

ISC Android SDK User's Guide

Jan.12, 2022

Contents

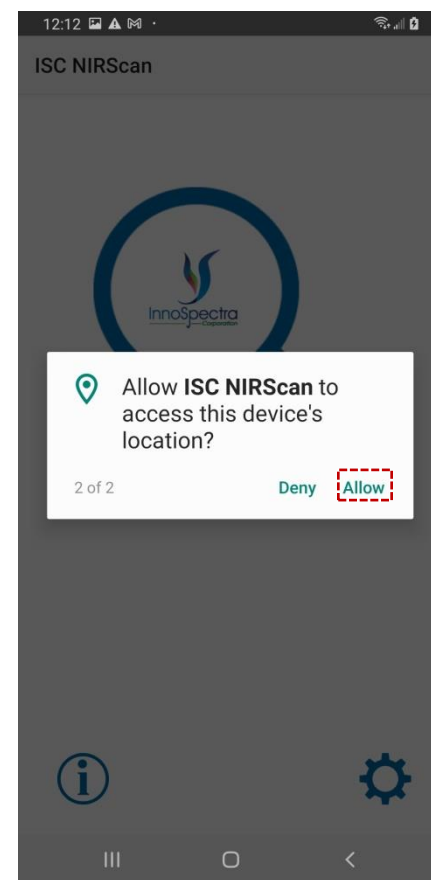
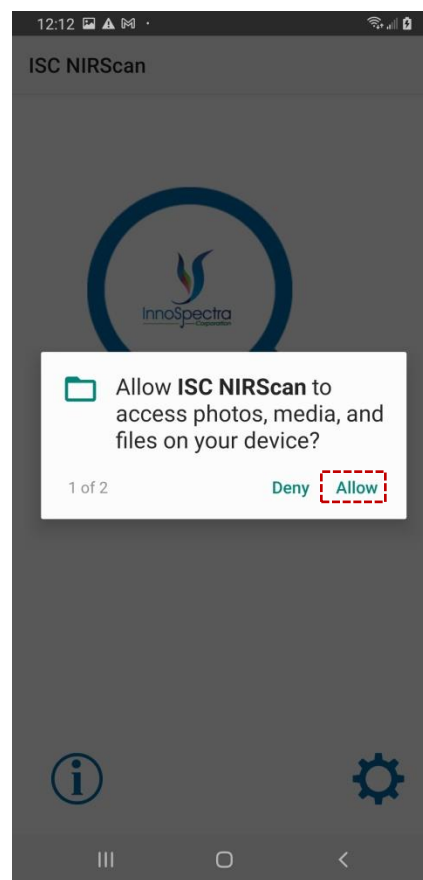
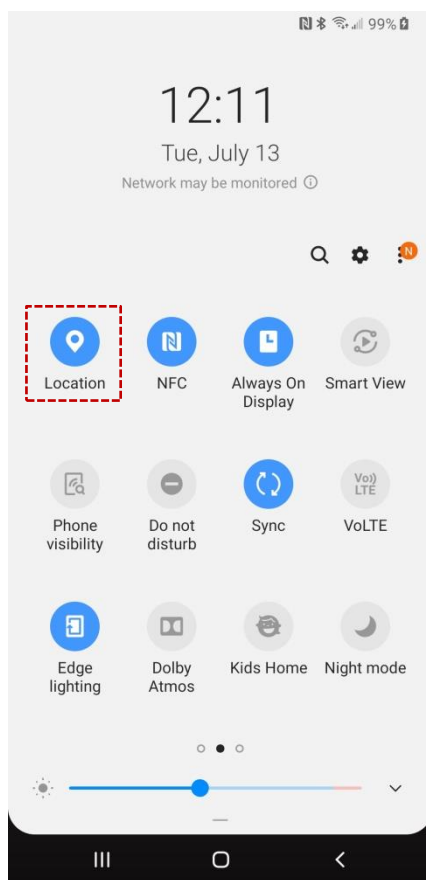
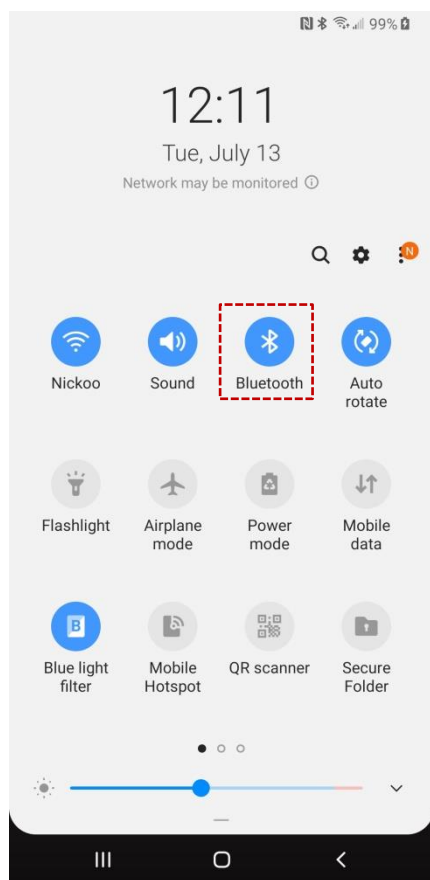


- Notice
- Introduction
- Performing A Scan
- Update Built-in Reference Data
- Warm Up the Device

Notice

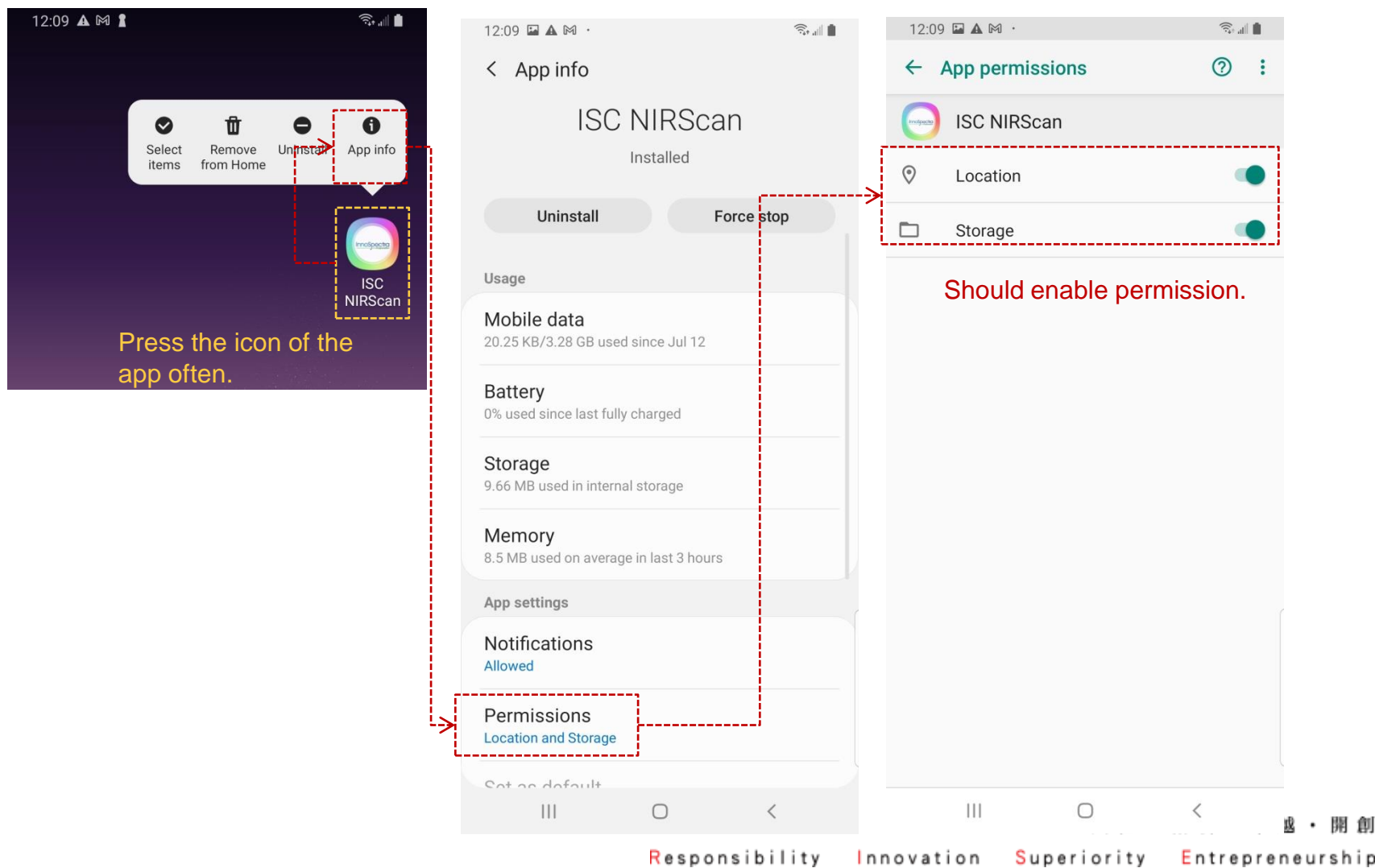
Notice

- User should open the Bluetooth and might need to open location due to the different phone's manufacture's requirements.
- When open app, should permit to save the graph, media, file, and location.



