, and follow the steps to change the login key:

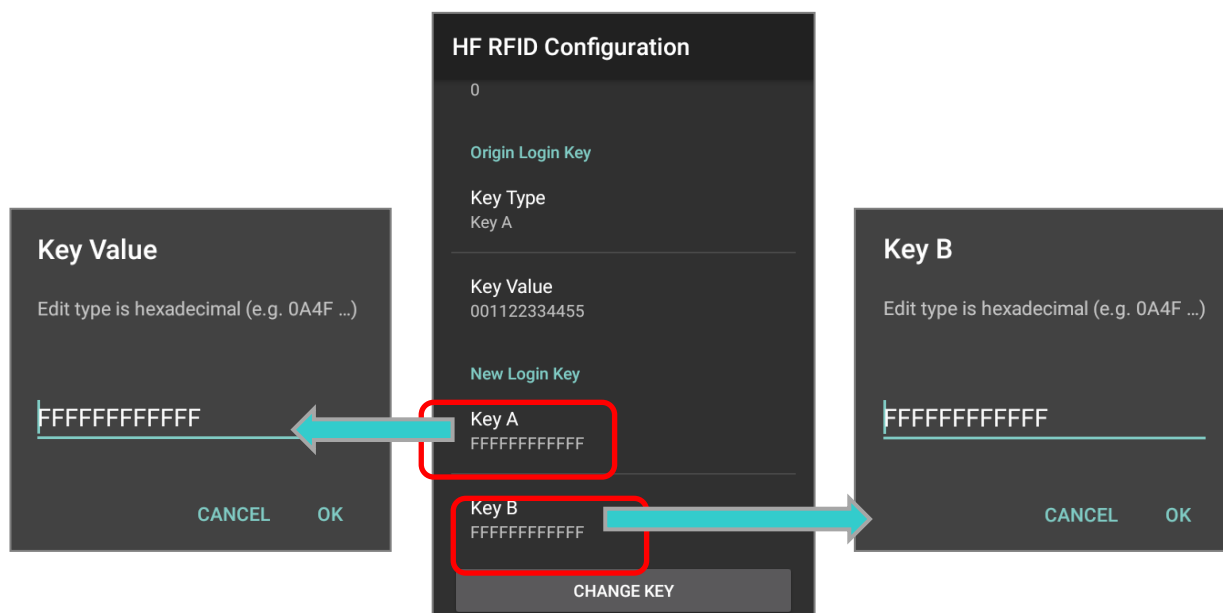
- 1) Tap on **"Index"** and input the sector trailer to be authenticated. Tap on **"OK"** to confirm your selection.



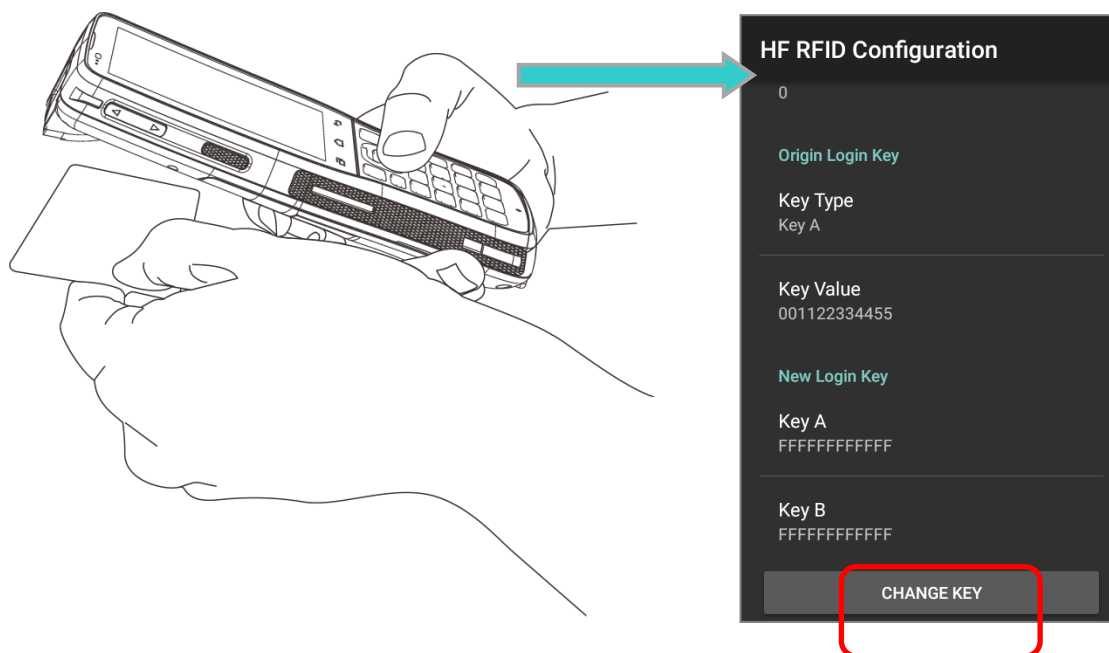
- 2) In **"Origin Longin Key"** part, tap on **"Key Type"** to select from Key A and Key B, and then tap on **"Key Value"** to input the key value in hexadecimal format.



