



ISC Android SDK User's Guide

April 6, 2023

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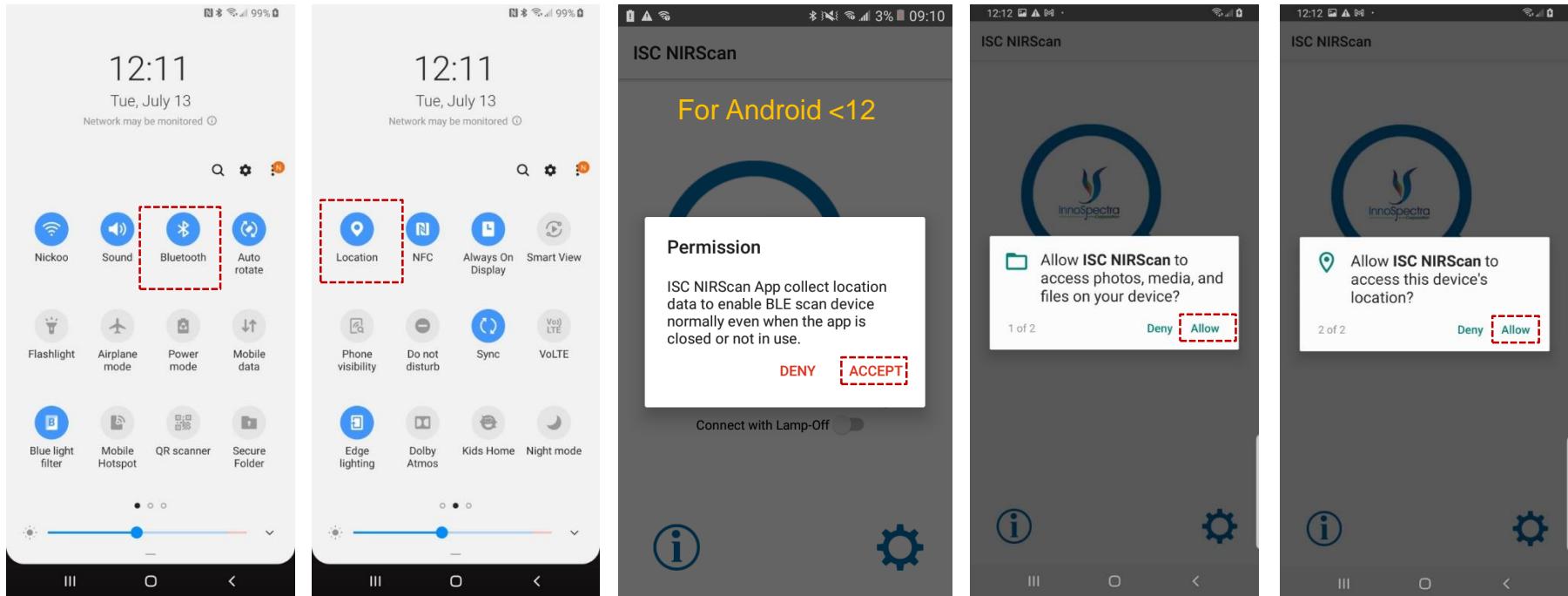
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- Performing A Scan
- Update Built-in Reference Data
- Warm Up the Device



Notice

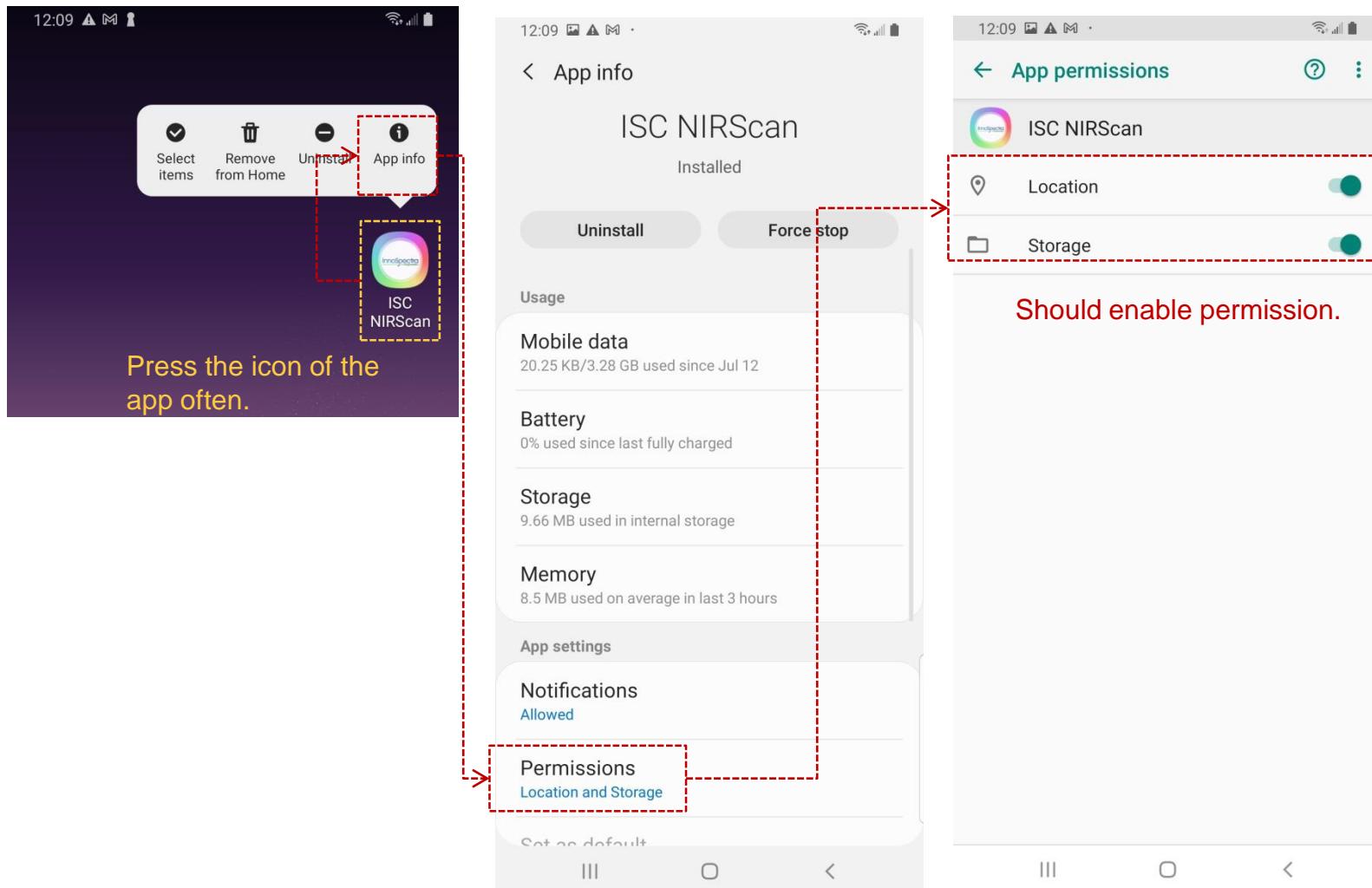
Notice

- User should open the Bluetooth and might need to open location due to the different phone's manufacturer's requirements.
- When open app, should permit to save the graph, media, file, and location.
- Android <12 versions will pop out dialog asking for a location permission declaration.



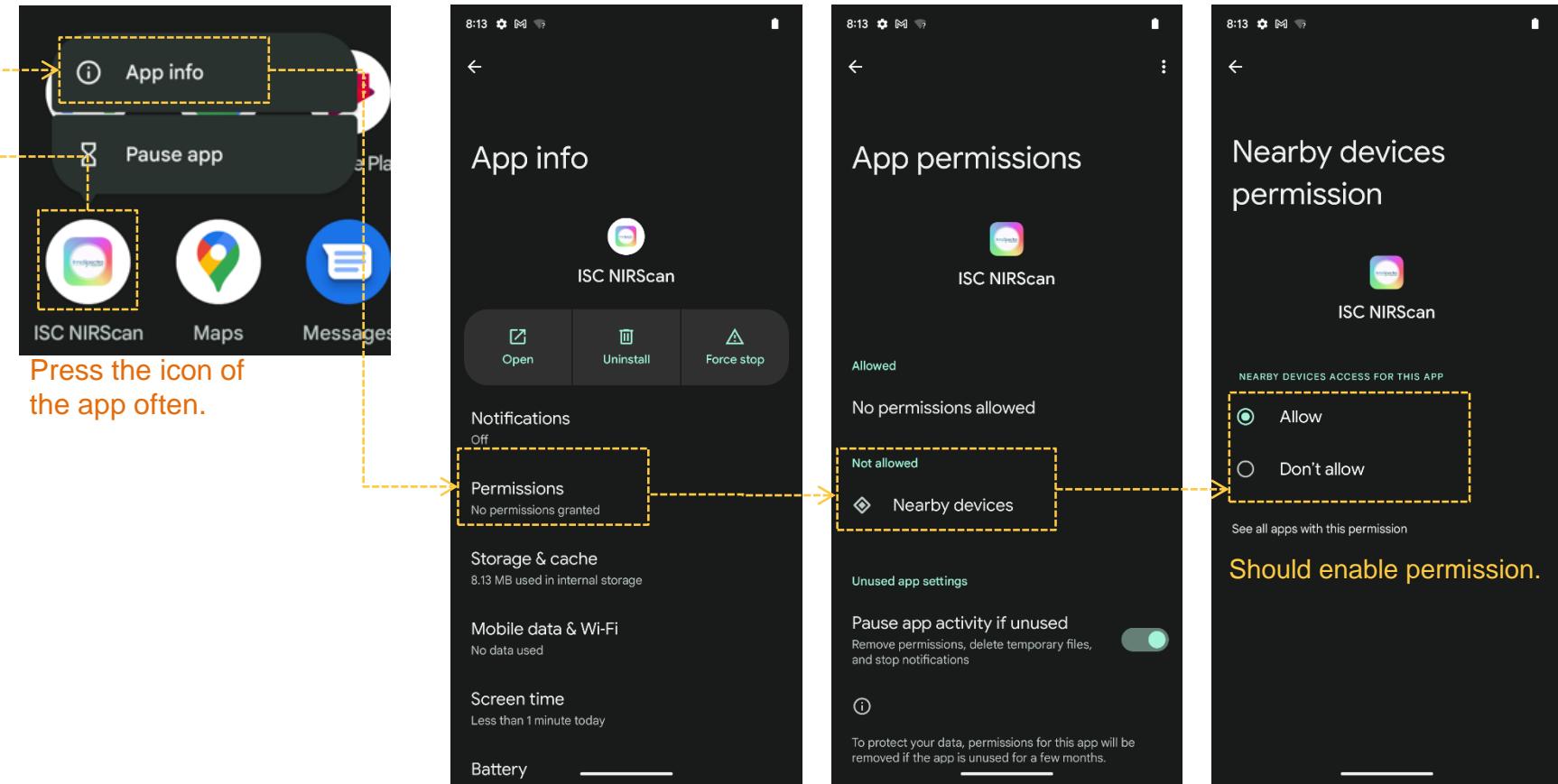
Notice

- If the device still cannot be found, it is necessary to confirm whether the APP has an allowable permission location.(For Android version < 12)



