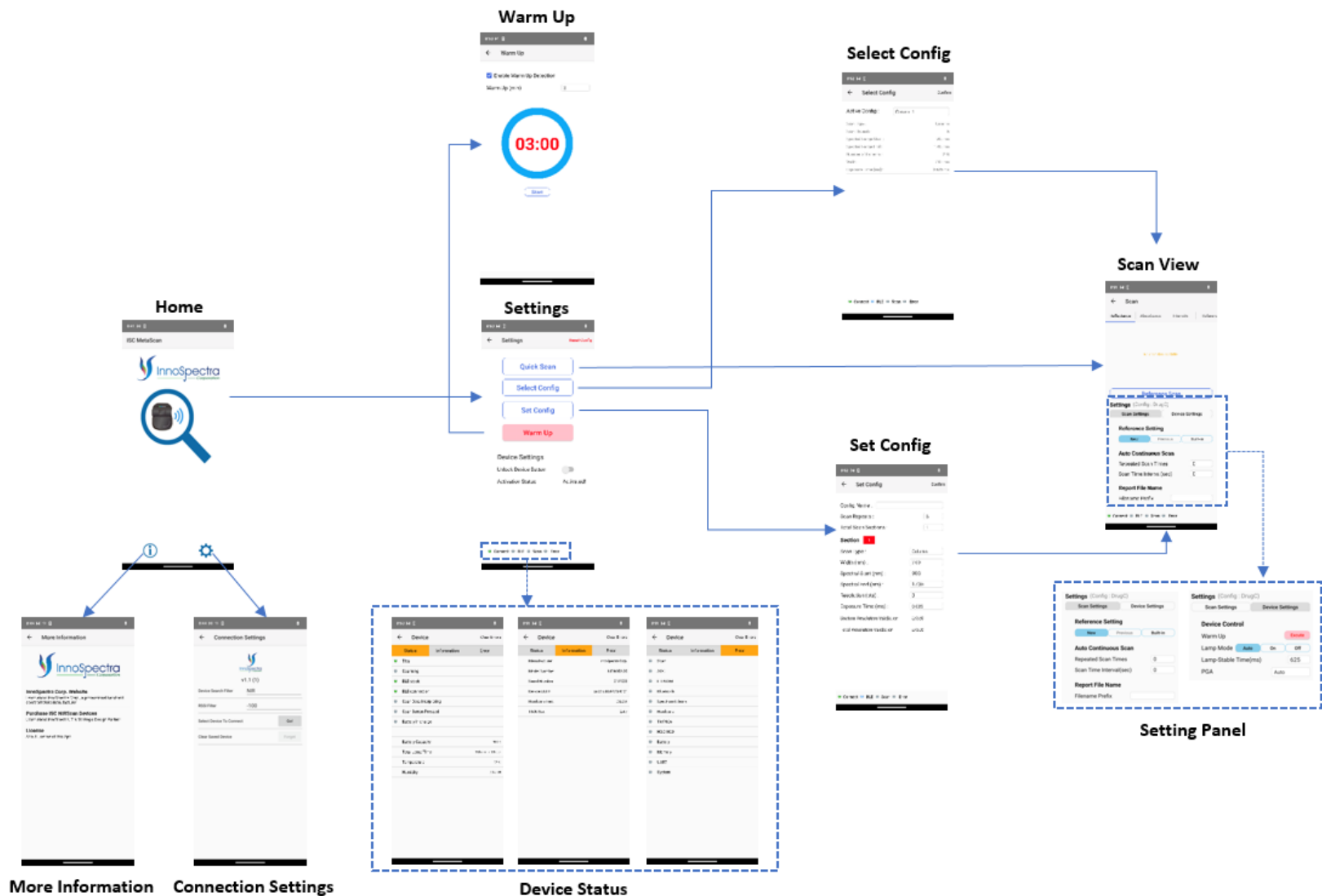


# Android MetaScan User Guide V4

Jan. 25, 2024

# Application Outline



# Contents

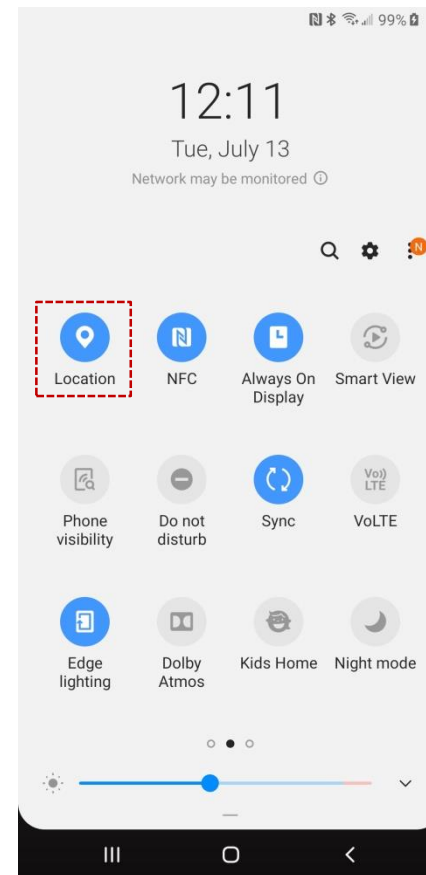
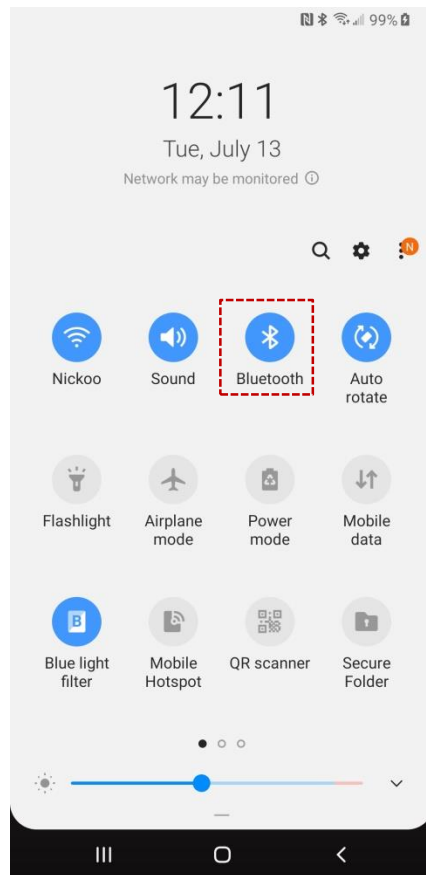


- Notice
- Introduction of Interface
- Connection
- Warm Up
- Quick Scan & Default Setting
- Select Config
- Set Config
- Reference
- Reset Default Config
- Device Information

# Notice

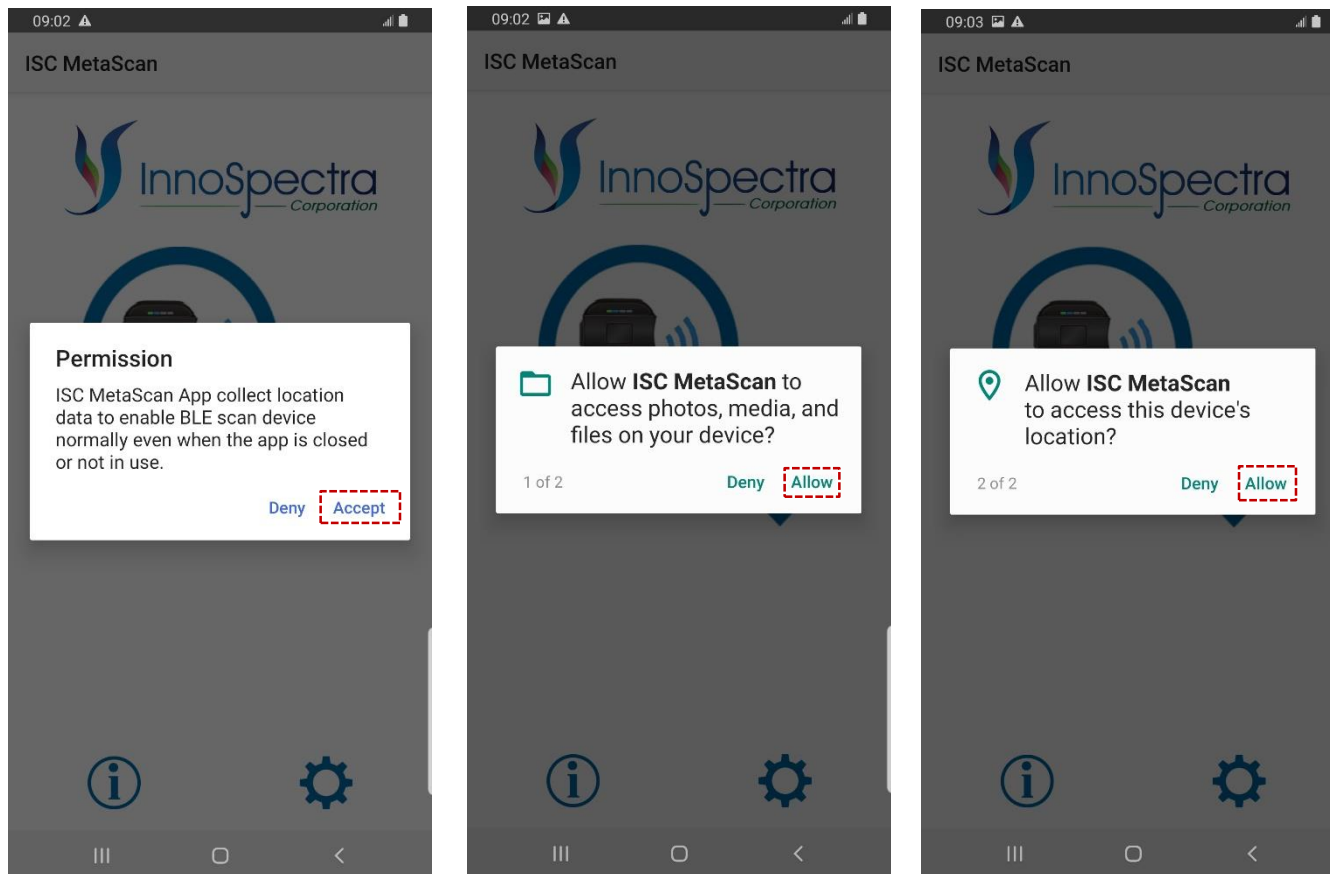
# Notice (For Android $\leq 11$ )

- User should open the Bluetooth and might need to open location due to the different phone's manufacture's requirements.



