

# Android SDK

## User Guide

*Barcode Demo App*  
*Ver. 1.04.00*



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Ver.1.02.00	2018/10/01	1. Updated the contents of barcode scanner setting.
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# 1. About this guide

## ■ Introduction

This guide provides technical information to use demo application which is included in Apulsetech Android SDK. Demo application is provided for references and better understanding of functions that how they are working and in what way it's coded by using API that SDK provides.

In each chapter, there are full details of how to control RFID and barcode functions that are included in demo app. Also, it explains the control flow and the execution result of each function.

① **NOTE:** The contents in this documents can be updated anytime without notice. Please contact with distributor or sales headquarter in your region to keep SDK and documents updated.

## ■ Notational Conventions

- A. The last changes are in **green** letters.
- B. The cautions are in **red** letters.
- C. The notes are in **blue** letters.

## ■ Related Documents.

- A. Barcode SDK Symbology developer guide  
Developer\_Guide-Barcode\_SDK\_Symbology-SDKUGD-004-EN-V10000-20180730

## 2. Supported Devices

Below devices which are manufactured by **Apulsetech** can execute demo applications included in the SDK.

- **α811** Android Handheld Reader.



### 3. Prerequisites

With this guide to use demo app, you should prepare following prerequisites.

- Supported devices which are listed in the chapter 2.
- Demo app which already installed in  $\alpha$ 811 or Apulsetech Android SDK.
  - Until December 26, 2018 available latest version
  - Demo App: BarcodeDemo\_V1.1.8\_20181224.apk
  - SDK: APULSETECH-a811-Android\_Barcode\_SDK\_v1.15.00\_20181226

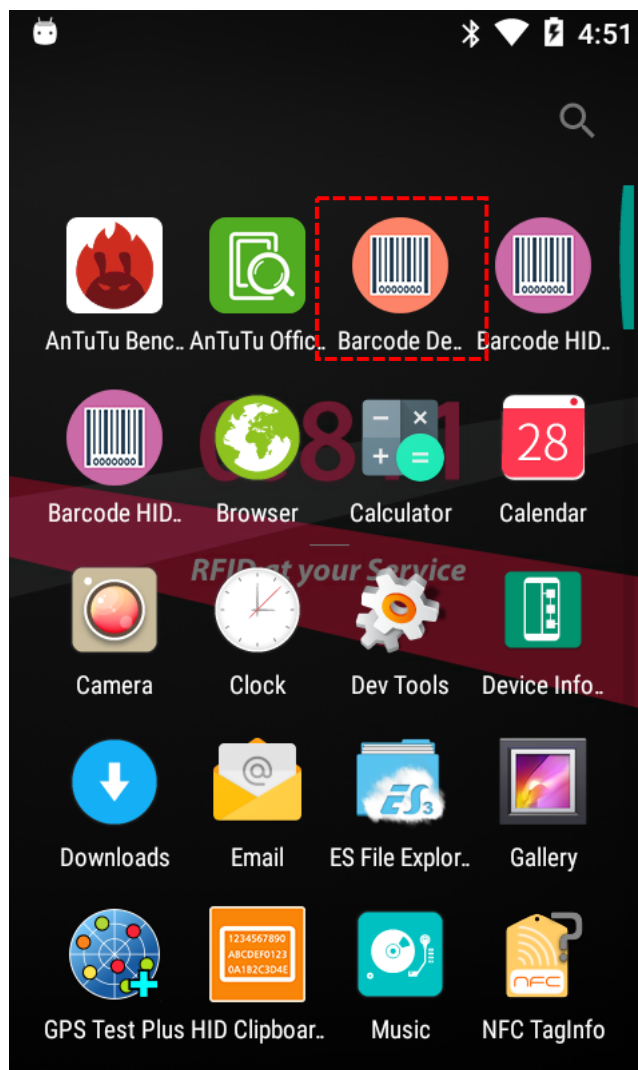
## 4. How to operate Demo apps

**Apulsetech** Barcode/RFID handheld reader is provided with preinstalled demo apps. If the device doesn't have them, you can install demo app apks from Android SDK by yourself.

Barcode demo app can be found in app list as Figure 1 shown below. It can be used to test or demonstrate each function of barcode scanner.

### 1) Run barcode demo app

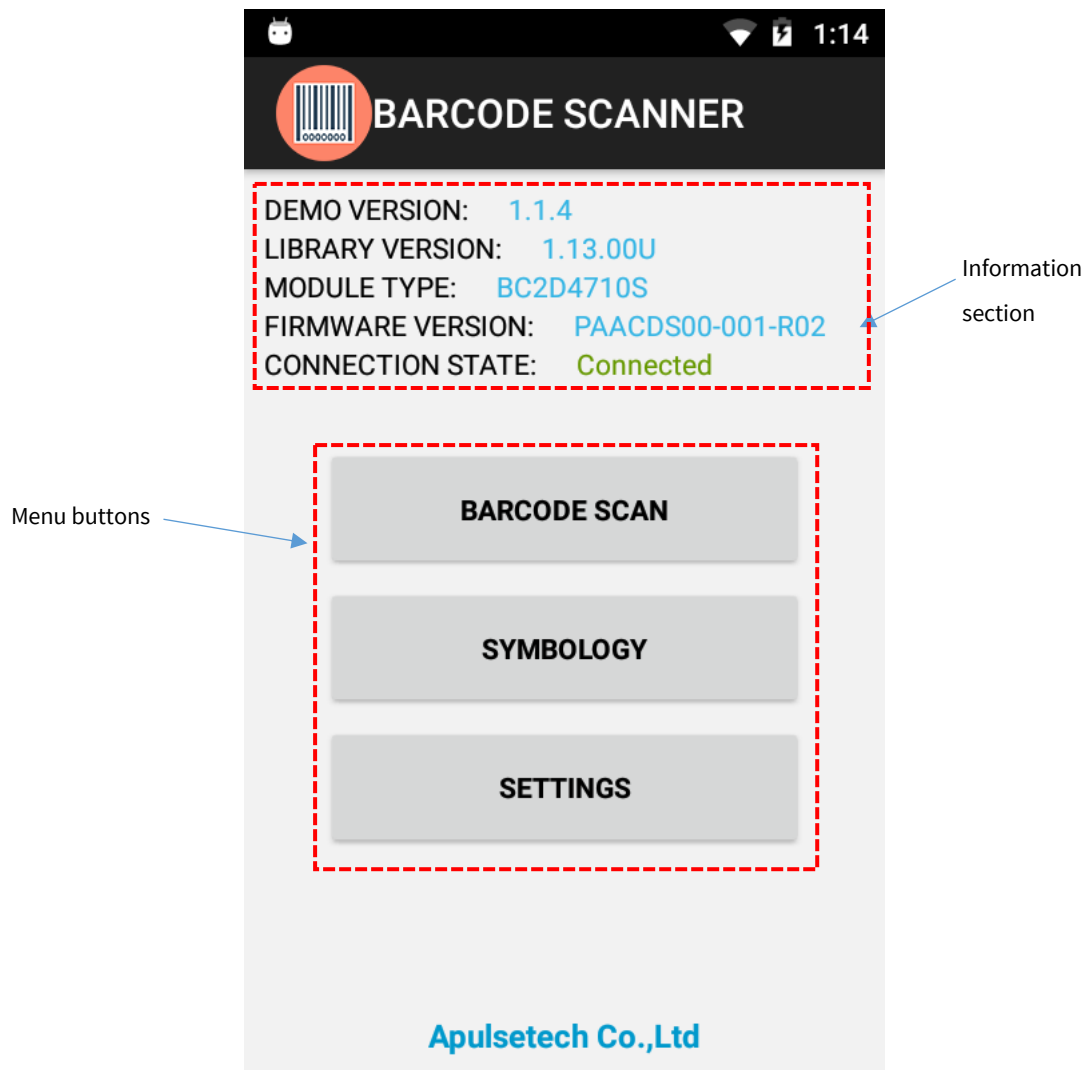
Run barcode demo app from application list, refer to Figure 1. When the app opens, the main screen of barcode scanner shows up as Figure 2.



**Figure 1. Barcode demo app.**

## 2) Barcode scanner function

Figure 2 shows the main screen of barcode reader. The main screen consists of 'information section' and 'menu buttons'.