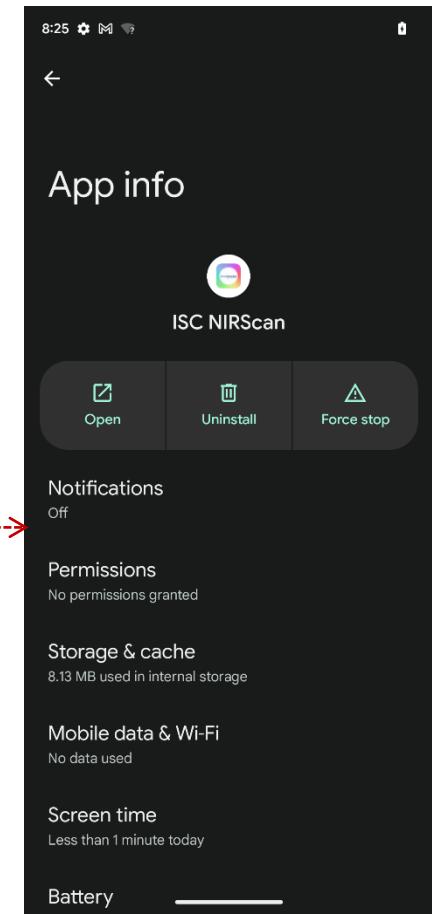
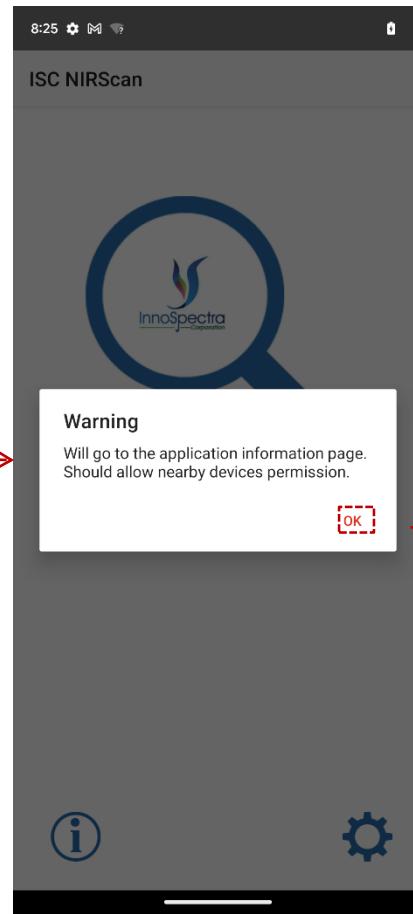
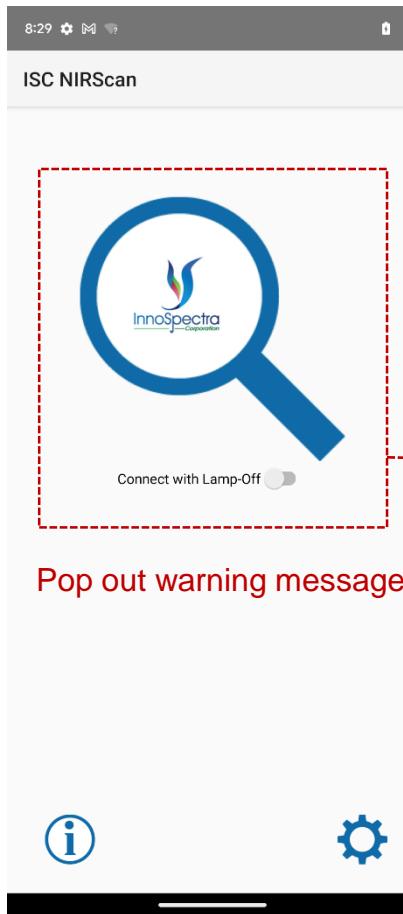
Notice

- If the device still cannot be found, it is necessary to confirm whether the APP has an allowable permission Nearby devices.(For Android version ≥ 12)



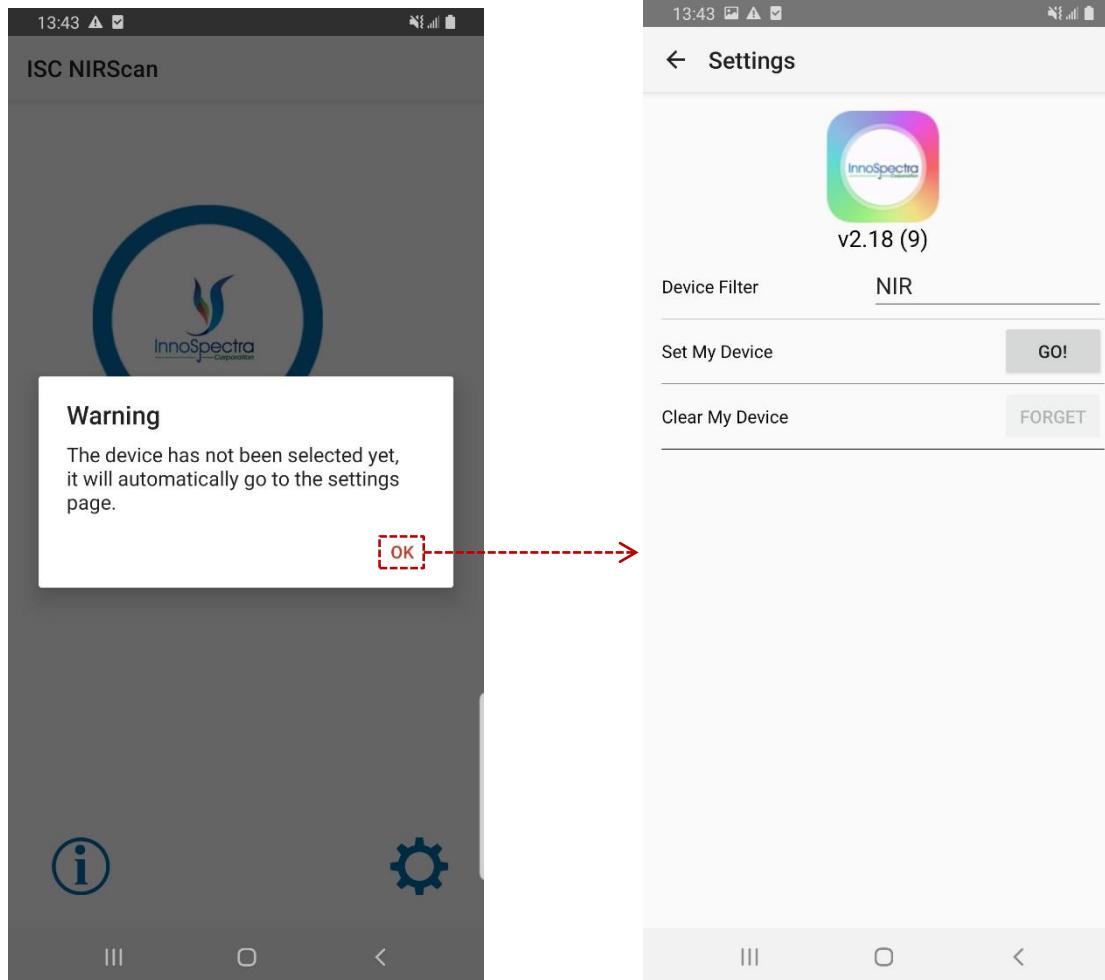
Notice

- If the user does not allow Nearby devices permissions, the connected deice will pop out warning message. After press ok will automatically jump to app info page. User must manually open the Nearby devices permissions to use the APP (Note: Can see previous page) .(For Android version ≥ 12)



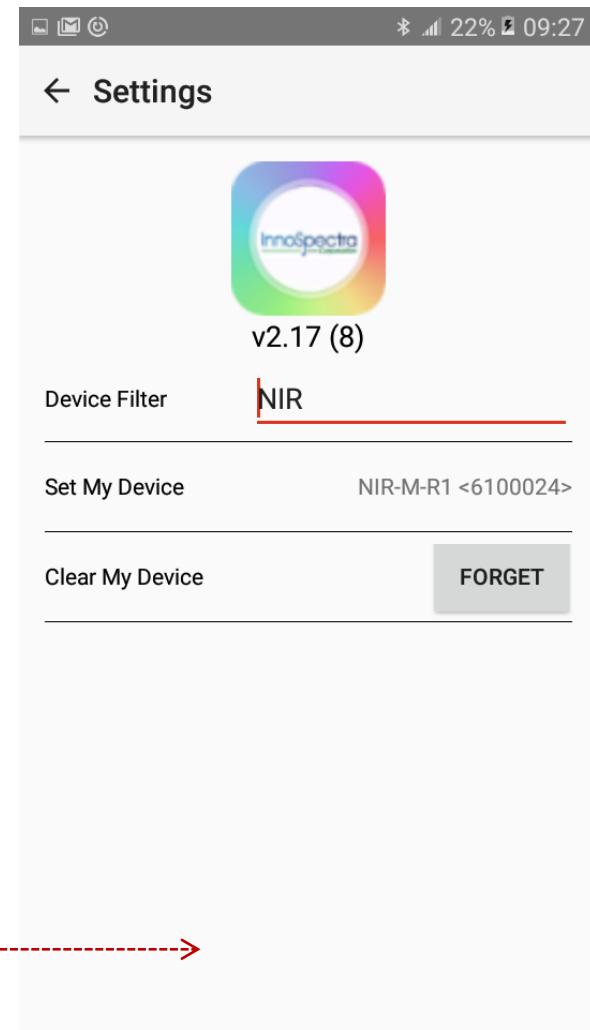
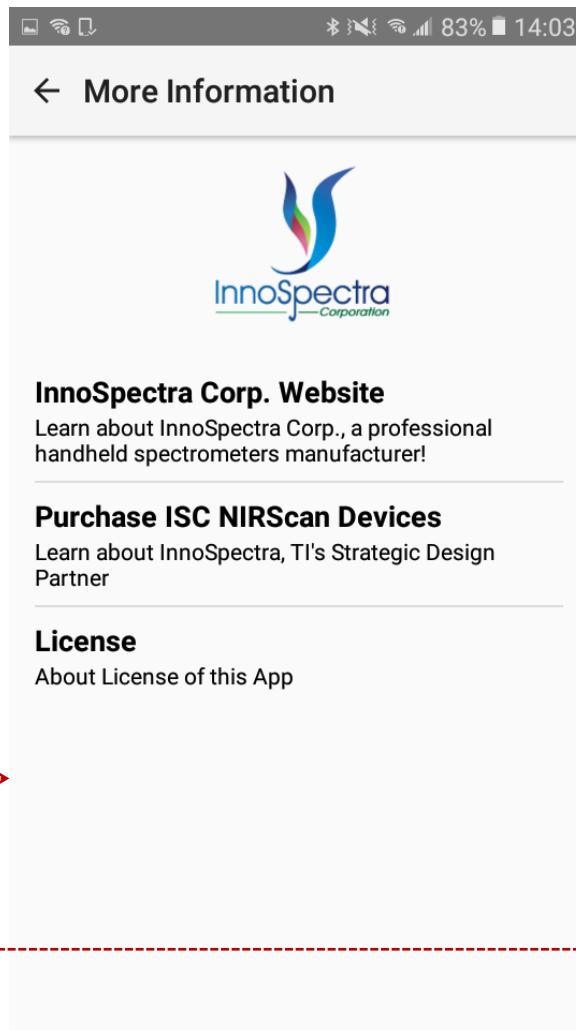
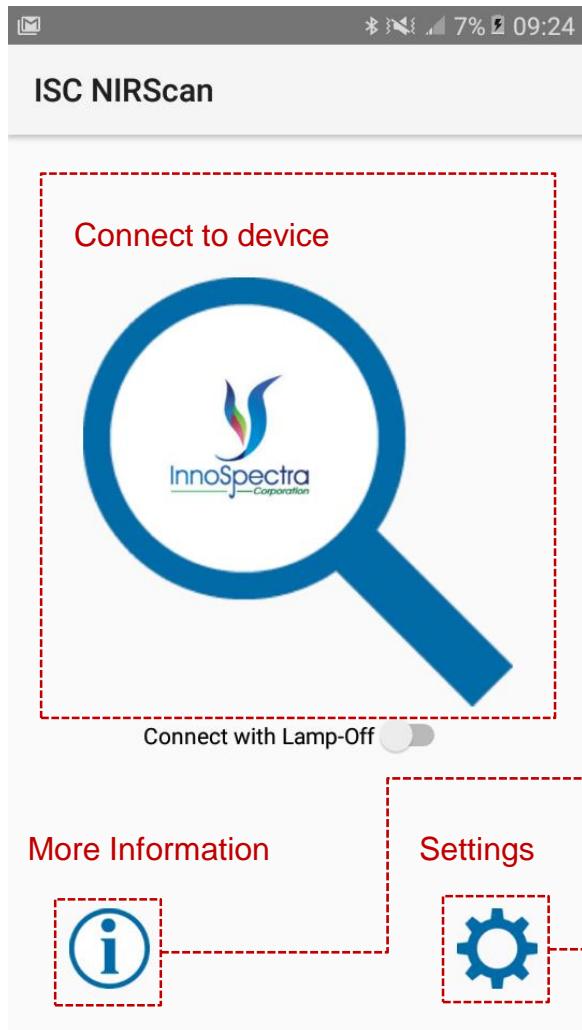
Notice