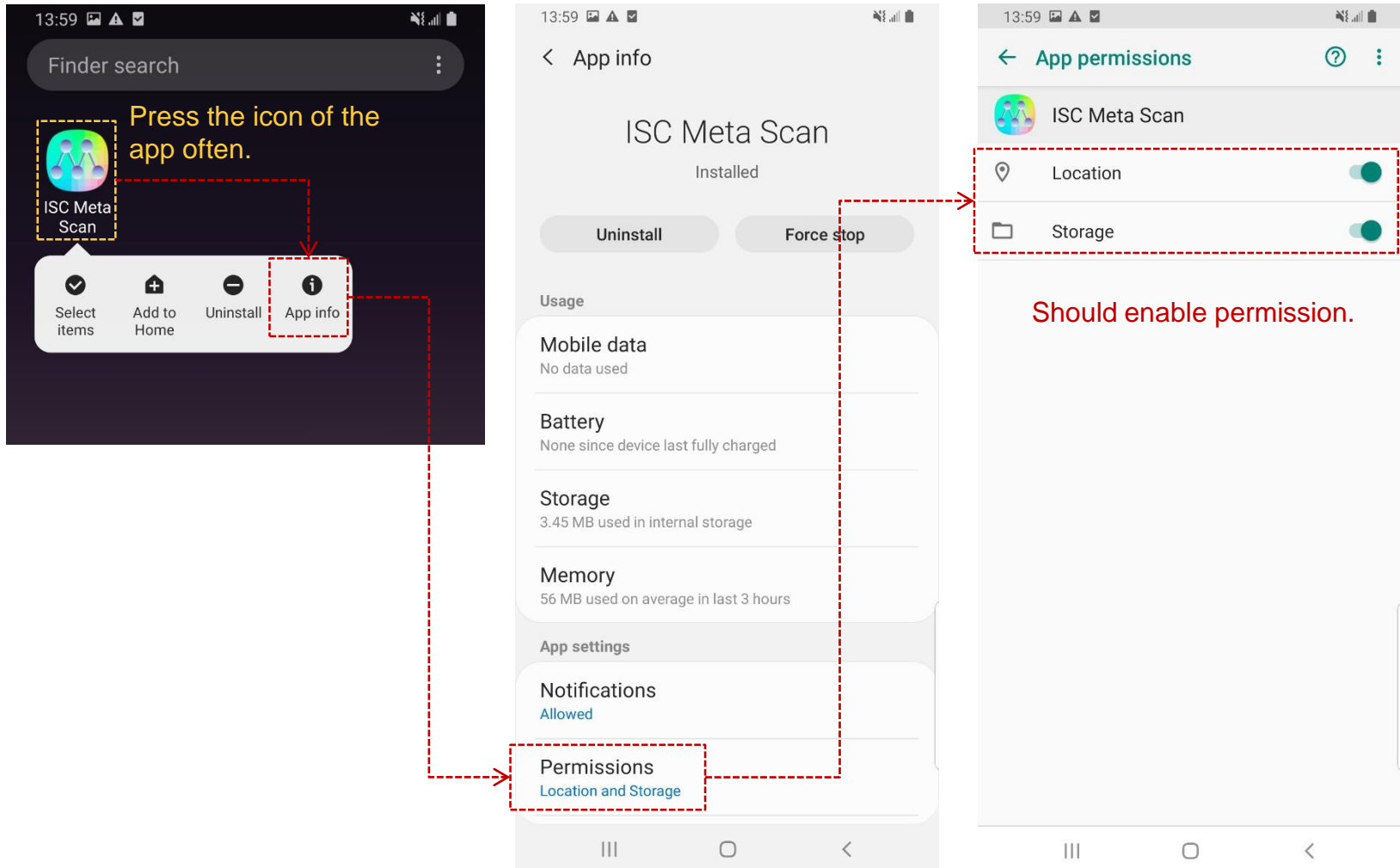
# Notice (For Android $\leq 11$ )

- When open app, a reminder window will pop up to remind the user that the location information must be collected for the Bluetooth to be able to search for the device normally. After accepting, should permit to save the graph, media, file, and location.



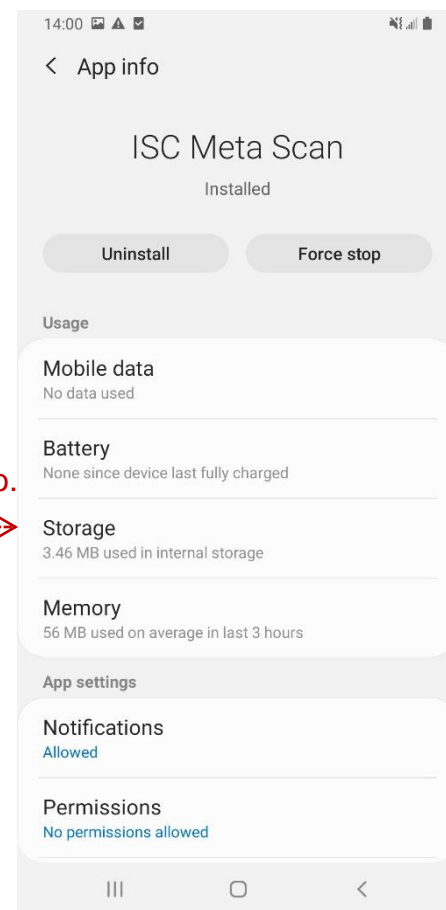
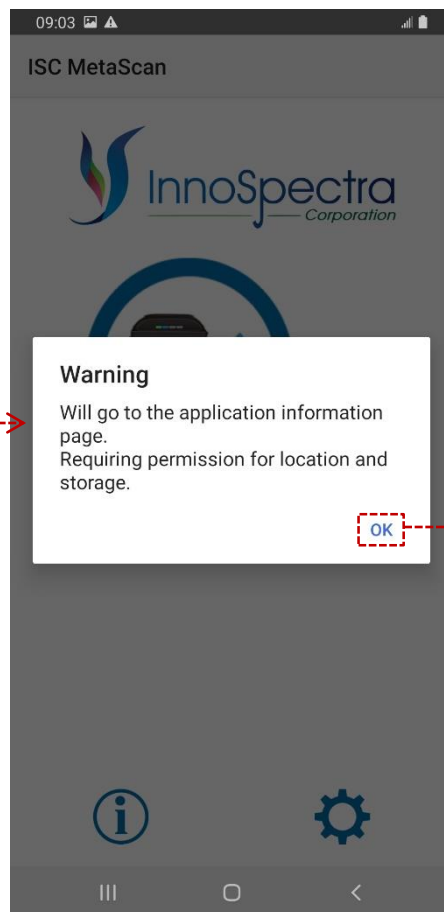
# Notice (For Android $\leq 11$ )

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



# Notice (For Android $\leq 11$ )

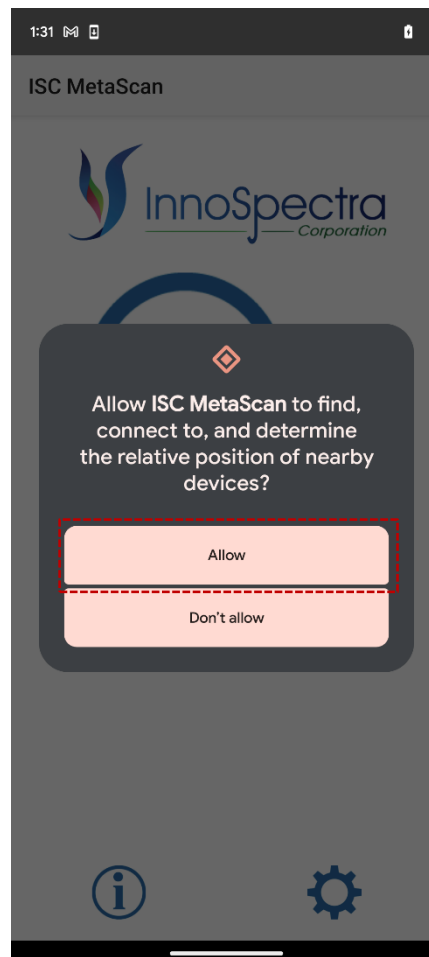
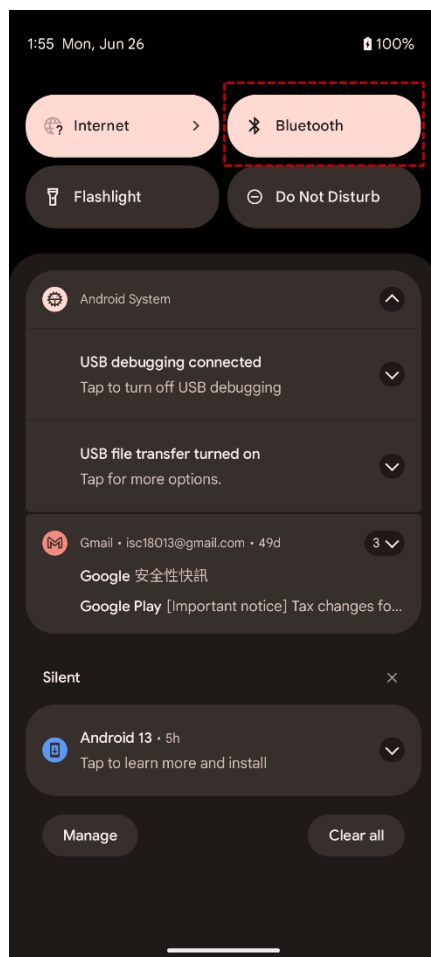
- If the user does not allow the location or storage permissions, the connected device will pop out warning message. After press ok will automatically jump to app info page. User must manually open the location and storage permissions to use the APP (Note: Can see previous page).





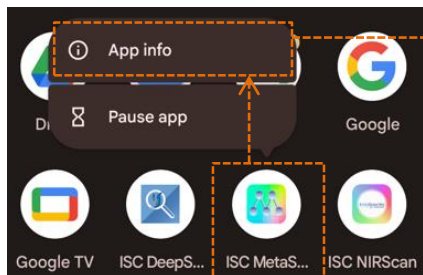
# Notice (For Android $\geq 12$ )

- User should open the Bluetooth due to the different phone's manufacture's requirements.
- When open app, need to allow the permission of nearby devices.