- 3) For **"New Login Key"** part, respectively input new key value in hexadecimal format for Key A and Key B. Please make sure that the new key value you input is valid.



- 4) Put the Mifare chips close to the NFC detection area of your device, make sure it could be read by your device, and then tap on "**CHANGE KEY**" to change the login key.



## Chapter 4

### MORE SETTINGS

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This chapter gives the instruction about the functions on the More Settings Menu which delivers advanced settings including writing data to the NFC tags and RFID compatible chips, exporting and importing settings to/ from your device internal storage, resetting the setting, disabling **HF RFID Configuration**, and the application version.


#### IN THIS CHAPTER

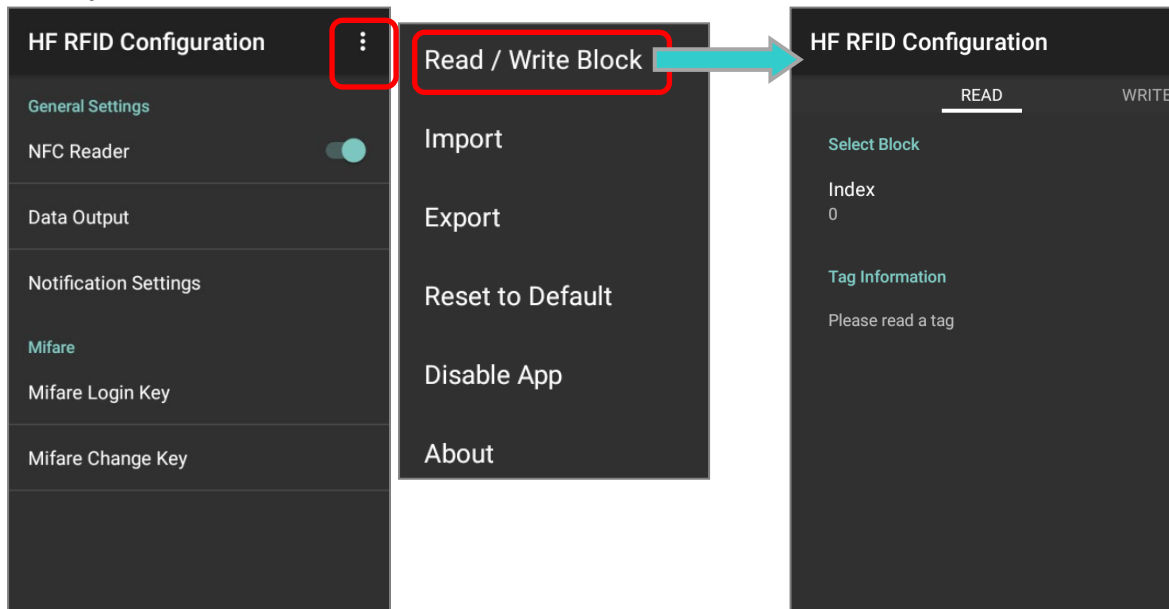
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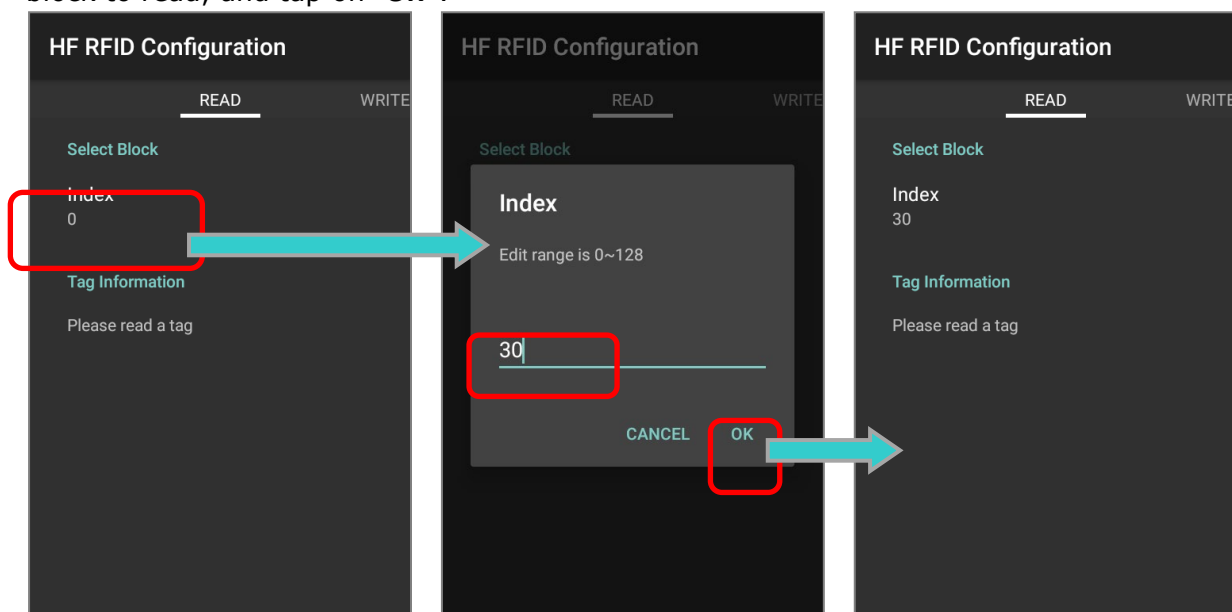
## 4.1 READ / WRITE BLOCK

### READ

Tap on the more button  on the action bar to open **More Settings menu**, and select **"Read / Write Block"**.