- When the user presses the magnifying glass to connect to the device, if the device has not been set, the window will pop up to remind and automatically jump to the setting page.



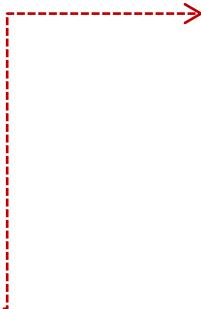
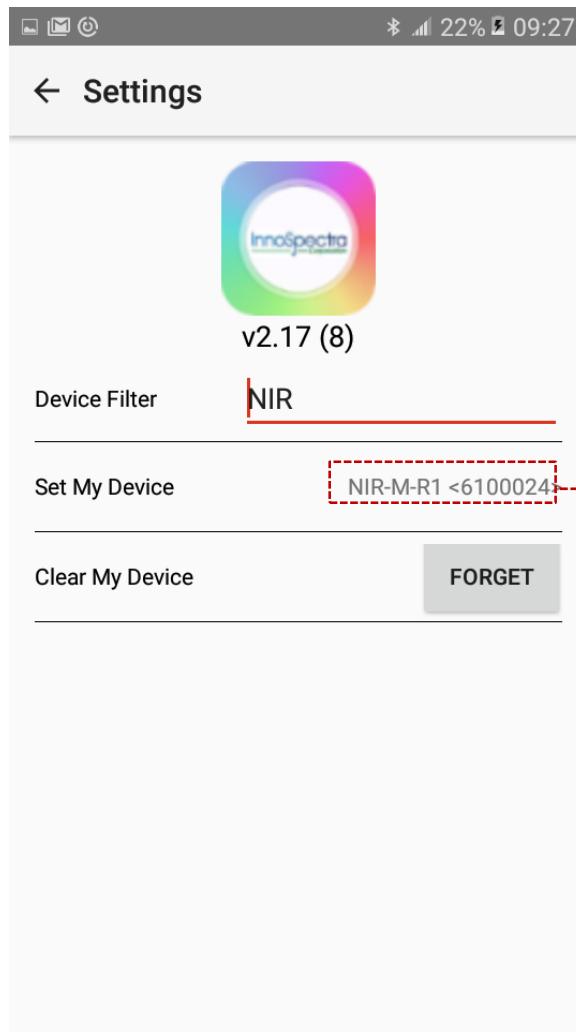
INTRODUCTION

Main Page

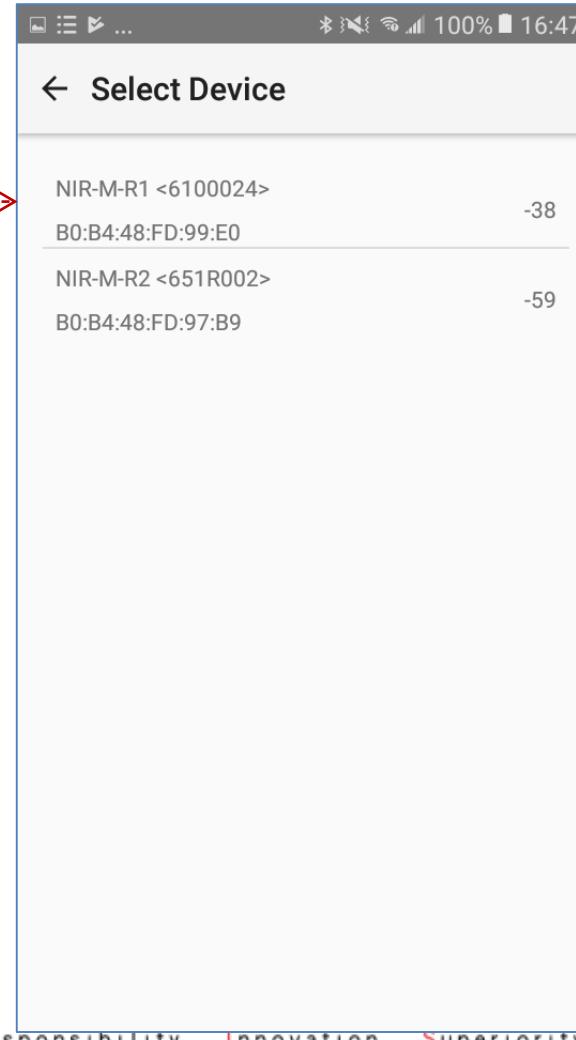


Select the device

- First user should go to setting page from main page and select the device.
- User can set the device filter to search the device.

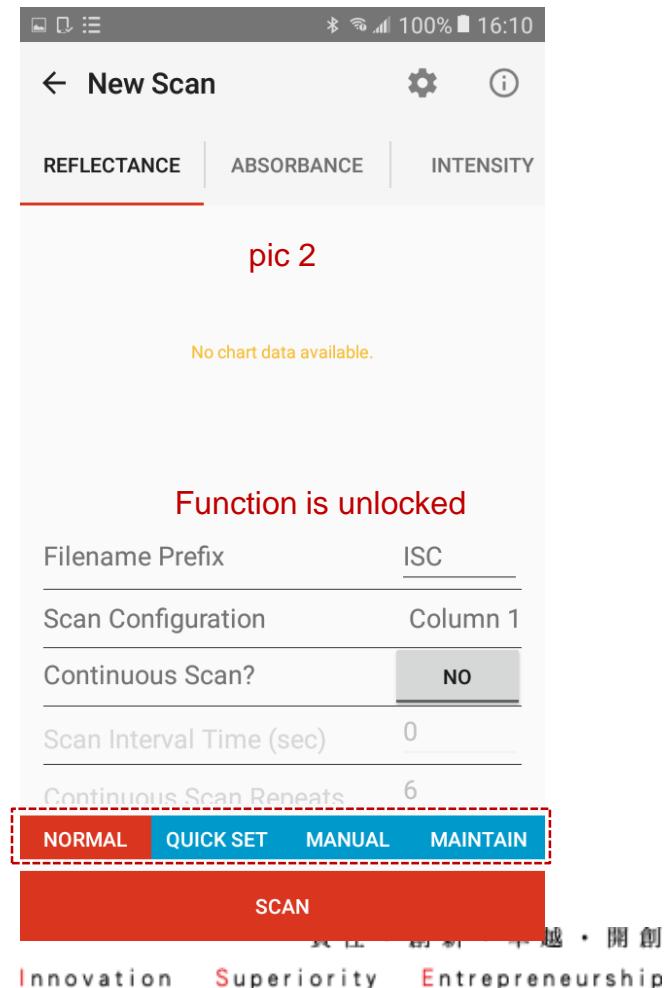
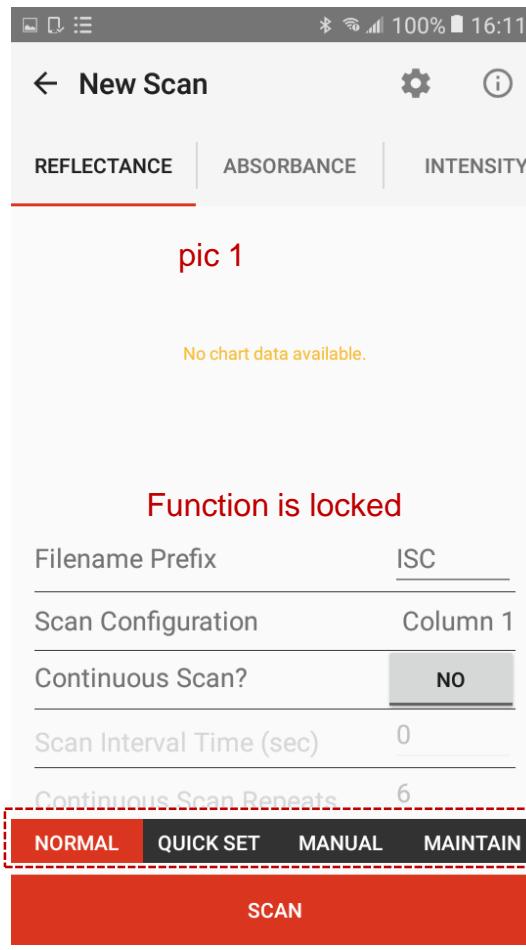
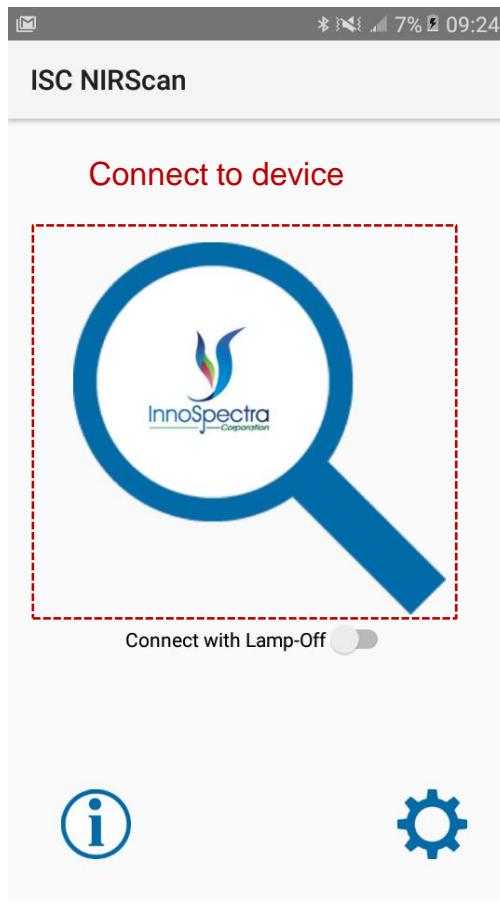