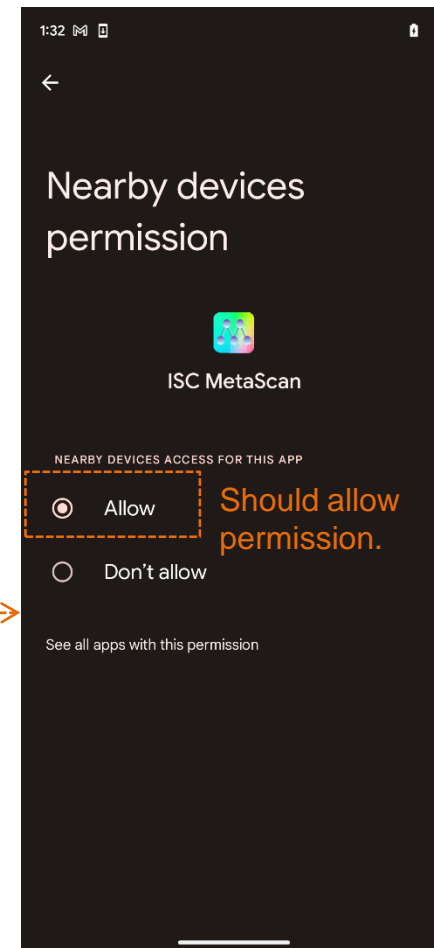
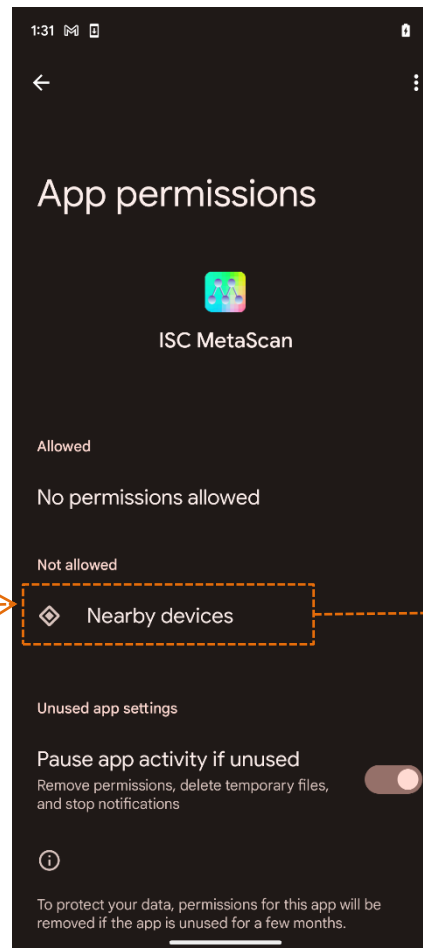
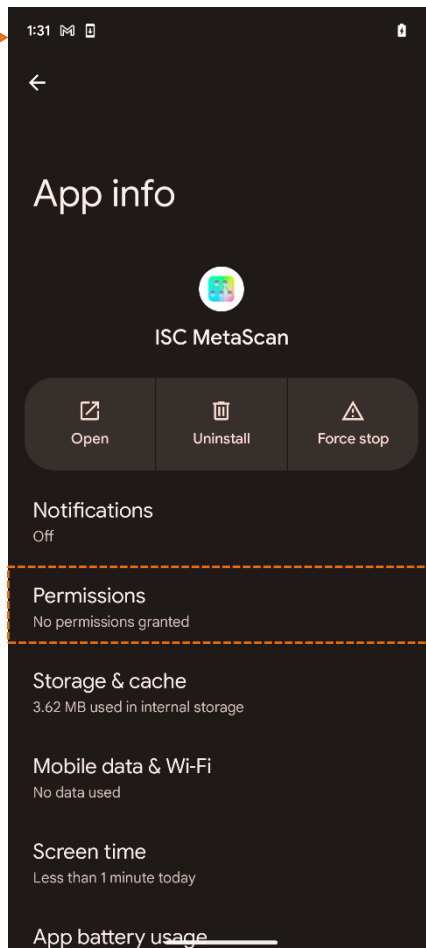


# Notice (For Android $\geq 12$ )

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



Press the icon of the app often.



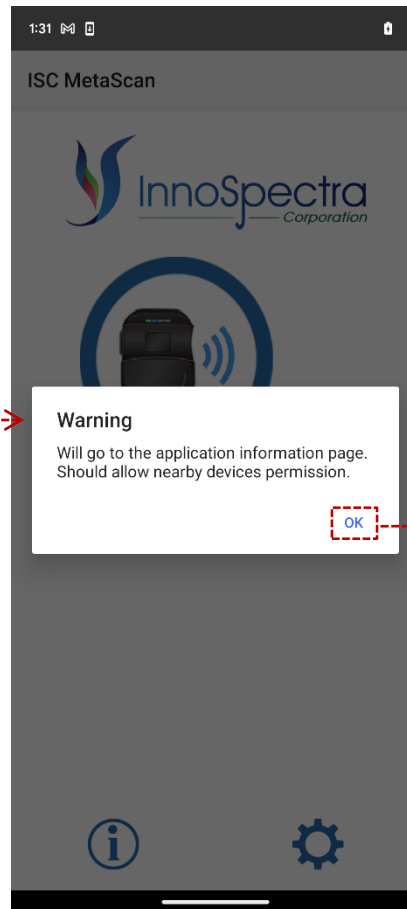
Should allow permission.

# Notice (For Android $\geq 12$ )

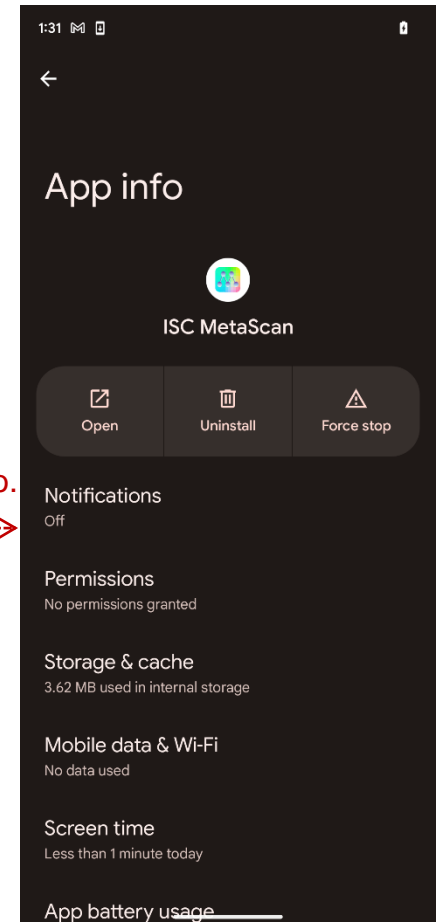
- If the user does not allow nearby devices, the connected device will pop out warning message. After press ok will automatically jump to app info page. User must manually allow nearby devices permissions to use the APP (Note: Can see previous page).



Pop out warning message.



Jump to app info.

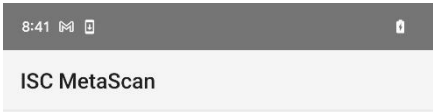


# Introduction of Interface

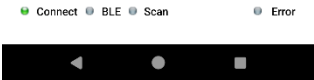
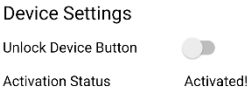
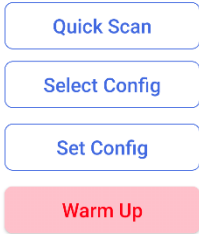
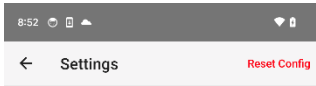
# Home Page