**Figure 2. Main screen of barcode scanner.**

For detailed descriptions of each part, refer to the followings.

- ✓ **Information section**  
Indicate information of demo app and module.

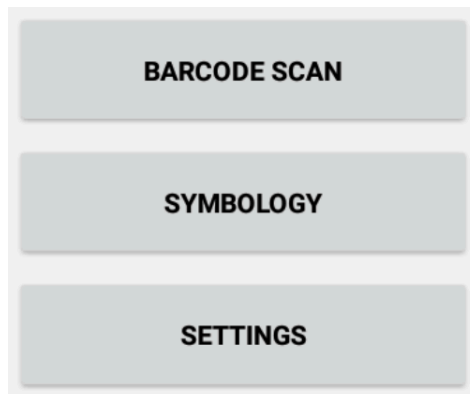
DEMO VERSION: 1.1.4  
LIBRARY VERSION: 1.13.00U  
MODULE TYPE: BC2D4710S  
FIRMWARE VERSION: PAACDS00-001-R02  
CONNECTION STATE: Connected

**Figure 3. Information section.**

- DEMO VERSION  
Version information of demo app.
- LIBRARY VERSION  
Version information of demo app SDK library.
- MODULE TYPE  
Type information of barcode scanner module.
- FIRMWARE VERSION  
Current connection status of barcode scanner module.

✓ **Menu buttons**

Menu for barcode scanning demonstration and scanner function setting.



**Figure 4. Menu buttons.**

- BARCODE SCAN  
Demonstrate barcode scanning.
- SYMBOLOGY  
Set barcode symbologies.
- SETTINGS  
Set detailed control options of barcode scanner.

### A. Barcode Scan

Click 'BARCODE SCAN' button from the barcode main screen and Figure 5 appears. This screen consists of 'Barcode output section', 'Information indicators', 'Setting options' and 'Operation buttons'.

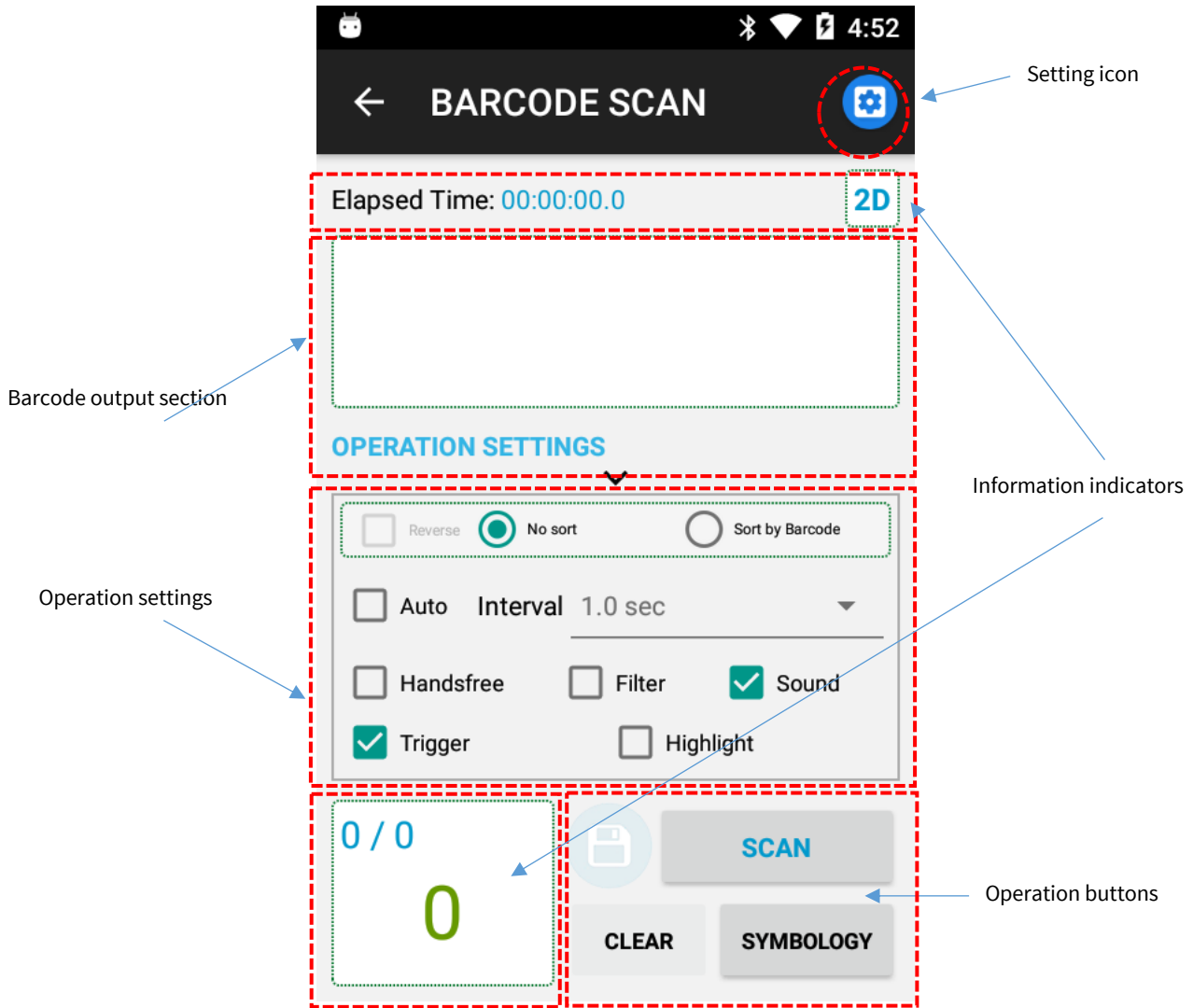
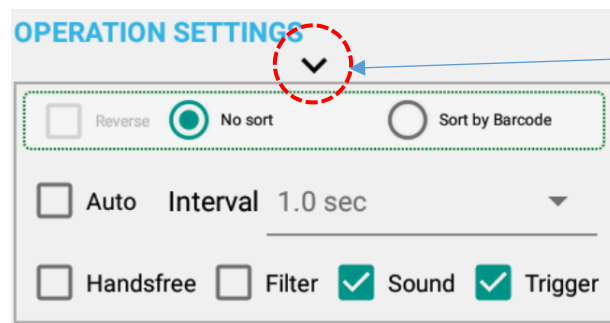


Figure 5. Barcode scanner screen.

For detailed descriptions of each part, refer to the followings.

- ✓ **Setting icon**  
Open barcode setting screen.
- ✓ **Barcode output section**  
Show scanned barcode data.
- ✓ **Operation settings**  
Set barcode operating options.  
Please refer to the details about the options from below Table 1.



Show/hide operation settings

**Figure 6. Operation settings.**

Item	Description
Reverse	Descending sort.
No sort	Do not sort.
Sort by Barcode	Sort by barcode data.
Auto	Performs scanning at Intervals of specified time. This option cannot be selected with handsfree mode at the same time. If you select Auto, Handsfree mode will be automatically unselected.
Handsfree	Automatic barcode scanning function based on motion-sensing. To stop the Handsfree mode while scanning, press SCAN button on the screen or physical button.
Filter	Filters duplicated barcode data
Sound	Play sounds per barcode scanning result.
Trigger	<ul style="list-style-type: none"> <li>- When checked Scanning starts when pressing scanner (physical key) key and it stops when pressing the key one more time.</li> <li>- When unchecked Scanning starts when pressing scanner key and it stops when releasing the key.</li> </ul>
Highlight	Highlight the latest tag data inventoried.

**Table 1. operation setting items.**

✓ **Information indicators**

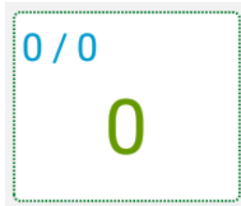
Indicate barcode scan performance and module information.

Elapsed Time: 00:00:00.0

2D

**Figure 7. Elapsed time and scanner type information.**

- Elapsed time  
Elapsed time after scanning starts.
- Scanner type  
1D or 2D.