Press to select device



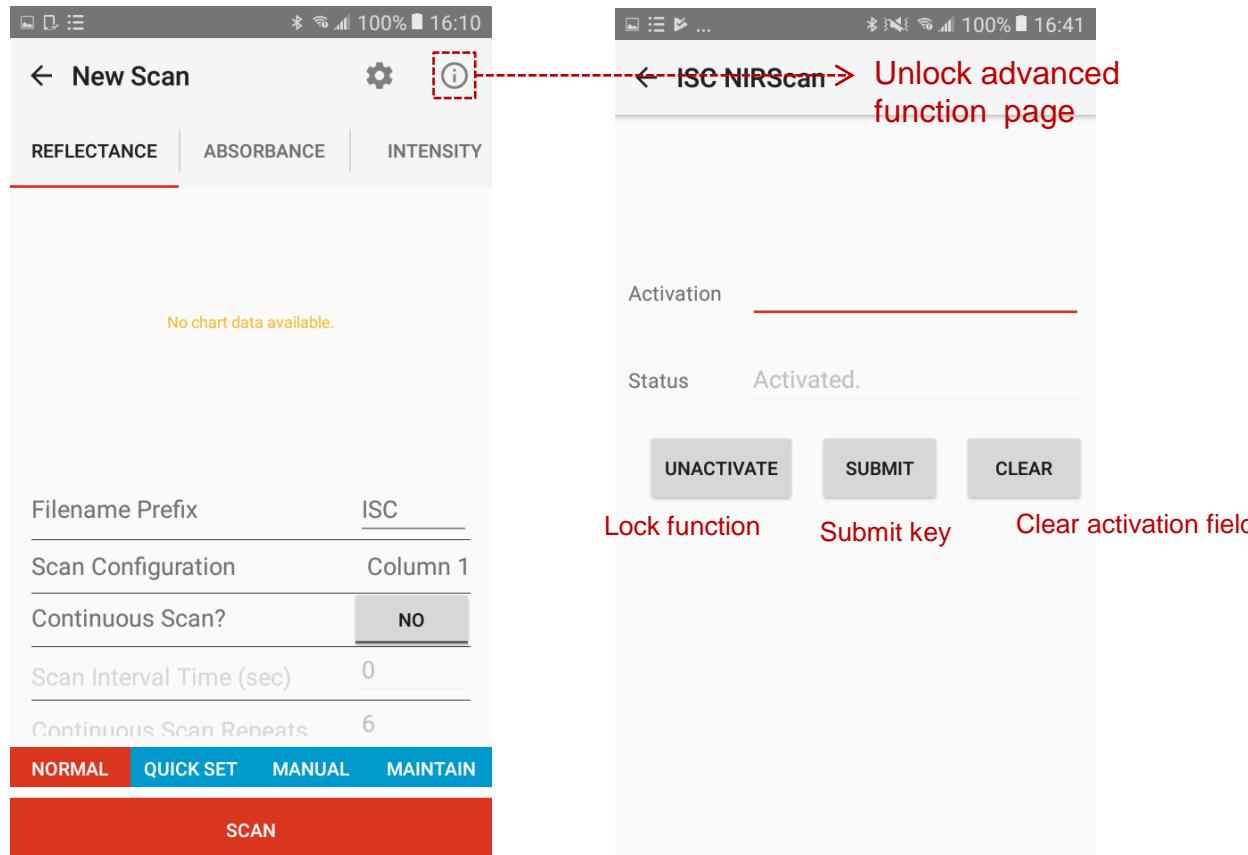
Connect to Device

- Second, user can press connect to device from the main page then go to the scan page.
- There are two scan pages. If function is locked user will see pic 1. If function is unlocked, user will see pic 2.



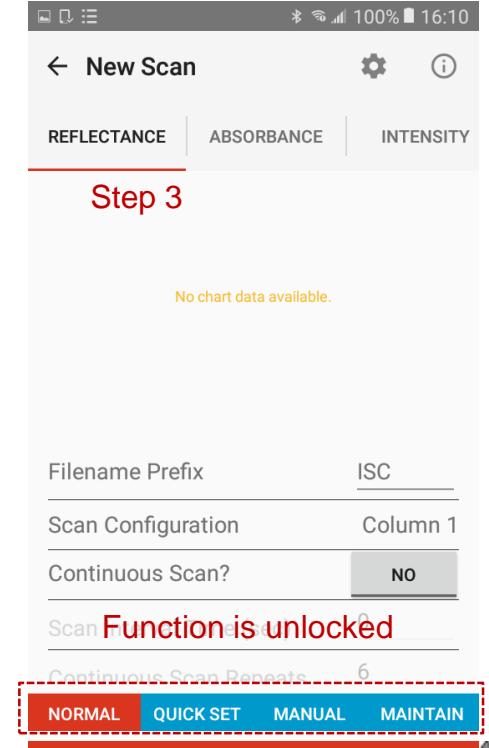
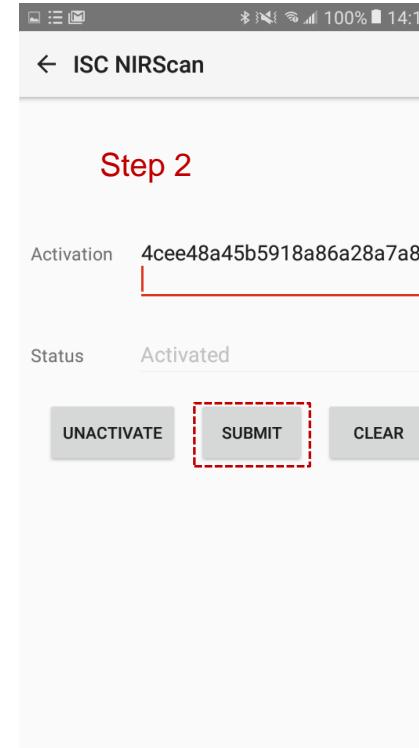
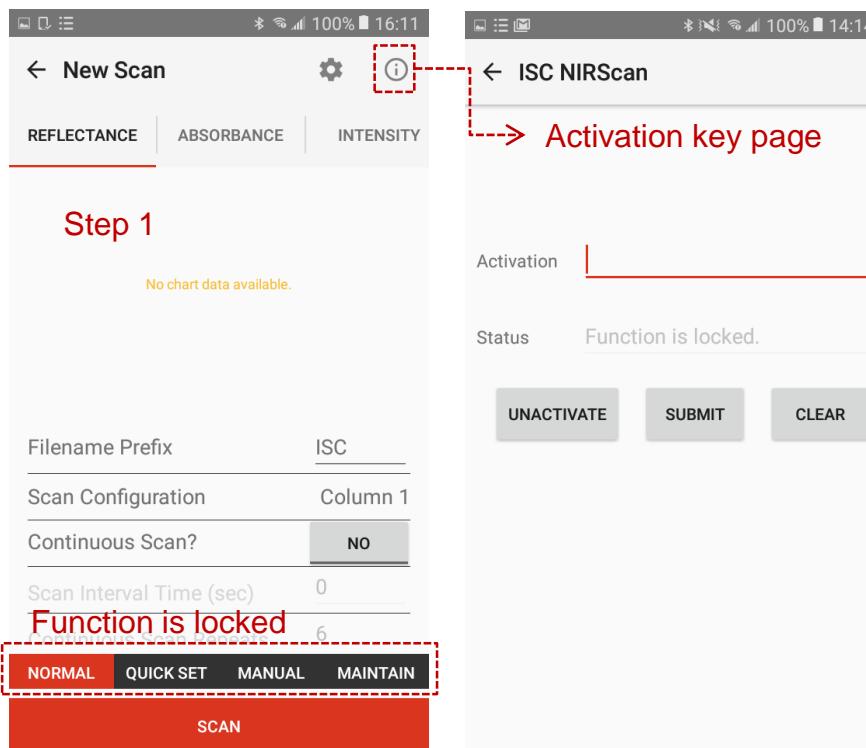
Unlock Advanced Function Page

- User can input key in activation field then press submit. If advanced function is unlocked, the status will show “Activated”. If advanced function is locked, the status will show function is locked.
- User press “UNACTIVATE” button. The function will lock and the status will show function is locked.
- User press “CLEAR” button. The activation field will clear.



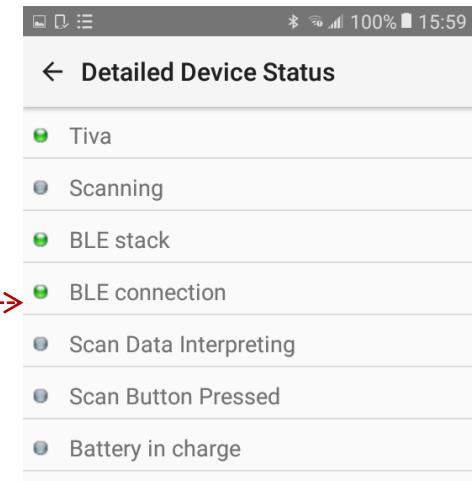
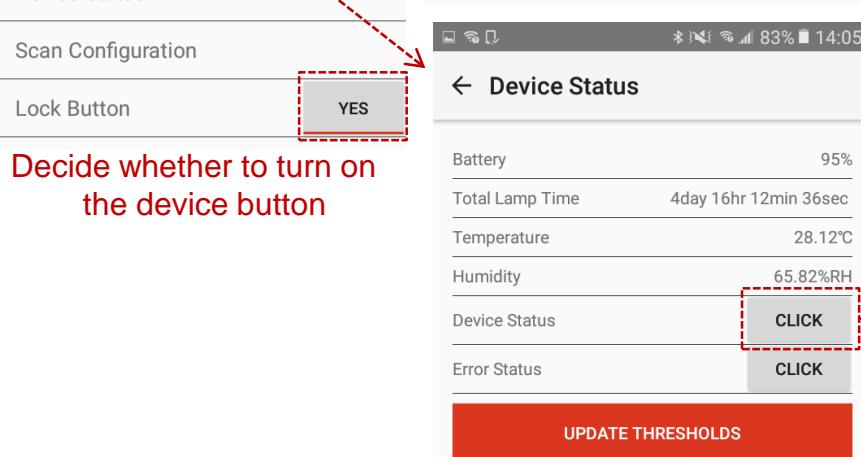
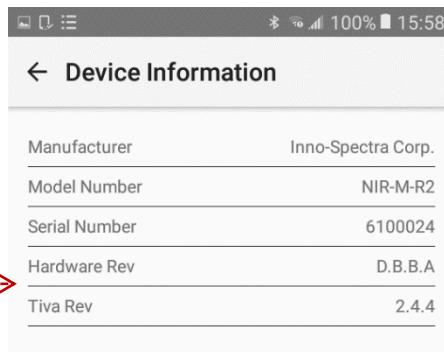
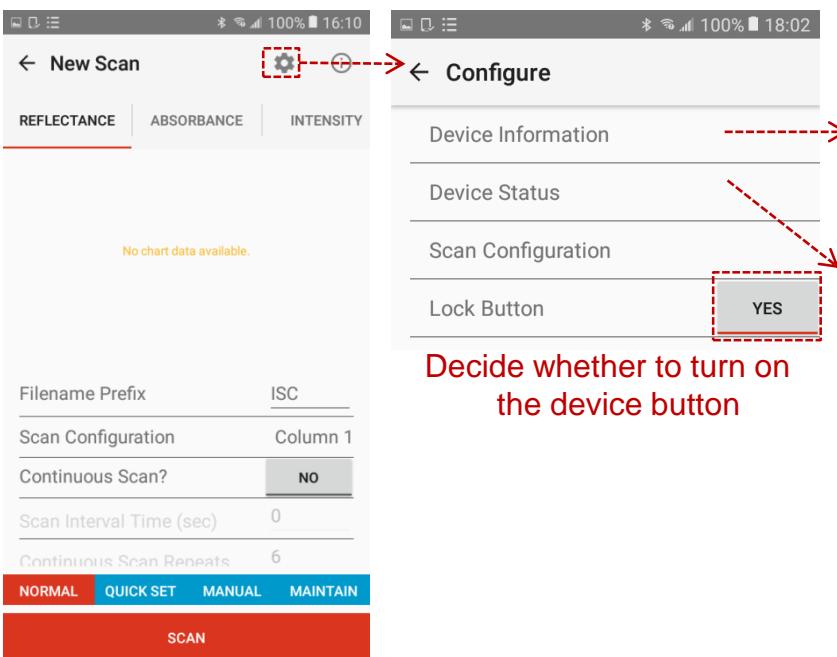
How to Unlock Advanced Function

- Step 1: Press button to go to activation key page. User can see the status is “Function is locked” .
- Step 2: Input key then press “SUBMIT”. The status will change to “Activated” when user input correct key.
- Step3: Back to scan page. The function will unlock.