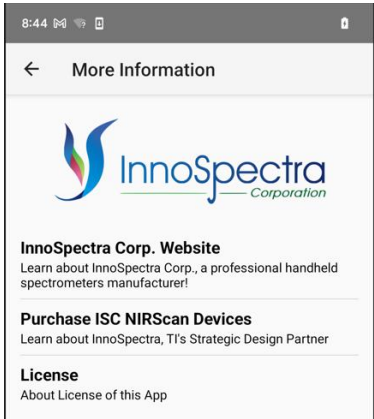
## Home



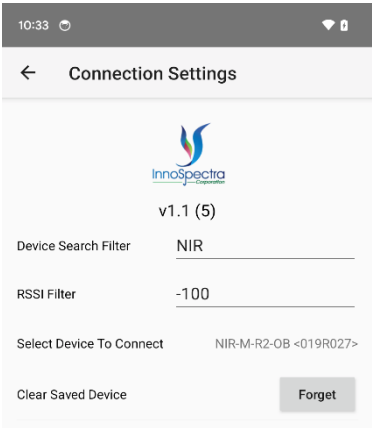
## Settings



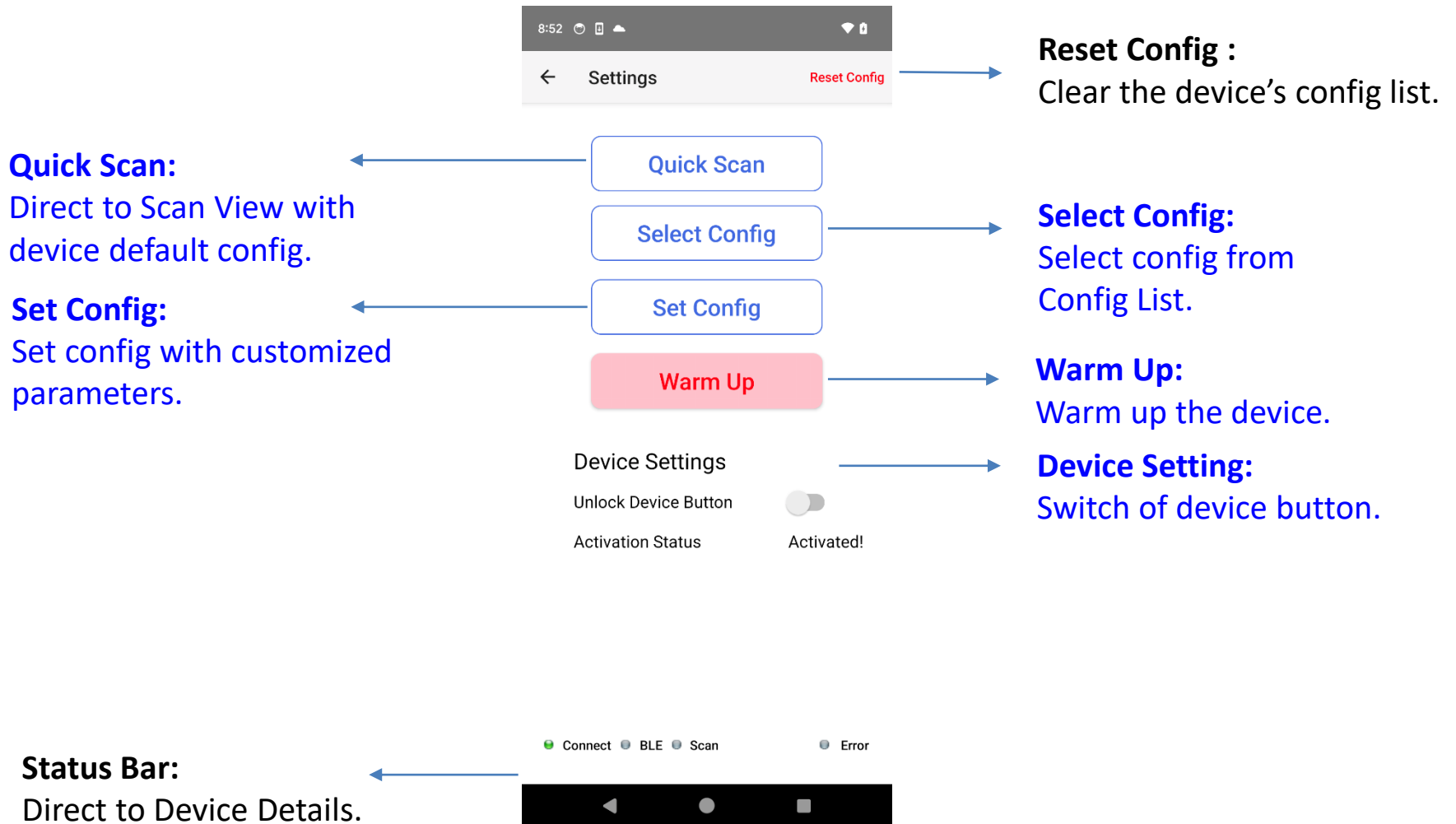
## Information



## Conection Settings



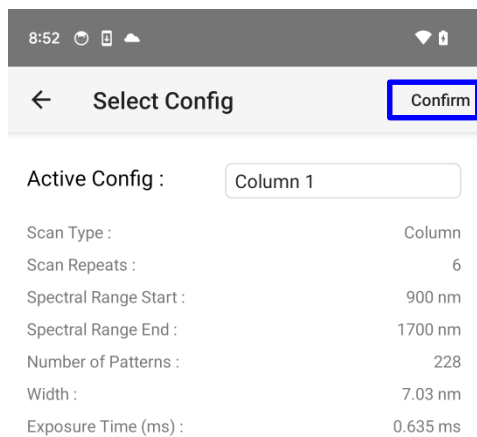
# Settings



# Select Config & Set Config

Use different config to scan, it can be set as default config latter.

## Select Config



8:52

← Select Config Confirm

Active Config :

Scan Type : Column

Scan Repeats : 6

Spectral Range Start : 900 nm

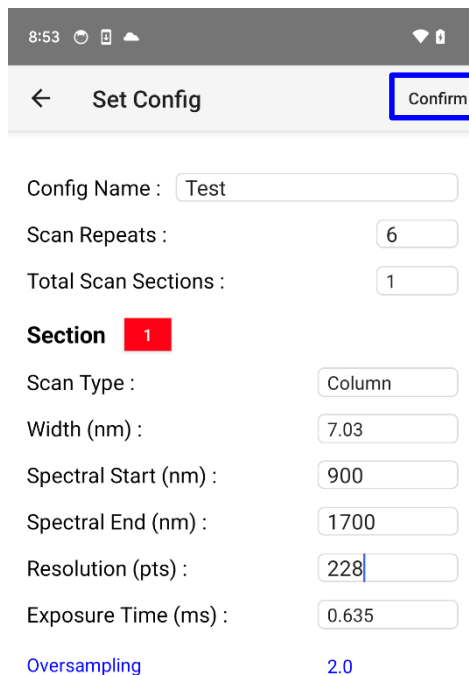
Spectral Range End : 1700 nm

Number of Patterns : 228

Width : 7.03 nm

Exposure Time (ms) : 0.635 ms

## Set Config



8:53

← Set Config Confirm

Config Name :

Scan Repeats :

Total Scan Sections :

**Section 1**

Scan Type :

Width (nm) :

Spectral Start (nm) :

Spectral End (nm) :

Resolution (pts) :

Exposure Time (ms) :

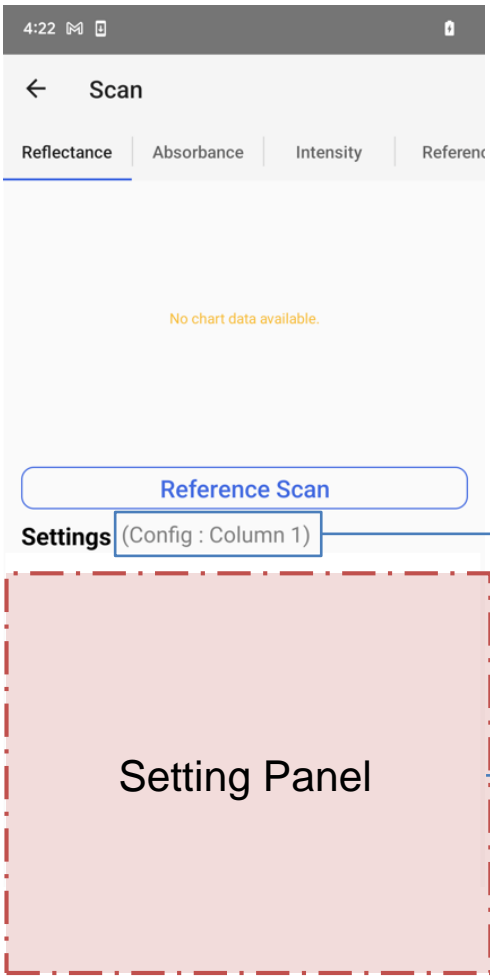
Oversampling 2.0

**Confirm:**  
Direct to Scan View

Connect BLE Scan Error

Connect BLE Scan Error

# Scan View



← Current Config

Current Config : Column 1

Scan Type :	Column
Scan Repeats :	6
Spectral Range Start :	900 nm
Spectral Range End :	1700 nm
Number of Patterns :	228
Width :	7.03 nm
Exposure Time (ms) :	0.635 ms

Settings (Config : Column 1)

Scan Settings Device Settings

Reference Setting

New Previous Built-in

Auto Continuous Scan

Repeated Scan Times 0

Scan Time Interval(sec) 0

Report File Name

Filename Prefix

Settings (Config : Column 1)

Scan Settings Device Settings

Device Control

Warm Up Excute

Lamp Mode Auto On Off

Lamp-Stable Time(ms) 625

PGA Auto

## Current Config:

- Current config details

## Scan Settings:

- Reference mode
- Auto continuous scan
- Report prefix name

## Device Settings:

- Warm up
- Lamp mode
- Lamp-stable time
- PGA



# Device Details – Status/Information/Error



Connect BLE Scan Error

## Access from any Status Bar

8:50

← Device

Clear Errors

Status

Information

Error

Tiva

Scanning

BLE stack

BLE connection

Scan Data Interpreting

Scan Button Pressed

Battery in charge

Battery Capacity 100%

Total Lamp Time 13hr 7min 31sec

Temperature 29°C

Humidity 79% RH

8:51

← Device

Clear Errors

Status

Information

Error

Manufacturer Inno-Spectra Corp.

Model Number NIR-M-R2-08

Serial Number 019R038

Device UUID de:67:c:88:67:75:47:21

Hardware Rev. D.B.B.A

TIVA Rev. 2.4.7

8:51

← Device

Clear Errors

Status

Information

Error

Scan

ADC

EEPROM

Bluetooth

Spectrum Library

Hardware

TMP006

HDC1000

Battery

Memory

UART

System

Press to see error details.

4:37

← Detailed Scan Error Status

DLPC150 Boot Error

DLPC150 Init Error

DLPC150 Lamp Driver Error

DLPC150 Crop Image Failed

ADC Data Error

CFG Invalid

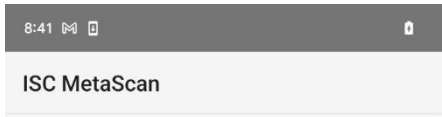
Scan Pattern Streaming

DLPC150 Read Error

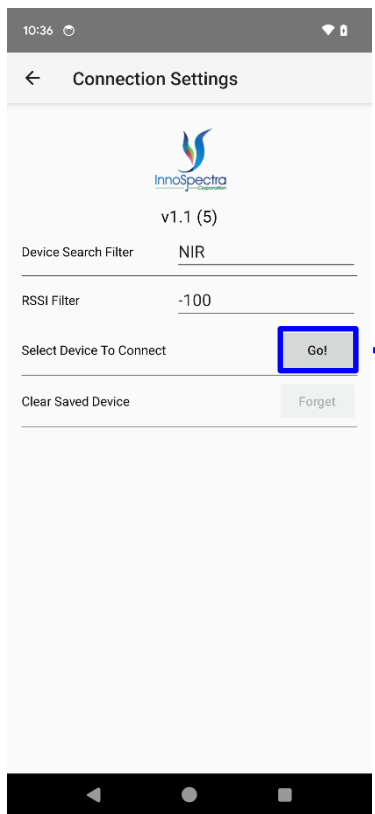
# Connection

# Connection - Set Target Device

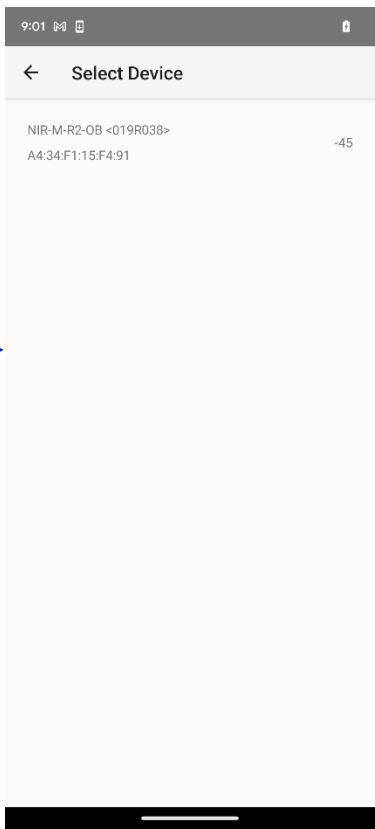
Target device is required before connecting to device.



