



For iOS Phones

ASR-L251G Demo APP User Manual

***Note:** This user manual is a manual for iOS apps, but Android apps operate in a similar way to iOS apps, so you can also refer to this manual when using Android apps.*

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Preface

This document describes the correct operation method of ASR-L251G Demo APP. Be sure to read it carefully before using it.

If you have any comments or questions about this manual, please contact us through the following ways.

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About ASR-L251G DemoAPP

ASR-L251G Demo APP (hereinafter referred to as "Demo APP") is an application that customers can use together with our company's ASR-L251G devices (hereinafter referred to as "AsReader").

Please download this application from AppStore by searching the keywords "ASR-L251G Demo APP" or you can scan the following QR code to find this Demo APP.



Note: ASR-L251G Demo App is dedicated to the ASR-L251G device. If the device you are using is ASR-R250G model, please use the dedicated DemoApp (AsReaderGun) of ASR-R250G.

1. Page Description

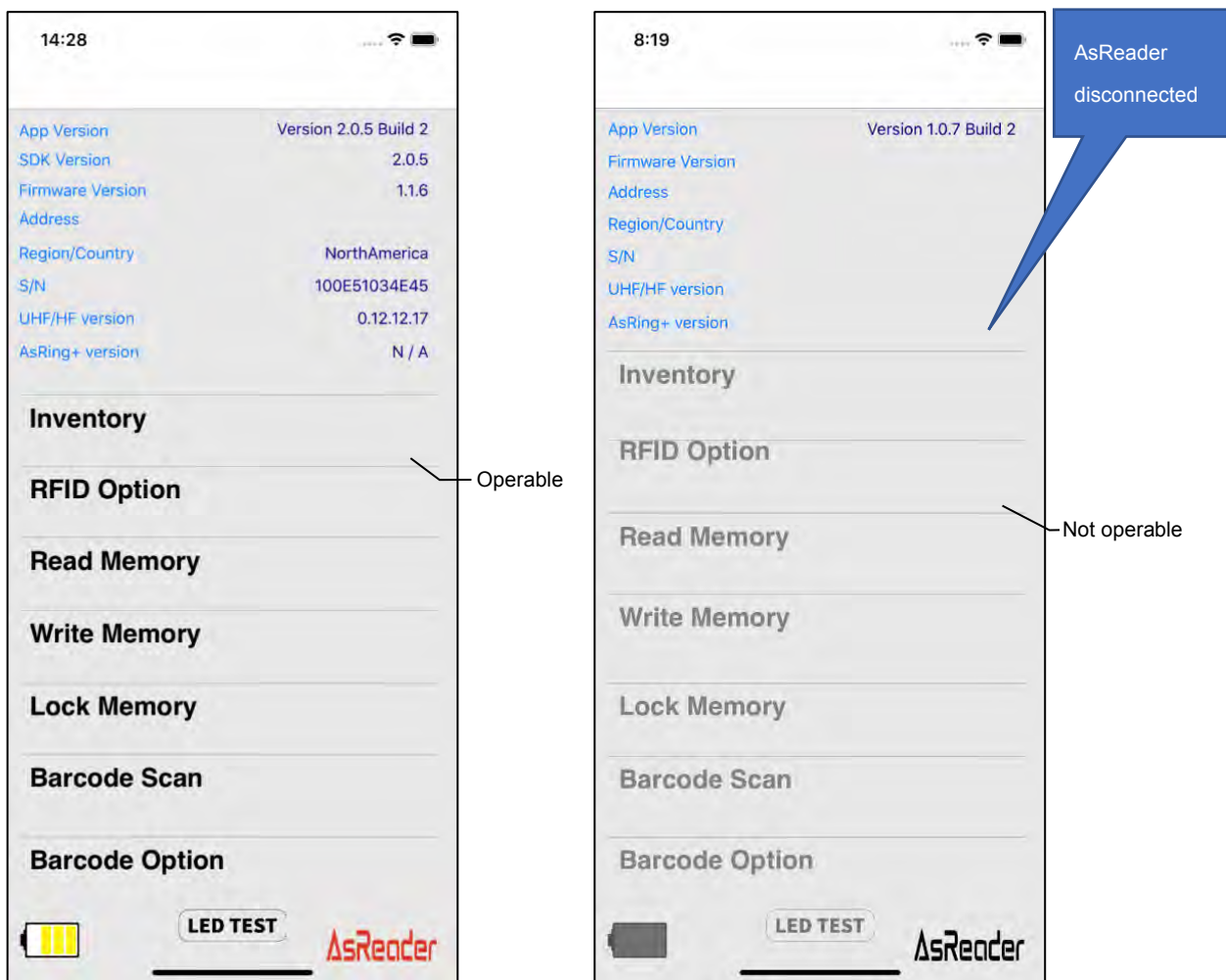
The screenshot shows the main menu of the DemoAPP. At the top, the time is 14:28. Below the status bar, there is a list of system information items, each with a blue link-like text on the left and a value on the right. Below this list are several menu options: Inventory, RFID Option, Read Memory, Write Memory, Lock Memory, Barcode Scan, and Barcode Option. At the bottom, there is a battery icon, an LED TEST button, and the AsReader logo.

Item	Value	Description
App Version	Version 2.0.5 Build 2	Version of DemoAPP
SDK Version	2.0.5	SDK version
Firmware Version	1.1.6	Firmware version of AsReader
Address		Physical address of AsRing+
Region/Country	NorthAmerica	Country/region where the device is permitted
S/N	100E51034E45	Serial number of AsReader
UHF/HF version	0.12.12.17	Version of RFID module
AsRing+ version	N / A	Version of AsRing+ (Only connected to ASR-R250G)
Inventory		Go to the Inventory page for RFID tags.
RFID Option		Go to the setup page for inventory.
Read Memory		Go to read the memory bank of RFID tag.
Write Memory		Go to write the memory bank of RFID tag.
Lock Memory		Go to lock/unlock the memory bank of RFID tag.
Barcode Scan		Go to scan 1D and 2D barcodes.
Barcode Option		Go to set the 1D/2D barcode types that allow the AsReader to scan.
LED TEST		Test button for Mode indicator on both sides of AsReader ※ The Mode indicator can be lit by clicking this button
Battery Icon		Remaining battery of AsReader

2. How to Connect

Once the phone is successfully connected to AsReader, AsReader will beep, and AsReader's Power LED light will change from flashing to regular light, and DemoAPP displays the following page.

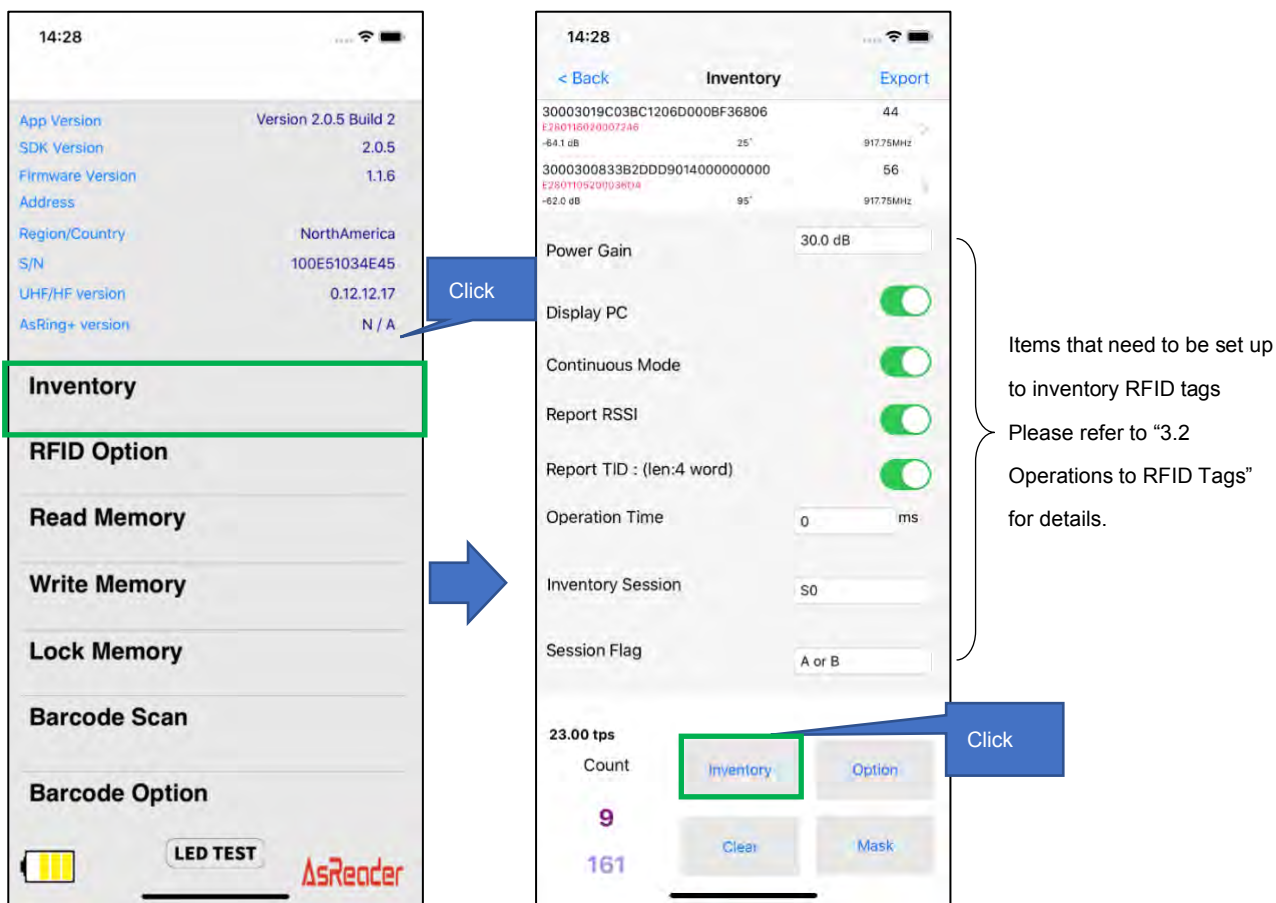
※ DemoAPP cannot be operated when the phone is disconnected from AsReader. If unable to connect, please refer to the operation manual of AsReader device.



3. How to Operate

3.1. Inventory RFID Tags

- ① Click on "Inventory" in the lower left figure, and then click on the "Inventory" button in the lower right figure to begin Inventory of RFID tags. Pressing the trigger key of AsReader can also start the inventory.



- ② Click the "Inventory" button, and AsReader will continue to read RFID tags until the set inventory stop condition is reached or the "Stop" button is clicked. Pressing the trigger key of AsReader will also continue the inventory until it is released.

※ During inventory, the "Inventory" button on the page changes to "Stop".