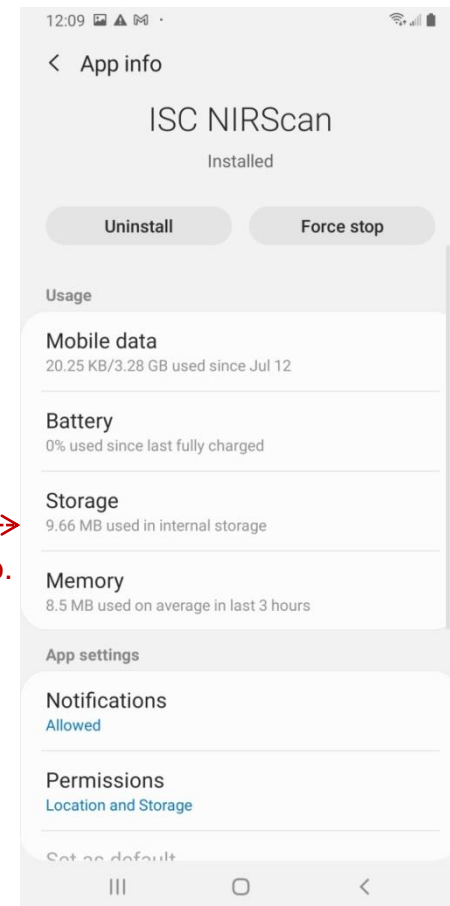
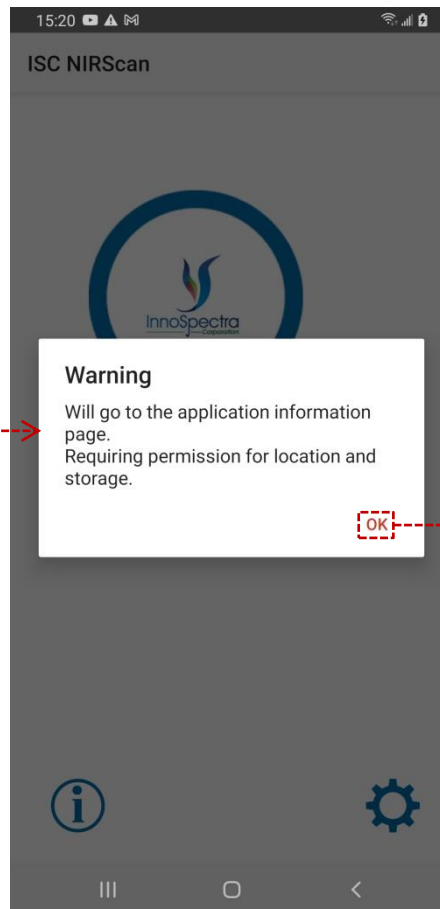
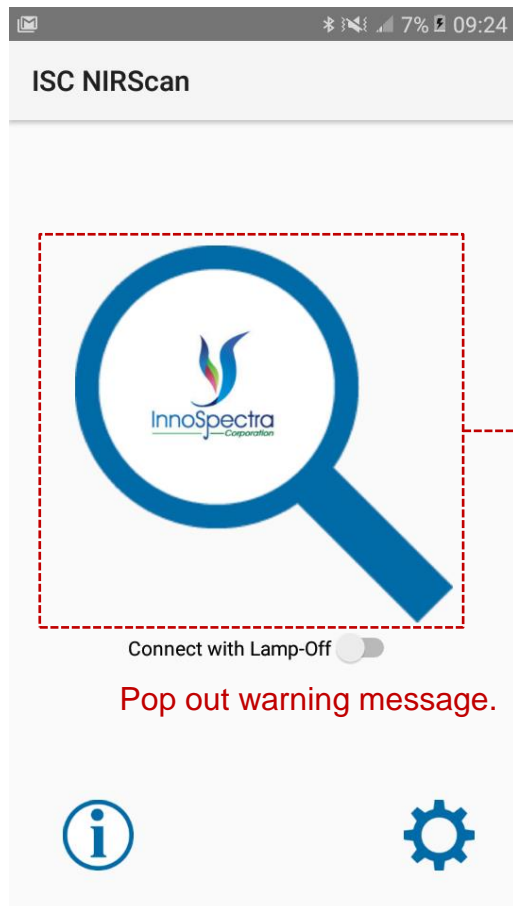
Notice

- If the device still cannot be found, it is necessary to confirm whether the APP has an allowable permission location.



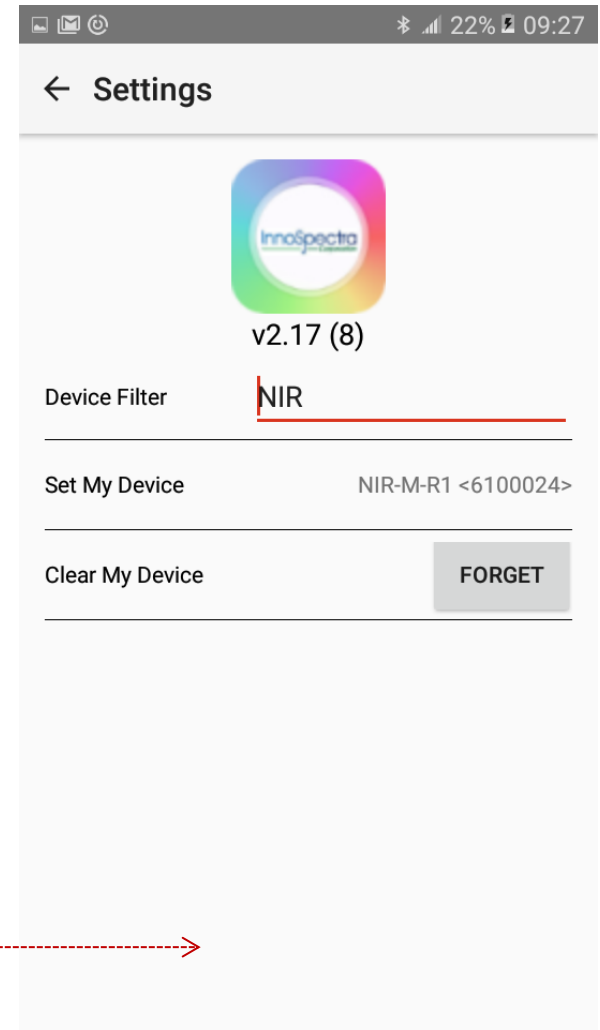
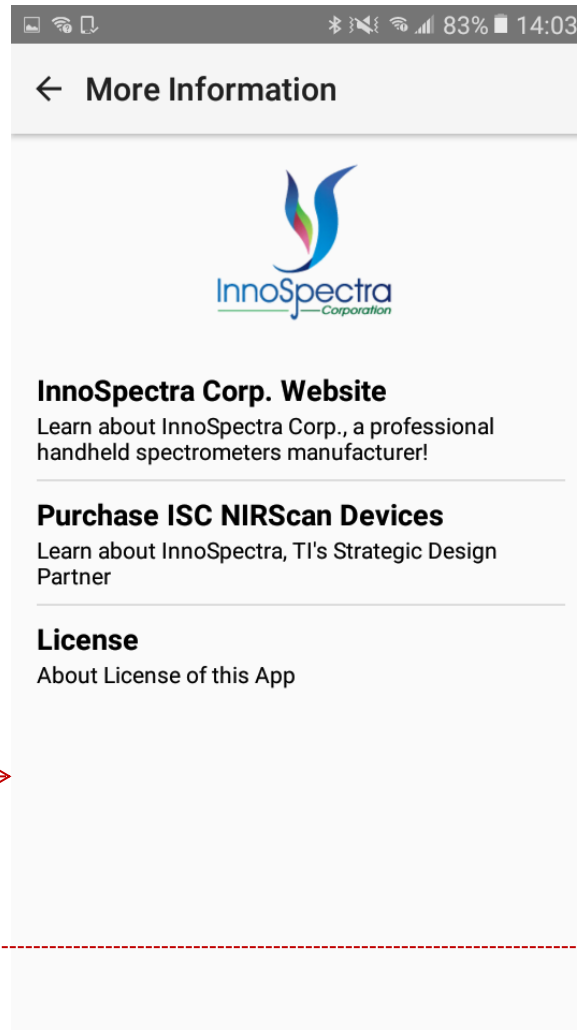
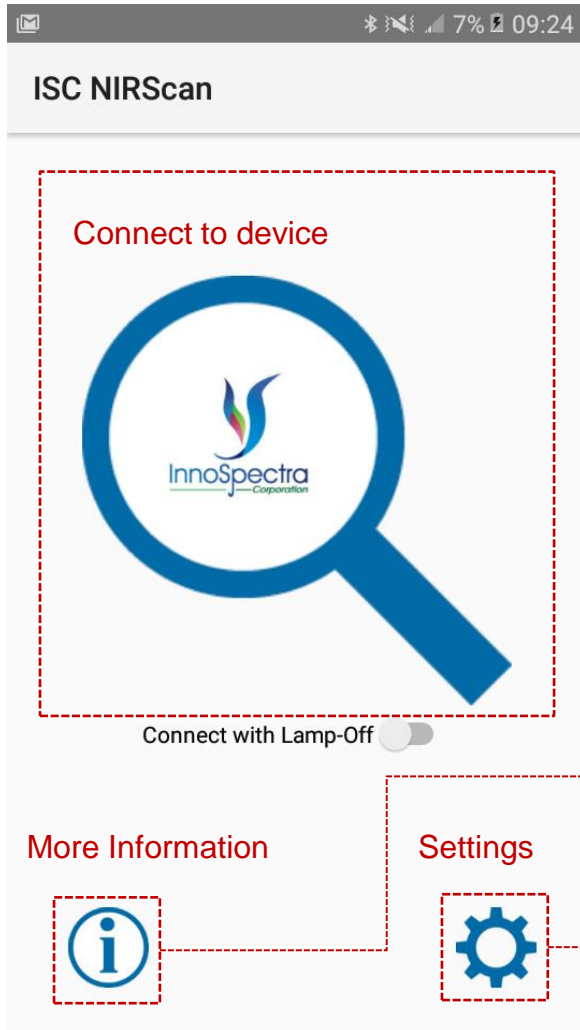
Notice

- If the user does not allow the location or storage permissions, the connected device will pop out warning message. After press ok will automatically jump to app info page. User must manually open the location and storage permissions to use the APP (Note: Can see previous page).