Set scanning filter by Device Name/RSSI.

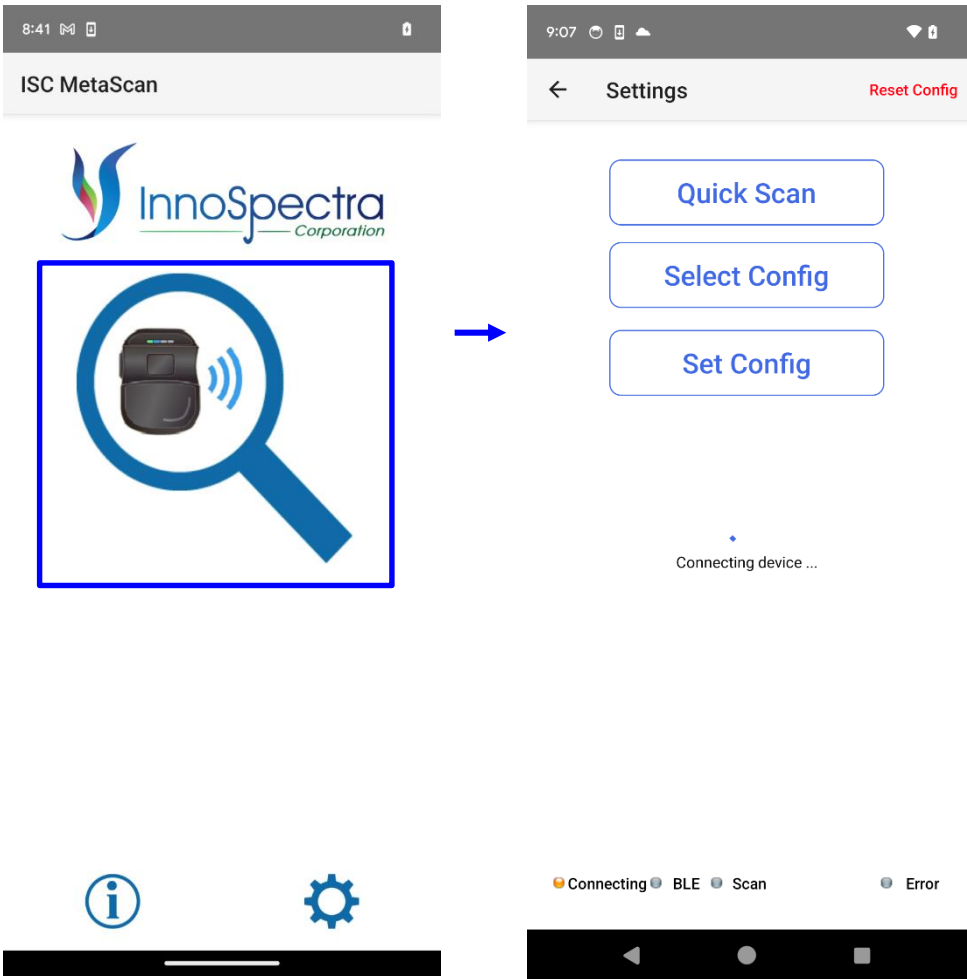


Display a list of available devices.



# Connection - Connect to Device

Press the icon of the magnifying glass to start connecting the device.



Status bar on bottom presents connection status.

Connecting

Connecting BLE Scan Error

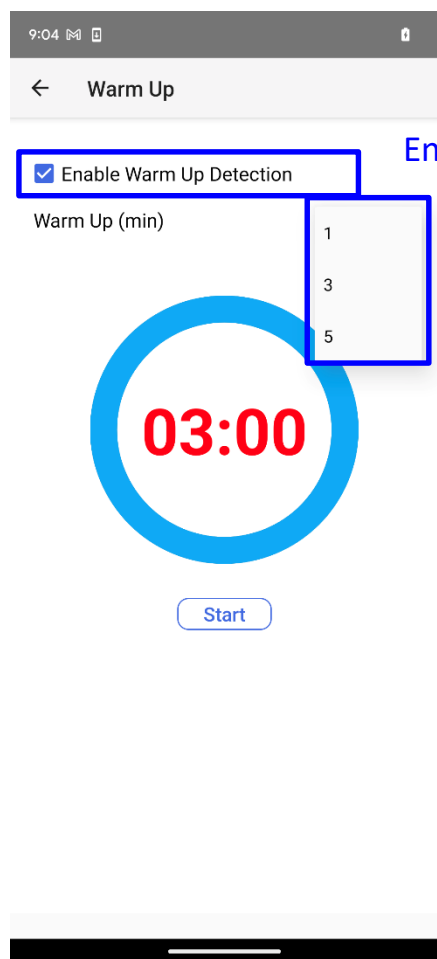
Connected

Connect BLE Scan Error

# Warm Up

# Warm Up

After the device is connected, if need to warm up will directly enter the warm up view. Both the settings view and the scan view have buttons that link to the warm up view. The warm up time can be selected from 1, 3, and 5 minutes. Warm up detection can be canceled.



Enable and disable warm up detection.

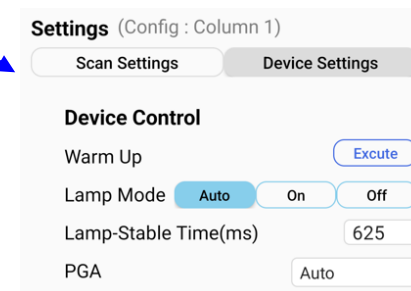
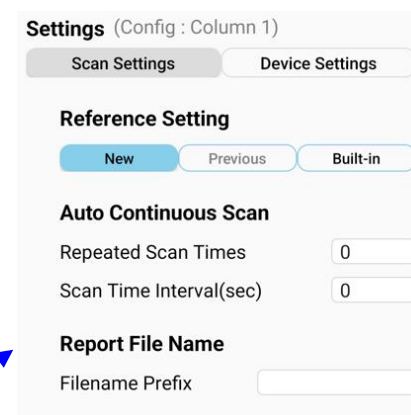
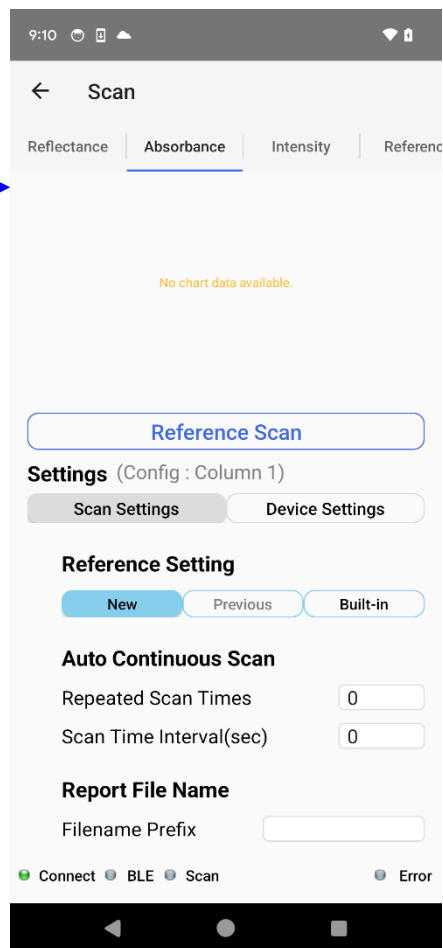
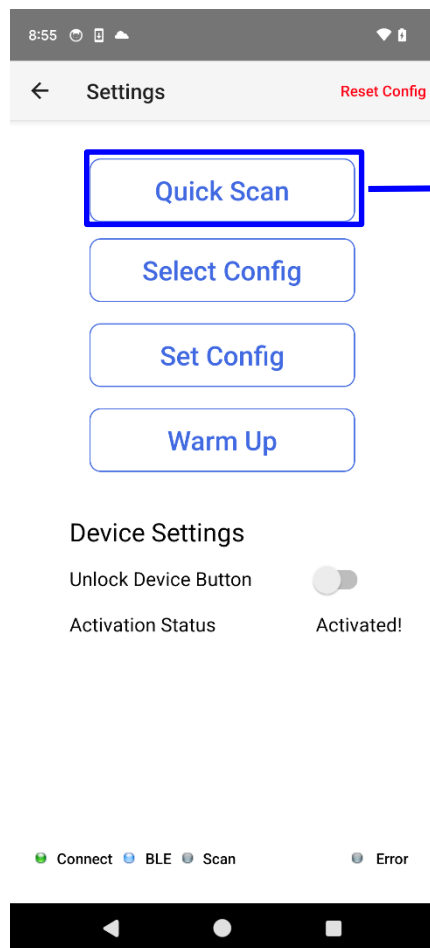
Select warm up time.

# Quick Scan & Default Setting

# Quick Scan & Default Setting

Perform scan by Quick Scan would apply device active config, and the default settings are set as following 2 pictures on right side.

Users can choose to scan the new reference first and then scan the sample, or directly select the built-in (factory reference) to scan the sample directly.





# Quick Scan & Default Setting – Reference Type



There are 3 reference types for scan.

**New:** The scan result would be saved as reference for Previous scan and not saved as report.

**Previous:** Enabled when new reference scan result is available. Scan result is computed with new reference. Report would be saved.