③ When taking inventory of RFID tags, the data of the RFID tags be inventoried will be displayed on the list of the inventory page. In addition, the inventoried RFID tag data can be exported as CSV or Excel files.

※ For the way to export data, please refer to "3.5 Export Inventoried Data".

The screenshot shows the 'Inventory' screen of the AsReader application. At the top, the time is 15:52. The screen has a '< Back' button on the left and an 'Export' button on the right. Below the title bar, there is a list of RFID tag data including PC:3000 EPC, E2801160600002054CC198C1, and a count of 37. Below this, there are fields for RSSI (-39.3 dB), distance (104*), and frequency (920.60MHz). The screen contains several toggle switches for 'Display PC', 'Continuous Mode', 'Report RSSI', and 'Report TID : (len:4 word)'. There are also fields for 'Operation Time' (0 ms) and 'Inventory Session' (S0). At the bottom, there are buttons for 'Inventory', 'Clear', 'RFM Sensor', 'Option', and 'Mask'. The screen also displays '115.00 tps Count' and '18' (Number of different RFID tags inventoried). The total number of RFID tags inventoried is 439.

TID information is displayed when the "Report TID" function is turned on.

RSSI is displayed when the "Report RSSI" function is turned on.

Number of RFID tags in 1 second inventory

Number of different RFID tags inventoried

The total number of RFID tags inventoried (If the same RFID tag is repeatedly inventoried, it is also counted.)

Export RFID tag data (CSV or Excel)

Times the same RFID tag is inventoried

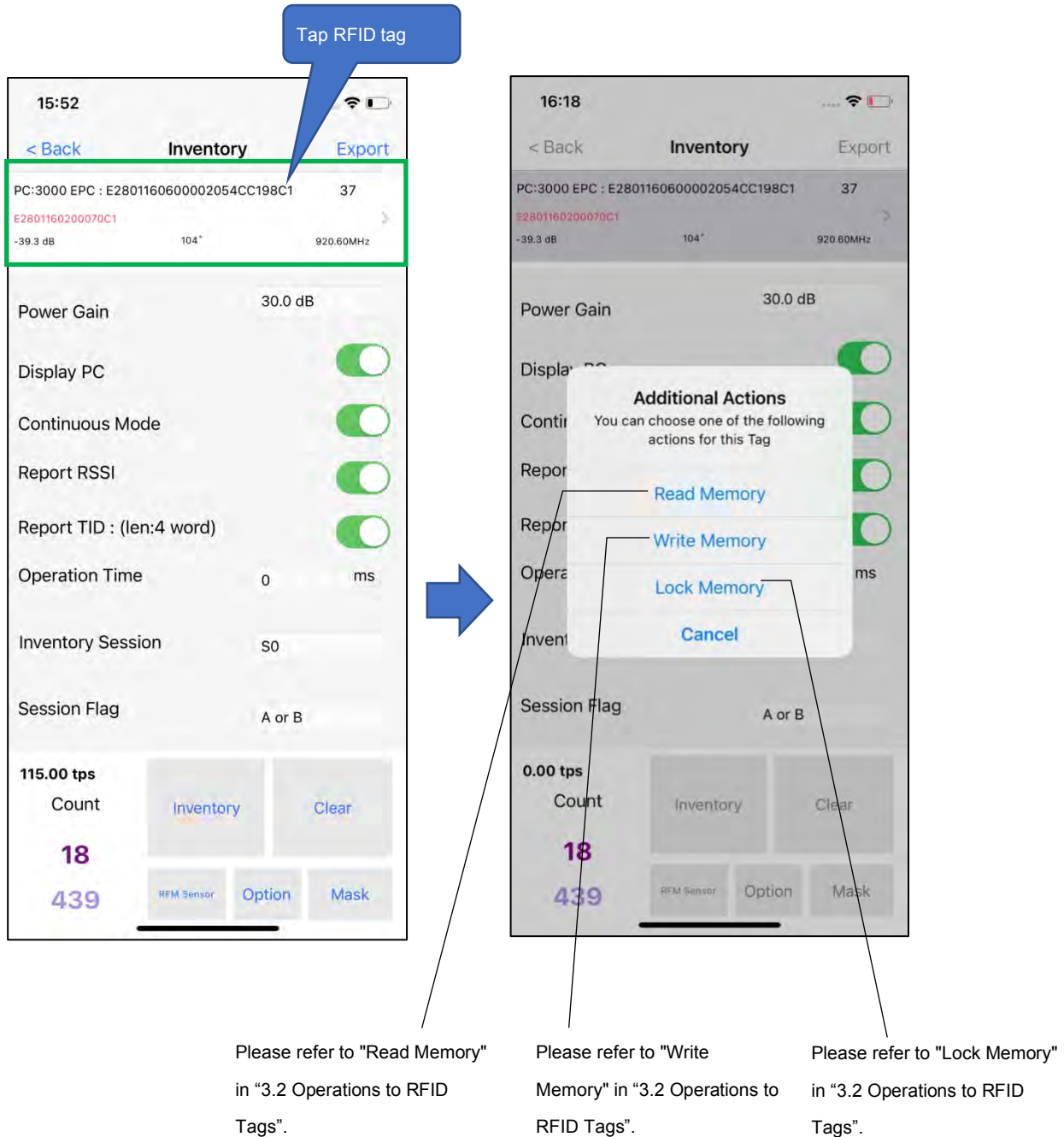
Empty the RFID tag list.

Select mask type Please refer to "3.3.6 Mask Settings" for details.

Shows/hides the setting items on this page

Inventory RFID tags with temperature chips

- ④ Tap a certain RFID tag on the list, you can perform the read, write or lock processes for the chosen tag. Please refer to "3.2 Operations to RFID Tags" for details.

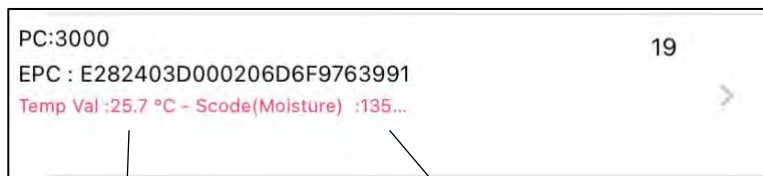


3.2. Inventory RFID Tags with Temperature Chips (Beta)

- ① Tap the "RFM Sensor" button at the bottom of the Inventory page to inventory the RFID tags with temperature chips.
- ② When you inventory the temperature tags, the "Inventory" button's name becomes "Stop". The inventory will continue until the "Stop" button is tapped.

The device supports the following models of RFID tags with temperature chips:

- AXZON RFM3200-AFR
 - AXZON RFM2100-AFR
 - AXZON RFM2121-AFR
- ※ This feature is still in a beta stage.



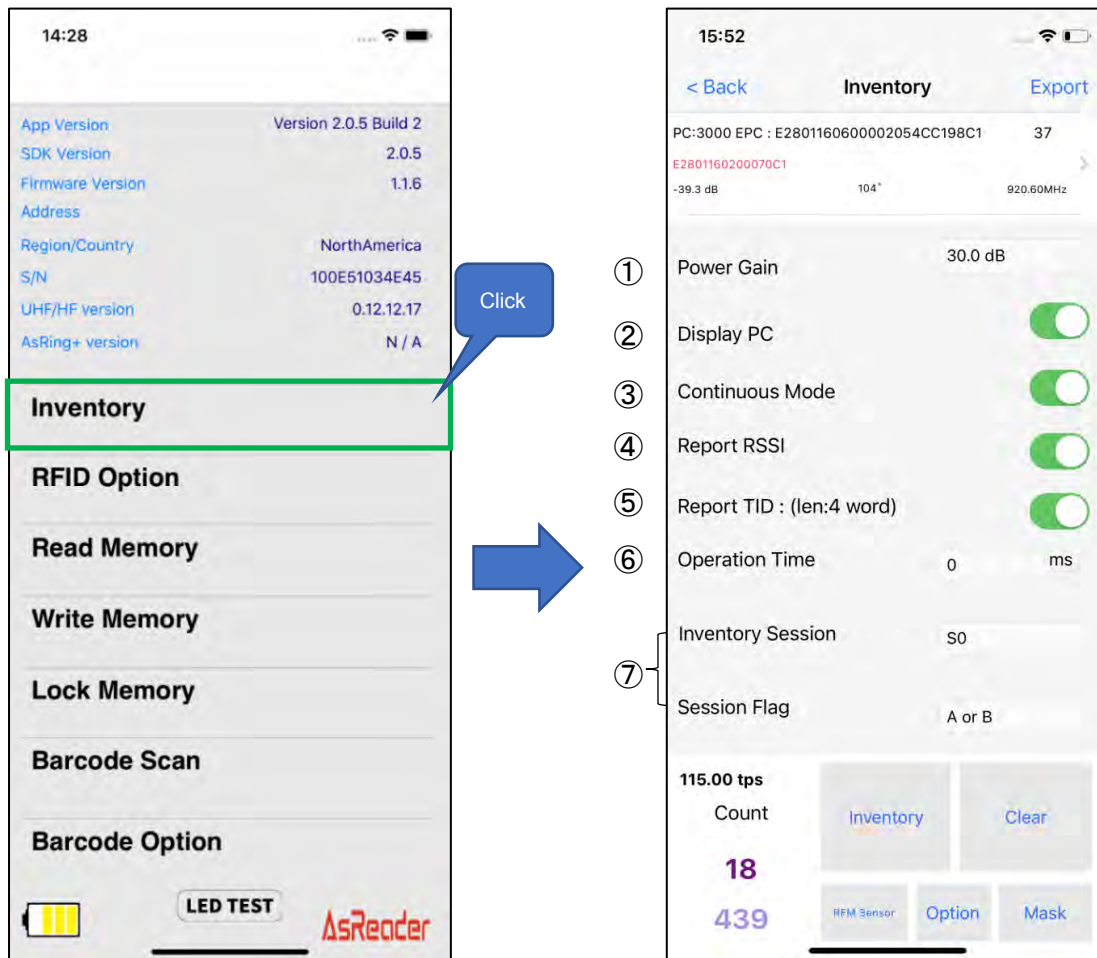
Temperature data

Humidity data

3.3. Operations to RFID Tags

3.3.1. Inventory

Tap the "Inventory" button on the left page to enter the Inventory page. Here, you can set the RFID tag inventory conditions, and inventory RFID tags.



① Power Gain

The output power of AsReader can be adjusted.

Adjusting range:

5dBm ~ 30 dBm

In general, the larger the value of output power is set, the farther the reading distance gets, but the more battery power is consumed. When the distance to the RFID tags is short and the number of the tags is large, setting to 25dBm would often give the best reading speed.

② Display PC

If this feature is enabled, the PC (Protocol Control) values of the inventoried RFID tags will be displayed.

③ Continuous Mode

Enable or disable continuous inventory mode.