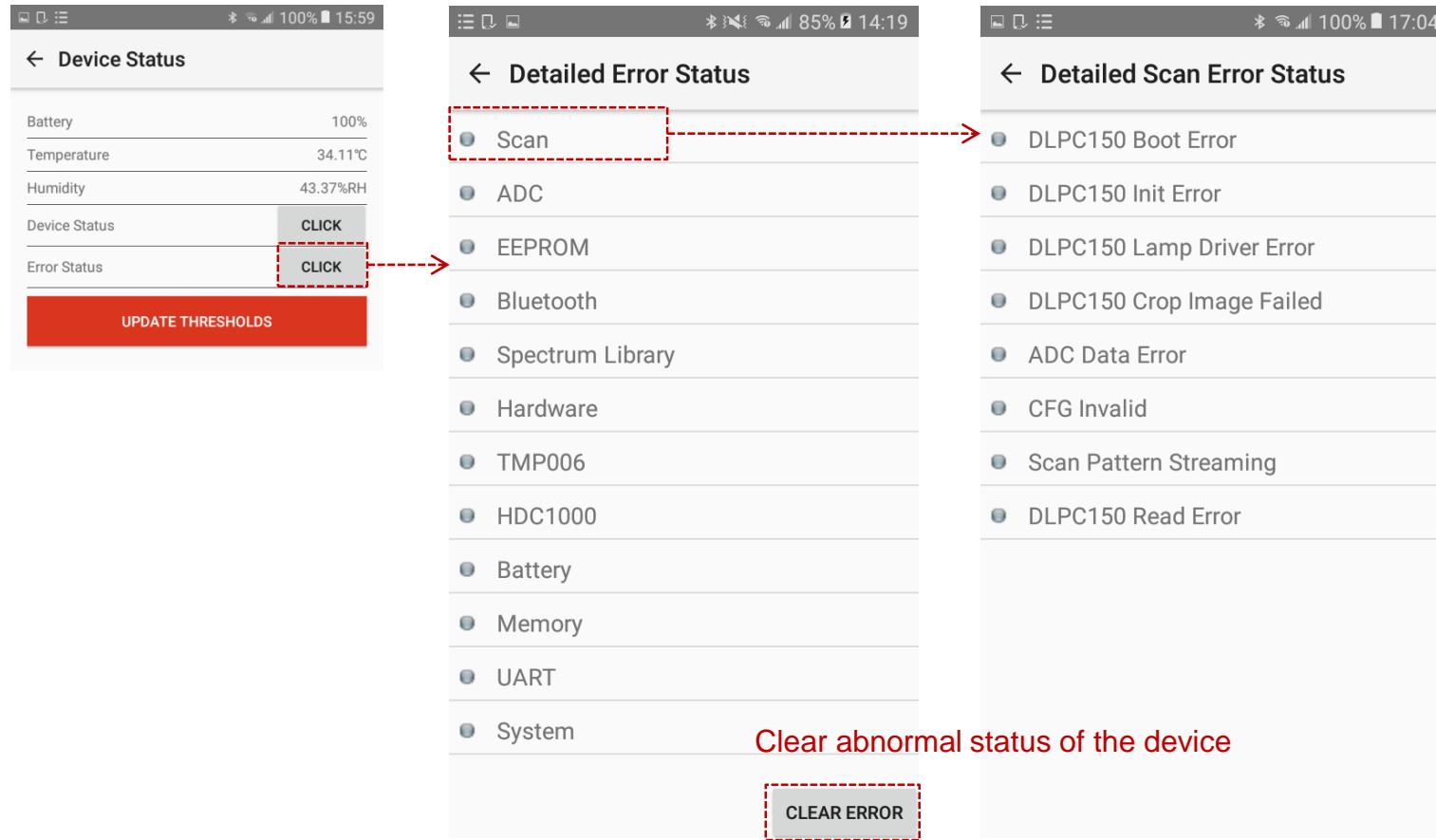
Configure Page

- User can go to configure page from scan page.
- Press “Device Information” can see the device information.
- Press “Device Status” can see the device status.
- Press “CLICK” button in device status filed can see the detailed device status.
- User can decide whether to turn on the device button.



Configure Page

- Press “CLICK” button in error status filed can see the detailed error status.
- Press “CLEAR ERROR” button can clear abnormal status of the device.
- Press “Scan” in detailed status can see detailed scan error status.

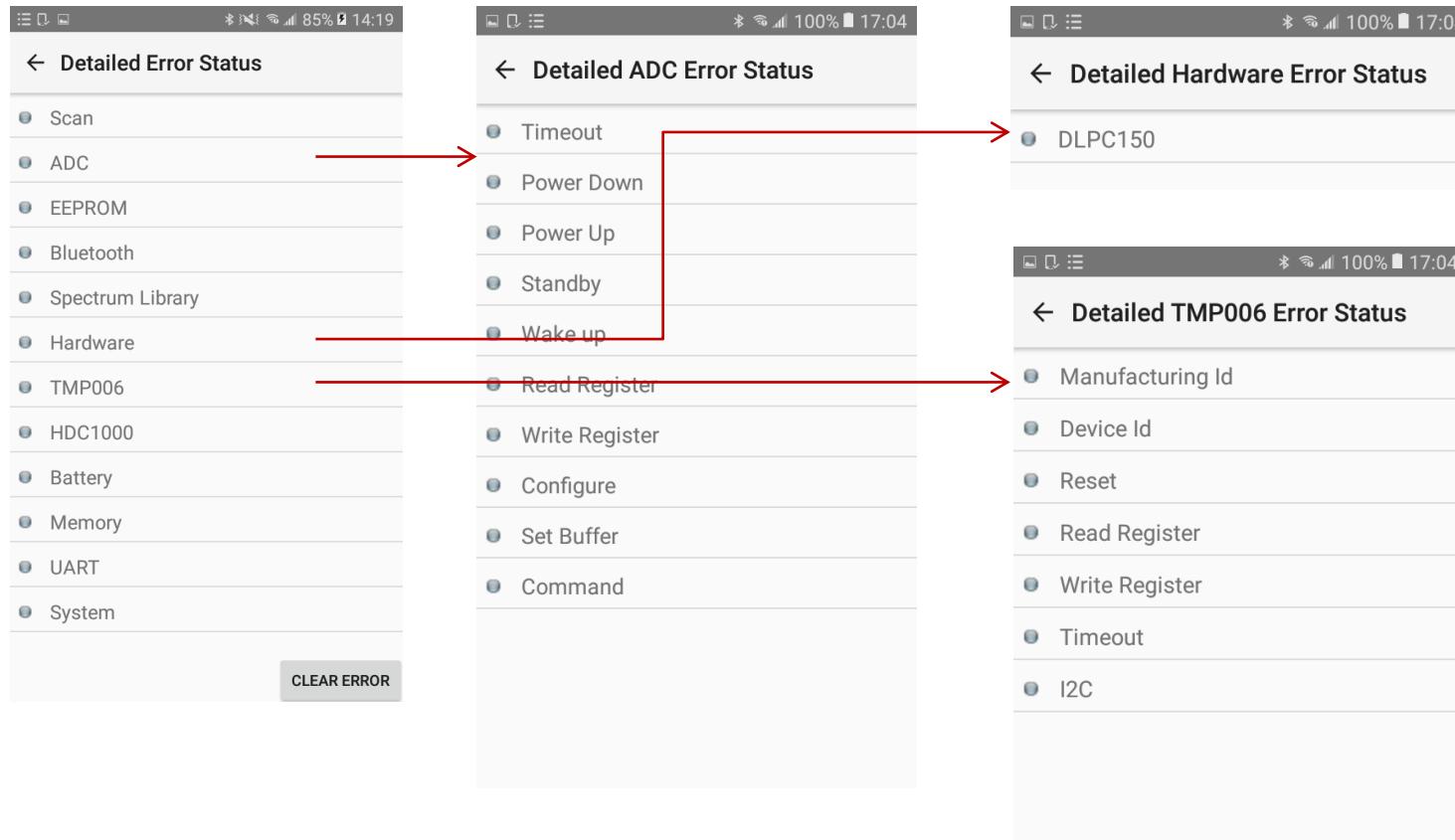


Clear abnormal status of the device

CLEAR ERROR

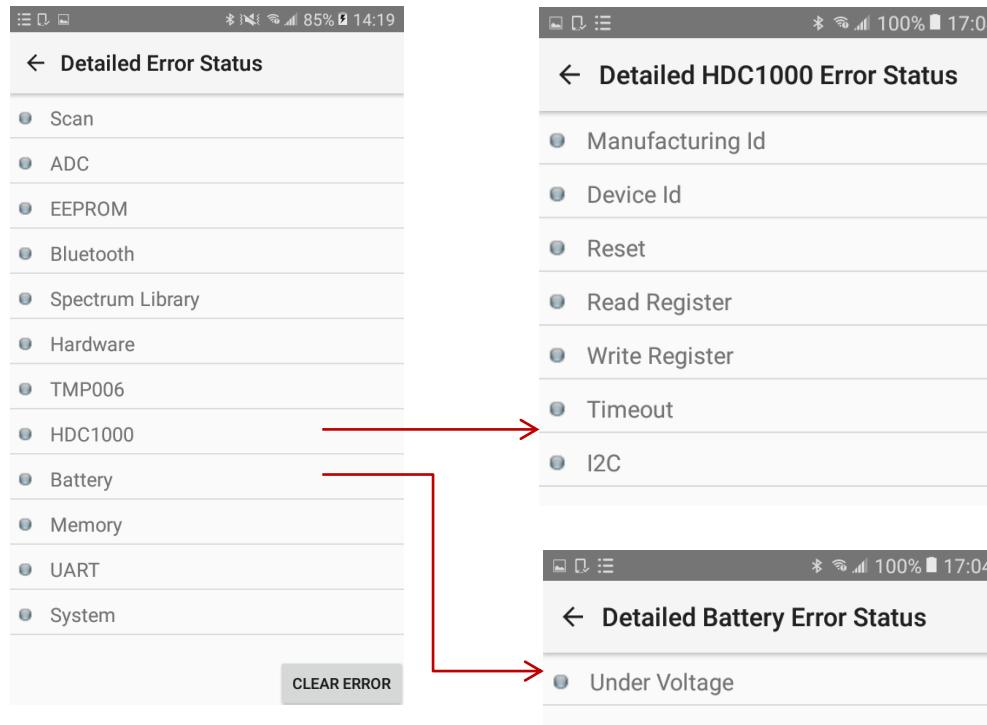
Configure Page

- Press “ADC” in detailed status can see detailed adc error status.
- Press “Hardware” in detailed status can see detailed hardware error status.
- Press “TMP006” in detailed status can see detailed tmp006 error status.