**Built-in:** Scan result is computed with device factory reference. Report would be saved.

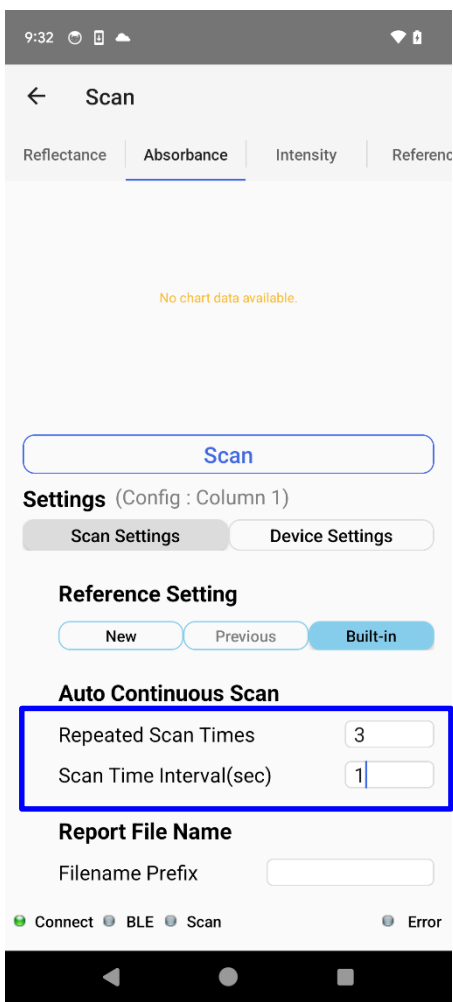
A screenshot of a mobile application interface for a spectrometer. The top status bar shows the time 9:10 and various icons. The app's header is a dark grey bar with a back arrow and the word "Scan". Below the header is a tab bar with four options: "Reflectance", "Absorbance", "Intensity", and "Reference". The "Absorbance" tab is currently selected. The main content area is light grey and contains a message "No chart data available." in orange text. Below this is a blue button labeled "Reference Scan". Underneath is a "Settings (Config : Column 1)" section with two tabs: "Scan Settings" and "Device Settings". The "Scan Settings" tab is active. Within this tab, there is a "Reference Setting" section with three buttons: "New", "Previous", and "Built-in". The "New" button is highlighted with a blue border and a blue background. Below this is an "Auto Continuous Scan" section with two input fields: "Repeated Scan Times" and "Scan Time Interval(sec)", both set to "0". At the bottom of the settings is a "Report File Name" section with a "Filename Prefix" input field. The very bottom of the screen shows a row of status indicators: "Connect" (green dot), "BLE" (grey dot), "Scan" (grey dot), and "Error" (grey dot). The bottom of the screen is a black navigation bar with three white icons: a back arrow, a circle, and a square.

Previous segment is enabled only if new reference scan has been performed.

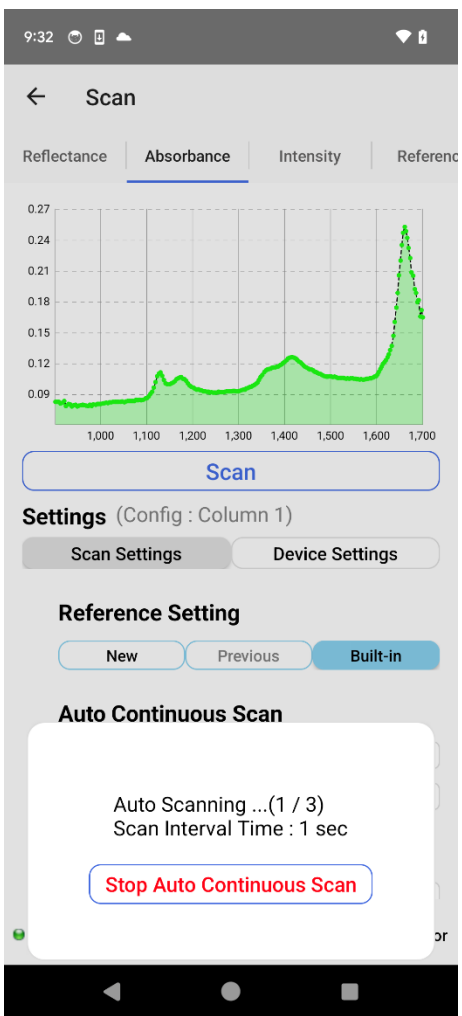
# Quick Scan & Default Setting – Auto Continuous Scan



Auto continuous scan is available with previous/built-in scan.



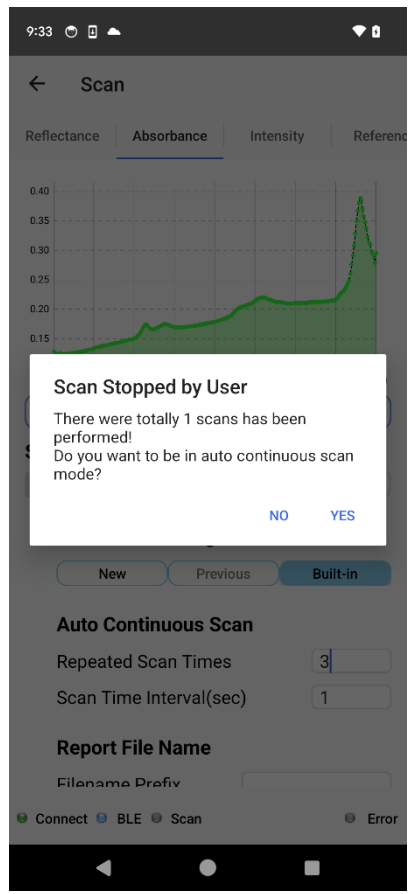
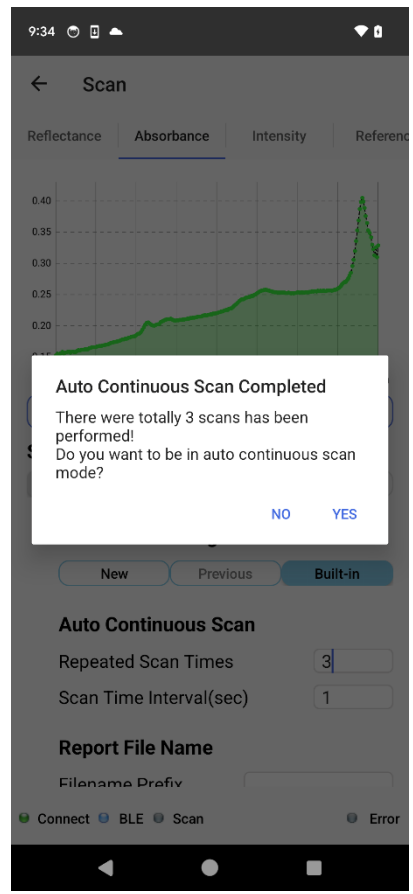
**Repeat Scan Times:**  
Number of scan to be processed  
**Scan Time Interval(s):**  
Break time between continuous scan



# Quick Scan & Default Setting – Auto Continuous Scan



When the auto continuous scanning is completed or the scanning is stopped midway, the dialog will pop up asking the user whether to continue in the auto continuous scanning mode.



# Quick Scan & Default Setting – Report File Name

13:31

Scan

Settings (Config : Column 1)

Scan Settings Device Settings

Reference Setting

New Previous Built-in

Auto Continuous Scan

Repeated Scan Times 5

Scan Time Interval(sec) 0

Report File Name

Filename Prefix Sample

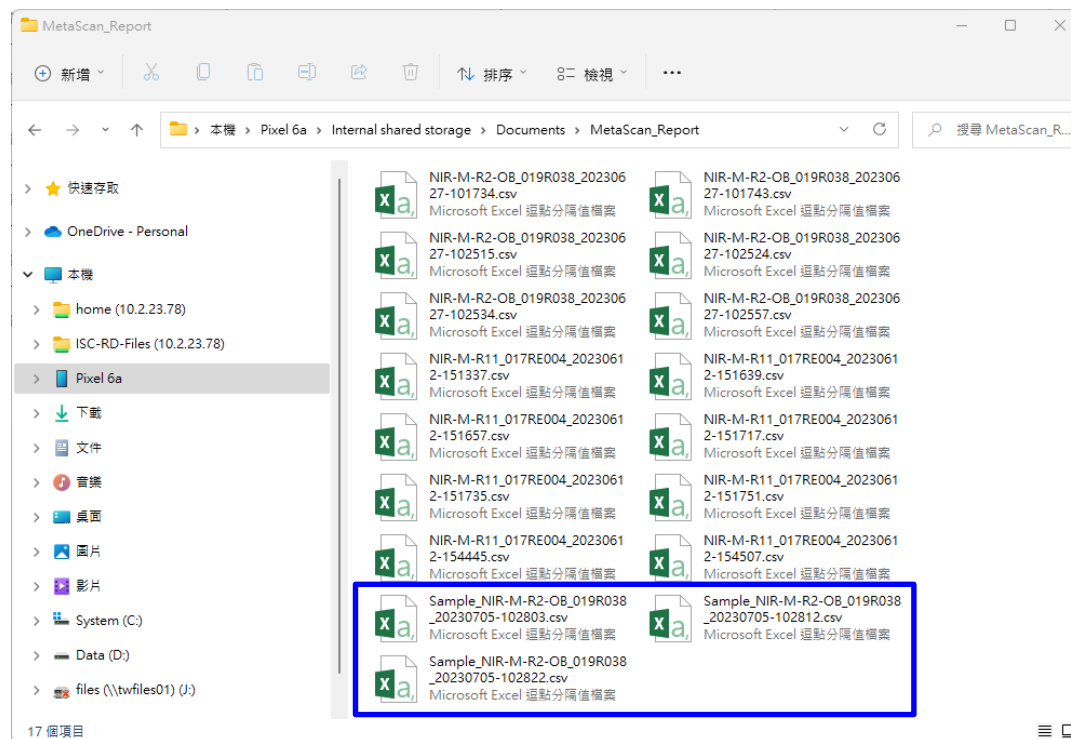
1 2 3 4 5 6 7 8 9 0

q w e r t y u i o p

a s d f g h j k l

↑ z x c v b n m

!/?# 123 , English (US) . Done



Rename the saved  
report file name with  
prefix.

# Quick Scan & Default Setting – Device Settings



Switch the setting panel content.