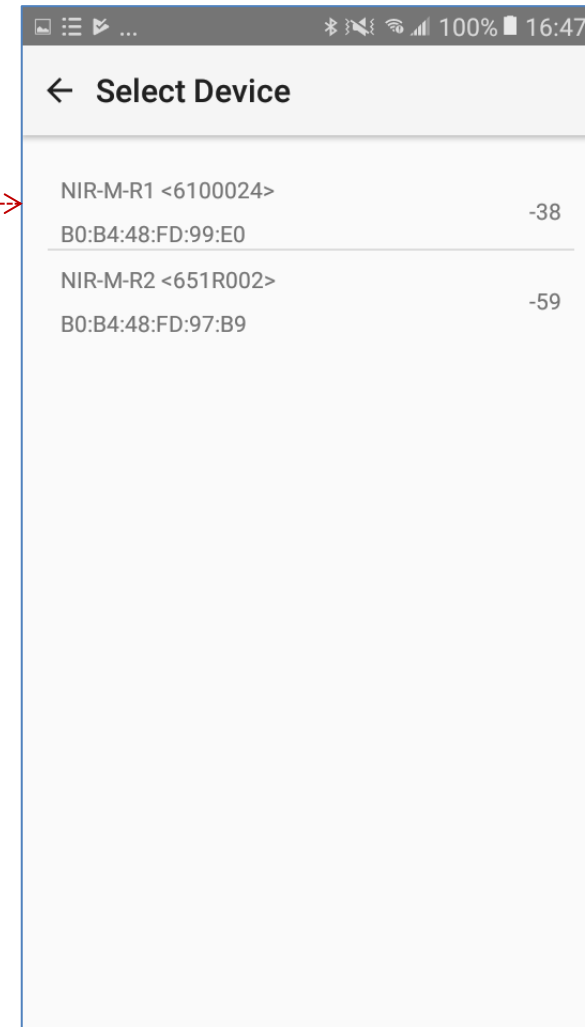
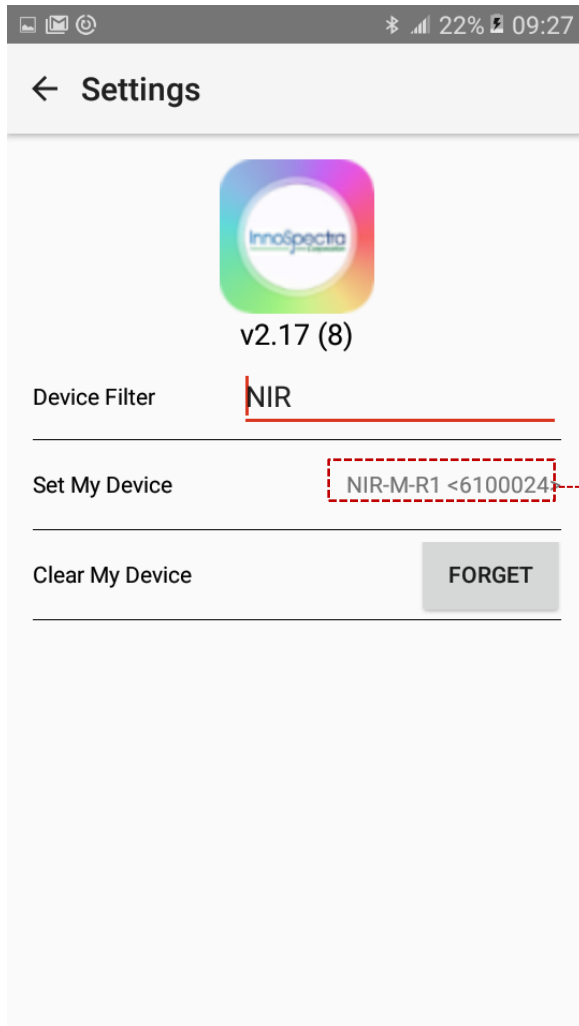
INTRODUCTION

Main Page



Select the device

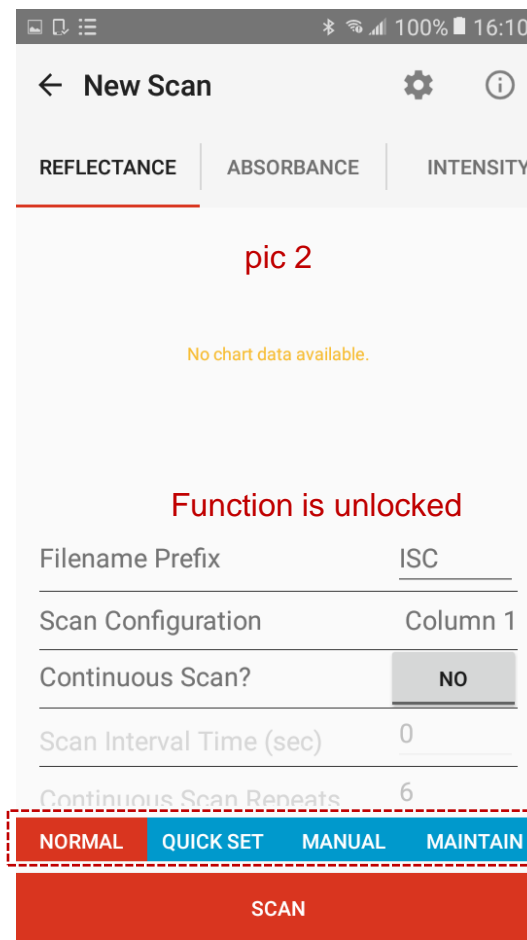
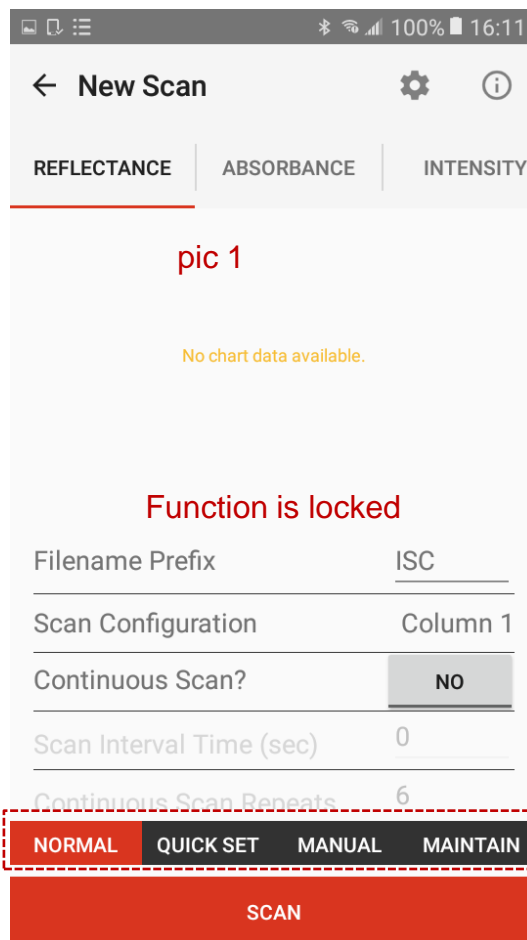
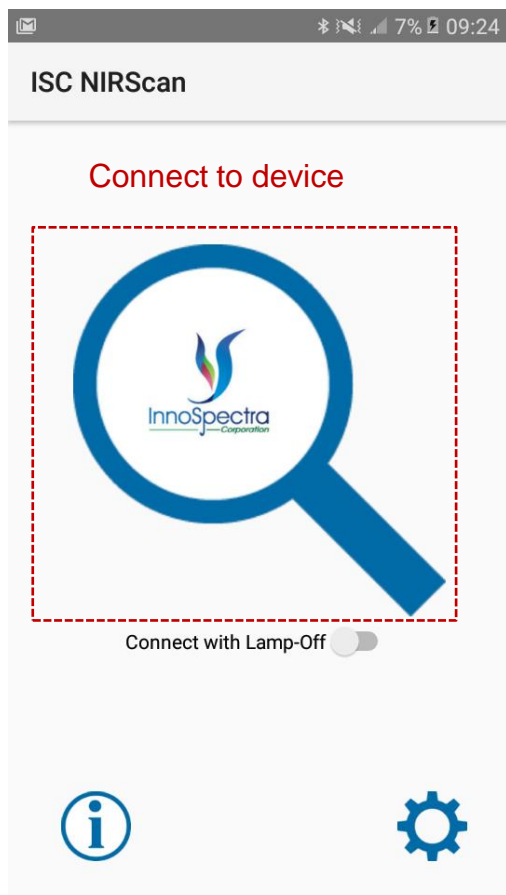
- First user should go to setting page from main page and select the device.
- User can set the device filter to search the device.