Once this is enabled, the AsReader will continue to read RFID tags from the moment the "Inventory" button on the Demo APP is tapped until the "Stop" button is tapped or while the trigger button of the AsReader is pressed.

④ Report RSSI

If this feature is enabled, the received signal strength indication for the RFID tags are displayed on the Demo App when taking inventory.

⑤ Report TID

When taking inventory with this function on, TID information of the RFID tag read will be displayed. You also need to set the length (Word) of the TID data you want to display.

※ When taking inventory with this function on, the scanning speed will slow down.

⑥ Operation Time

Set the inventory time. AsReader stops the inventory as soon as the set time is reached.

※ Only works if Continuous Mode is on.

⑦ Inventory Session & Session Flag

"Inventory Session" and "Session Flag" can be set to adjust the response time of RFID tags. (Response time varies with RFID tag specifications.)

Please set parameters according to the number of RFID tags to be inventoried. Refer to the following table.

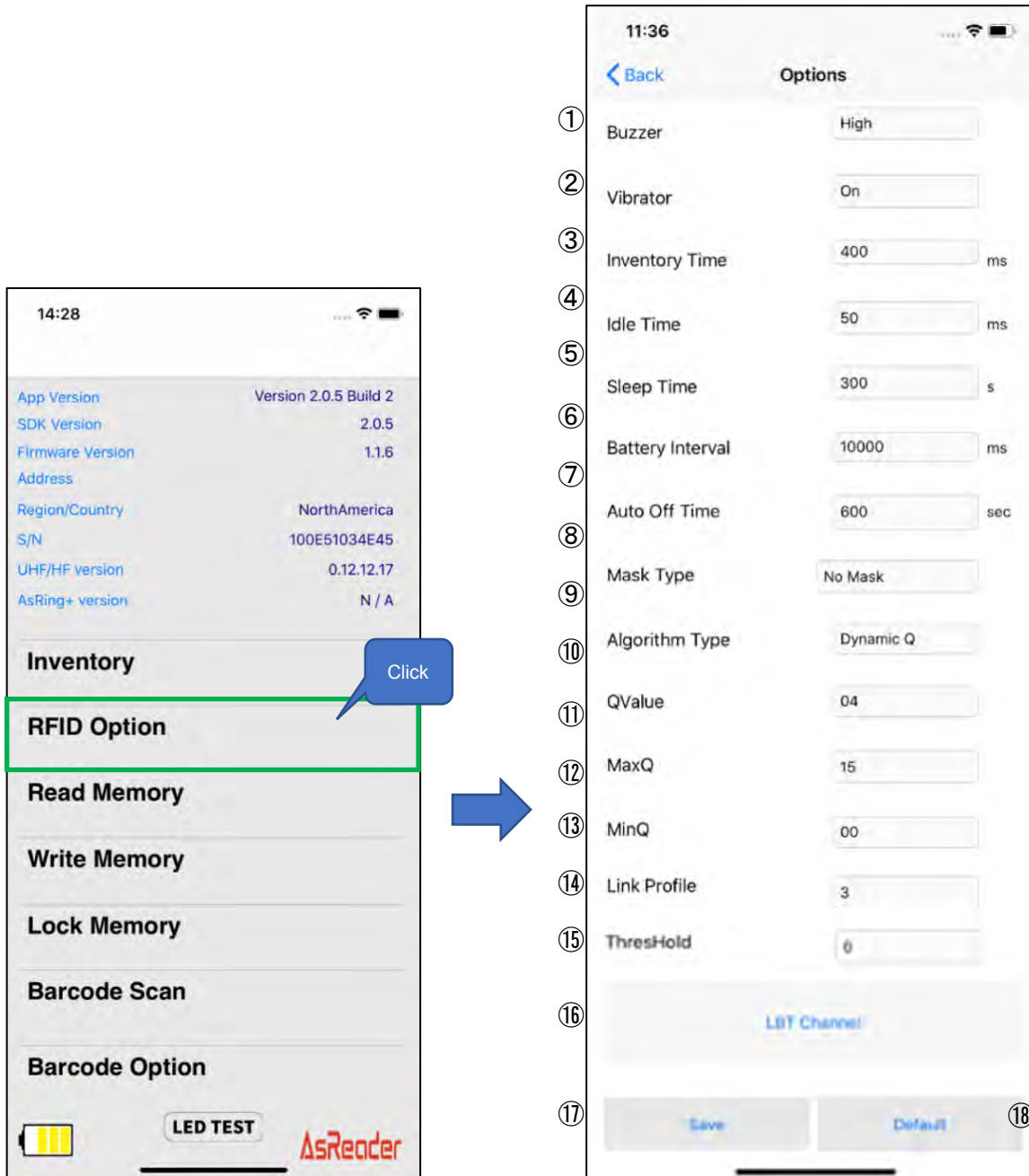
Session Flag	S0	S1	S2/S3
A Only	The RFID tags that have been inventoried will immediately become ready to be inventoried again after receiving the radio waves. Recommended when the number of RFID tags <100 pieces.	The RFID tags that have been taken inventory cannot be taken again within 0.5 ~ 5 seconds after being taken inventory. Recommended when the number of RFID tags <400 pieces.	The RFID tags that have been taken inventory cannot be taken again within 2~ 60 seconds after being taken inventory. Recommended when the number of RFID tags <400 pieces.
B Only	RFID tags in the initial state cannot be taken inventory. In S2/S3 and so on, use this option if an RFID tag that has already been inventoried needs to be inventoried again immediately.	The same as S0.	The same as S0.
A or B	Apply this when you need to repeatedly inventory the same RFID tags. Inventory speed: S0 > S1 > S2/S3	The same as S0.	The same as S0.

※ The patterns of S2 and S3 are the same, but not related. It is recommended that each AsReader select a different Session when using more than one AsReader at a time.

※ The Settings for all the above items will be saved to DemoAPP.

3.3.2. RFID Option

Tap "RFID Option" in the left page to set the inventory condition of RFID tags.



① Buzzer

Set the buzzer on/off and volume.

When it is turned on, AsReader will beep at the set volume at the following cases:

- a) When AsReader is turned on or off,

- b) When the phone and AsReader connect successfully,
- c) When AsReader inventories RFID tags or scans 1D and 2D barcodes.

② Vibrator

Set the vibrator on/off.

When it is turned on, AsReader will vibrate at the following cases:

- a) When AsReader is turned on or off,
- d) When the phone and AsReader connect successfully,
- e) When AsReader inventories RFID tags or scans 1D and 2D barcodes.

③ Inventory Time

Sets the duration of the radio waves emitted when the RFID tag is in inventory. The longer the Inventory Time, the faster the inventory, but the more power it consumes, resulting in a shorter battery using time.

※ According to the laws of various countries on the use of radio waves, the Inventory Time should be set according to the following table.

④ Idle Time

Sets the duration of the radio waves non-emitted when the RFID tag is in inventory.

※ According to the laws of various countries on the use of radio waves, the Idle Time should be set according to the following table.

Regulations	Inventory Time	Idle Time
Radio law (JP)	Not greater than 4000ms	Not less than 50ms
FCC (US)	Not greater than 400ms	Not less than 20ms
CE (EU)	Not greater than 4000ms	Not less than 100ms

⑤ Sleep Time

Sets the time you want AsReader to go to sleep.

⑥ Battery Interval Time

Set the interval at which AsReader sends battery information to DemoAPP.

⑦ Auto Off Time

Set the automatic shutdown time for AsReader.

Sets the period from the disconnection of AsReader from the Desktop to the power shutdown of AsReader.

⑧ Mask Type

When you select "Mask Type", the RFID tags outside the Mask targets will not be inventoried.

⑨ Algorithm Type

The number of slots used in anti-collision processing ($= 2^Q$) and whether the Q value is fixed is optional.

Fixed Q	Q is fixed in inventory
Dynamic Q	Q floats in the specified range in inventory.

⑩ QValue

In the case of "Fixed Q" in ⑨, specify the Q value.

⑪ MaxQ

In the case of "Dynamic Q" in ⑨, specify the maximum value of the floating range of Q.

⑫ MinQ

In the case of "Dynamic Q" in ⑨, specify the minimum value of the floating range of Q.

⑬ Link Profile

Change the Settings of the RFID module. Please refer to the table below.

0	The inventory speed is slow, but the inventory sensitivity is high.
1	Long inventory distance. Supports a wide range of inventory.
2	The same as "1". (for EU version)
3	Fast inventory. Suitable for small scale inventory.

This value is always saved in AsReader.

⑭ ThresHold

The default value is "50". Recommended not to change.

⑮ “LBT Channel” button

Select the LBT channel in inventory.

※ Only if Region is Japan.

⑯ “Save” button

After doing the above settings, you need to click the "Save" button to save the settings. Settings ①~⑫, ⑮ and ⑯ are saved to the DemoAPP, ⑬ and ⑭ are saved to the AsReader.