**Settings** (Config : Column 1)

Scan Settings Device Settings

**Device Control**

Warm Up Excute

Lamp Mode Auto On Off

Lamp-Stable Time(ms) 625

PGA Auto

Link to warm up view.

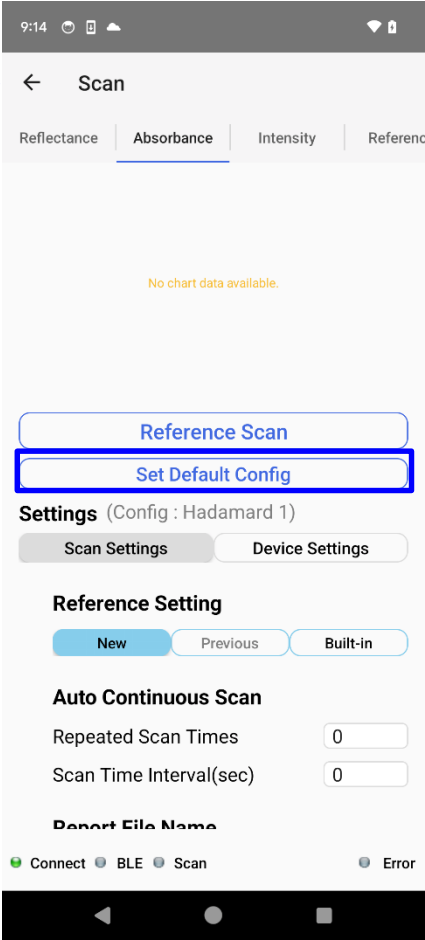
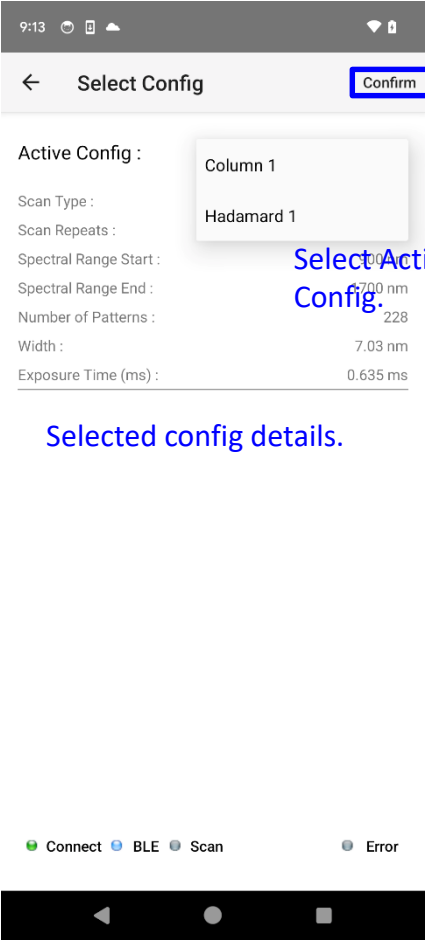
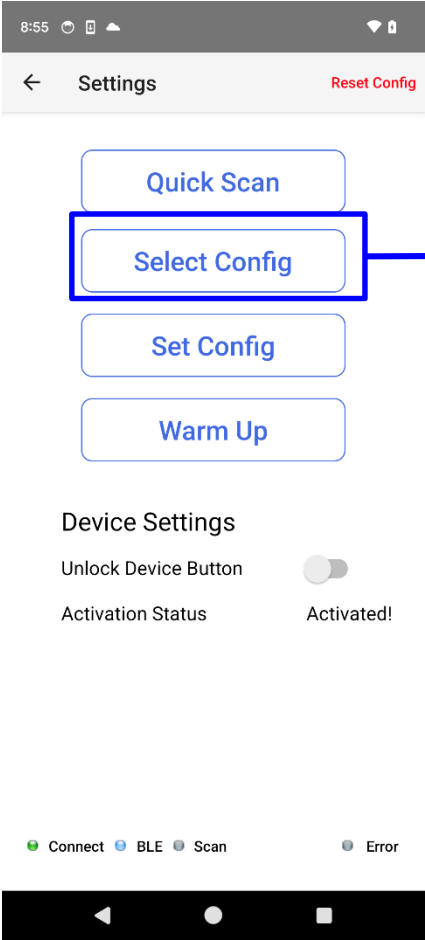
Set lamp status.

Set lamp-stable time.

Set PGA.

# Select Config

# Select Config



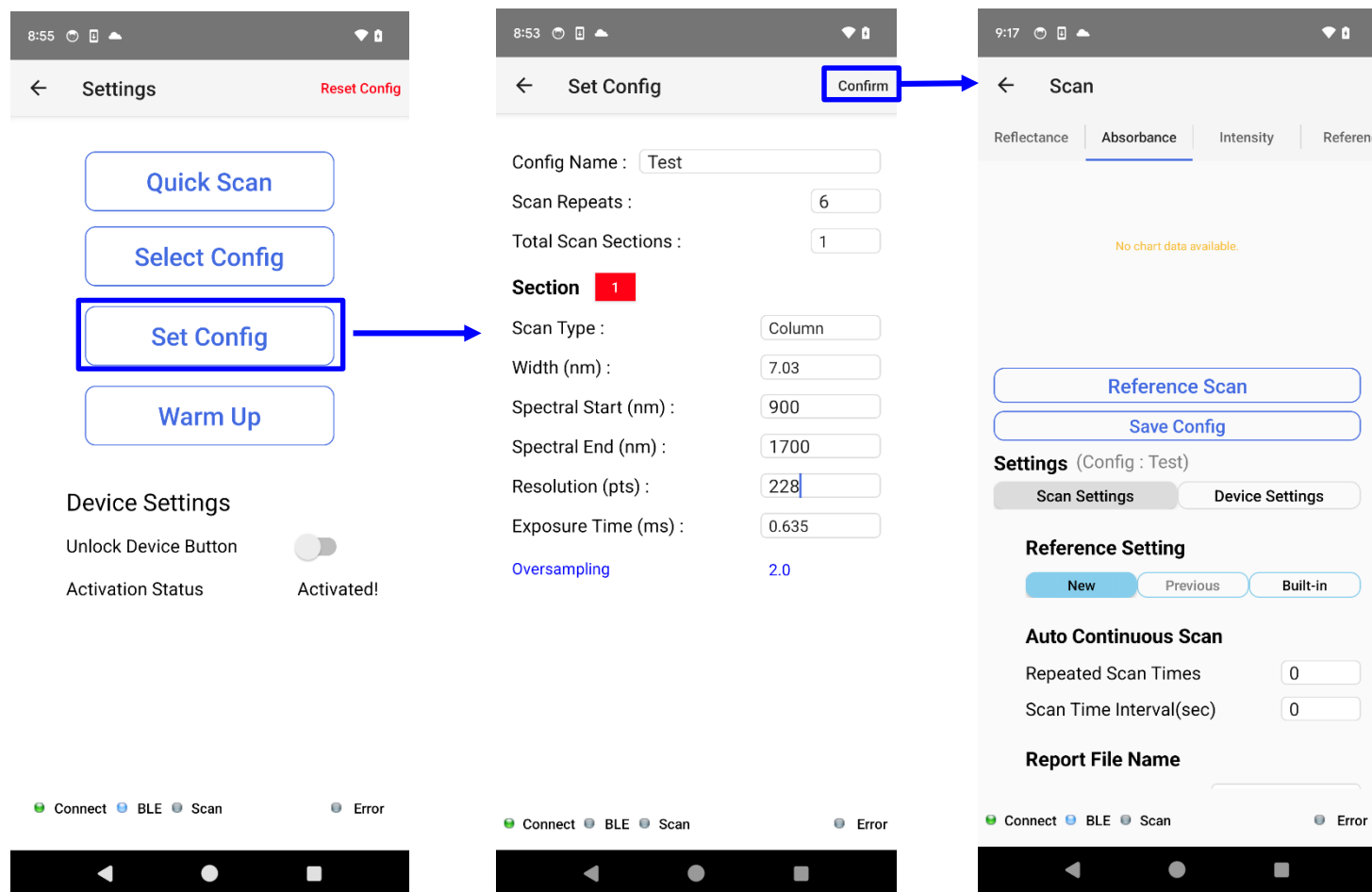
Available if selected config is different from device default config.