Press to select device

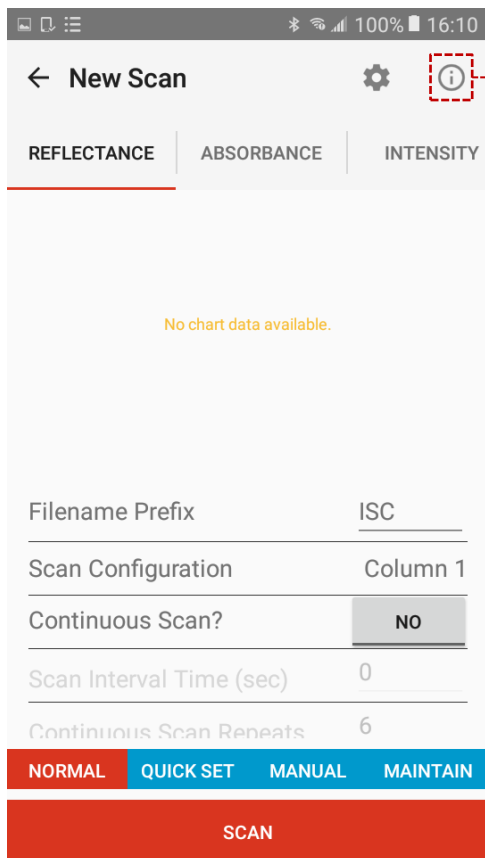
Connect to Device

- 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.



← New Scan

REFLECTANCE | ABSORBANCE | INTENSITY

No chart data available.

Filename Prefix: ISC

Scan Configuration: Column 1

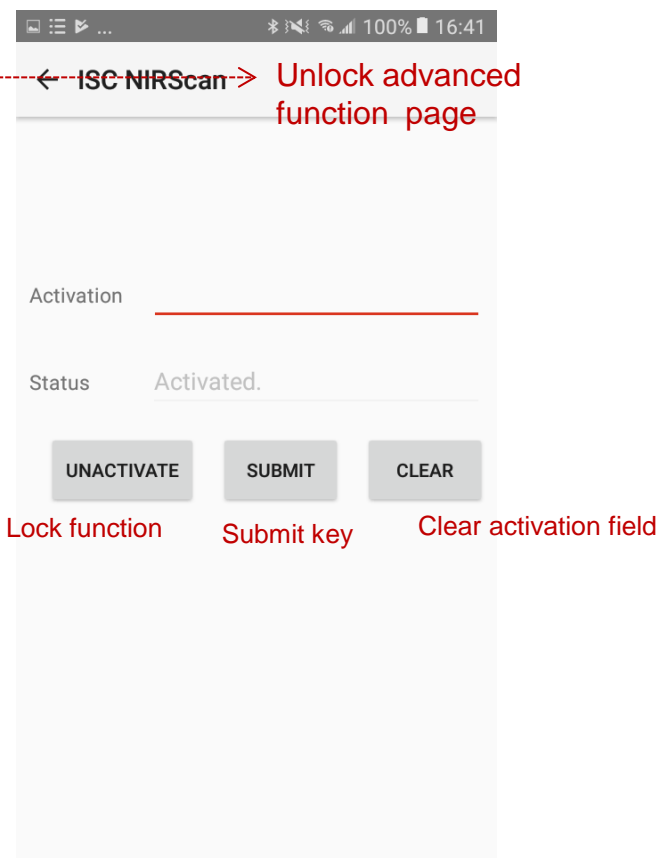
Continuous Scan?: NO

Scan Interval Time (sec): 0

Continuous Scan Repeats: 6

NORMAL | QUICK SET | MANUAL | MAINTAIN

SCAN



← ISC NIRScan →

Activation: _____

Status: Activated.

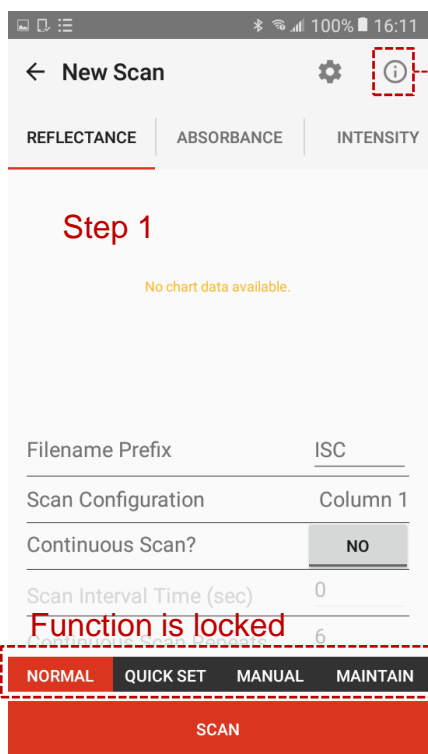
UNACTIVATE | SUBMIT | CLEAR

Lock function | Submit key | Clear activation field

Unlock advanced function page

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.



Step 1

No chart data available.

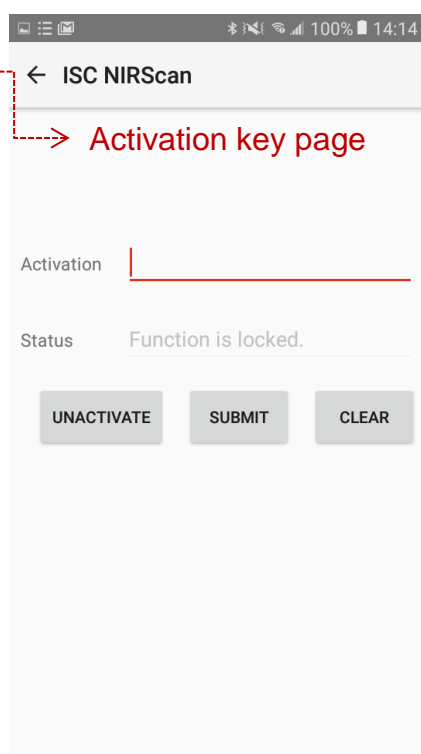
Filename Prefix

Scan Configuration

Continuous Scan?

Scan Interval Time (sec)

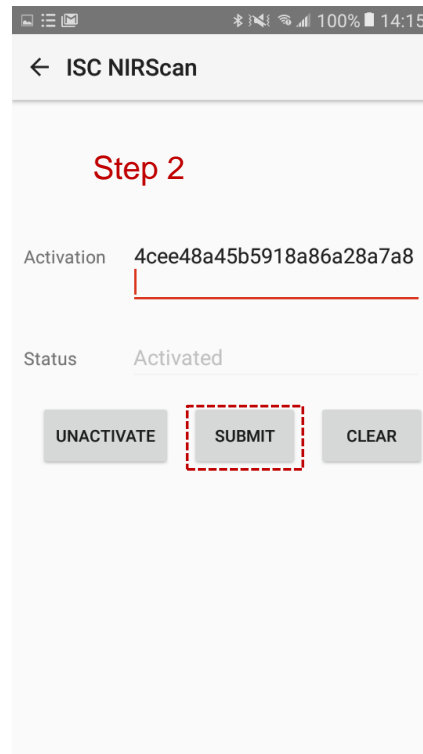
Function is locked



Activation key page

Activation

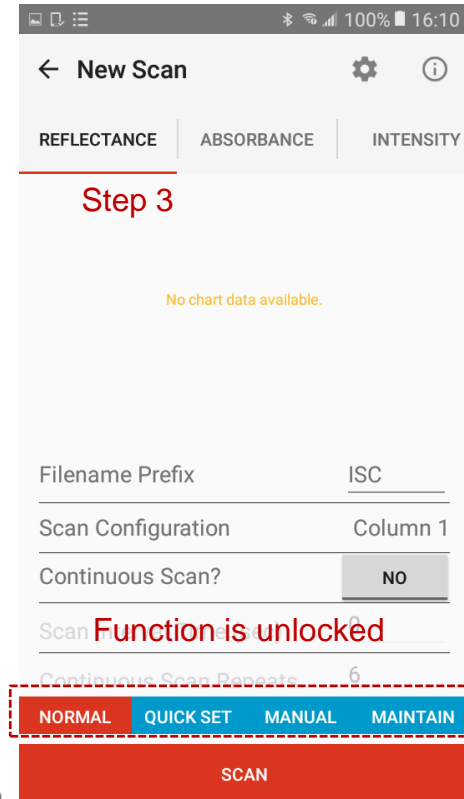
Status



Step 2

Activation

Status



Step 3

No chart data available.