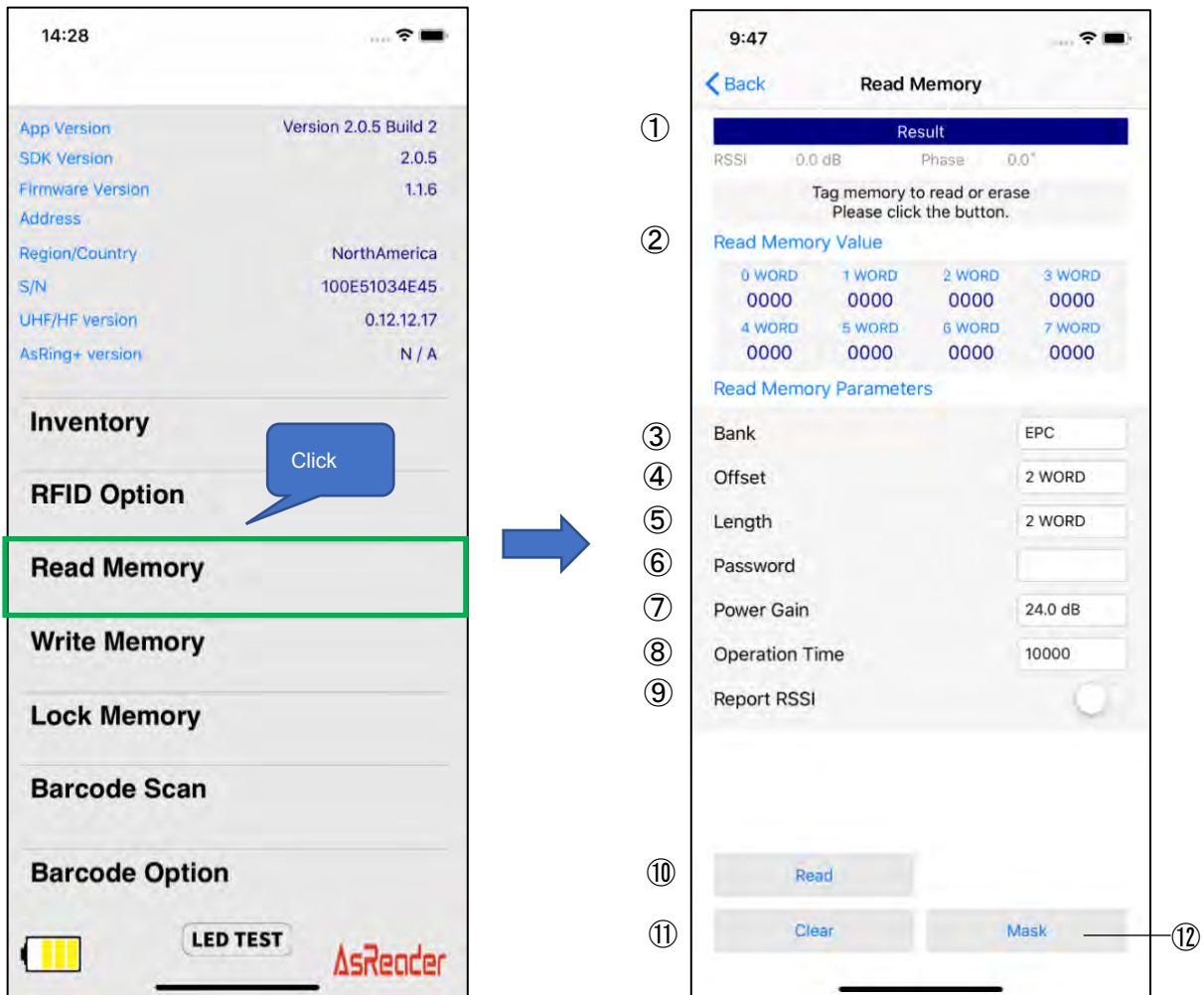
⑰ “Default” button

Tap this button to restore all Settings to factory settings.

※ Sometimes AsReader does not respond very quickly and may display the wrong value. In this case, please click the "Save" or "Default" button again.

3.3.3. Read Memory

Click the "Read Memory" button in the page shown in the left figure to set the RFID tag reading condition.



① Result

The reading results of RFID tags will be displayed in the "Result" area.

② Read Memory Value

The data of each WORD of the RFID tag read will be displayed in the "Read Memory Parameters" area.

Read RFID tags according to the items in "Read Memory Parameters" (Refer to ③~⑨ below).

③ Bank

You can select the memory bank to read. After the RFID tag is read, the data of each WORD will be displayed to the "Read Memory Value".

- Reserved Bank: kill password and access password.
- EPC Bank: individual identification number.
- TID Bank: inherent information that represents the type of RFID tag.
- User Bank: User-defined data.

④ Offset

Specifies the read start location for the memory bank of the read object. Range: 0~15 WORD. The RFID tag data will be displayed from the Offset position on the "Read Memory Value".

⑤ Length

Specifies the length of the data to be read. Range: 0~15 WORD. Once the RFID tag is read, the specified Length RFID tag data will be displayed on the "Read Memory Value" area.

⑥ Password

Enter the access password. When you read the Reserved Bank of a locked RFID tag, you need to enter the access password.

No password is needed to read the other Banks.

⑦ Power Gain

Change the radio output value of AsReader. This setting is saved in DemoAPP.

⑧ Operation Time

Sets the execution time of the "Read" processing. This setting is saved in DemoAPP.

⑨ Report RSSI

When this feature is enabled for reading, the radio wave intensity of the RFID tag is displayed. This setting is saved in DemoAPP.

⑩ Read button

Click on it to begin read of RFID tags. If the read processing is successful, "Success" appears below "Result".

⑪ Clear button

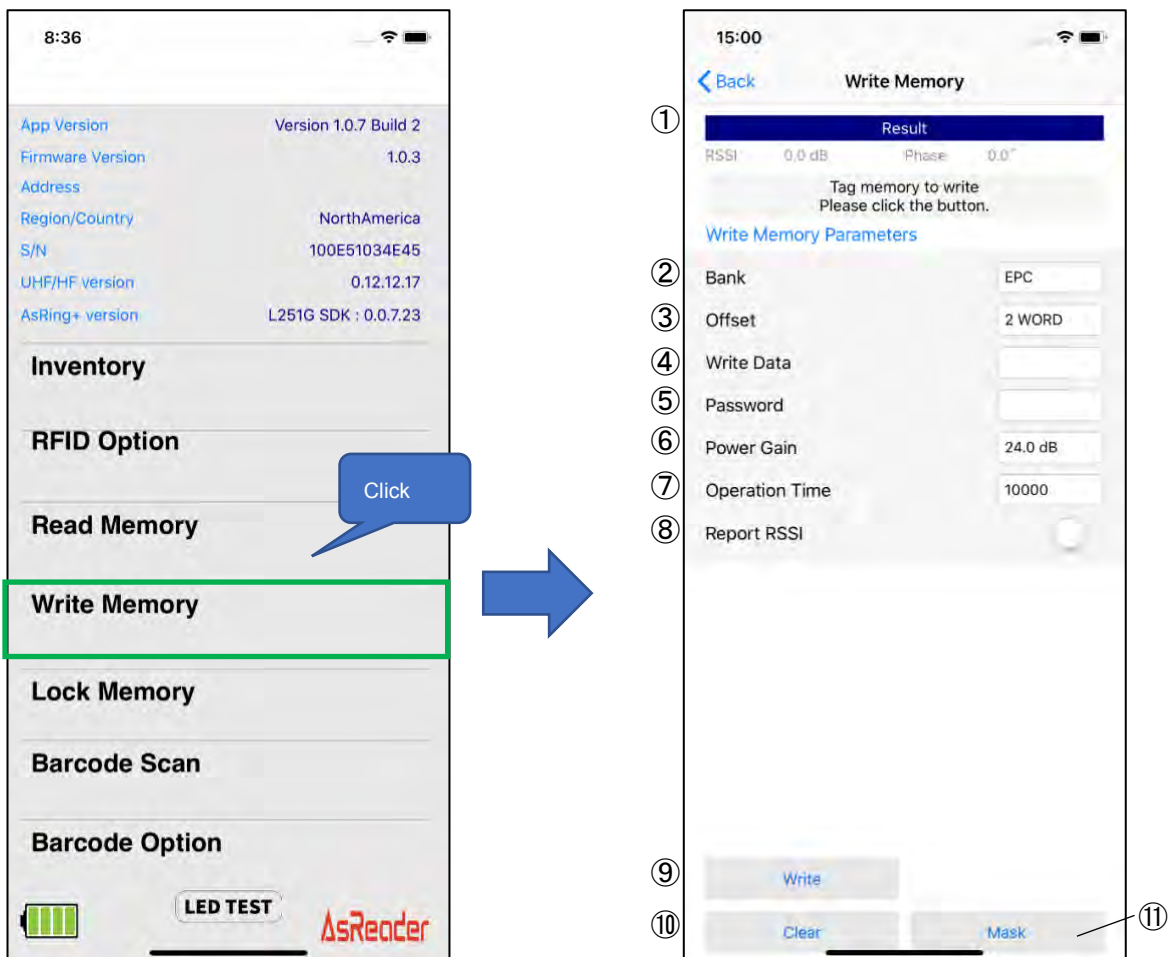
Click it to clear all the RFID tag data displayed in the "Result" area.

⑫ Mask button

When the "Mask Type" of "RFID Option" is set to "Selection Mask", you can click the "Mask" button to set the Mask. See "3.2.6 Mask Settings" for the setting method. This setting is saved in DemoAPP.

3.3.4. Write Memory

Click "Write Memory" in the left page to Write to the RFID tag.



① Result

The "Result" area displays the inventory results of the RFID tags.

② Bank

Memory bank can be selected from the following four Banks.

- Reserved Bank: kill password and access password.
- EPC Bank: individual identification number.
- TID Bank: inherent information that represents the type of RFID tag. (unable to implement write)
- User Bank: User-defined data.

③ Offset

Specifies the write start location for the memory bank of the written object. Range: 0~15 WORD.

④ Write Data

Enter the data to be written. The number of bits written must be a multiple of 4 bits, 8 bits, 12 bits, etc.

⑤ Password

If the RFID tag memory bank is locked, an access password must be entered to write to it.

⑥ Power Gain

Change the radio output value of AsReader. This setting is saved in DemoAPP.

⑦ Operation Time

Sets the execution time of the "Write" processing. It is recommended that this value not be set. This setting is saved in DemoAPP.

⑧ Report RSSI

When this feature is enabled for RFID tag writing, the radio wave intensity of the RFID tag is displayed. This setting is saved in DemoAPP.

⑨ Write button

Click the button to perform the RFID tag write operation. If it succeeds, "Success" will appear below the "Result" area.

⑩ Clear button

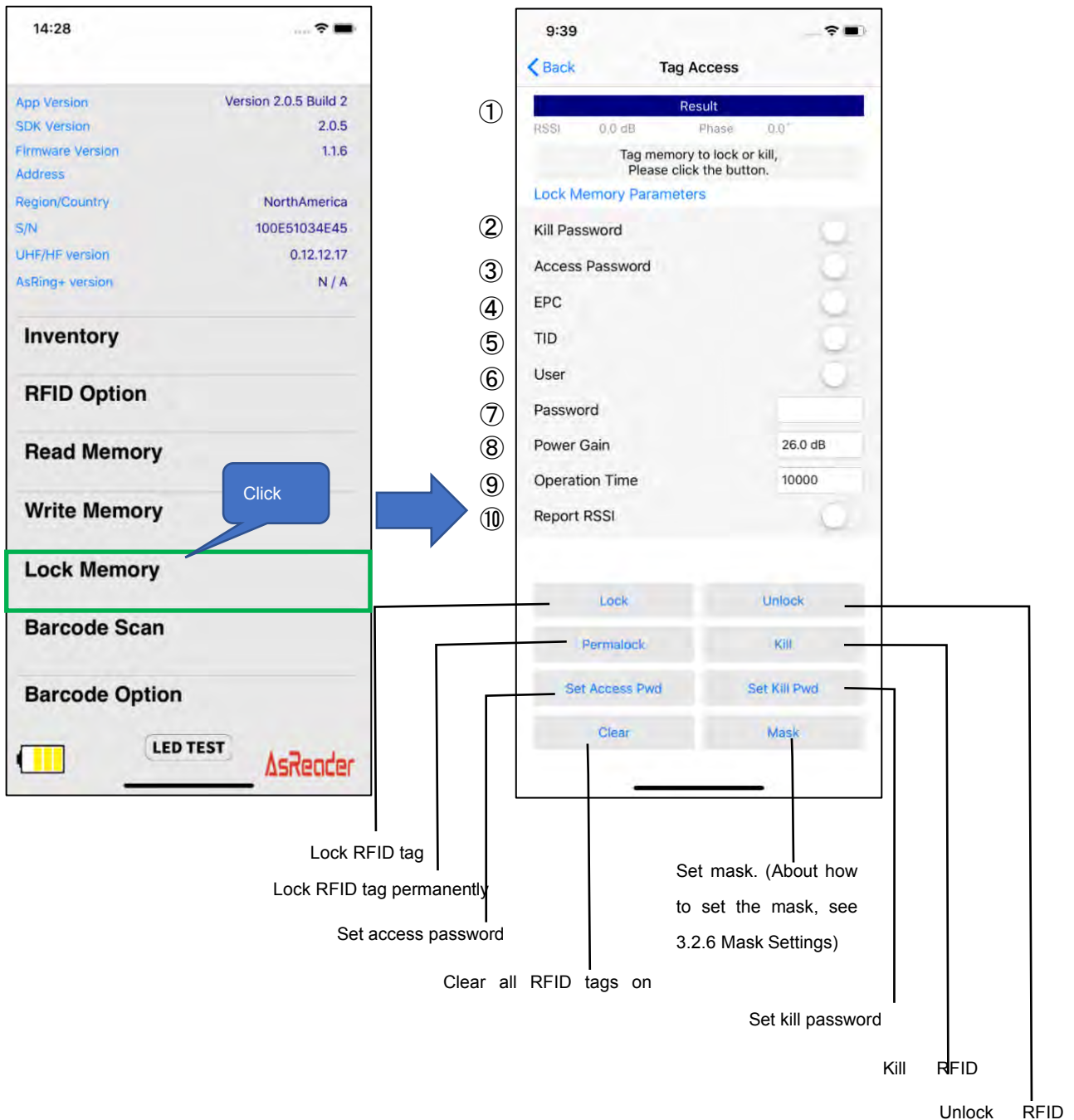
Click it to clear all the RFID tag data displayed in the "Result" area.