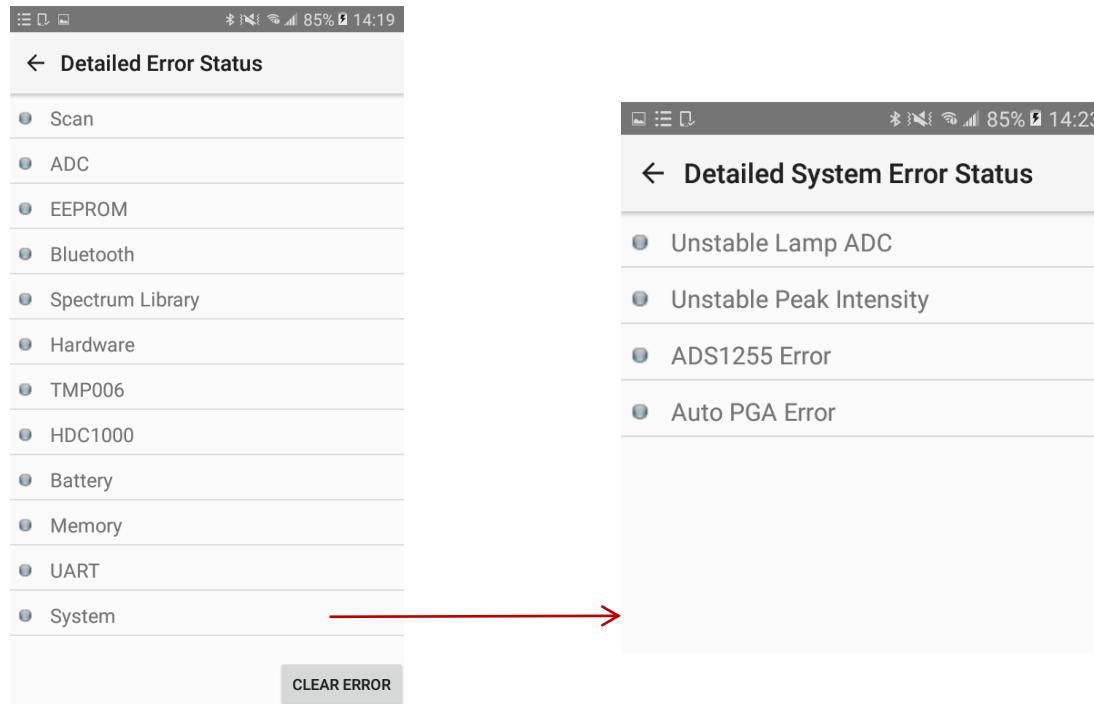
Configure Page

- Press “HDC1000” in detailed status can see detailed hdc1000 error status.
- Press “Battery” in detailed status can see detailed battery error status.



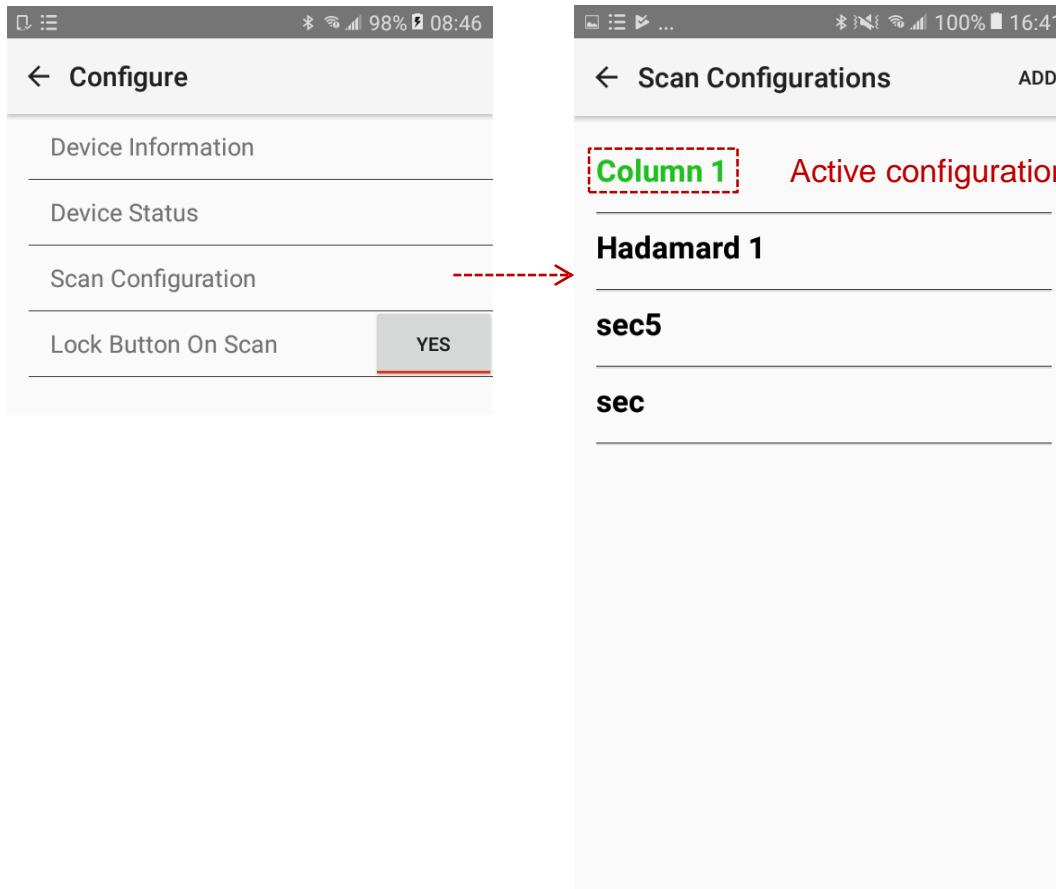
Configure Page

- Press “System” in detailed status can see detailed System error status.



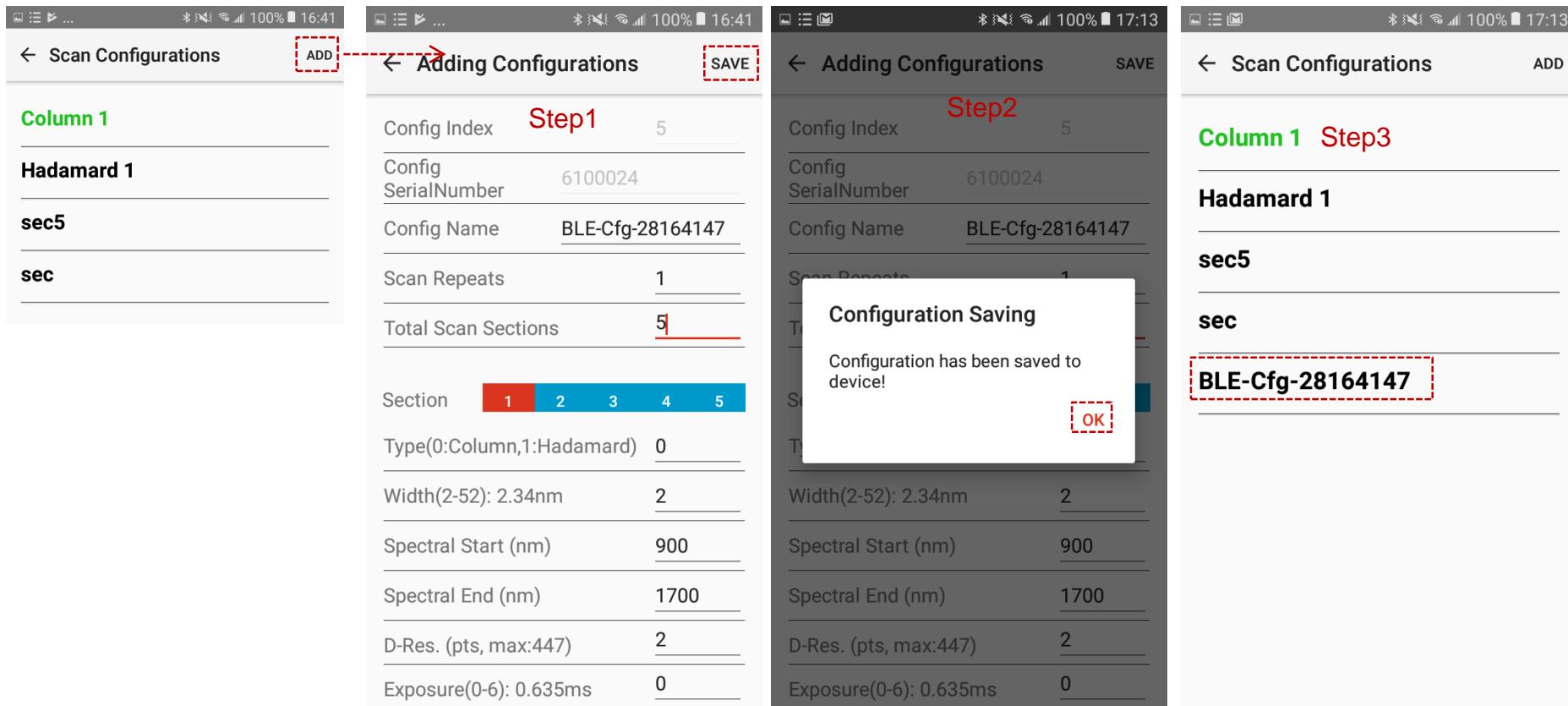
Scan Configurations Page

- Scan configurations page will show the configurations saved in device.
- The green is represented the active configuration.
- User can press other configuration to change the active configuration.
- The active configuration is used to default configuration.



Create A Scan Configuration

- Step 1: Input config name, scan repeats, total scan sections, and section info then save.
- Step 2: Press “OK” when pop out configuration saving dialog. The app will back to scan configurations and re-download config.
- Step 3: The config will list to scan configurations.



The screenshots show the flow of creating a scan configuration:

- Step 1: Adding Configurations** (Left Screen)
 - Config Index: Step1
 - Config SerialNumber: 6100024
 - Config Name: BLE-Cfg-28164147
 - Scan Repeats: 1
 - Total Scan Sections: 5
 - Section Selection: 1 (highlighted in red)
 - Type(0:Column,1:Hadamard): 0
 - Width(2-52): 2.34nm
 - Spectral Start (nm): 900
 - Spectral End (nm): 1700
 - D-Res. (pts, max:447): 2
 - Exposure(0-6): 0.635ms
- Step 2: Configuration Saving** (Middle Screen)

A confirmation dialog box is displayed:

Configuration Saving

Configuration has been saved to device!

OK
- Step 3: Scan Configurations** (Right Screen)
 - Column 1: Step3
 - Hadamard 1
 - sec5
 - sec
 - BLE-Cfg-28164147** (highlighted in red)

PERFORMING A SCAN

Scan Page

Back to main page
and disconnect to device Unlock function page

↑ ↑ ↑

New Scan Configure

REFLECTANCE ABSORBANCE INTENSITY

Select plot method

No chart data available.