Filename Prefix

Scan Configuration

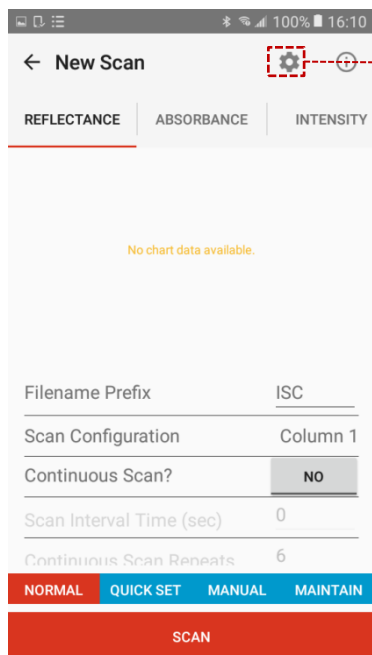
Continuous Scan?

Scan **Function is unlocked**

Continuous Scan Repeats

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.



← New Scan

REFLECTANCE | ABSORBANCE | INTENSITY

No chart data available.

Filename Prefix: ISC

Scan Configuration: Column 1

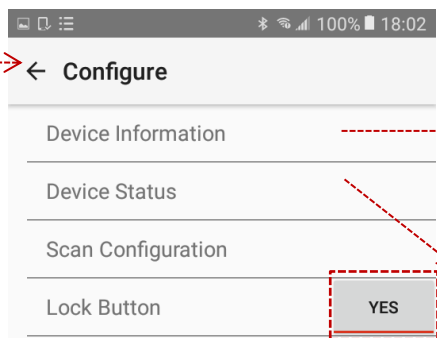
Continuous Scan?: NO

Scan Interval Time (sec): 0

Continuous Scan Repeats: 6

NORMAL | QUICK SET | MANUAL | MAINTAIN

SCAN



← Configure

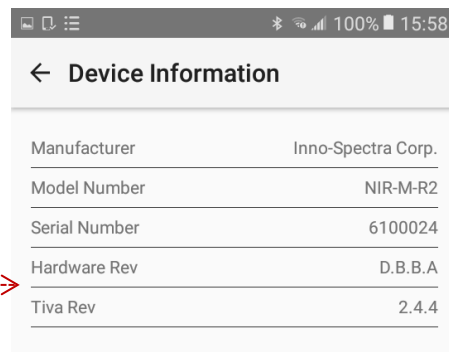
Device Information

Device Status

Scan Configuration

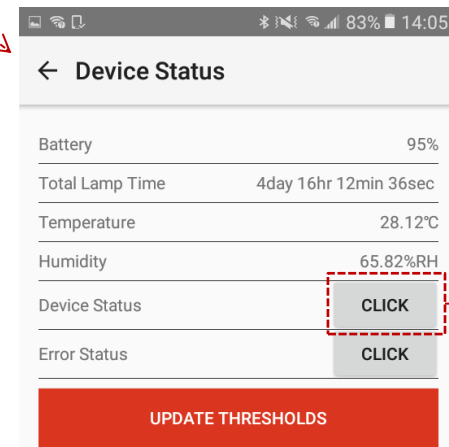
Lock Button: YES

Decide whether to turn on the device button



← Device Information

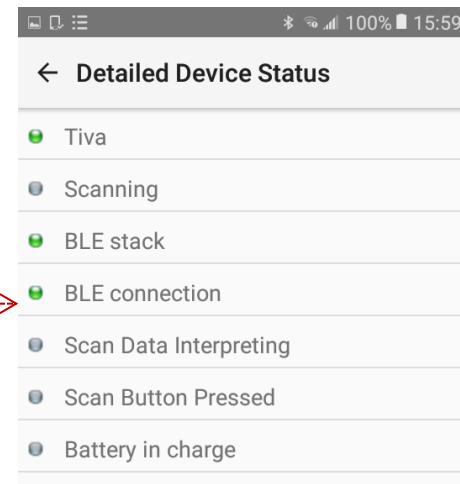
| | |
|---------------|--------------------|
| Manufacturer | Inno-Spectra Corp. |
| Model Number | NIR-M-R2 |
| Serial Number | 6100024 |
| Hardware Rev | D.B.B.A |
| Tiva Rev | 2.4.4 |



← Device Status

| | |
|-----------------|-----------------------|
| Battery | 95% |
| Total Lamp Time | 4day 16hr 12min 36sec |
| Temperature | 28.12°C |
| Humidity | 65.82%RH |
| Device Status | CLICK |
| Error Status | CLICK |

UPDATE THRESHOLDS

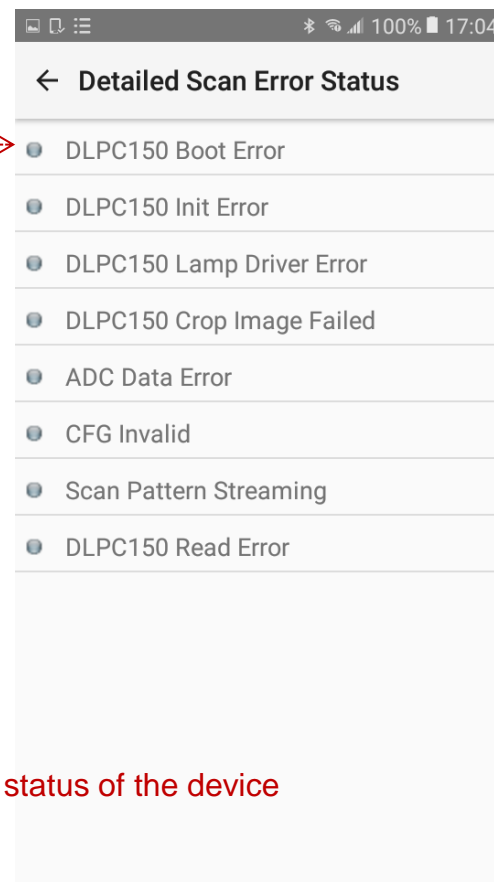
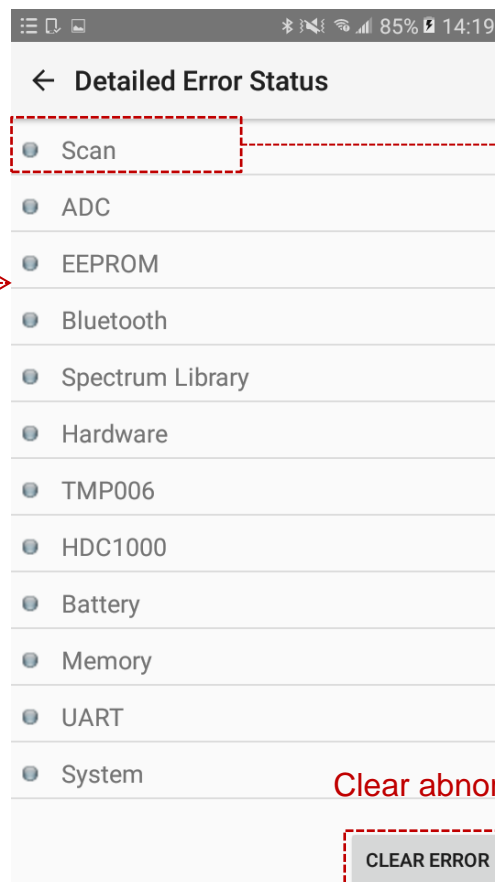
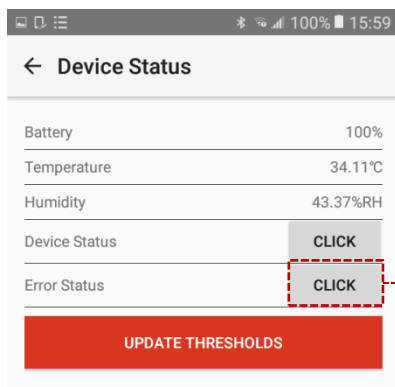


← Detailed Device Status

- Tiva
- Scanning
- BLE stack
- BLE connection
- Scan Data Interpreting
- Scan Button Pressed
- Battery in charge