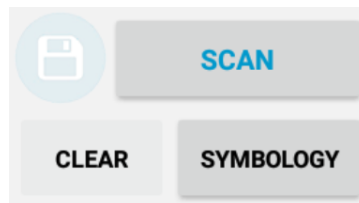


**Figure 8. Scan result counter.**


- Scan result information
  - Above '0 / 0': Decoding success count / Total decoding count
  - Center '0': Decoding success count without filtering option, none duplicated decoding success count with filtering option.

✓ **Operation buttons**

Start/stop barcode scanning, symbology setting, clear data on the screen.

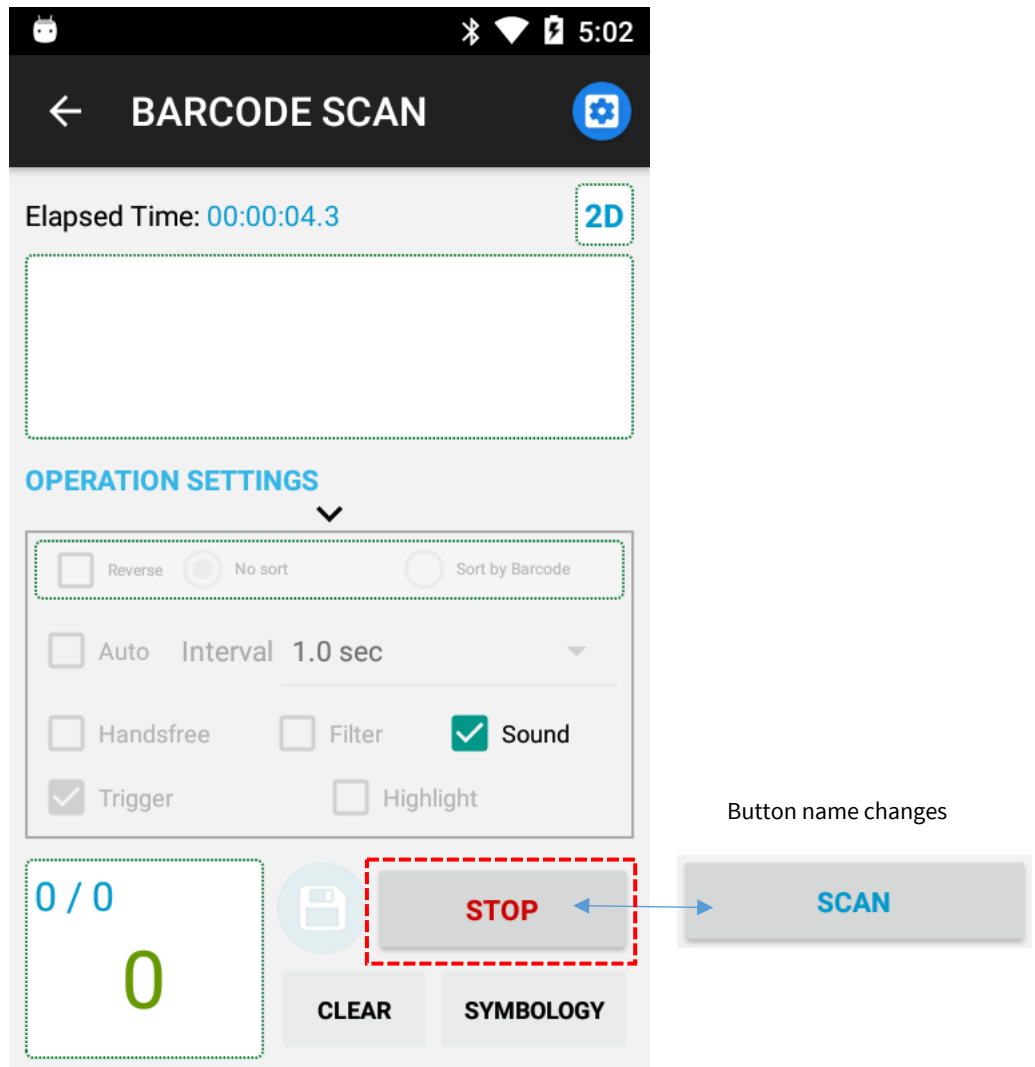


**Figure 9. Operation button.**

- 'Save to excel file' icon   
Export barcode data to excel file.
- SCAN  
Start/stop barcode scanning.
- CLEAR  
Remove barcode data on the screen.
- SYMBOLOGY  
Set and select symbologies to scan and detailed setting per each barcode.

① **Start/Stop Scan**

When press 'SCAN' button, scanning starts and scanner beam comes out. At the same time, the button changes as 'STOP'. When press 'STOP' button, scanning stops and scanner beam is off to stop. At the same time, the button changes as 'SCAN'.



**Figure 10. Start/stop scan.**

When Barcode scanning is succeeded, with success sound (if sound is checked) and barcode data is on the screen. If scanning failed or time out, fail sound comes and no barcode data on the screen.



## ② Barcode filtering

To avoid showing the same barcode data on the screen, check 'Filter' option.

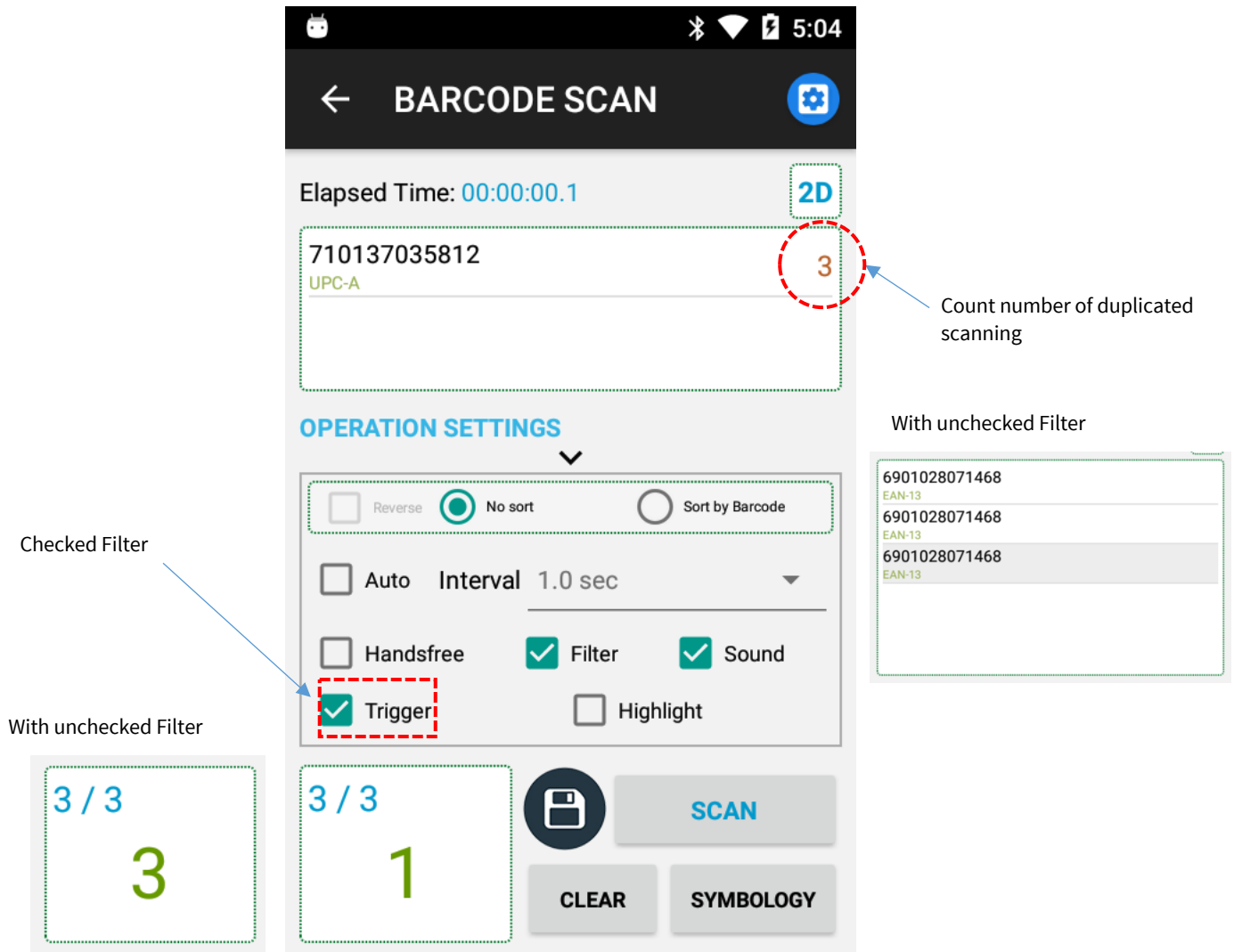


Figure 11. Scanned barcode data on the screen with filter checked or unchecked.