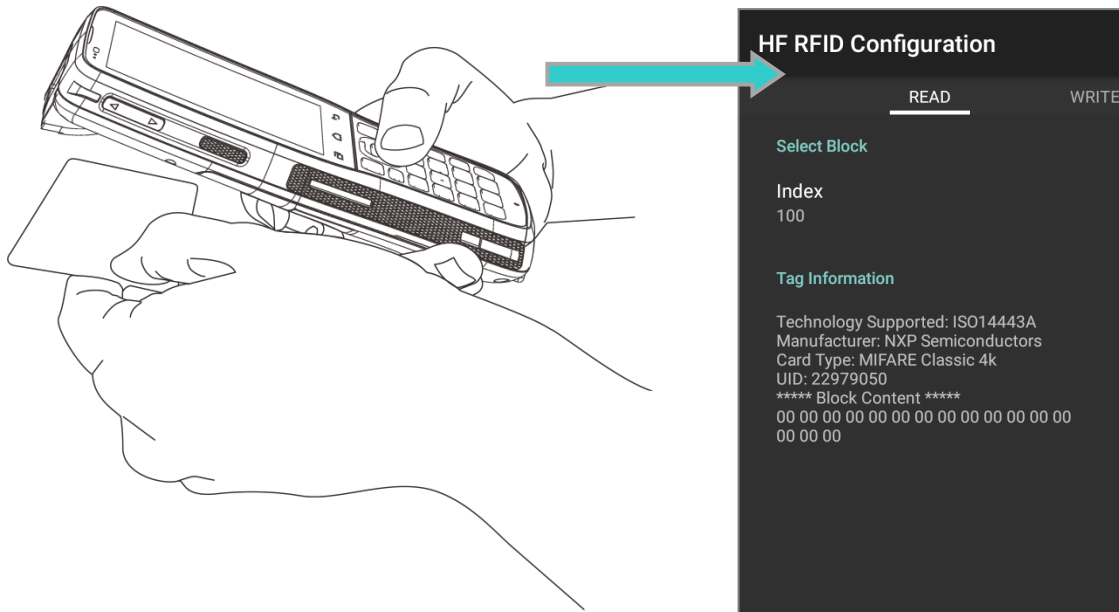


To read NFC tags and RFID chips, please tap on **"Index"** and input the number to select the block to read, and tap on **"OK"**:



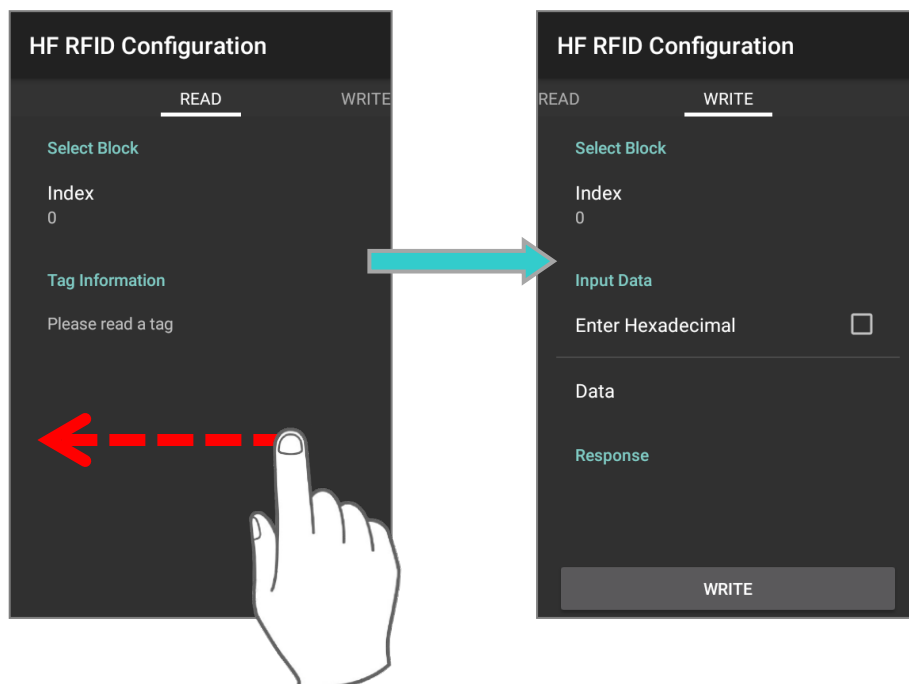


Put the NFC tags or RFID chips close to the NFC detection area of your device to read it, and the tag information will be shown:

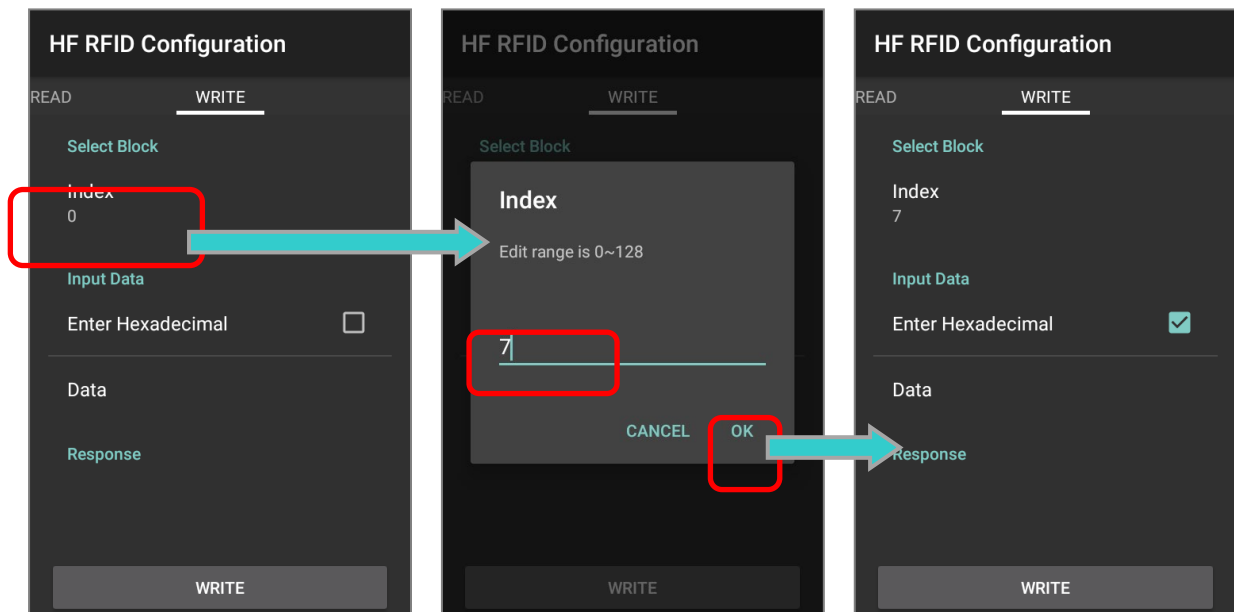


## WRITE

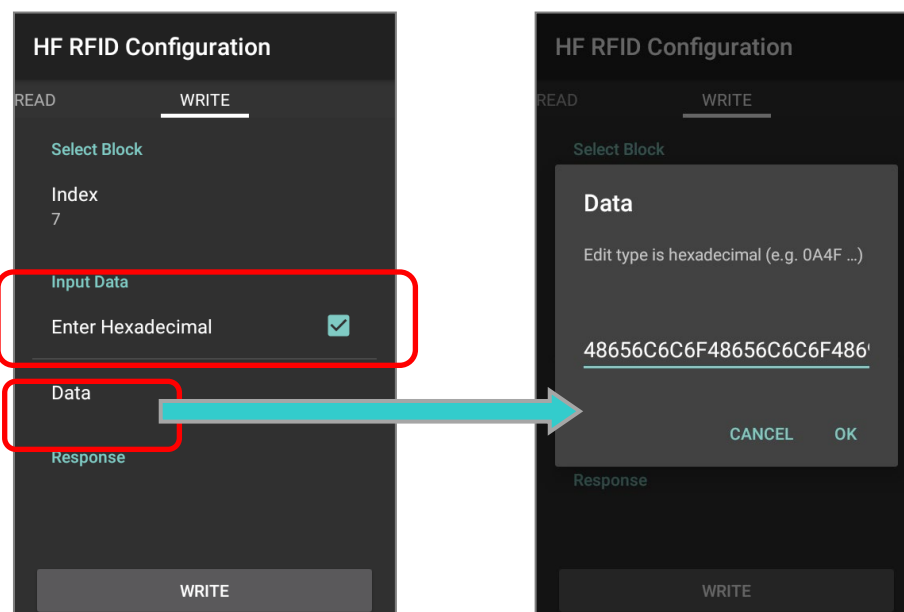
To write data to NFC tags and RFID chips, please enter "**Read / Write Block**" page, and slide leftward to "**WRITE**" tab page:



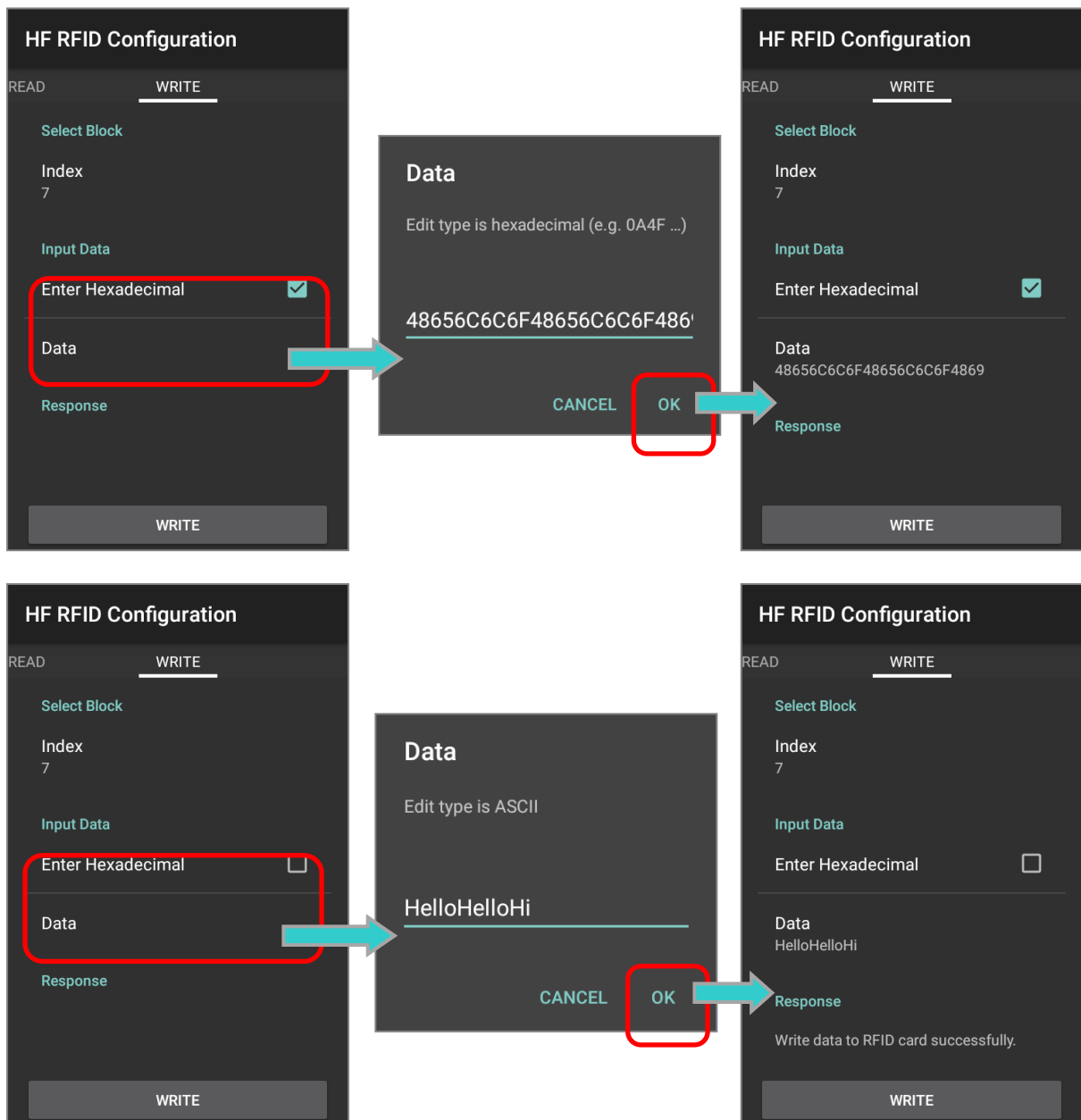
In “**WRITE**” tab page, tap on “**Index**” and input the number to select the block to be written, and tap on “**OK**”:



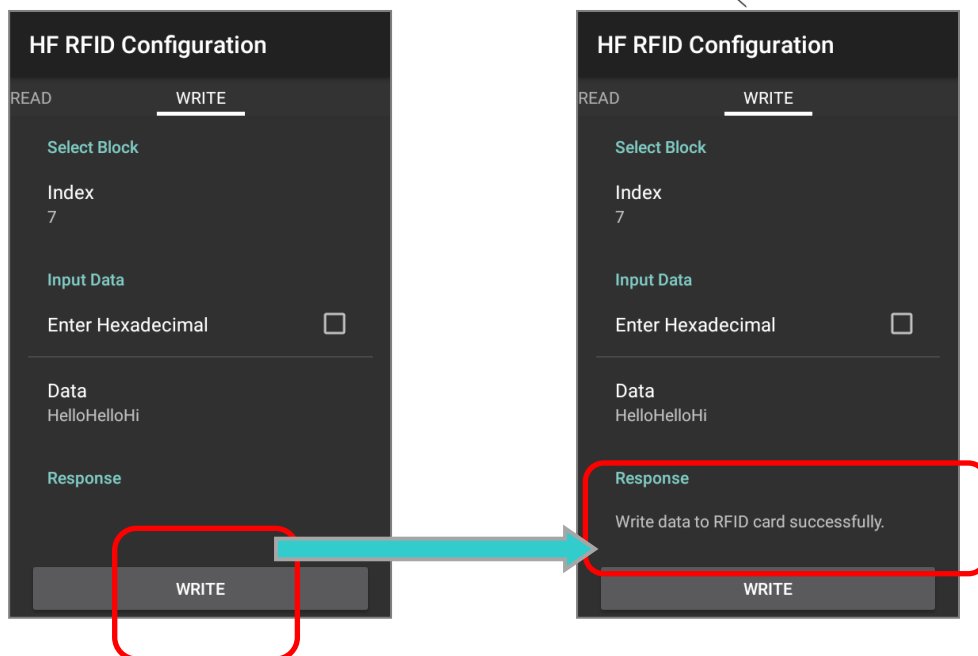
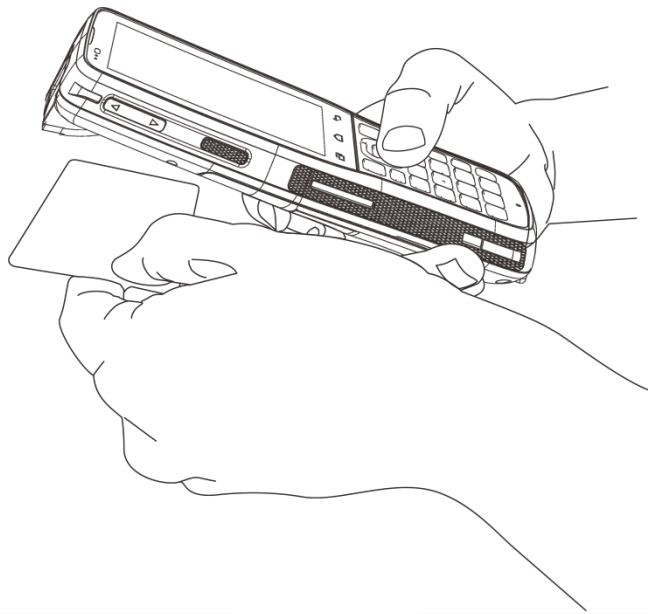
Select whether enabling “**Enter Hexadecimal**” by ticking or unticking the checkbox, and tap on “**Data**” to input the data to be written in the block:



Please note that the input data type should be Hexadecimal if "**Enter Hexadecimal**" is enabled while it should be ASCII if "**Enter Hexadecimal**" is disabled:




Put the NFC tags or RFID chips close to the NFC detection area of your device, make sure it is read by your device, and then tap on "**Write**" to write the data you just input to the block you select.

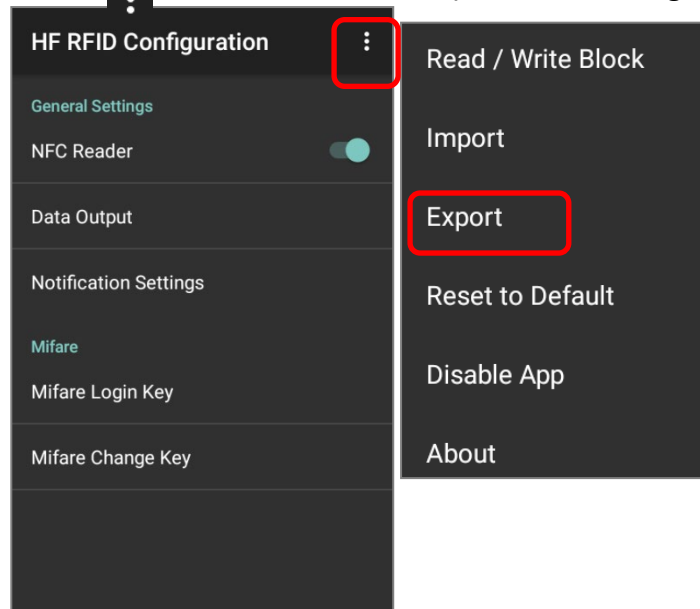


## 4.2 EXPORT & IMPORT

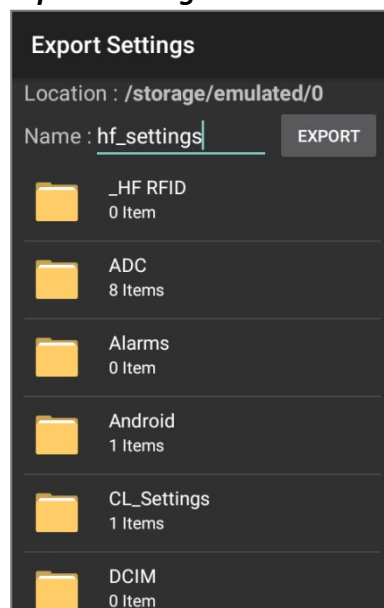
### EXPORT

You can export all your settings of **HF RFID Configuration** to your device internal storage (**/storage/emulated/0**) by tapping on "**Export**":

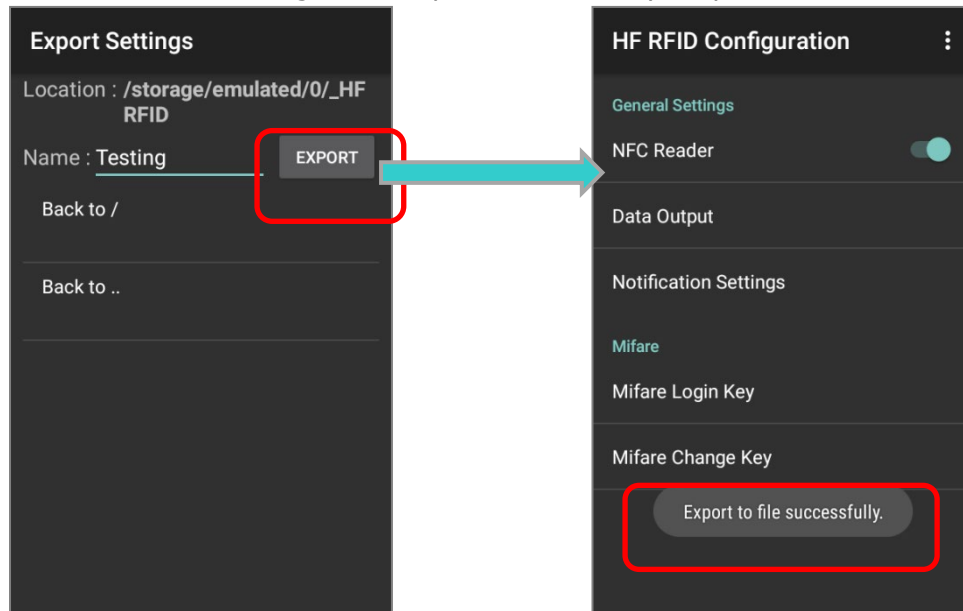
- 1) Tap on the more button  on the action bar to open **More Settings menu**:



- 2) Tap on "**Export**" and the **Export Settings** screen shows up.




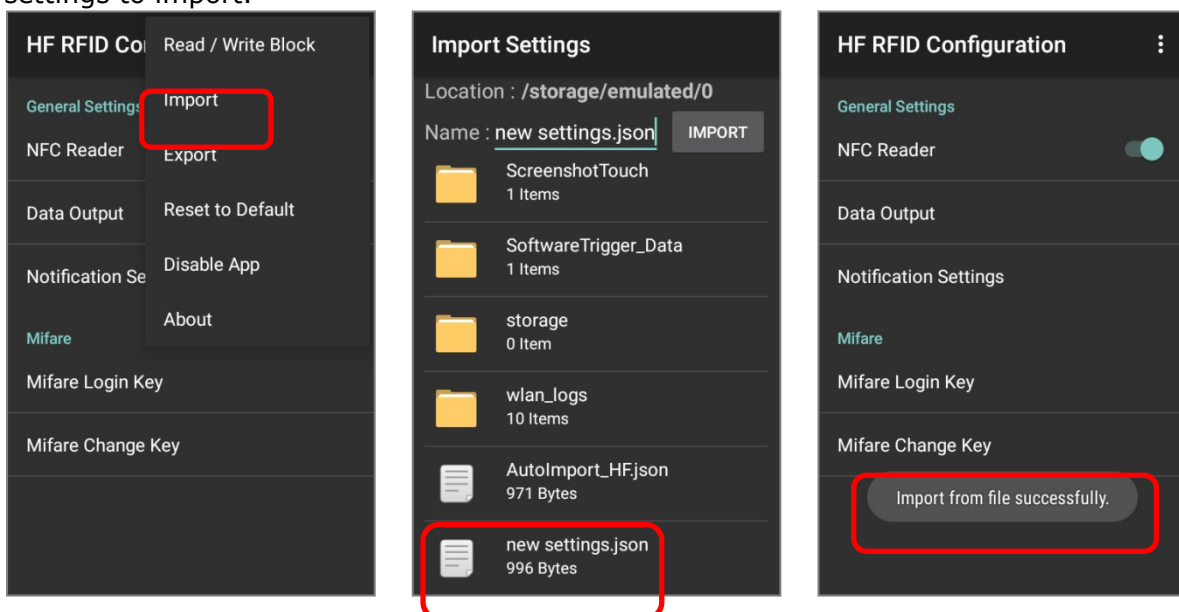
3) Enter a file name and designate the path if necessary. Tap on “**EXPORT**” to save.



Note: Your exported settings will be saved as a .json file.