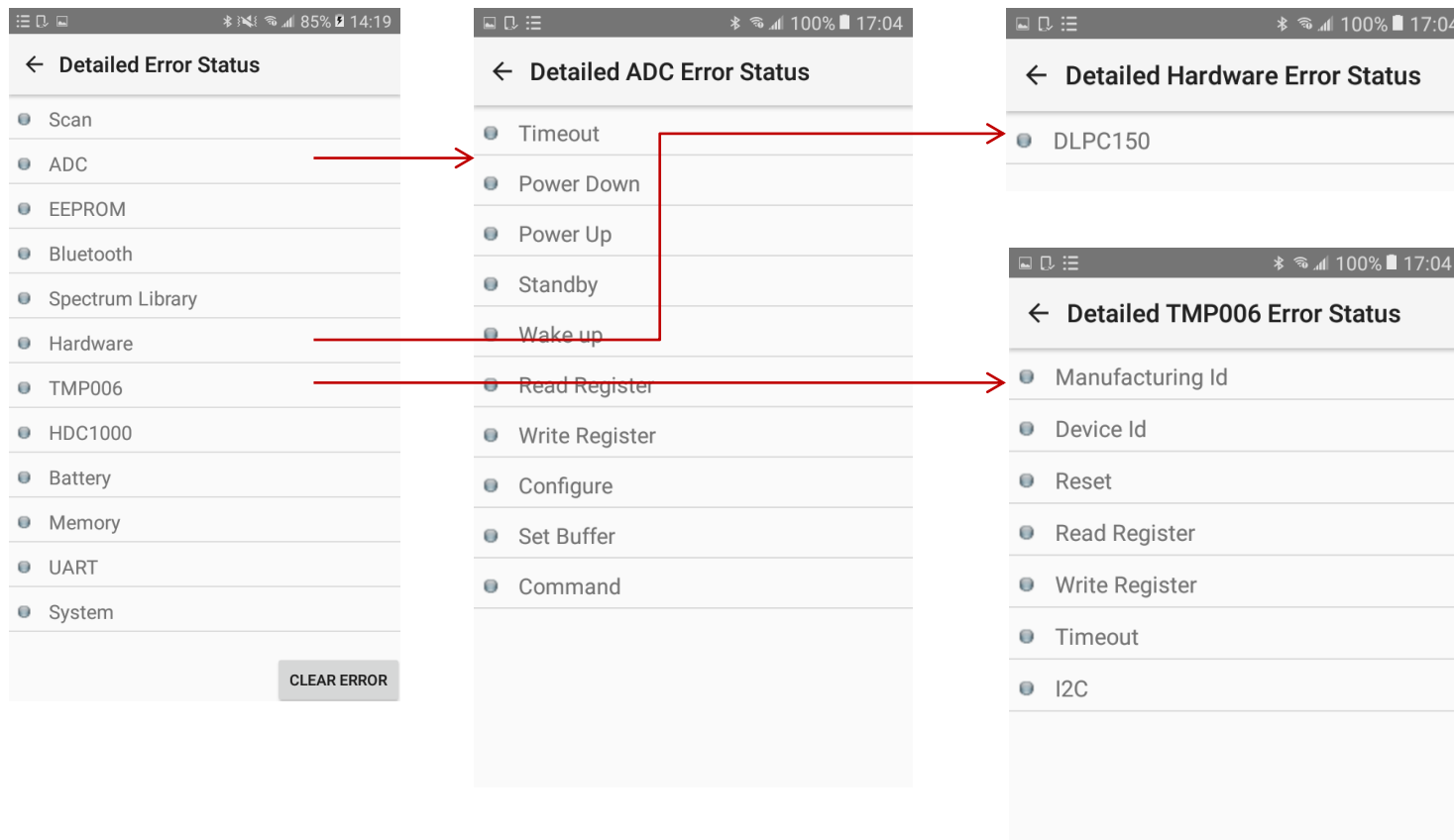
Configure Page

- 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.



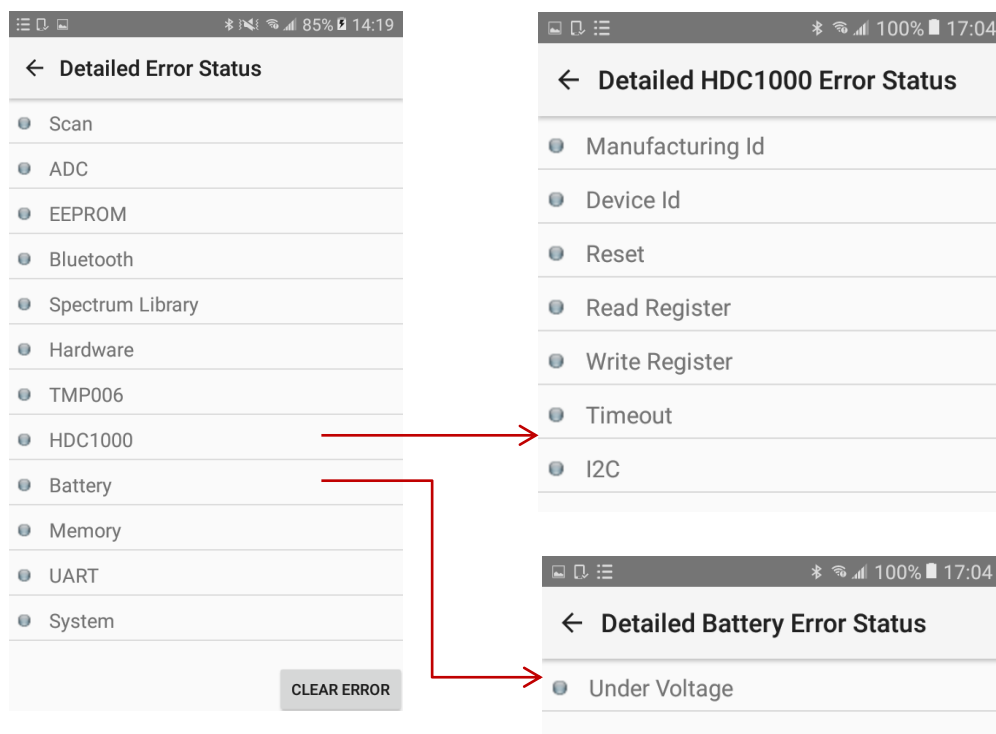
Configure Page

- 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.



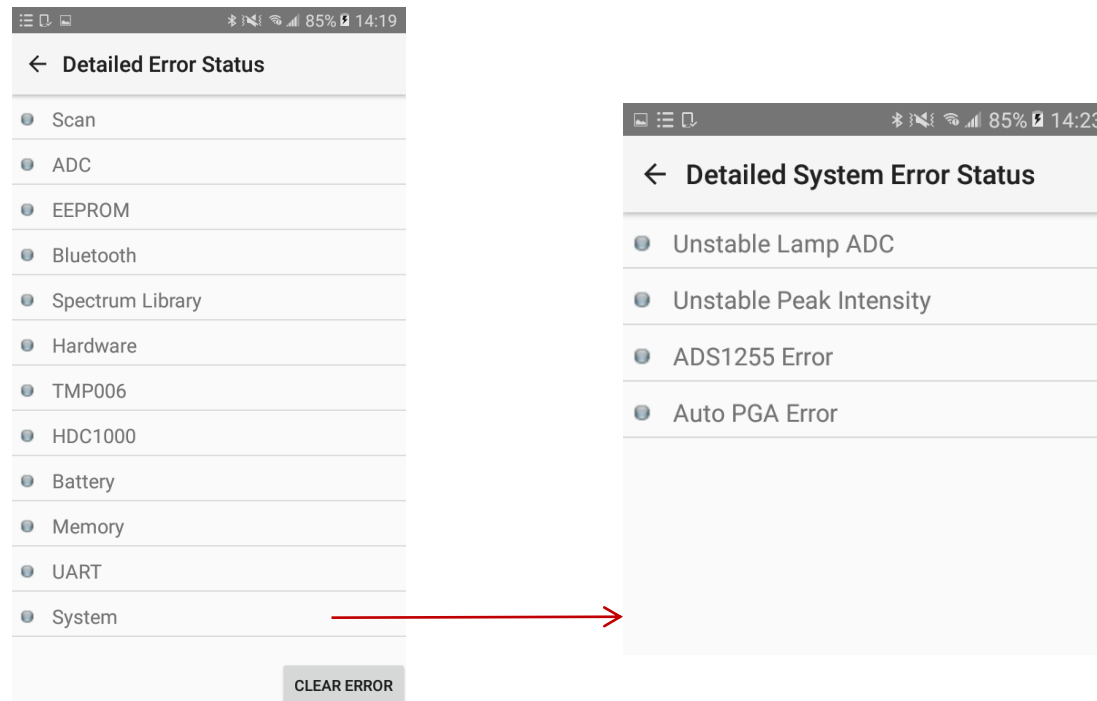
Configure Page

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



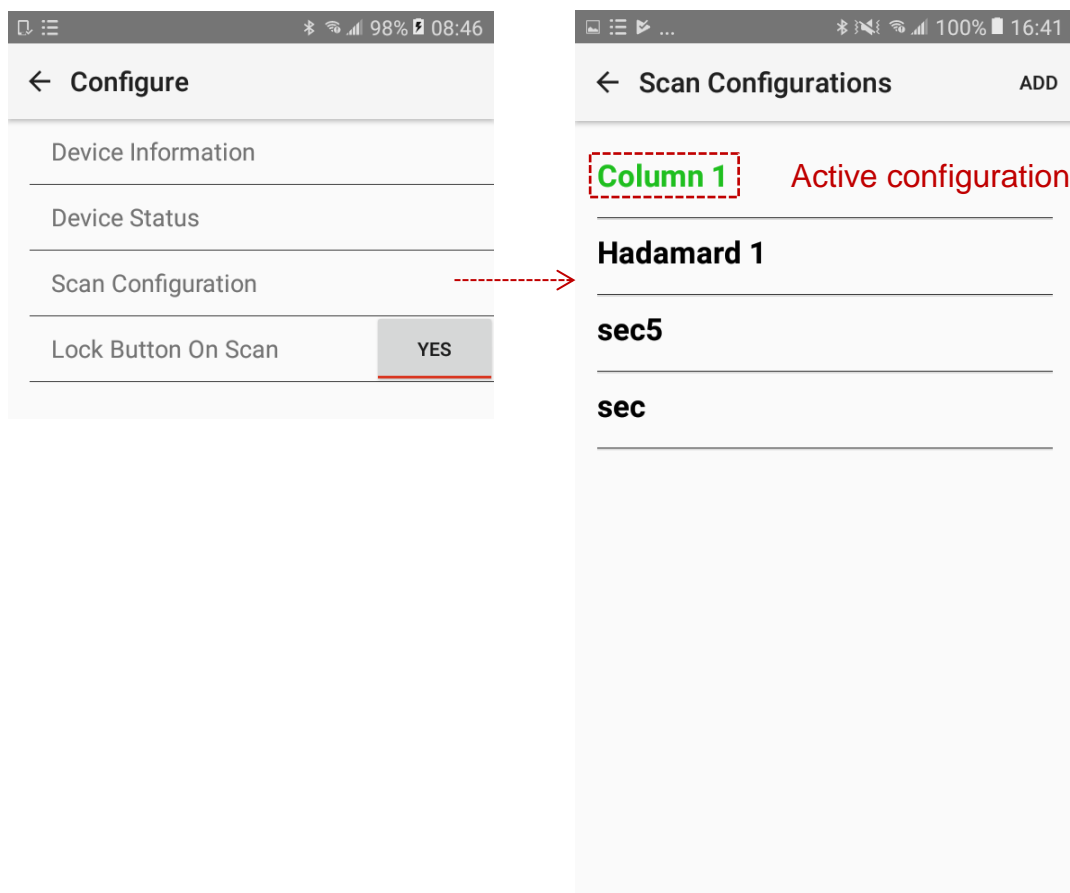
Configure Page

- 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.