When checked 'Filter', one barcode data shows on the screen with multiple scanning and shows count numbers of scanning the barcode. With unchecked "Filter", the same barcode data shows repeatedly on the screen as 'With unchecked Filter' part of Figure 11.

### ③ Barcode data display

Figure 12 shows scanned barcode data. The data has barcode number, type and the count number of scanning the same barcode. The count number of repeated scanning can be showed when filter option enabled.

From the Figure 12 shows that barcode number is “4902778160725”, type is “EAN-13” and scanned the same barcode 3 times.

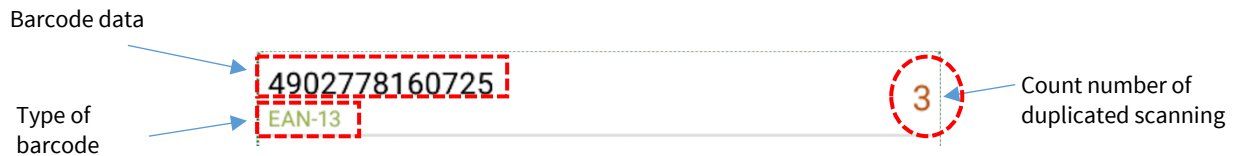


Figure 12. Barcode data display format.

### ④ Supported barcode type list

Table 2 shows supported barcode type list in demo app. Some barcode types are not supported depending on the scanner module installed on the device. Please check the supported barcode type from symbology setting.

```
AUSTRALIAN_POST("Australian Post"),
AZTEC_CODE("Aztec Code"),
BOOKLAND_EAN("Bookland EAN"),
BRITISH_POST("British Post"),
CANADIAN_POST("Canadian Post"),
CHINA_POST("China Post"),
CODABAR("Codabar"),
CODABLOCK_F("Codablock F"),
CODA_BLOCK_A("Codablock A"),
CODE11("Code 11"),
CODE128("Code 128"),
CODE_16K("Code 16K"),
CODE32("Code 32"),
CODE39("Code 39"),
CODE49("Code 49"),
CODE93("Code 93"),
COM_CODE("EAN-UCC Composite Code"),
COM_CODE_CCAB("Composite CC-A/B"),
COM_CODE_CCC("Composite CC-C"),
D20F5("Discreate 2 of 5"),
DATA_MATRIX("Data Matrix"),
EAN128("UCC/EAN-128"),
EAN13("EAN-13"),
EAN13_COUPON_CODE("EAN-13 with Extended Coupon Code"),
EAN8("EAN-8"),
I20F5("Interleaved 2 of 5"),
IATA("IATA 2 of 5"),
ISBT128("ISBT 128"),
ISBT128_CONCAT("ISBT-128 Concat."),
JAPANESE_POST("Japanese Post"),
KIX_POST("Kix (Netherlands) Post"),
KOREA_POST("Korea Post"),
MACRO_MICRO_PDF("Macro Micro PDF"),
MAXI_CODE("MaxiCode"),
```

```

MICRO_PDF("Micro PDF 417"),
MSI("MSI"),
MULTI_PACKET_FORMAT(""),
OCR("OCR"),
PARAMETER_FNC3("Parameter (FNC3)",
PDF417("PDF-417"),
PLANET_CODE("Planet Code"),
PLESSEY_CODE("Plessey Code"),
POSICODE("PosiCode"),
POSTNET("Postnet"),
QR_CODE("QR Code"),
MICRO_QR("Micro QR"),
R2OF5("Straight 2 of 5"),
RSS("RSS"),
SCANLET_WEB_CODE("Scanlet Webcode"),
TELEPEN("Telepen"),
TLC39("TCIF Linked Code 39"),
TRIOPTIC_CODE("Trioptic Code 39"),
UPCA("UPC-A"),
UPCE("UPC-E"),
VERI_CODE("VeriCode"),
X2OF5("Matrix 2 of 5"),
USPS_4CB_ONE_CODE_INTELLIGENT_MAIL("USPS 4CB One Code Intelligent Mail"),
HANXIN("Han Xin(Chinese-Sensible Code)",
INDUSTRIAL_2OF5("Industrial 2 of 5"),
UPUFICS_POSTAL("UPU FICS Postal"),
NEC_2OF5("NEC 2of 5"),
INFO_MAIL("Info Mail"),
POSTAL_4I("Postal-4i"),
INTELLIGENT_MAIL_BARCODE("Intelligent Mail Bar Code"),
SCODE("S-Code");

```

Table 2. Supported barcode list.

## B. Barcode Symbology Setting

Press 'SYMBOLLOGY' button from the barcode scanner main screen (Figure 2) or press 'SYMBOLLOGY' button from Barcode scan screen (Figure 5) and symbology setting screen appears as below Figure 13.

Symbology setting screen consists of 'Barcode symbology list' and 5 'setting buttons'.

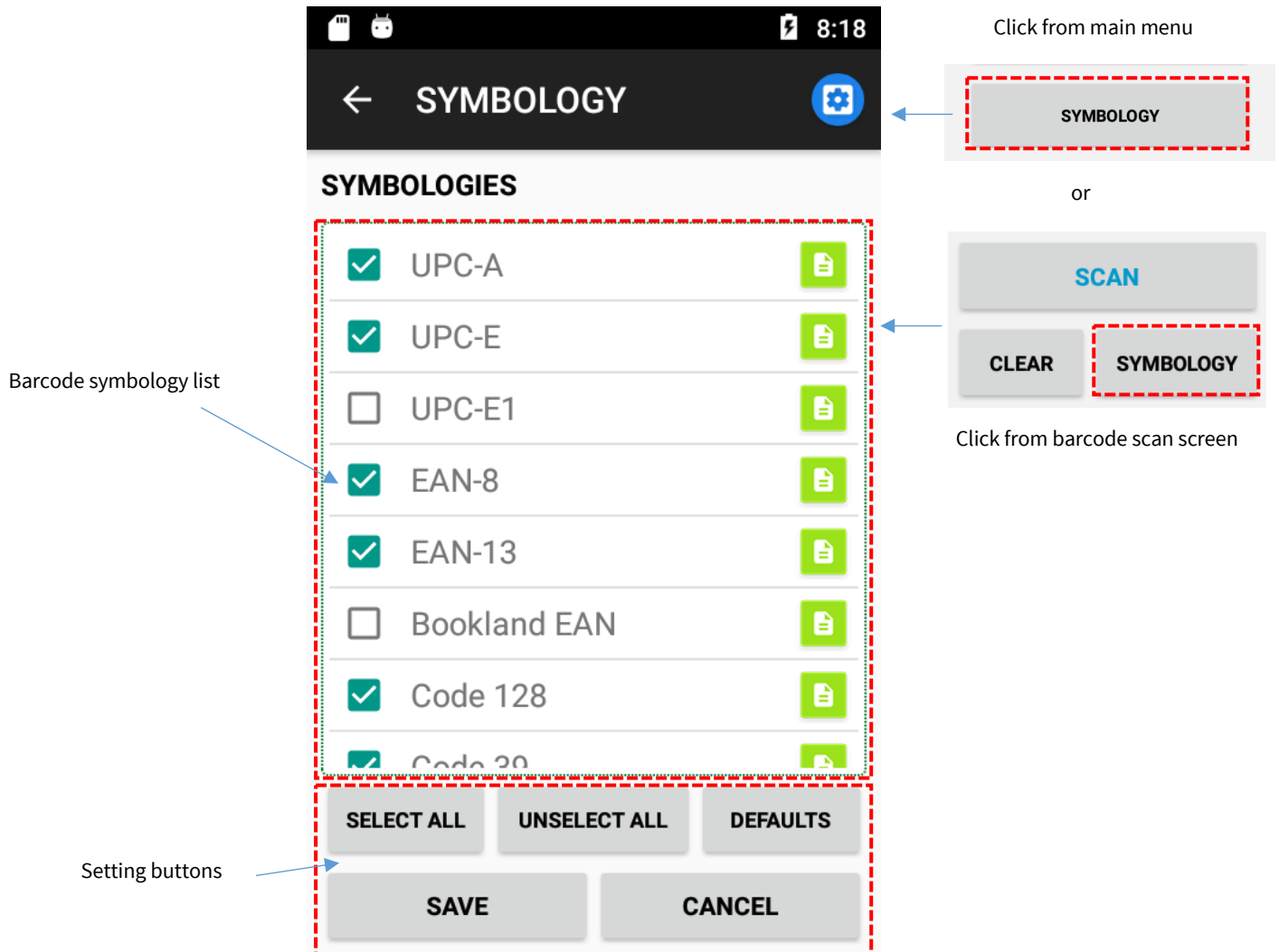










Figure 13. Barcode symbology setting screen.