⑪ Mask button

When the "Mask Type" of "RFID Option" is set to "Selection Mask", you can click the "Mask" button to set the Mask. See "3.2.6 Mask Settings" for the setting method. This setting is saved in DemoAPP.

3.3.5. Lock Memory

Click "Lock Memory" in the left page to perform the Lock series or Kill processing on the RFID tag.



① Result

The inventory results of the RFID tags are displayed in the "Result" area.

② Kill Password

To "Lock", "Unlock", or "Permalock" a Kill password, this item must be enabled.

※ If you want to Set a Kill password, click "Set Kill Pwd" to display the Kill password input box.

③ Access Password

To "Lock", "Unlock", and "Permalock" the Access password must be enabled.

※ if you want to Set an Access password, click "Set Access Pwd" to display the Access password input box.

This item needs to be enabled to do the following:

- a) Lock, Unlock, or permanently Lock the memory Bank
- b) Write to the locked memory bank
- c) Read locked Reserved Bank data

④ EPC

When enabled, this area becomes an action object for Lock, Unlock, or Permalock.

⑤ TID

When enabled, this area becomes an action object for Lock, Unlock, or Permalock.

※ This Memory Bank is usually locked permanently as soon as the RFID tag leaves the factory.

⑥ User

When enabled, this area becomes an action object for Lock, Unlock, or Permalock.

⑦ Password

To Lock, Unlock, or Permalock an RFID tag, you must enter an access password here.

※ You cannot do Lock, Unlock, Permalock, etc., without setting the access password.

⑧ Power Gain

Change the radio output value of AsReader. This setting is saved in DemoAPP.

⑨ Operation Time

Sets the execution time for the processing of the "Lock" series. This setting is saved in DemoAPP.

⑩ Report RSSI

If this feature is enabled, the radio wave strength of the RFID tag is displayed when the "Lock" and "Unlock" are performed. This setting is saved in Demo APP.

※ If the "Lock", "Unlock", "Permalock", "Kill", "Set Access Pwd", and "Set Kill Pwd" operations execute successfully, "Success" appears below the "Result" area.

3.3.6. Mask

"Mask" is the filtering function used to inventory RFID tags. After selecting "EPC Mask" or "Selection Mask" in the "Mask Type" of "RFID Option", you can set the details in the "Mask" on the "Inventory" page. If "Selection Mask" is selected, you can click "Mask" on the "Read Memory", "Write Memory", "Lock Memory" pages as required.

① EPC Mask

First, select "EPC Mask" in the "Mask Type" of "RFID Option". After saving, click the "Mask" button on the Inventory page, and then click the "+" button at the top right of the screen. Fill in the starting position bit number of the mask in "Offset".

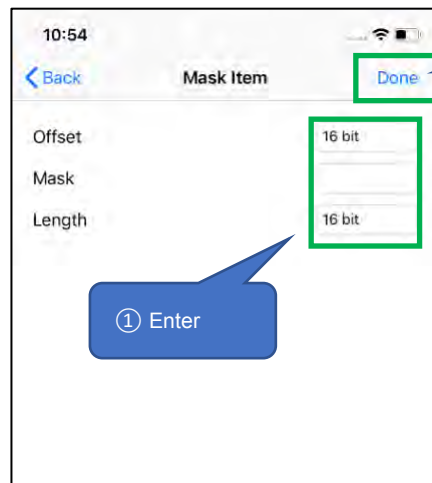
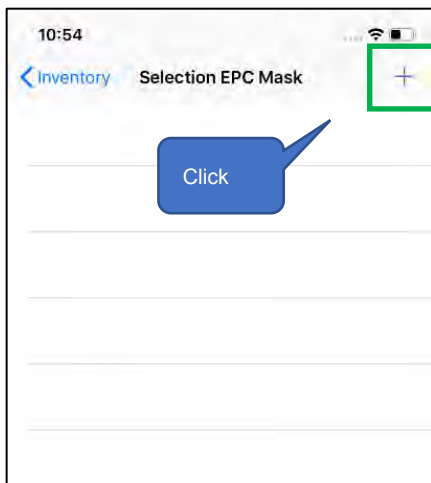
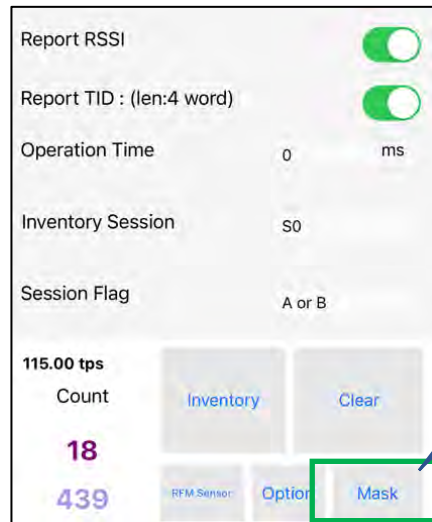
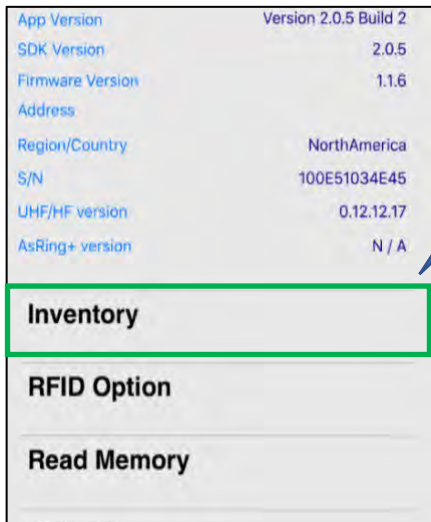
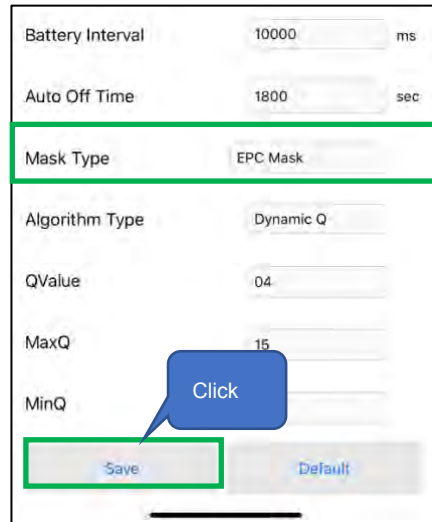
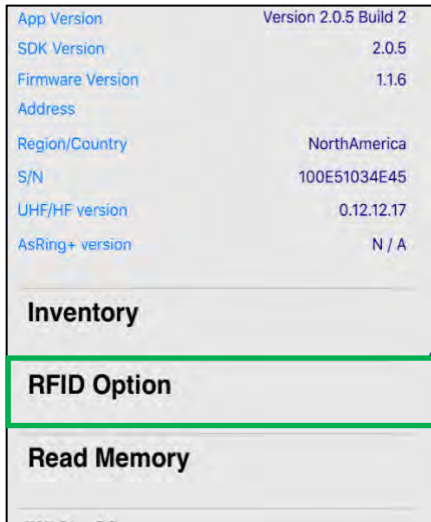
※1 Add mask value in "Mask".

※2 Enter the Length of the mask you want to add in bit in the "Length" text box, and click the "Done" button.

Then, on the page that displays, click the "Save" button. In the state where "Not Matching" is OFF, the RFID tags that meet the mask condition will be listed. In the case of "Not Matching" turned on, RFID tags that do Not match the mask condition are taken into inventory. This setting is saved in DemoAPP.

※1 The initial setting is 16 bits, because the CRC's 16 bits are also included. You can also choose 0 bit, but it cannot be saved because it is below the program minimum.

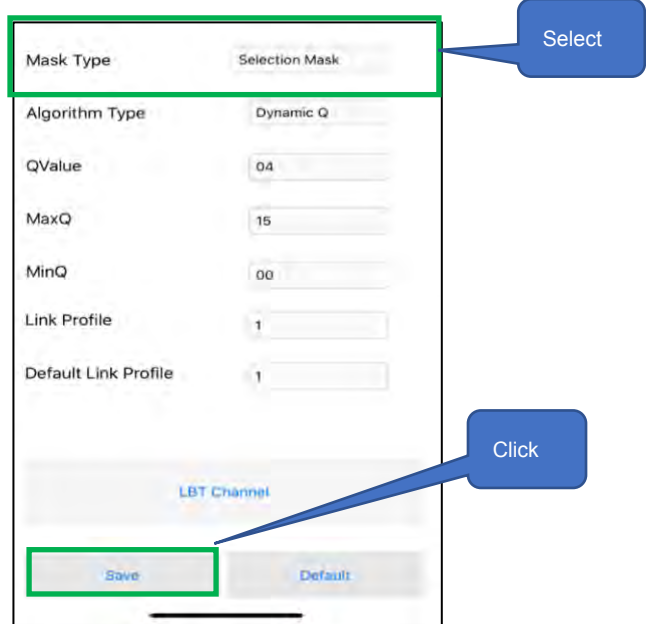
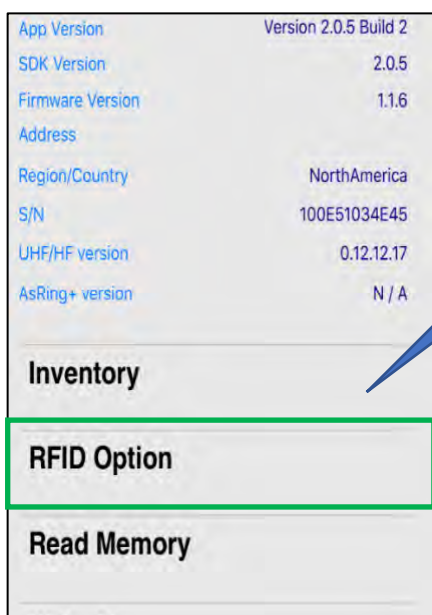
※2 If the offset is set to 16 bit, then the value of PC part also needs to be set.