← Scan Configurations ADD

Column 1

Hadamard 1

sec5

sec

← Adding Configurations SAVE

Config Index **Step1** 5

Config SerialNumber 6100024

Config Name BLE-Cfg-28164147

Scan Repeats 1

Total Scan Sections 5

Section **1** 2 3 4 5

Type(0:Column,1:Hadamard) 0

Width(2-52): 2.34nm 2

Spectral Start (nm) 900

Spectral End (nm) 1700

D-Res. (pts, max:447) 2

Exposure(0-6): 0.635ms 0

← Adding Configurations SAVE

Config Index **Step2** 5

Config SerialNumber 6100024

Config Name BLE-Cfg-28164147

Scan Repeats 1

Total Scan Sections 5

Section 1 2 3 4 5

Type(0:Column,1:Hadamard) 0

Width(2-52): 2.34nm 2

Spectral Start (nm) 900

Spectral End (nm) 1700

D-Res. (pts, max:447) 2

Exposure(0-6): 0.635ms 0

Configuration Saving

Configuration has been saved to device!

OK

← Scan Configurations ADD

Column 1 **Step3**

Hadamard 1

sec5

sec

BLE-Cfg-28164147

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

Continuous Scan Repeats 6

Select scan method

NORMAL QUICK SET MANUAL MAINTAIN

SCAN

Scan data

← Configure

Device Information

Device Status

Scan Configuration

Lock Button YES

ISC NIRScan Unlock function page

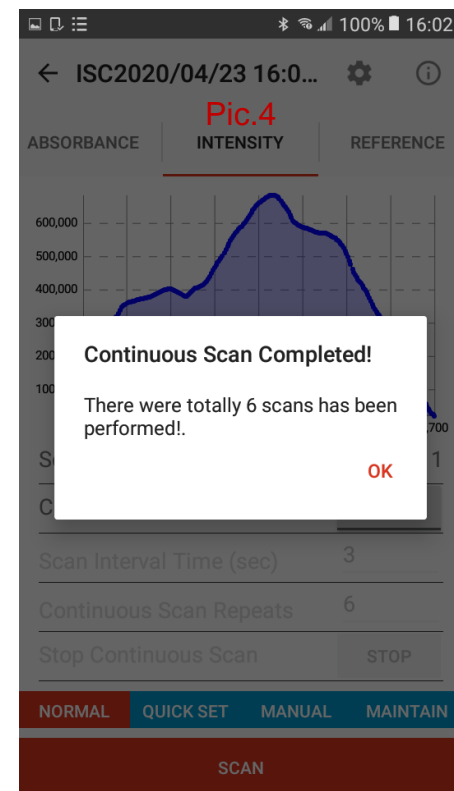
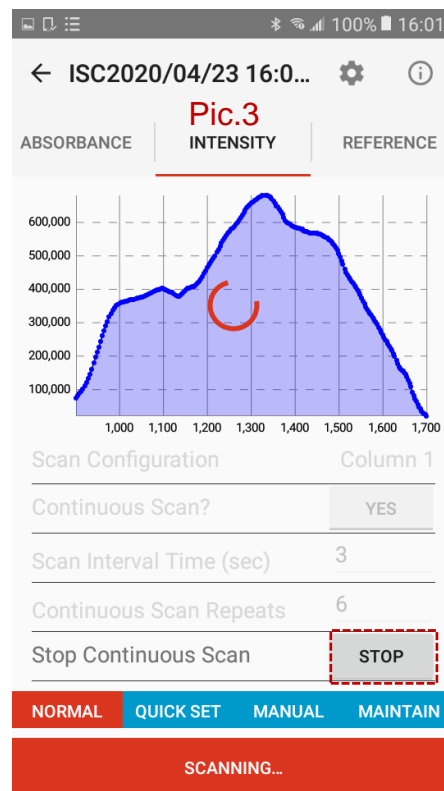
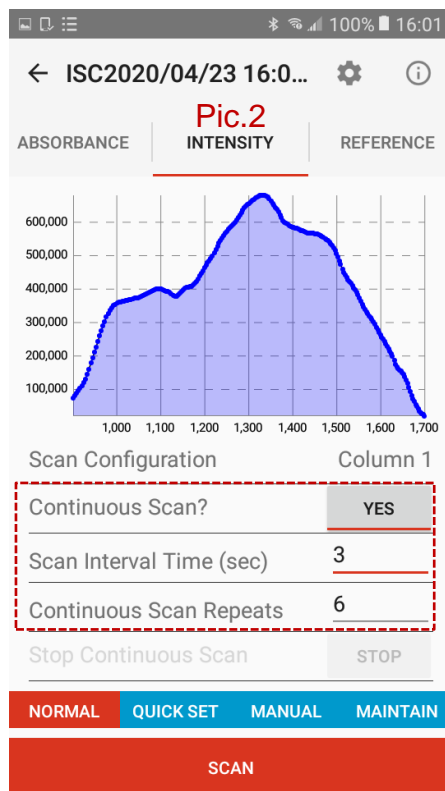
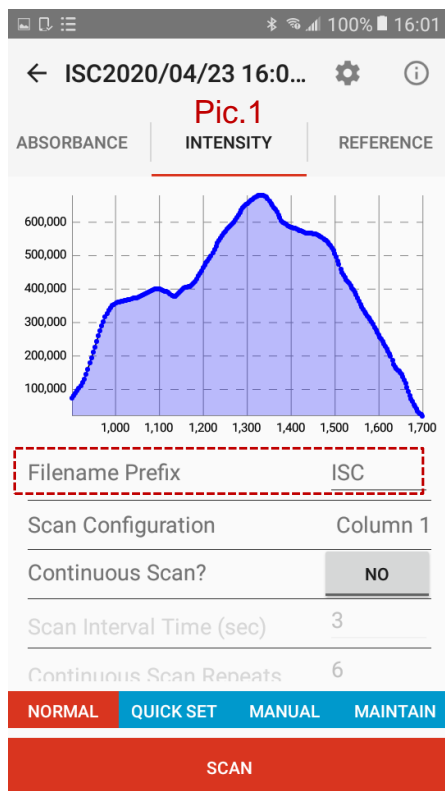
Activation

Status Activated.

UNACTIVATE SUBMIT CLEAR

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).



- The image displays four sequential screenshots of the 'New Scan' screen in the SpectraLab app, illustrating the configuration process. Each screenshot shows a top navigation bar with a back arrow, the title 'New Scan', and icons for settings and information. Below the navigation bar are three tabs: REFLECTANCE, ABSORBANCE, and INTENSITY. The first three screenshots show the 'New Scan' screen with the 'REFLECTANCE' tab selected. The fourth screenshot shows the 'New Scan' screen with the 'QUICK SET' tab selected. In the fourth screenshot, a red dashed box highlights the 'Continuous Scan Mode' and 'Set all config' buttons, which are both labeled 'SET'.

| Parameter | Value |
|----------------------|--------|
| Lamp-Stable Time(ms) | 625 |
| Scan Method | Column |
| Spectral Start (nm) | 900 |
| Spectral End (nm) | 1700 |
| Scan Width (nm) | 2.34 |

| Parameter | Value |
|-----------------------|-------|
| Scan Width (nm) | 2.34 |
| D-Res. (pts, max:447) | 15 |
| Average Scans (times) | 6 |
| Exposure Time (ms) | 0.635 |
| Continuous Scan Mode | OFF |

| Parameter | Value |
|--------------------------|-------|
| Continuous Scan Mode | OFF |
| Scan Interval Time (sec) | 0 |
| Continuous Scan Repeats | 6 |
| Stop Continuous Scan | STOP |
| Set all config | SET |

| Parameter | Value |
|-------------------------|-------|
| Continuous Scan Mode | ON |
| Scan Interval Time | 0 |
| Continuous Scan Repeats | 6 |
| Stop Continuous Scan | STOP |
| Set all config | SET |