- ✓ **Barcode symbology list**  
Indicates supported barcode types.  
\* Refer to 'SDK and Barcode SDK symbology guide'.  
\* Barcode type can differ from device and option.

SYMBOLOGIES		
<input checked="" type="checkbox"/>	UPC-A	
<input checked="" type="checkbox"/>	UPC-E	
<input type="checkbox"/>	UPC-E1	
<input checked="" type="checkbox"/>	EAN-8	
<input checked="" type="checkbox"/>	EAN-13	
<input type="checkbox"/>	Bookland EAN	
<input checked="" type="checkbox"/>	Code 128	
<input checked="" type="checkbox"/>	Code 39	

**Figure 14. Supported symbology list.**

✓ **Setting buttons**

Select/unselect symbology, set defaults and save or cancel the changes.

**\* Changes can be applied after saving by pressing “SAVE”**



**Figure 15. Setting buttons.**

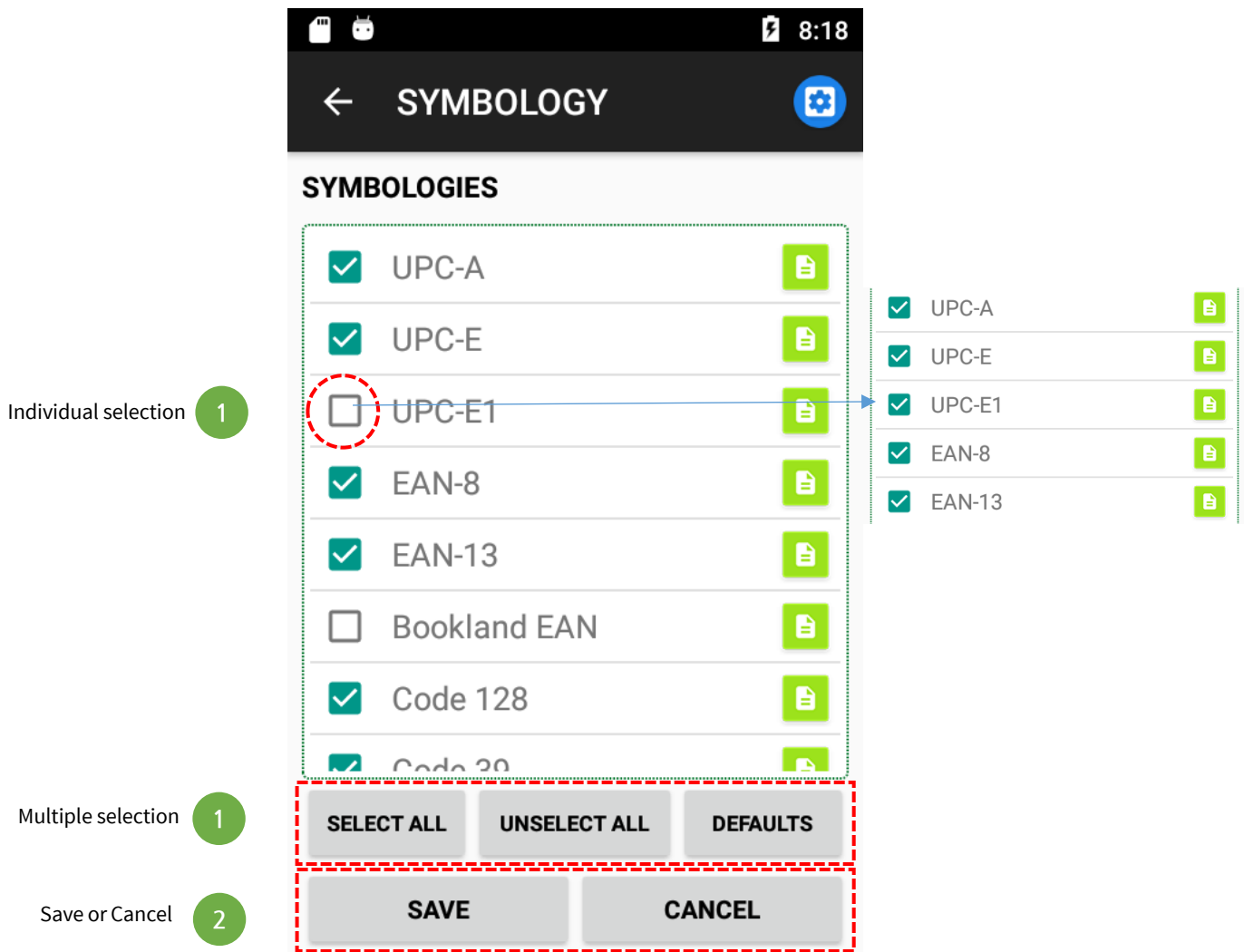
- **SELECT ALL**  
Select all barcode type from the list.
- **UNSELECT ALL**  
Unselect all barcode type from the list.
- **DEFAULTS**  
Select default barcode type.
- **SAVE**  
Save all changes.
- **CANCEL**  
Cancel changes.

① **Set barcode type to scan**

Figure 16 show how to select barcode symbology types in a sequence. You can select them individually or by group with 'SELECT ALL', 'UNSELECT ALL' and 'DEFAULTS' buttons.

For 'DEFAULTS' list, please refer to '[Barcode SDK Symbology Guide](#)'.

After selection, press 'SAVE' to save or 'CANCEL' to cancel and back to previous screen.