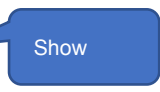
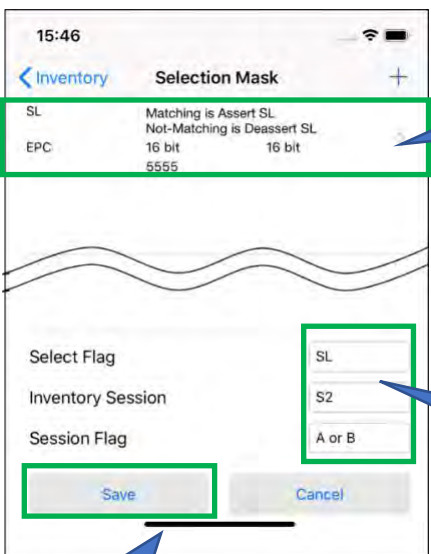
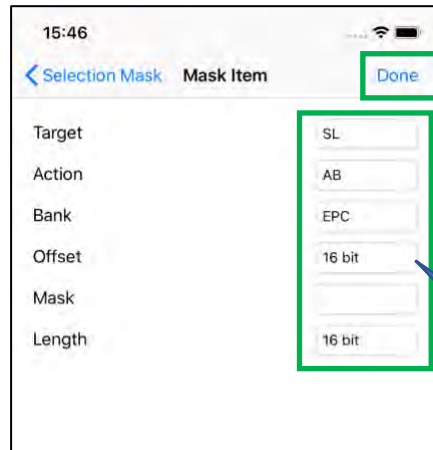
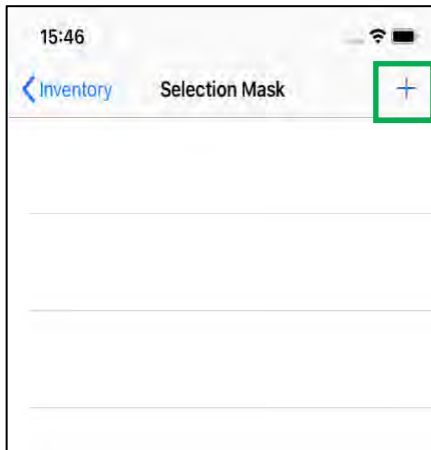
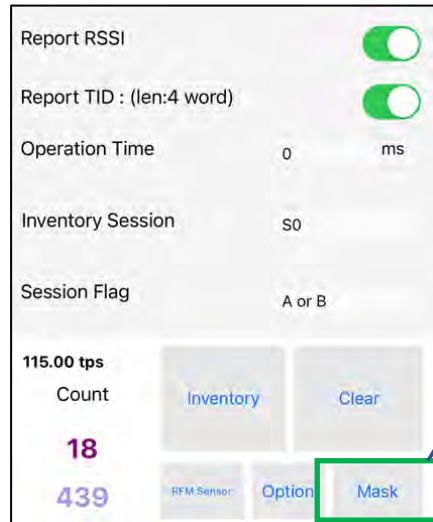
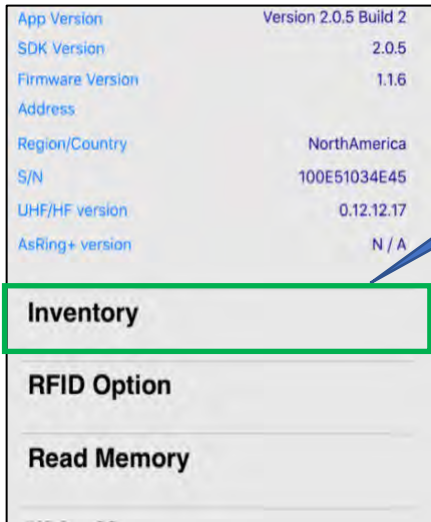




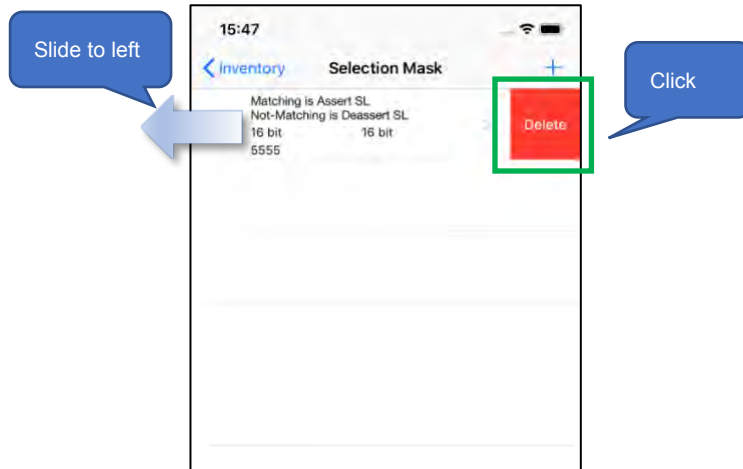
② Selection Mask

First, select "Selection Mask" in the "Mask Type" of "RFID Option". After saving, click the "Mask" button on the Inventory page, and then click the "+" button at the top right of the screen. You can select Target, Action, Bank, Offset, Mask, and Length from the page. When you're done, click "Done" to return to the "Selection Mask" page. At this point, the "Selection Mask" page displays the filters that have been set. Click "Save" to save these settings so they can be applied to the Inventory process. You can also set the Select Flag, Inventory Session, and Session Flag at the bottom of the "Selection Mask" page. These settings are saved in DemoAPP.



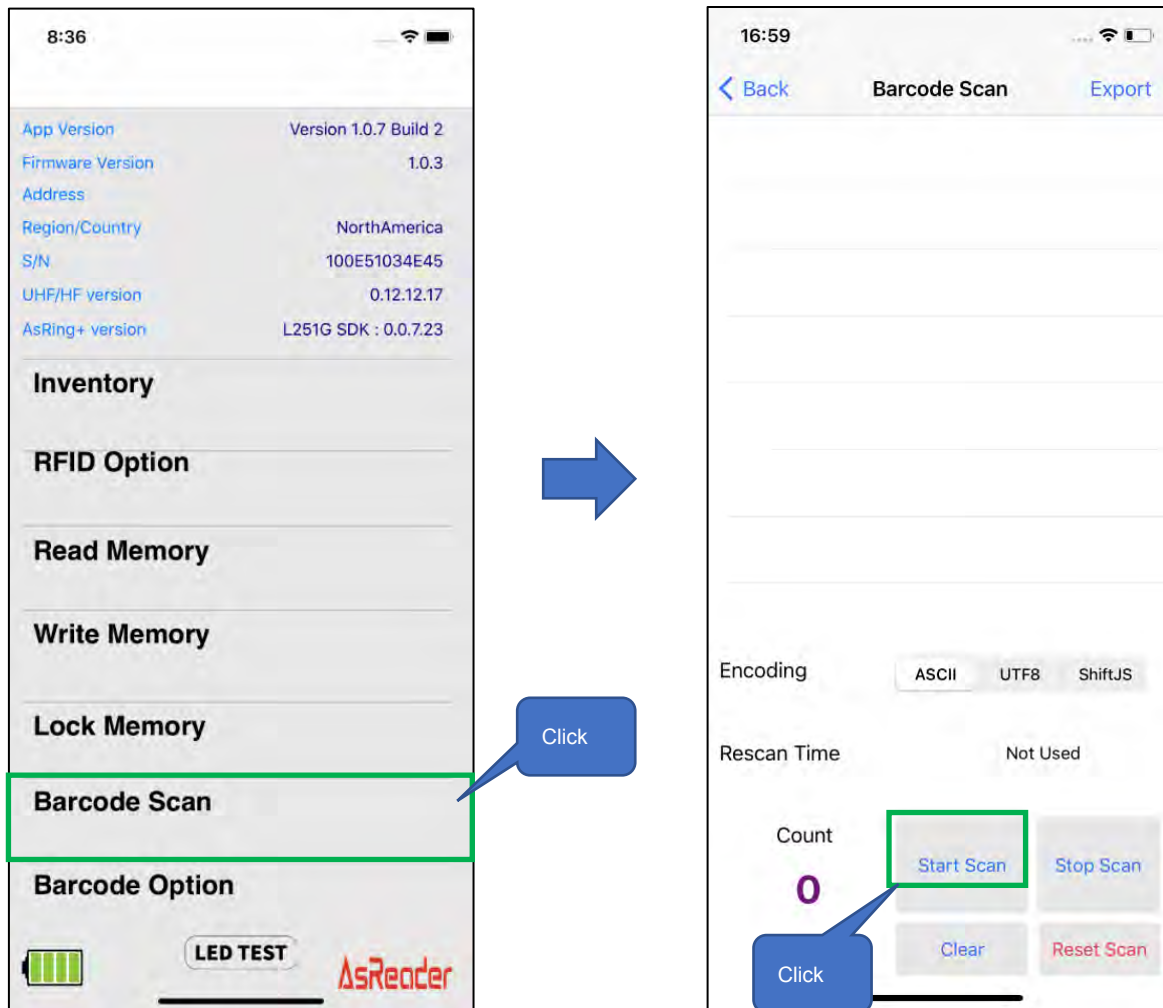


※ To remove the set mask condition, slide it to left, and then click the "Delete" button.



3.4. 1D&2D Barcodes Scan

- ① Click "Barcode Scan" at the bottom of the left page, and then click "Start Scan" shown in the right page to scan 1D and 2D Barcodes. Pressing the Trigger button of AsReader can also scan.