Spectrum data plot

Filename Prefix ISC

Scan Configuration Column 1

Continuous Scan? **NO**

Scan Interval Time 0

Select scan method

Continuous Scan Repeats 6

NORMAL **QUICK SET** MANUAL MAINTAIN

SCAN

Scan data

← Configure

Device Information

Device Status

Scan Configuration

Lock Button **YES**

Activation

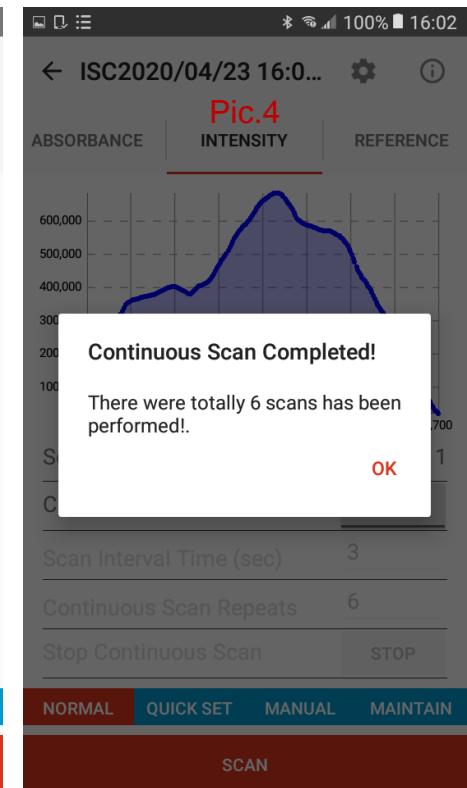
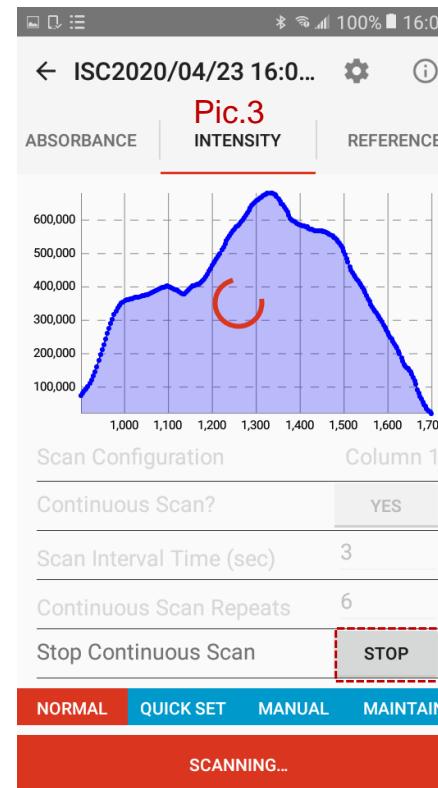
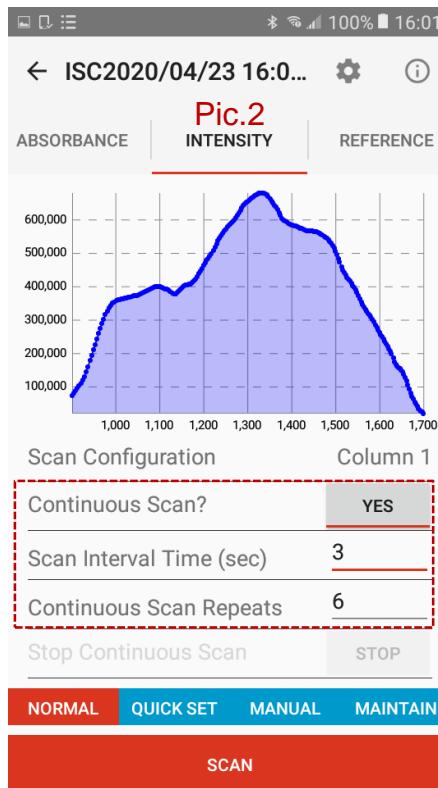
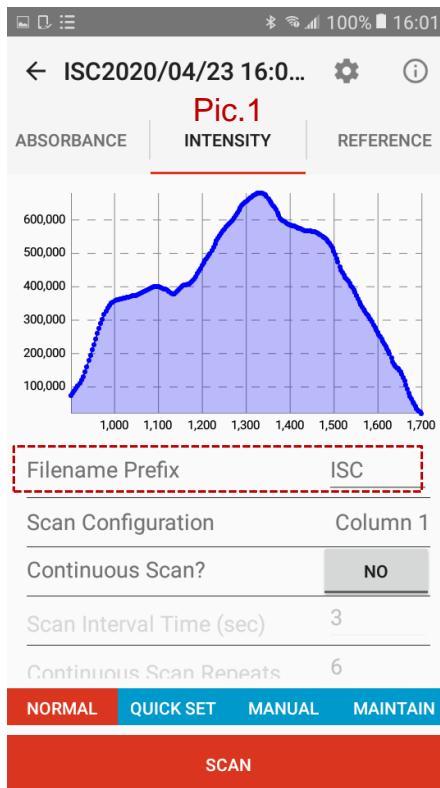
Status Activated.

UNACTIVATE **SUBMIT** **CLEAR**

→ ISC NIRScan Unlock function page

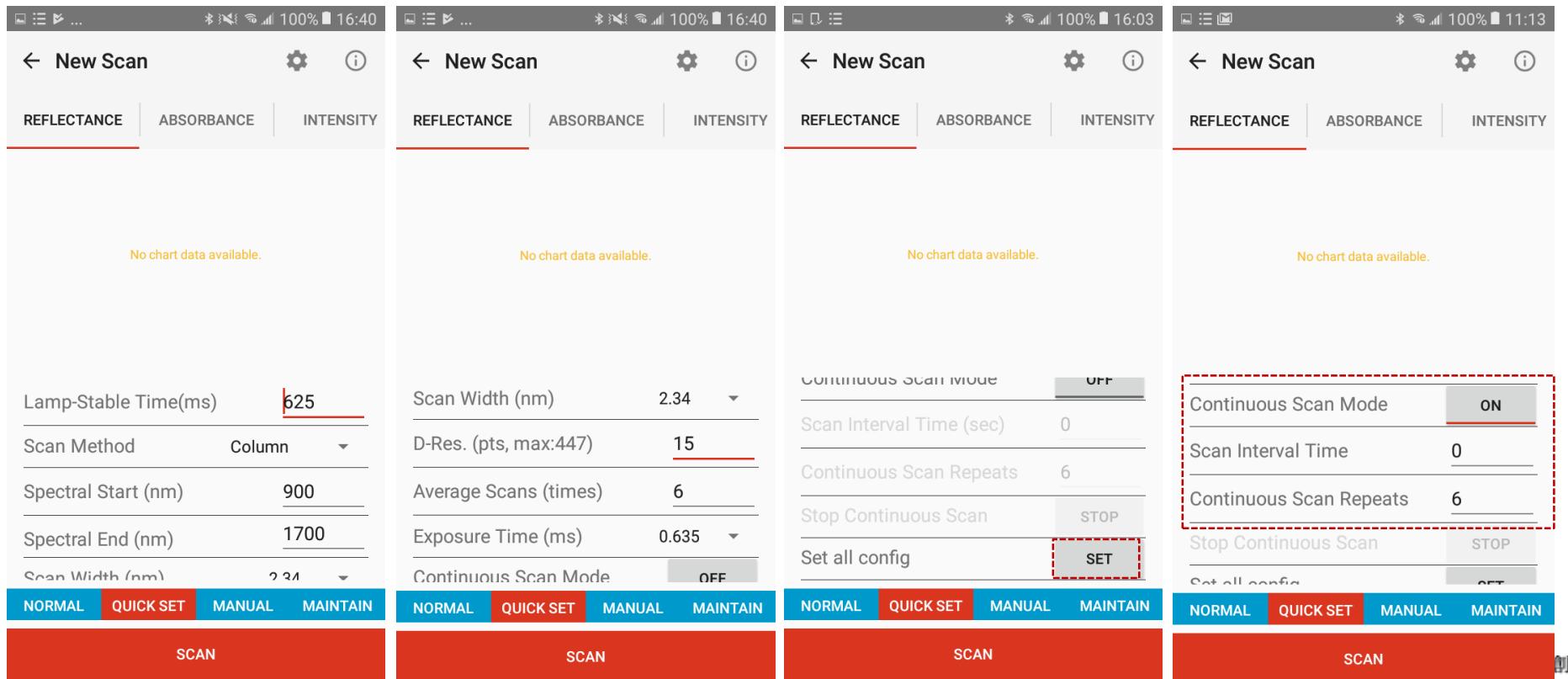
Normal Scan

- Press “SCAN”, the result will show in the plot and save .csv in the phone. The file path is Documents/ISC_Report/. User can modify filename prefix before scan (Pic.1).
- If user want to continuous scan, open continuous scan and set scan interval time and continuous scan repeats (Pic.2). User can press “STOP” to stop scan in continuous scan mode (Pic.3). After continuous scan complete, will pop out dialog (Pic.4).



Quick Set Scan

- User can set parameter individual in quick set mode. **Before scan, user should press “SET” to set all configuration to take effect.**
- If user want to continuous scan, open continuous scan and set scan interval time and continuous scan repeats . User can press “STOP” to stop scan in continuous scan mode.

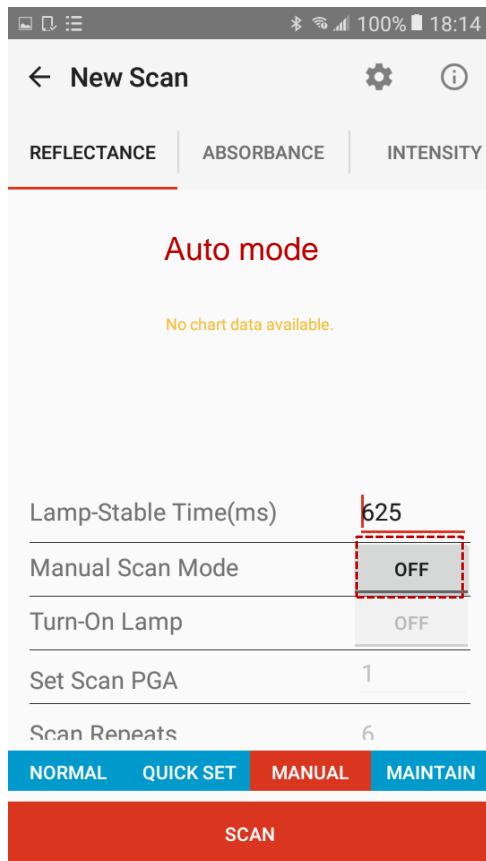


The screenshots show the 'New Scan' screen with various parameters and modes:

- Screenshot 1 (Left):** Shows basic parameters like Lamp-Stable Time (ms), Scan Method (Column), Spectral Start (nm), Spectral End (nm), and Scan Width (nm). The 'REFLECTANCE' tab is selected.
- Screenshot 2 (Second from Left):** Shows parameters like Scan Width (nm), D-Res. (pts, max:447), Average Scans (times), Exposure Time (ms), and Continuous Scan Mode (OFF). The 'REFLECTANCE' tab is selected.
- Screenshot 3 (Third from Left):** Shows parameters like Scan Interval Time (sec), Continuous Scan Repeats, Stop Continuous Scan (STOP), and Set all config (button highlighted with a red dashed box). The 'REFLECTANCE' tab is selected.
- Screenshot 4 (Right):** Shows the same parameters as Screenshot 3, but with 'Continuous Scan Mode' set to 'ON'. The 'REFLECTANCE' tab is selected. A red dashed box highlights the 'Continuous Scan Mode' section.