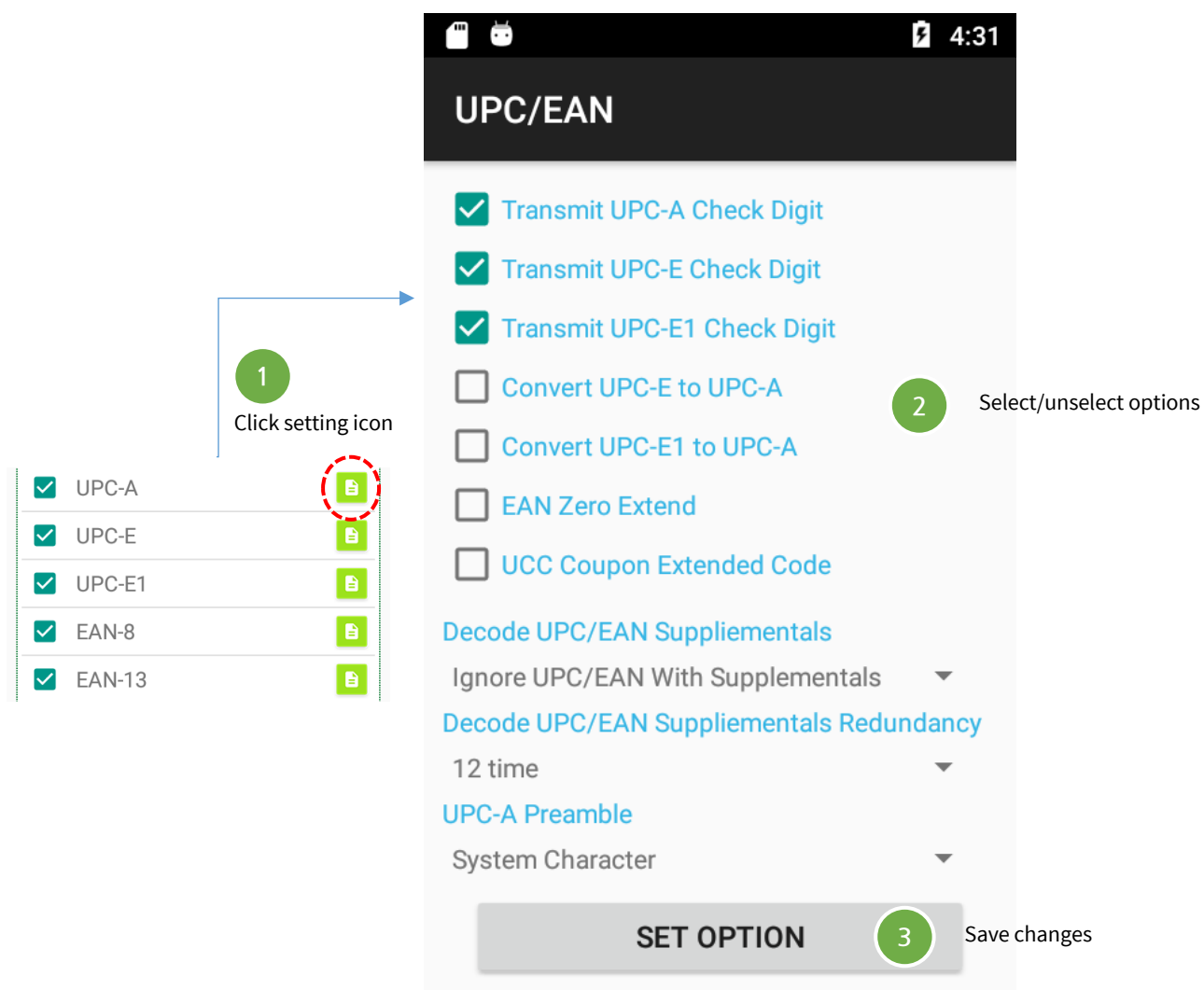
**Figure 16. Barcode symbology setting order.**

② **Set the detailed options per barcode type**

If the barcode Symbology is available for detailed setting, there are green setting icon on the right. When click the green icon, detailed setting screen per each symbology appears.

Setting details are different by scanner module type, please refer to '[Barcode SDK Symbology Guide](#)' or related document list for more specific information.

Select or unselect options and press "SET OPTION" button to save changes.



**Figure 17. Detailed settings of barcode symbology.**

### C. Barcode Scanner Setting

Figure 18 shows barcode scanner setting screen. The screen can be different by scanner module installed in the device you have.

The setting screen consists of 'USER PREFERENCES' for user setting and 'IMAGER OPTIONS' for scanner module setting.

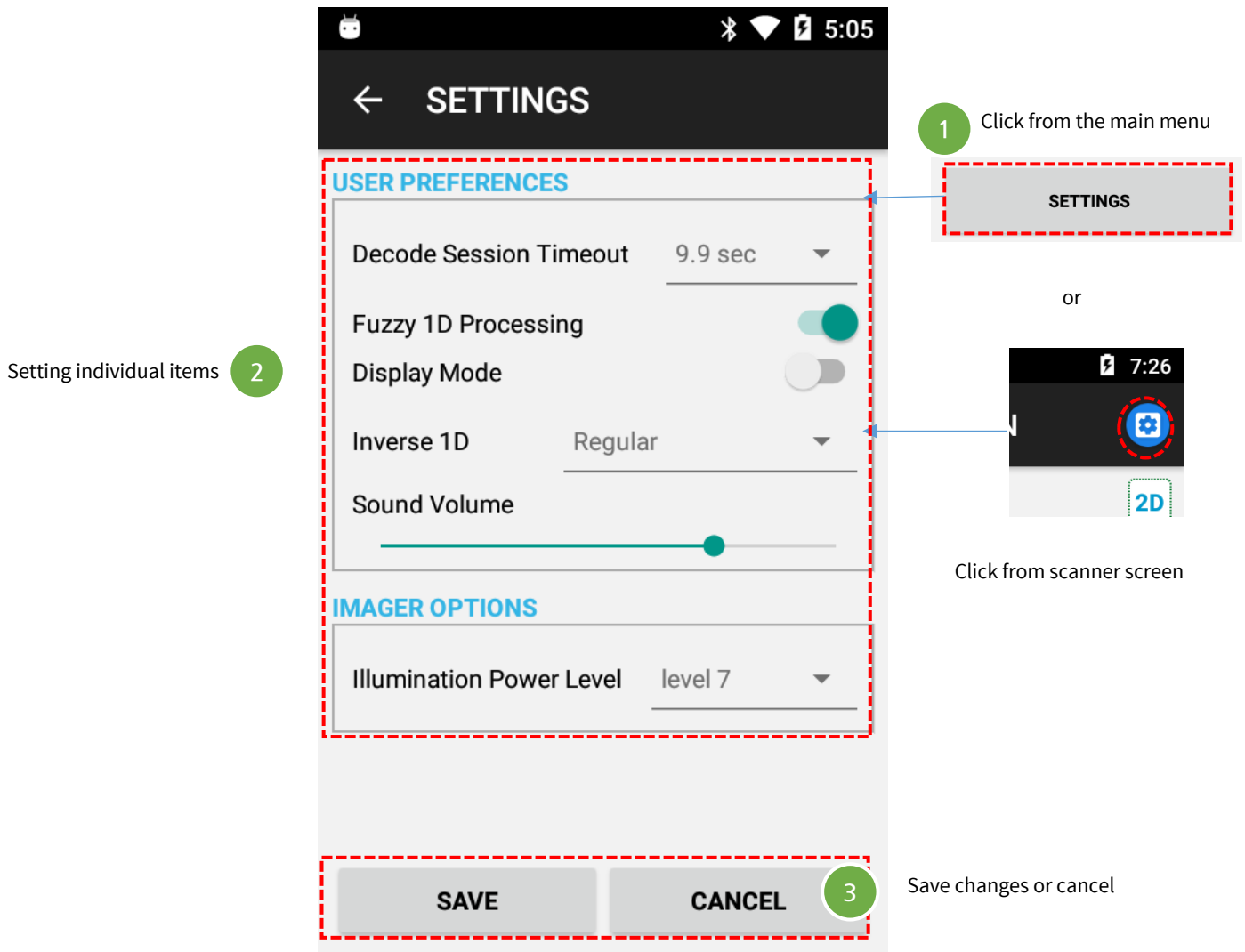
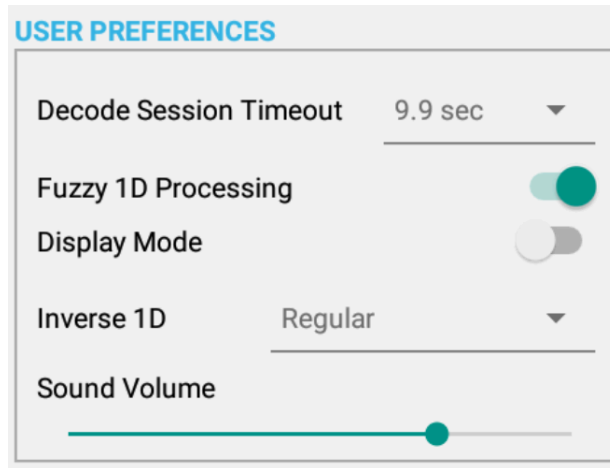


Figure 18. Barcode scanner setting screen.

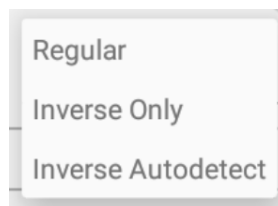
- ✓ **USER PREFERENCES**  
User setting items.