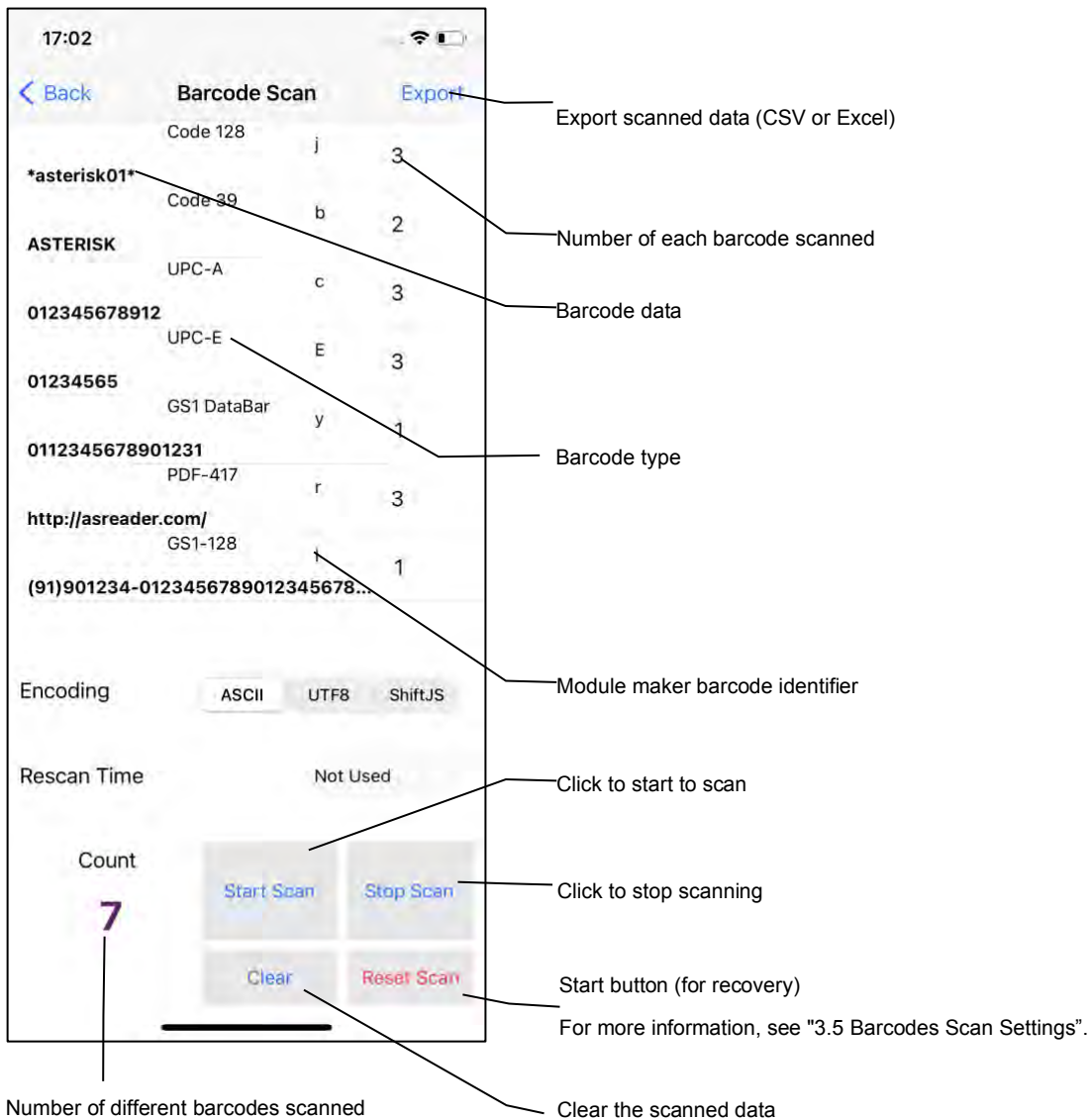


- ② Press the trigger button of AsReader, or click the "Start Scan" button on Demo APP, and the LED/ laser light will light up, but if no barcode is scanned within timeout time, the LED/ laser light will go out. Once a barcode is successfully scanned, the scan is stopped. In the continuous scan mode, AsReader will perform a continuous scan since pressing Trigger button (or clicking the "Start Scan" button), and it won't stop till releasing Trigger button (or clicking the "Stop Scan" button).

※ For the settings of continuous scanning, please refer to 3.5 Barcodes Scan Settings.

- ③ After the scan, the 1D and 2D barcode scanned will be displayed on the page. In addition, the scanned data can be exported in CSV file or Excel file format.

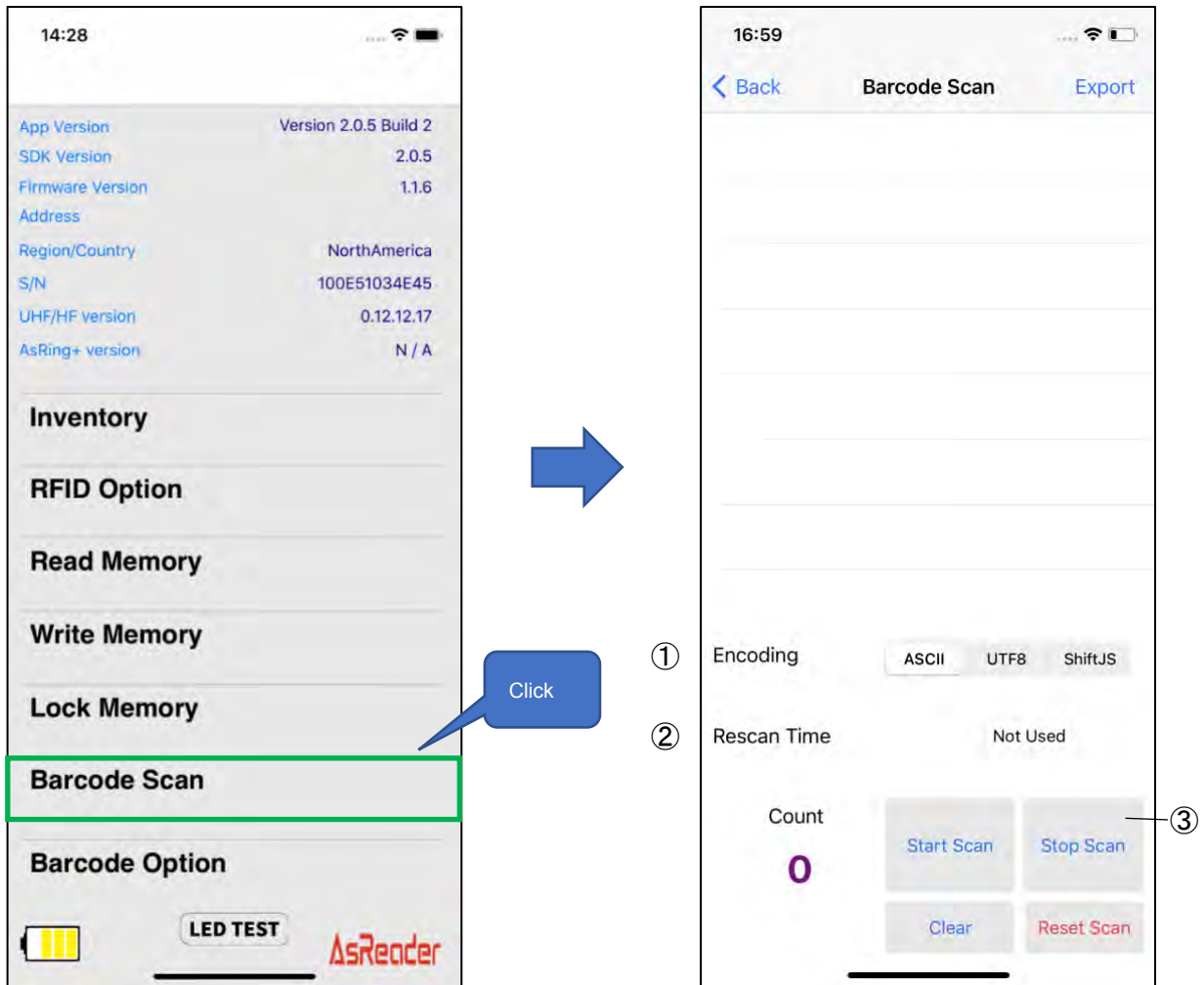
※ How to export the barcode data, please refer to “3.5 Data Export”.



3.5. Barcodes Scan Settings

3.5.1. Barcode Scan

Click "Barcode Scan" on the menu page to Scan the Barcode and set the scanning conditions.



① Encoding

There are three encoding types to select from: ASCII, UTF8, Shift JIS.

② Rescan Time

Continuous scanning is supported and the time interval between two consecutive scans can be set. If you select "Not Used", the continuous scanning function will be turned off. This setting is saved in DemoAPP.

③ Reset Scan

This feature is not used under normal circumstances. If Barcode scanning cannot be performed due to incorrect Barcode setting, click this button to make the laser of the device light up again.

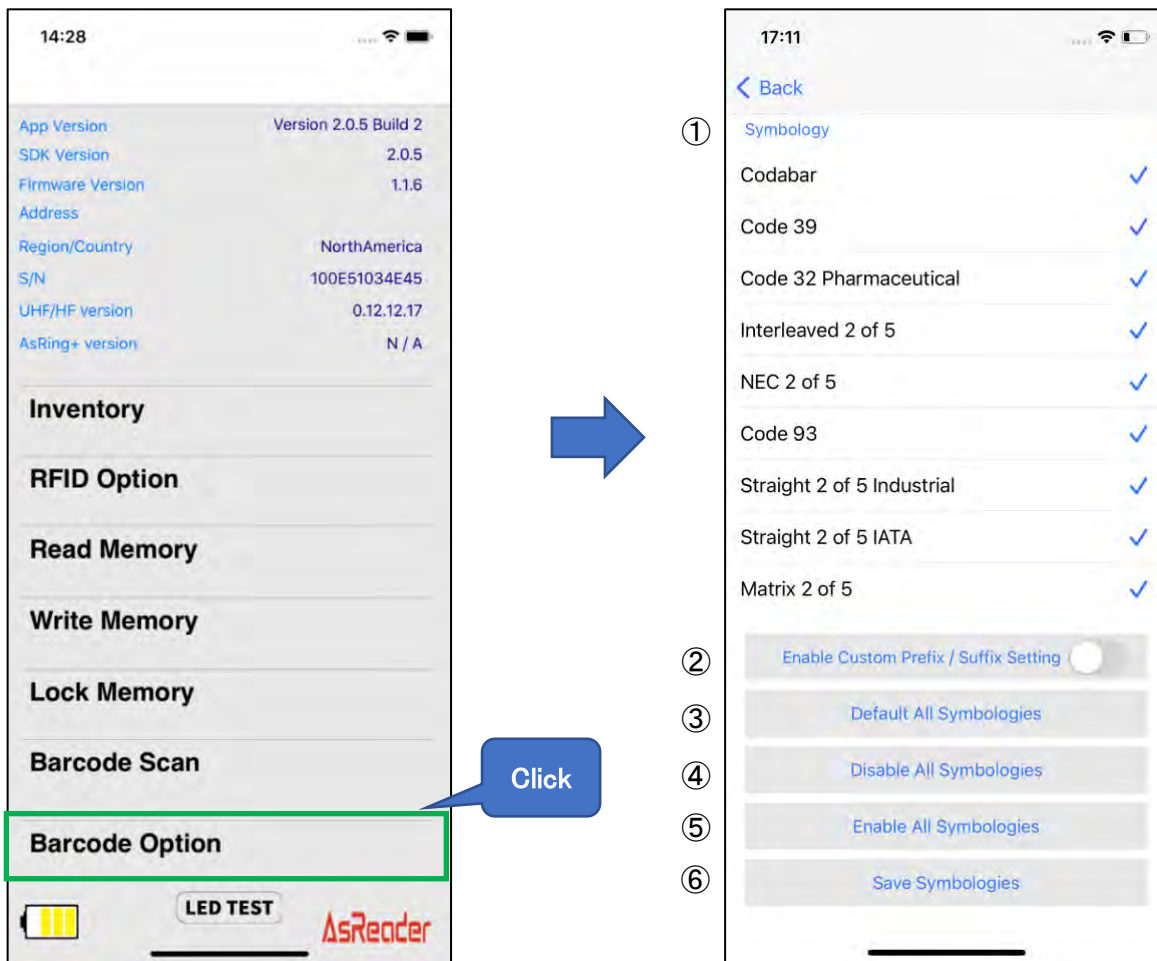
At this time, the scanning function can be resumed by scanning "Activate Defaults" in the Barcode setting manual.