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

Manual Scan Mode ON

Turn-On Lamp ON

Set Scan PGA 1

Scan Repeats 6

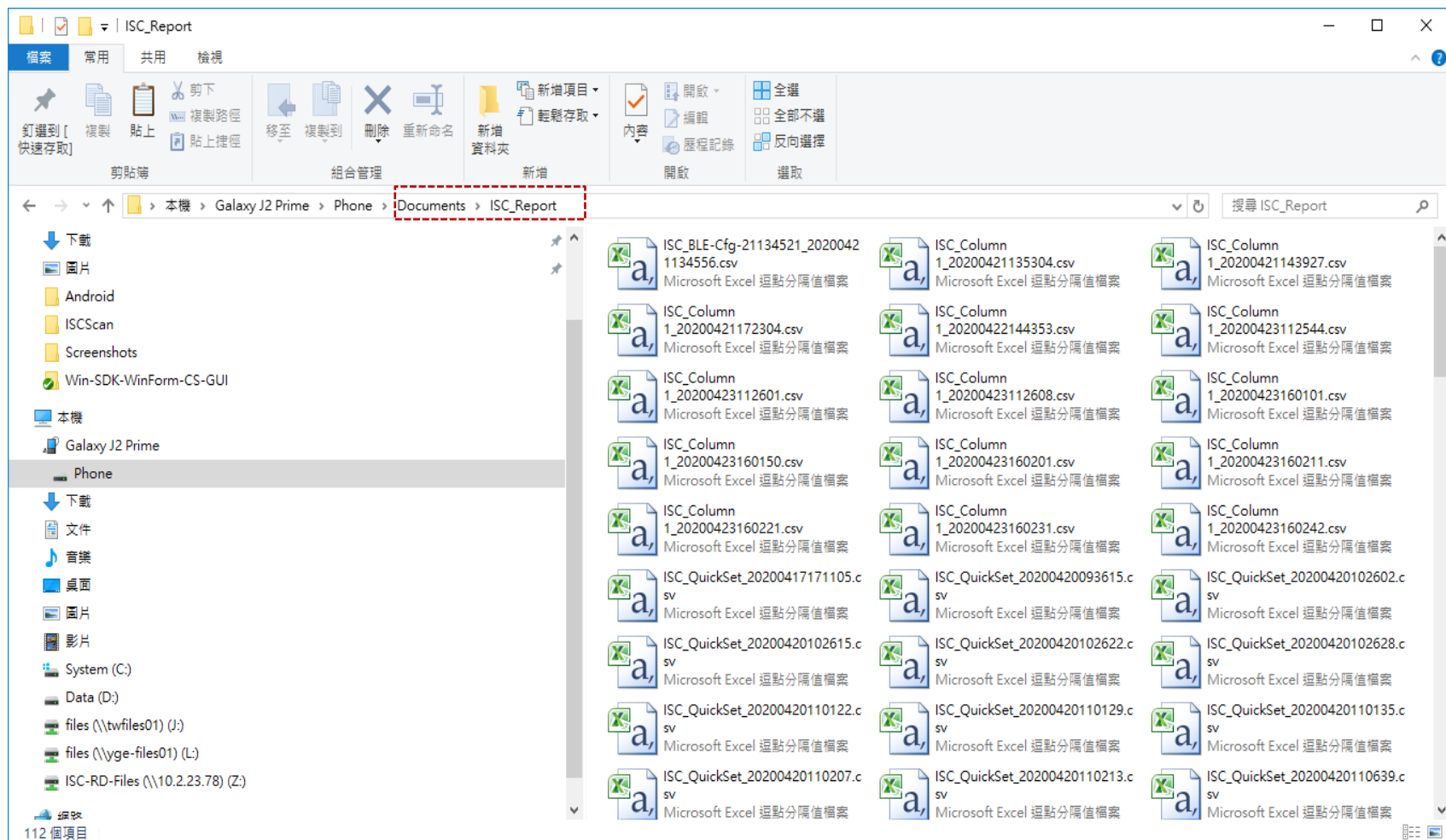
Scan Configuration Column 1

NORMAL QUICK SET MANUAL MAINTAIN

SCAN

.CSV file

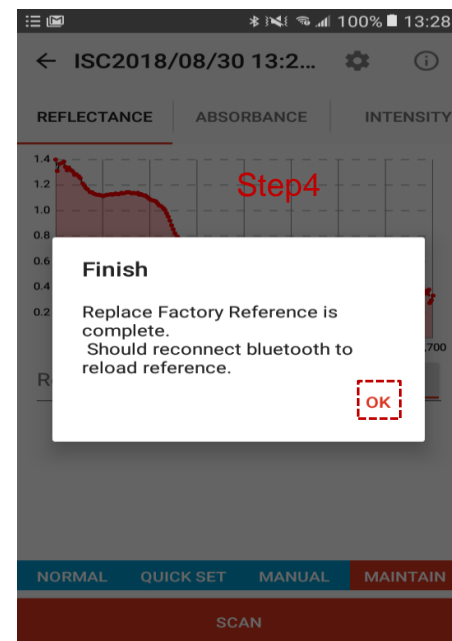
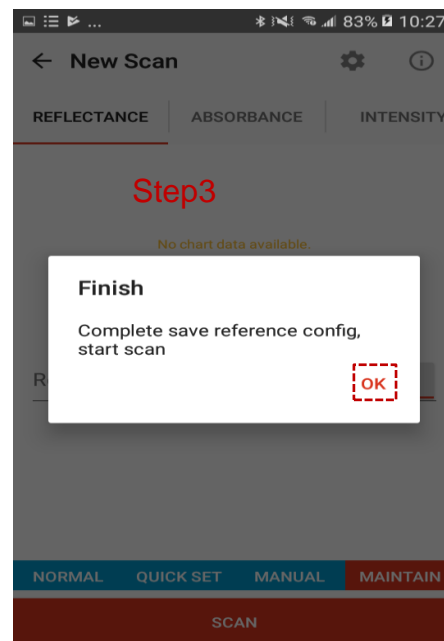
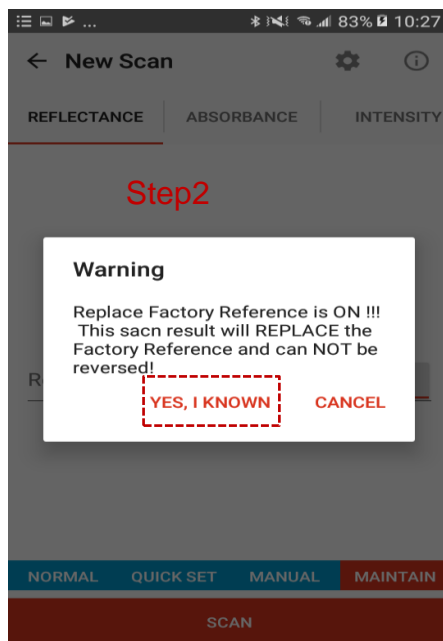
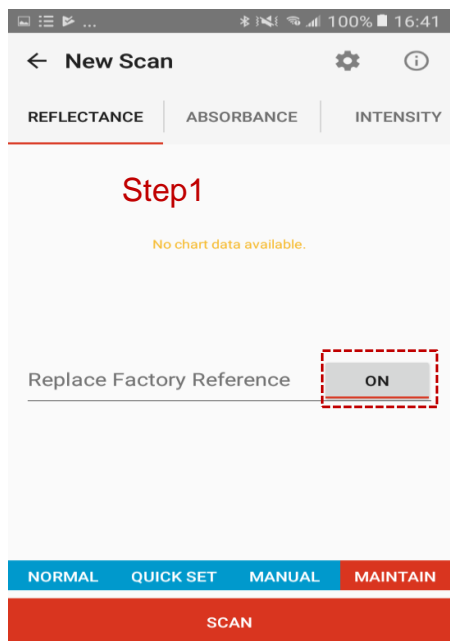
- After scan, the scan report (.csv file) will save to Documents/ISC_Report.
- The phone should use USB to connect PC and find the file.



UPDATE BUILT-IN REFERENCE DATA

Replace Built-In Reference

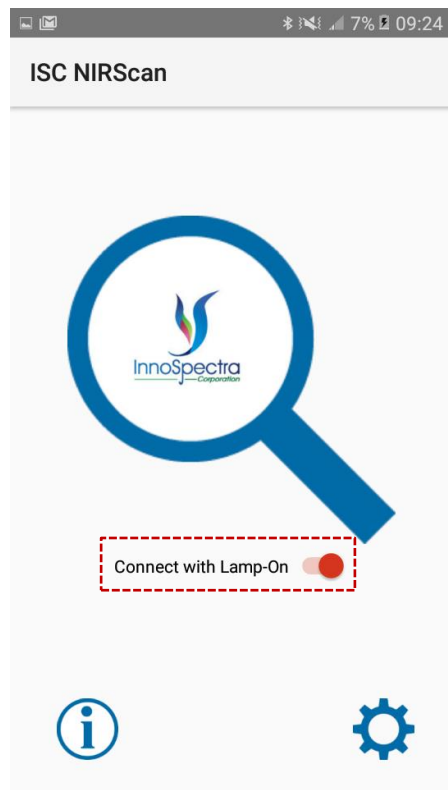
- Before replacing stored reference data, preparing a highly reflective material. A 99% reflective material as Spectralon® is preferred.
- Step1: Turn on “Replace Factory Reference” then scan. The warning dialog will pop out.
- Step2: Select “YES,I KNOWN”. The device will set config. If set config success, 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



責任・創新・卓越・開創

Responsibility Innovation Superiority Entrepreneurship