**Figure 19. USER PREFERENCES.**

- Decode session timeout  
Timeout for barcode decoding. Valid range: 0.5 ~ 9.9 seconds
- Fuzzy 1D processing  
Option to improve 1D decoding performance.  
**\* Release this option if there's a problem on 2D decoding process.**
- Display mode  
Option for better barcode scanning from the phone or monitor screen.  
**\* This option enables scanning performance improvement when scanning barcode from the phone or monitor.**
- Inverse 1D  
Option for inverse 1D barcode decoding mode.

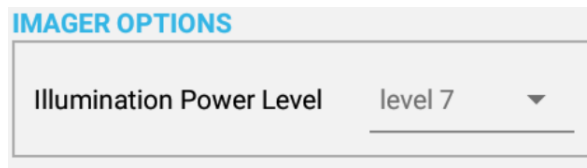


**Figure 20. Inverse 1D setting.**

Item	Description
Regular	Regular 1D barcode decoding mode.
Inverse Only	Inverse 1D barcode decoding mode.
Inverse Auto detect	Regular and Inverse 1D auto decoding mode.

**Table 3. Inverse 1D setting items.**

- ✓ **IMAGER OPTIONS**  
Module setting items.



**Figure 21. IMAGER OPTIONS.**

- Illumination Power Level  
Laser beam and LED light power adjustment. Able to set the Level 1~10.

#### D. Barcode Scanner HID Demo

Demo app package provides HID demo which runs in the background and transfers barcode data to running other applications.

Run “Barcode HID” app from application list, refer to Figure 22. Barcode HID demo app doesn’t run if barcode demo or barcode/RFID demo apps are running at the same time. If so, close them first. When barcode HID demo runs properly, HID service setting screen shows as Figure 24. If the app is already running, you can find a notification from the status bar and click barcode HID demo notification. Refer to Figure 23.

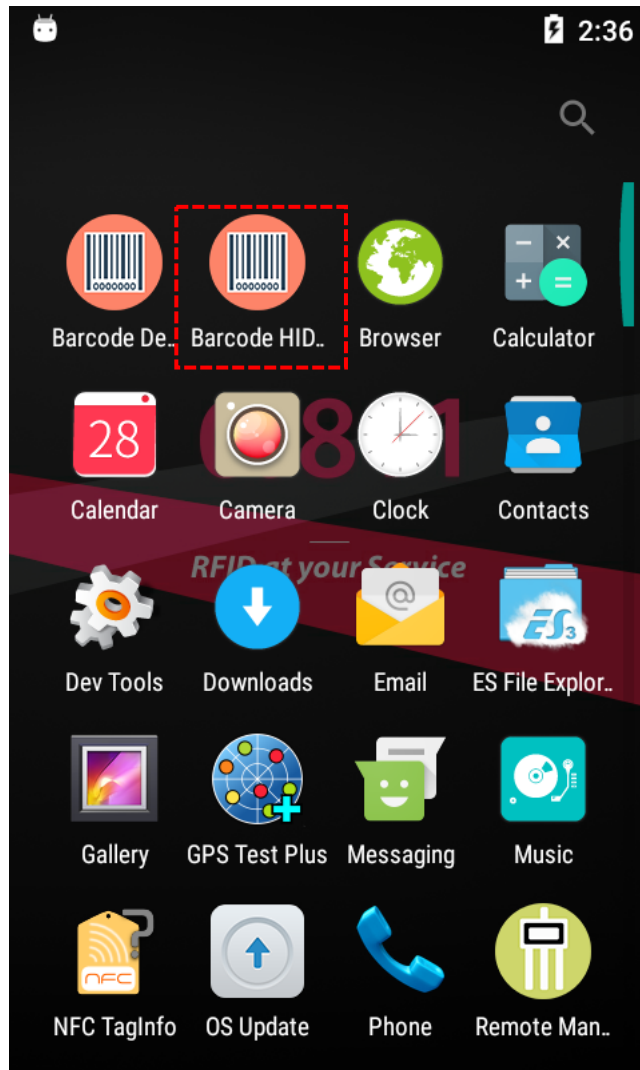


Figure 22. Barcode HID demo.

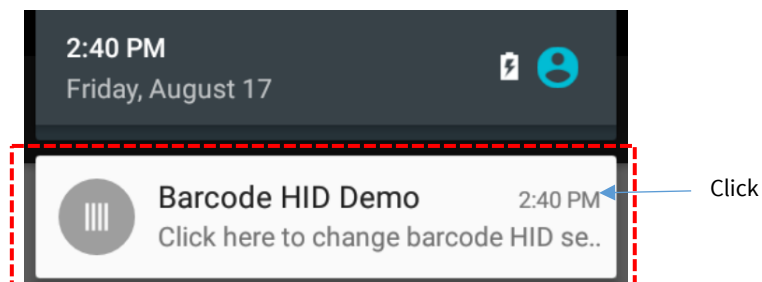
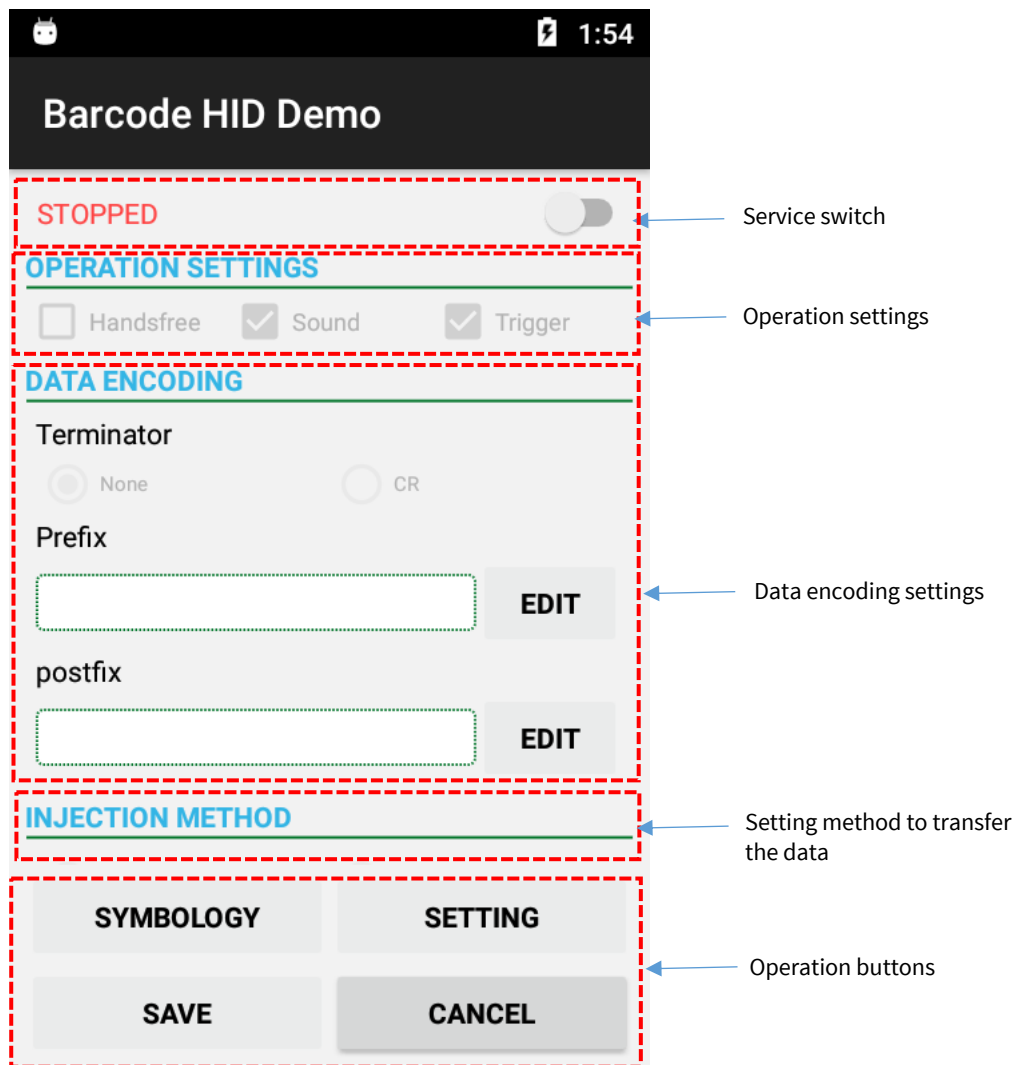


Figure 23. Enter HID setting from the status notification.