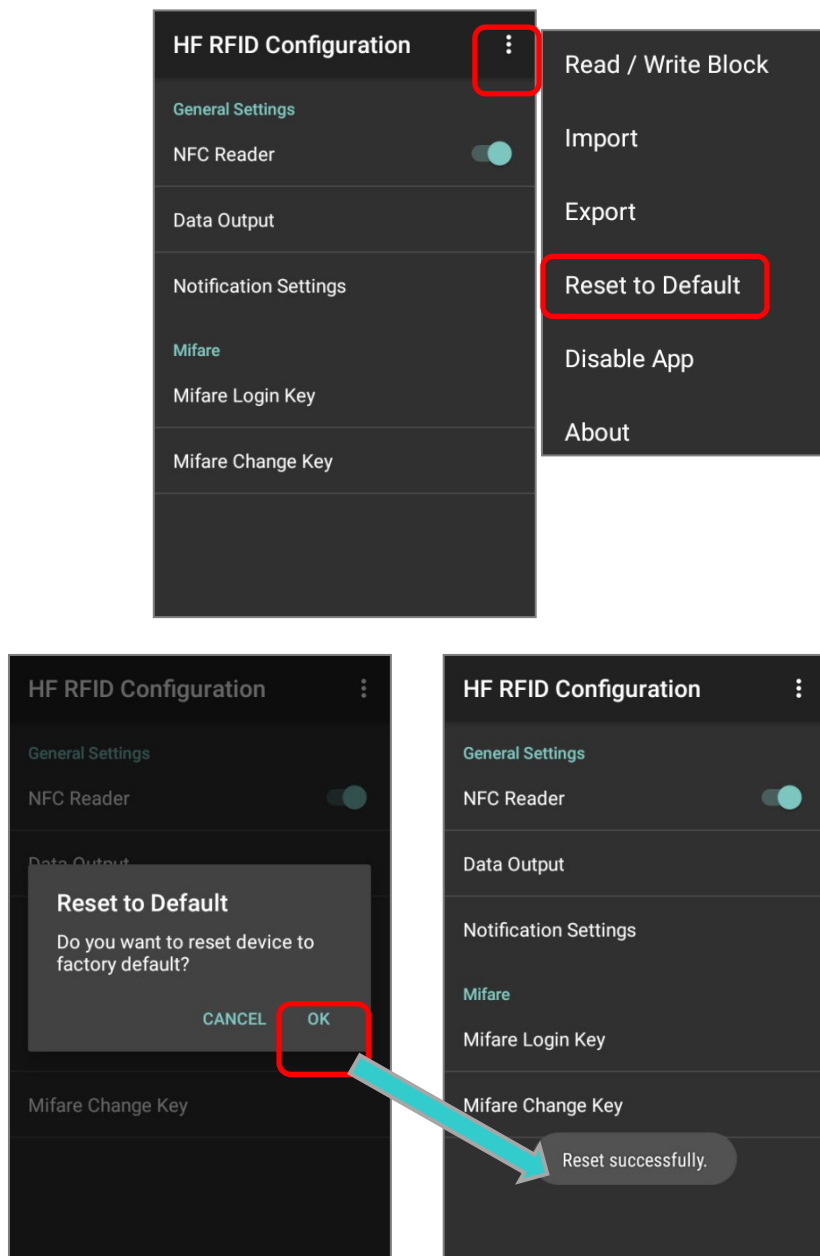
### IMPORT

To import the settings, tap the more button  on the right side of the action bar then tap “**Import**”. The “**Import Settings**” page shows up, select the .json file that contains your settings to import.



### 4.3 RESET TO DEFAULT

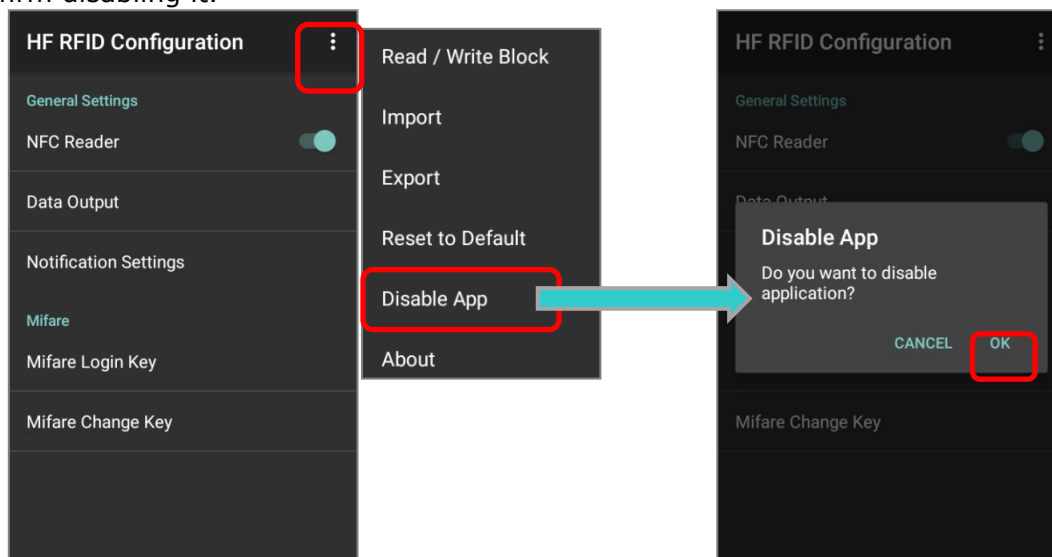
Tap on "**Reset to Default**" to restore the default settings. Confirm by tapping on "**OK**" in the pop-up window:



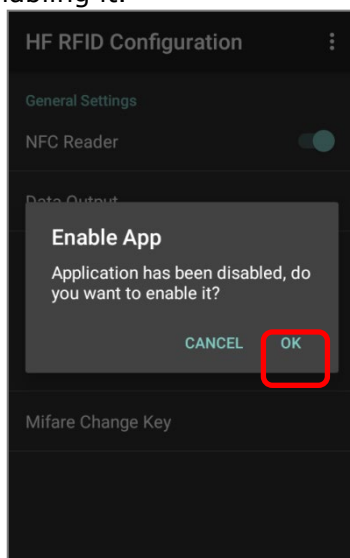
## 4.4 DISABLE APP

For the very first time you launch **HF RFID Configuration**, you have to confirm enabling it. Once you enable **HF RFID Configuration**, the NFC reader works as what you set in **HF RFID Configuration**, even if **HF RFID Configuration** is not launched.

By tapping on "**Disable App**", **HF RFID Configuration** will be disabled and its settings will not take control of NFC reader. **HF RFID Configuration** will automatically close right after you confirm disabling it.



To enable the app again, please go to **App Drawer (All Applications)**, tap on the icon , and tap on "**OK**" to confirm enabling it.





## 4.5 ABOUT

Tap on "**About**" to show the version information of HF RFID Configuration.