Manual Scan

- In auto mode, user can set lamp-stable time.
- In manual scan mode, user can set lamp on or off, pga gain and scan repeats.



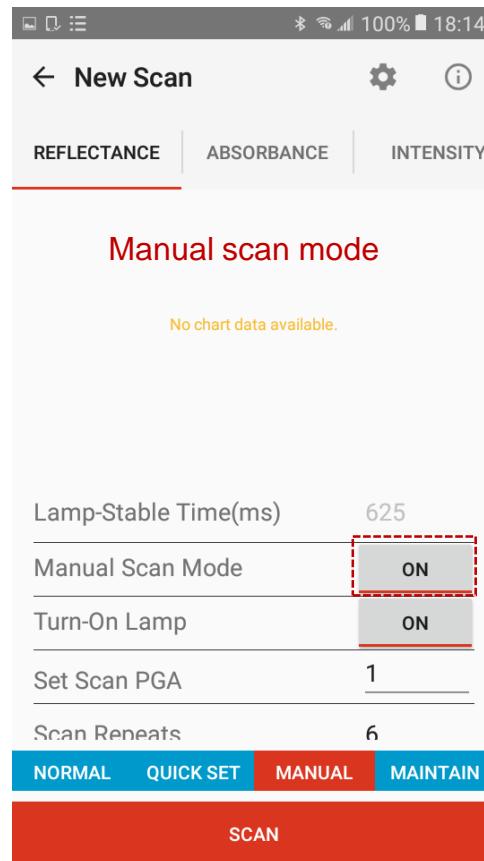
New Scan

REFLECTANCE ABSORBANCE INTENSITY

Auto mode

No chart data available.

Lamp-Stable Time(ms)	625
Manual Scan Mode	OFF
Turn-On Lamp	OFF
Set Scan PGA	1
Scan Repeats	6
NORMAL QUICK SET MANUAL MAINTAIN	SCAN



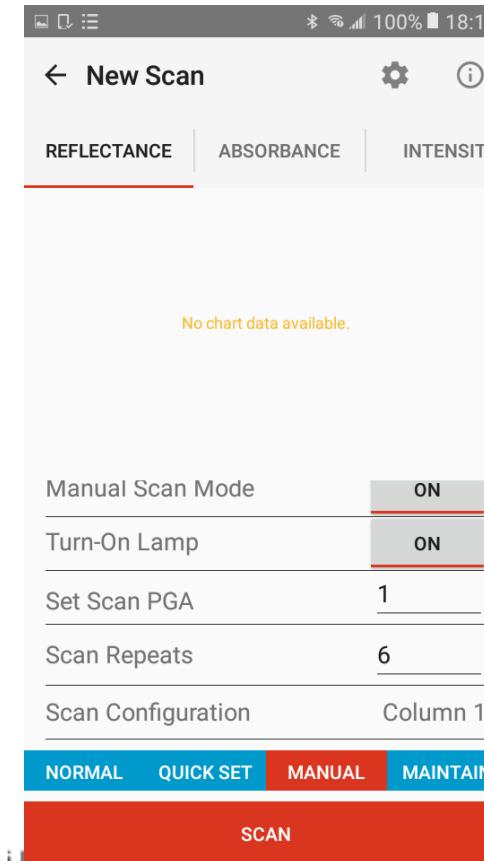
New Scan

REFLECTANCE ABSORBANCE INTENSITY

Manual scan mode

No chart data available.

Lamp-Stable Time(ms)	625
Manual Scan Mode	ON
Turn-On Lamp	ON
Set Scan PGA	1
Scan Repeats	6
NORMAL QUICK SET MANUAL MAINTAIN	SCAN



New Scan

REFLECTANCE ABSORBANCE INTENSITY

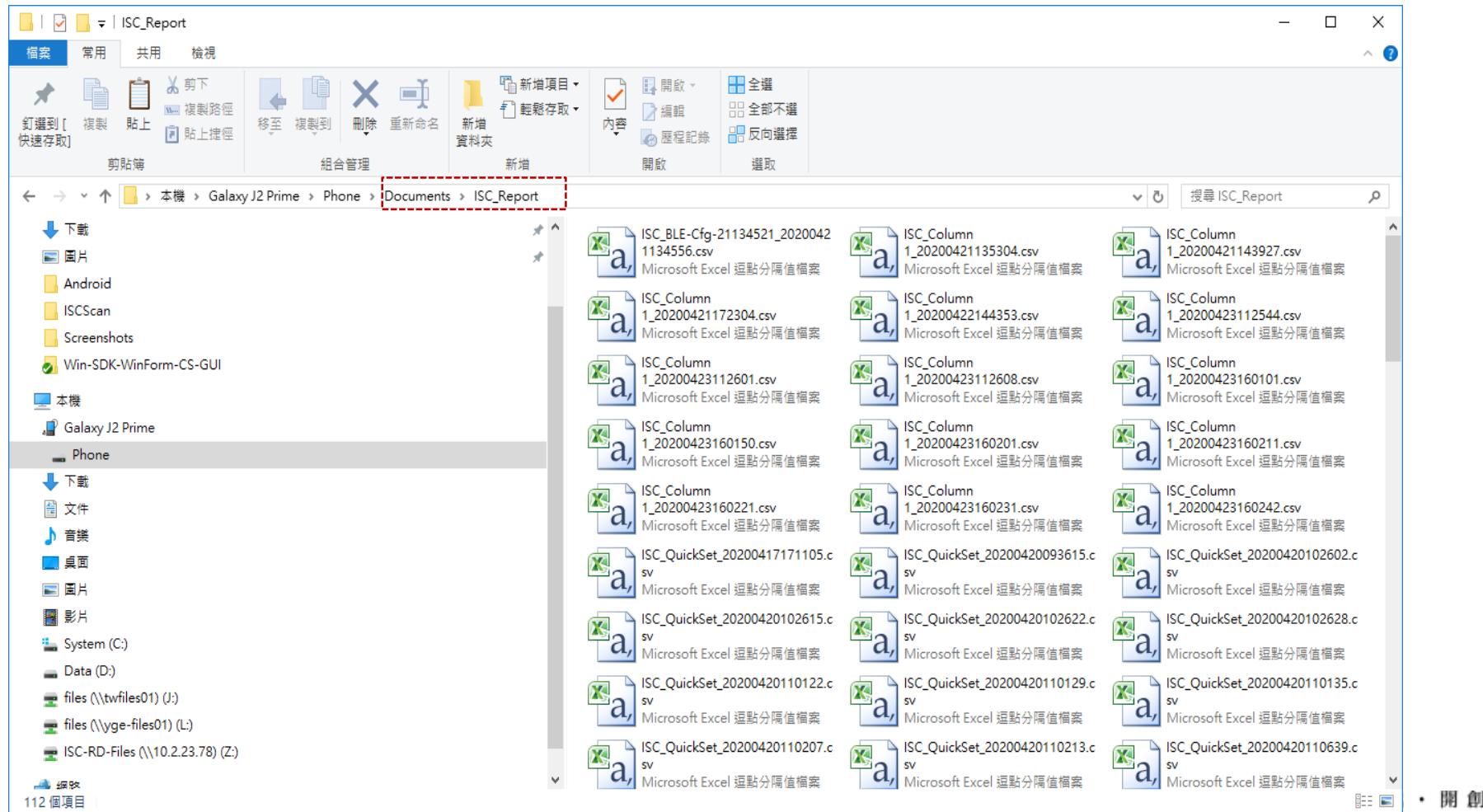
No chart data available.

Manual Scan Mode	ON
Turn-On Lamp	ON
Set Scan PGA	1
Scan Repeats	6
Scan Configuration	Column 1
NORMAL QUICK SET MANUAL MAINTAIN	SCAN

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.CSV file

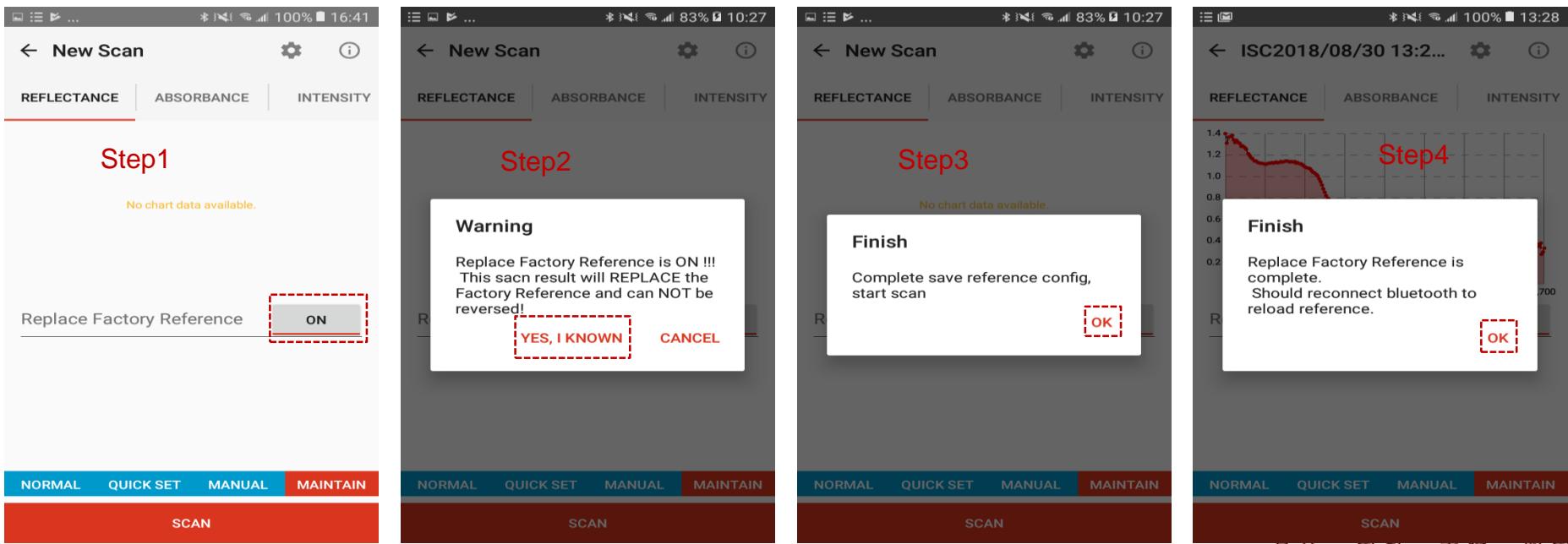
- After scan, the scan report (.csv file) will save to Documents/ISC_Report.
- The phone should use USB to connect PC and find the file.



UPDATE BUILT-IN REFERENCE DATA

Replace Built-In Reference

- Before replacing stored reference data, preparing a highly reflective material. A 99% reflective material as Spectralon® is preferred.
- Step1: Turn on “Replace Factory Reference” then scan. The warning dialog will pop out.
- Step2: Select “YES,I KNOWN”. The device will set config. If set config success, the finish config will pop out.
- Step3: Select “OK” then the device will start scan.
- Step4: Complete save reference will pop out finish dialog. Select “OK” and wait for 3 sec, the device will disconnect. User should reconnect to download new reference.





WARM UP THE DEVICE

Warm Up the Device

- User can turn on the switch button to warm up the device.
- The lamp will turn on after connect to the device.
- Warm-up time reaches three minutes, user can directly switch pages or scan, and the device will automatically turn off the lamp.
- **Warning: When the user sets connect with lamp on, must pay attention to the warm-up time and confirm that the device is warmed up and turn off the lamp before leaving.**



Thank You