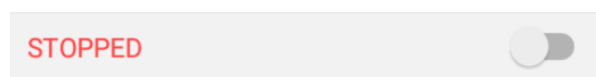
**Figure 24. Barcode HID setting screen**

For the details of Barcode HID setting screen, refer to the followings.

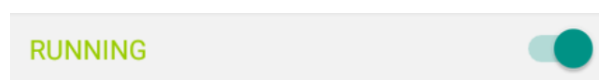
✓ **Service switch**

HID service start/stop.

When it's running, there is an Icon  on the status bar as below Figure 25.



**Figure 25. HID service stop status.**



**Figure 26. HID service running status.**



**Figure 27. Indication of HID service running.**

✓ **Operation settings**

Setting items for barcode operation.

\* Refer to [operation settings section](#).

✓ **Data encoding settings**

Set how to format barcode data before transferring. Refer to Table 3 for details.

**Figure 28. Data encoding settings.**

Item	Description
Terminator	None: Do not add termination at the end of data. CR: Add CR(Carriage Return) at the end of data.
Prefix	Prefix to add at the front of data.
Postfix	Postfix to add at the end of data (terminator).

**Table 4. Data encoding setting items**

✓ **Setting method of data transfer**

Setting method to transfer the data to other application.

**Figure 29. Selection of data transfer method.**

Item	Description
Key Injection	Transfer data directly to OS input using virtual key.
Copy by Clipboard	Copy data to OS clipboard. * Code implementation is needed to carry data from the clipboard to the application user wants to use.

**Table 5. Data transfer method.**

✓ **Operation buttons**

Barcode symbology, scanner setting and save/cancel of changes.

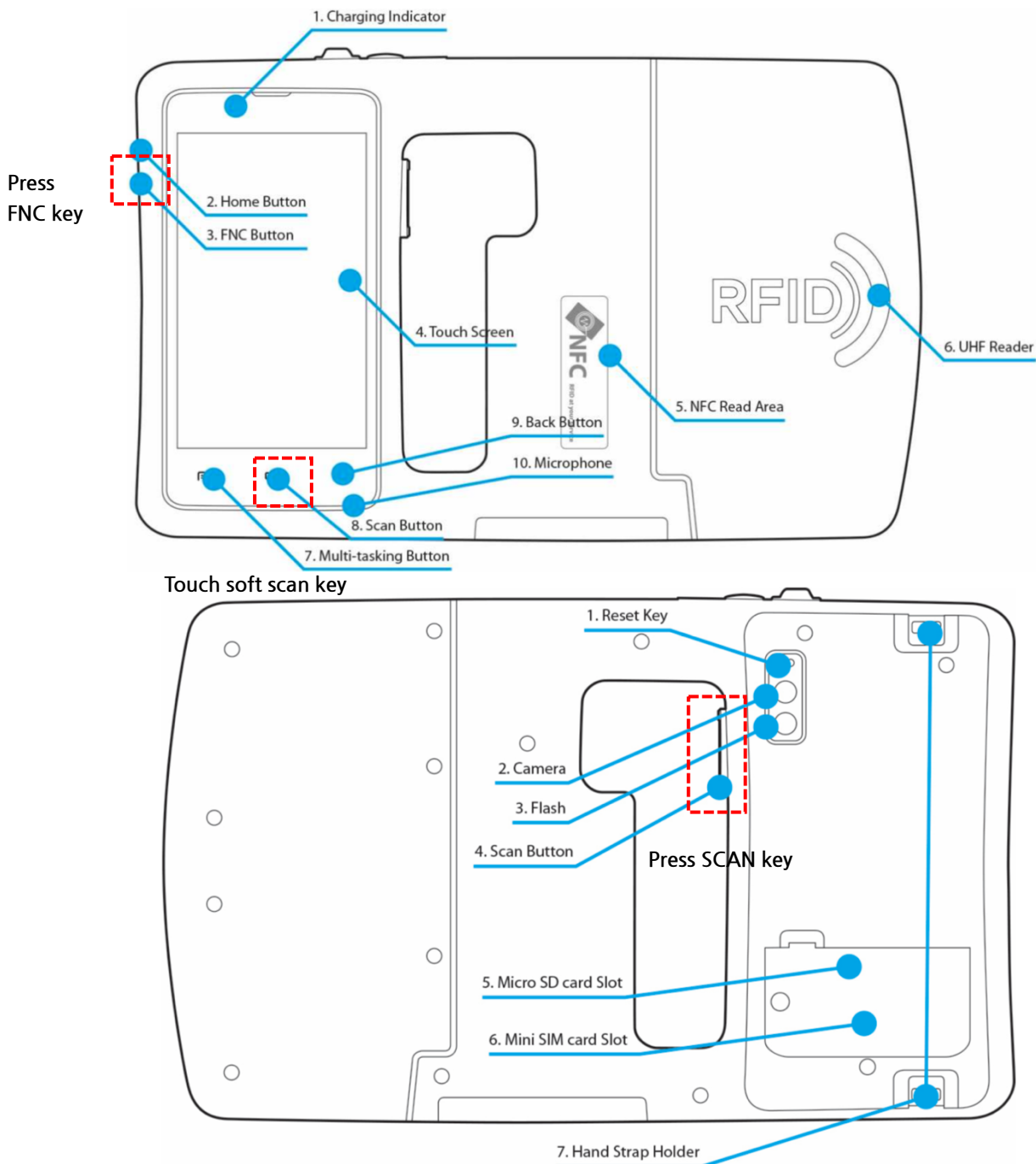


**Figure 30. Operation buttons**

- SYMBOLOGY  
Barcode symbology detailed setting.  
\* Refer to 'Barcode Symbology' section.
- SETTING  
Setting barcode scanner.  
\* Refer to 'Barcode scanner setting' section.
- SAVE  
Save changes
- CANCEL  
Cancel changes

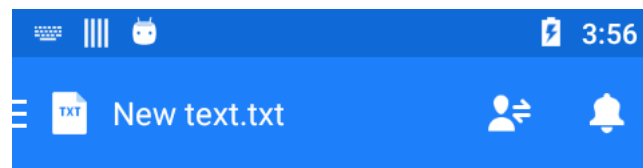
### ① Barcode scan

While running Barcode HID service, to start barcode scanning, move to application you want to input the data or other OS input window first and press soft scan key on the screen, FNC or Scan key (physical keys). Refer to Figure 31.

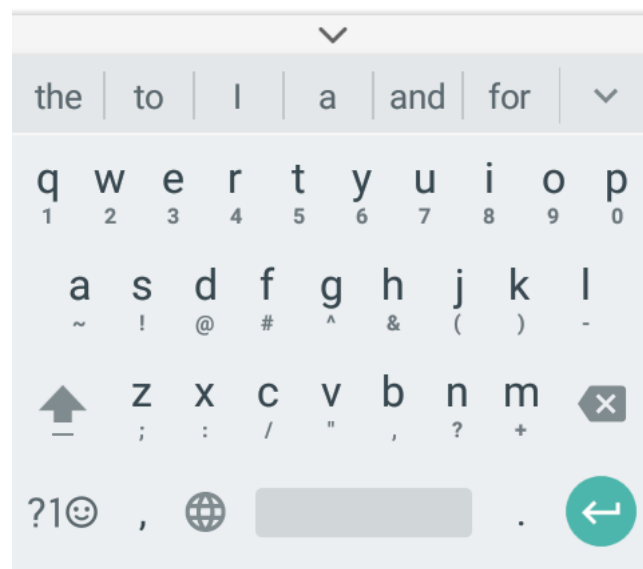


**Figure 31. Barcode scan keys**

When barcode scanning is succeeded, barcode data inputs on running app or OS input window by the setting encoding methods as Figure 32 shown below.



```
//start//6901028071468//  
end////start//4893176000006//  
end//
```



**Figure 32. Barcode data inputs on app by HID service.**



## **5. Customer Support**

### **1) Technical Support**

Please visit APULSETECH website for technical support. You can report your issues and get its answers. Also, you can get all the latest information and updates for products and its software.

### **2) Feedback**

Please send us your feedbacks about APULESTECH products.