※ Barcode setting manual can be downloaded at the link below.

<https://asreader.com/downloads/ASR-L251G/>

3.5.2. Barcode Option

Click "Barcode Option" at the bottom of the left page to select the Barcode type that AsReader is allowed to scan.



① Symbology

Click to select the barcode types that allows/does not allow scanning.

② Enable Custom Prefix / Suffix Setting

Prefix/Suffix function can be enabled or disabled. With Prefix/Suffix enabled, it can be set by the user. If Prefix/Suffix is disabled, it cannot be set.

※ Note :

Disabled: Once the Active Default setting code is scanned, you need to re-enter the page to display the newly scanned barcode data.

Enable: Once the Active Default setting code is scanned, to display the newly scanned barcode data, you need to customize the prefix or suffix.

③ Default All Symbologies

Restore the barcode types setting to factory setting.

④ Disable All Symbologies

After clicking it, all barcode types in the “①Symbology” list will be deselected.

⑤ Enable All Symbologies

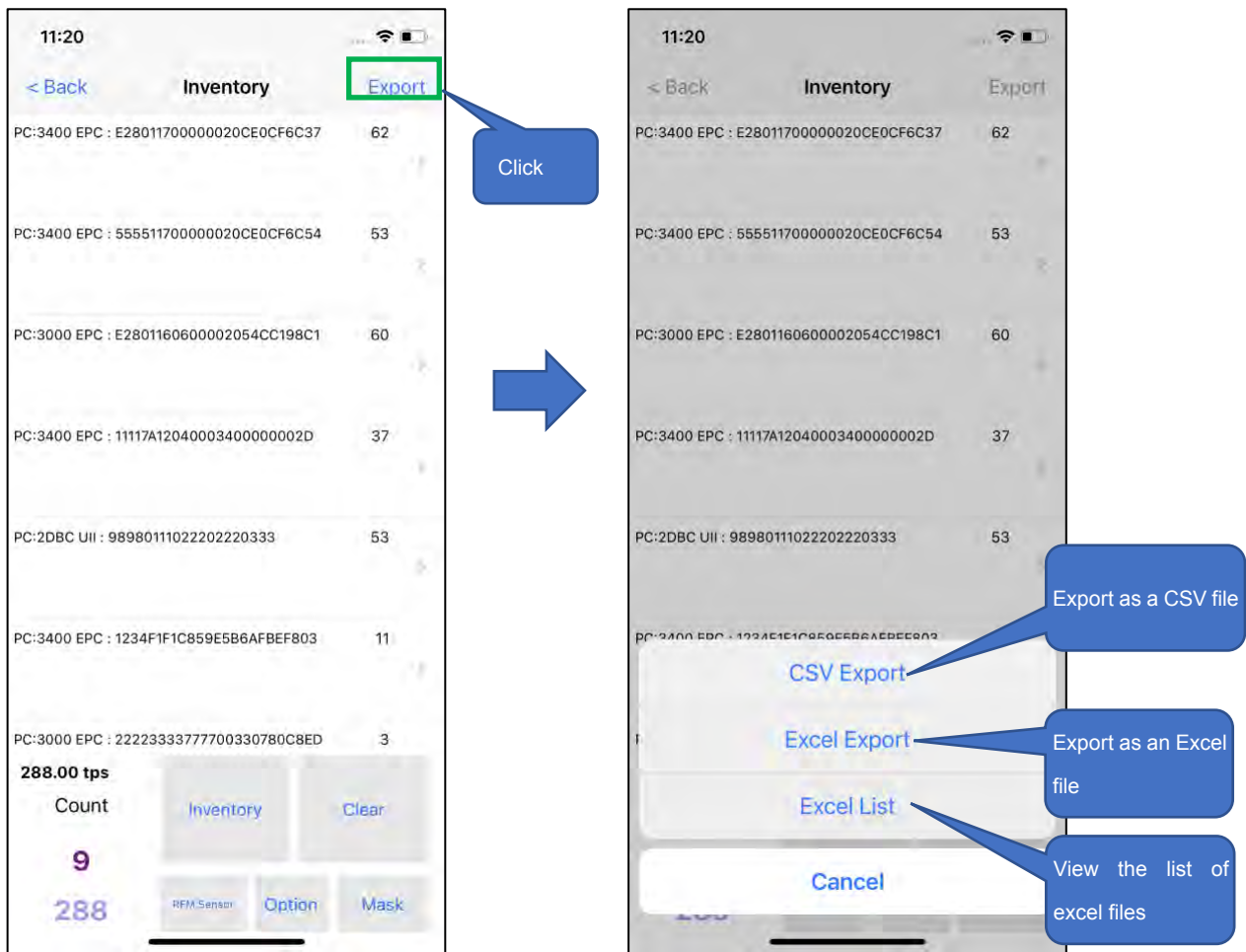
After clicking it, all barcode types in the “①Symbology” list will be selected.

⑥ Save Symbologies

After performing any of the ①③④⑤ of the above settings, click this button to save it. This setting will be saved to DemoAPP.

3.6. Data Export

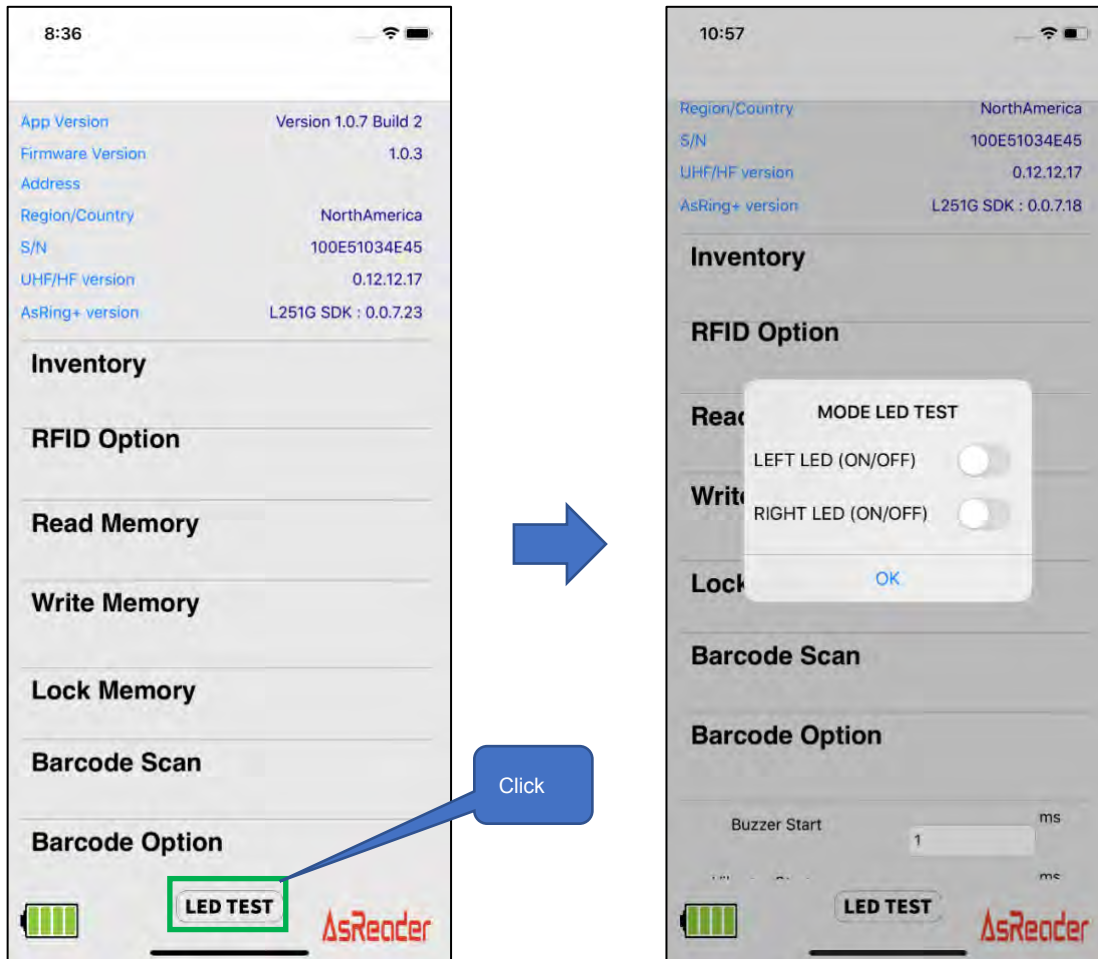
In the Demo APP, barcode and RFID tag data can be exported as a CSV file or an Excel file. You can then transfer those files to PC via iTunes. The following example is the data export page of RFID tags, and the data export of barcodes is the same.



- ① Click the "Export" at the top right of the Inventory page.
- ② Select an export file type. To Export to a CSV file, select "CSV Export"; To Export to an Excel file, select "Excel Export". Once done, the file is saved to the Demo APP. You can then click on the "Excel List" to view all the saved Excel files, which are displayed as a List.
- ③ Connect your phone device to your PC and transfer files saved in the Demo APP to your PC via iTunes.

3.7. The Test Button of the Mode Indicator LED

Click "LED TEST" at the bottom of the left page to control the Mode LED indicator of AsReader. If "LEFT LED" is turned on, the Mode indicator on the left side of AsReader will remain on. If "RIGHT LED" is turned on, the Mode indicator on the right side of AsReader will remain on.



ASR-L251G Demo App

User Manual

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