# Set Config



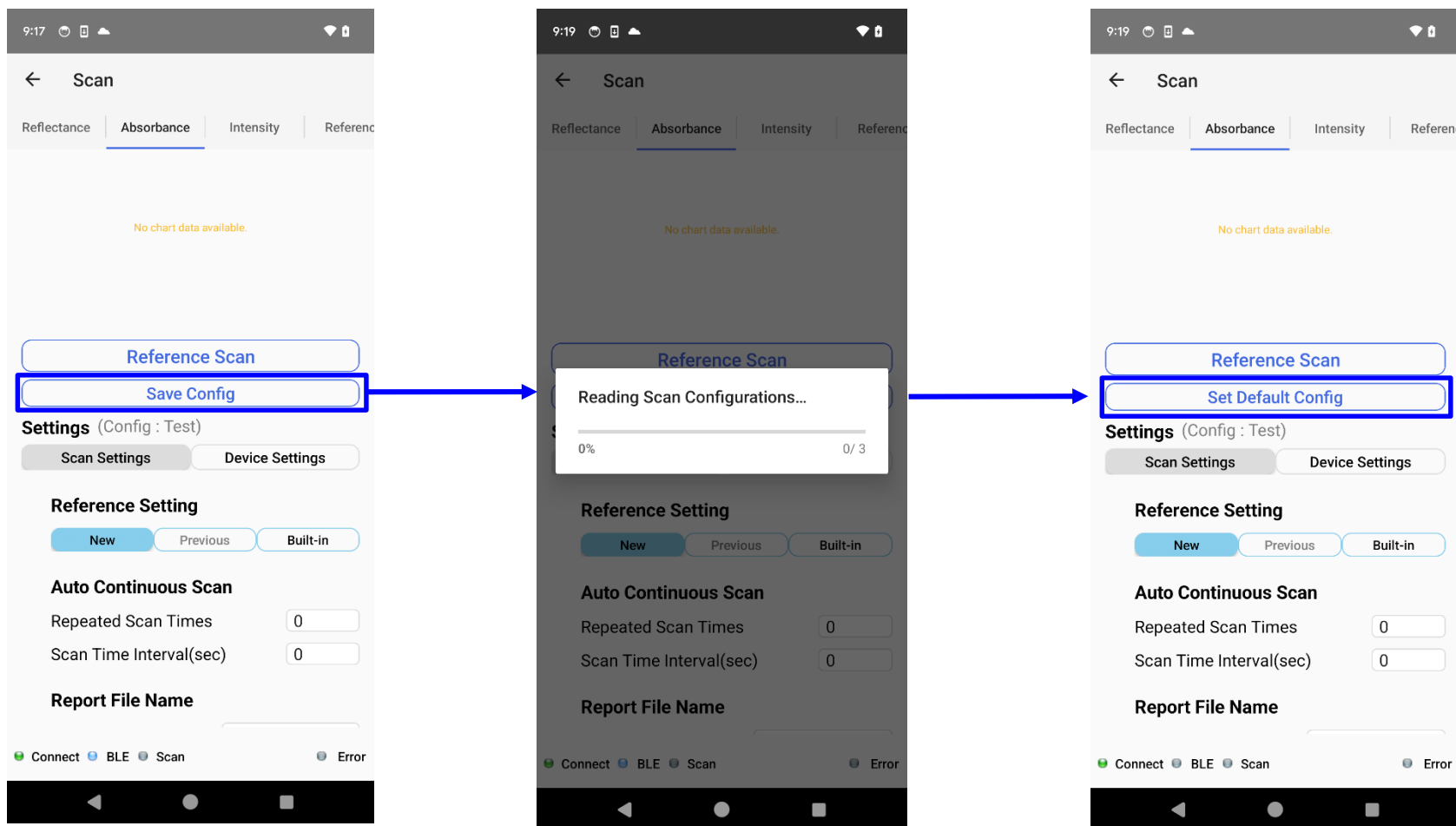
# Set Config

The set config would be applied for later scan, and it is just a temporary config that is not saved to device.



# Set Config (Save to Device)

After the set config is saved to device, the scan config list will be obtained from the device and then can be set as default.

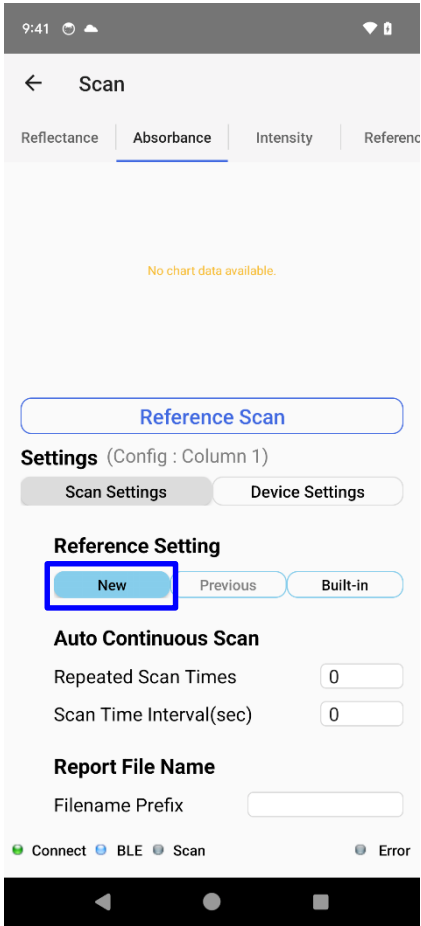


# Reference

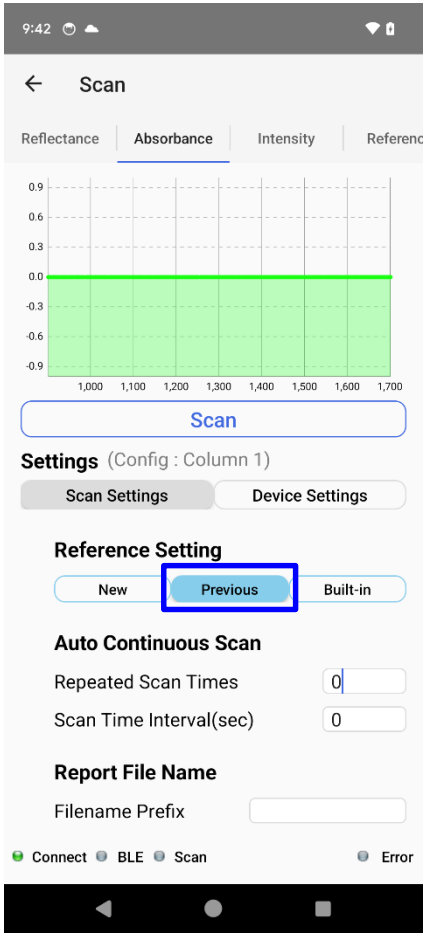
# Reference



Users can create a new reference. It is necessary to set the reference setting to new, and then place the reference white to start scanning. If user can select previous for the reference setting, it means that the user has created a new reference.



Prepare scan new reference.

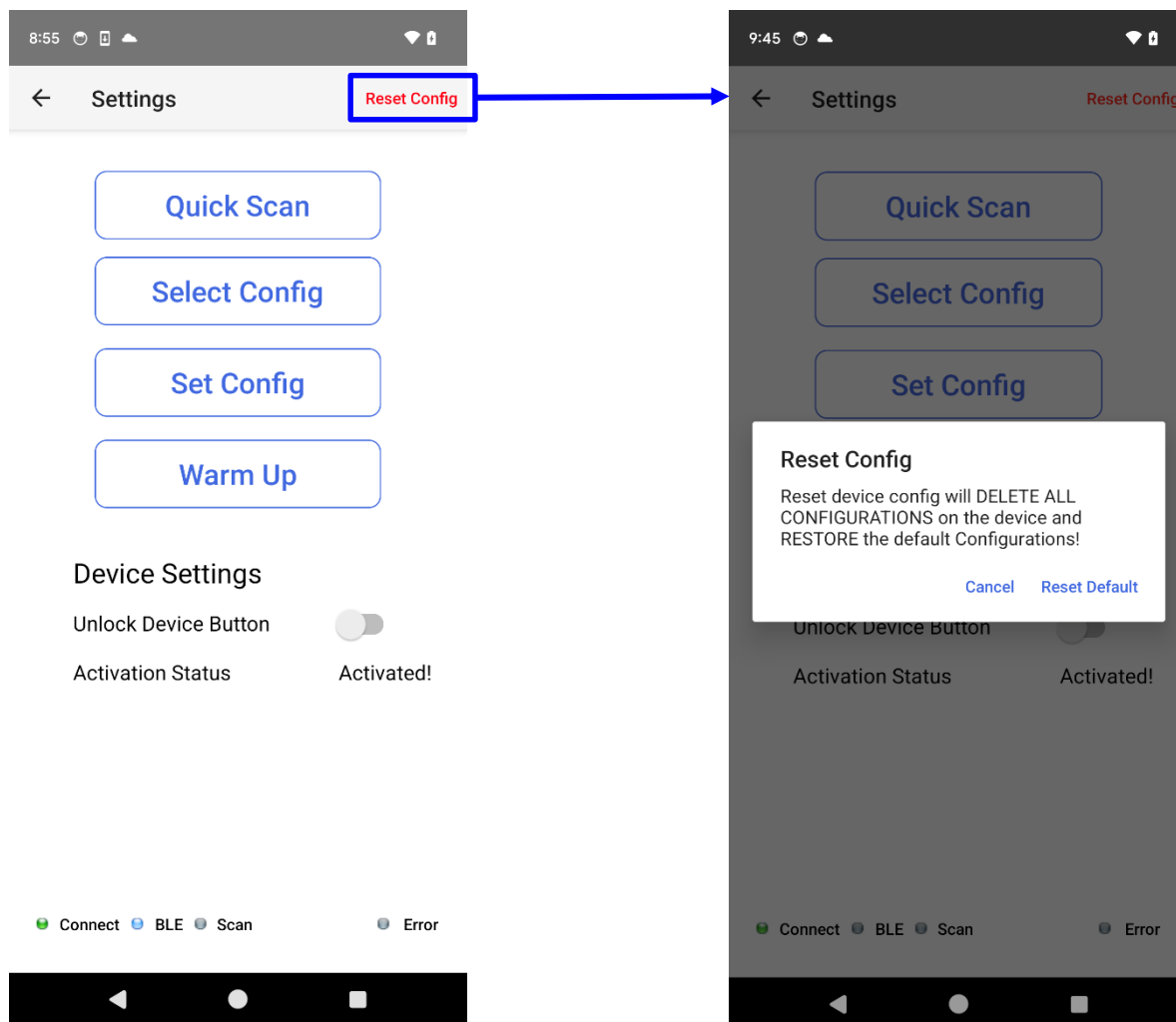


User have create new reference.

# Reset Default Config

# Reset Default Config

Reset config would remove all configs except Column 1 and Hadamard 1.



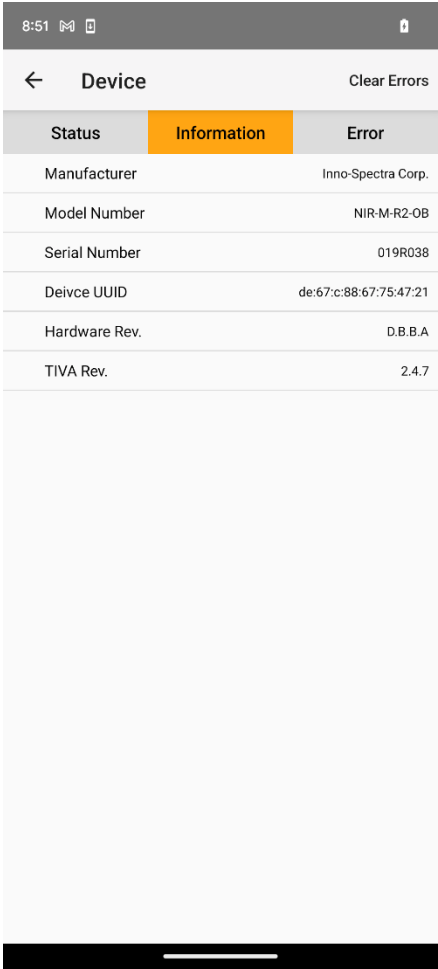
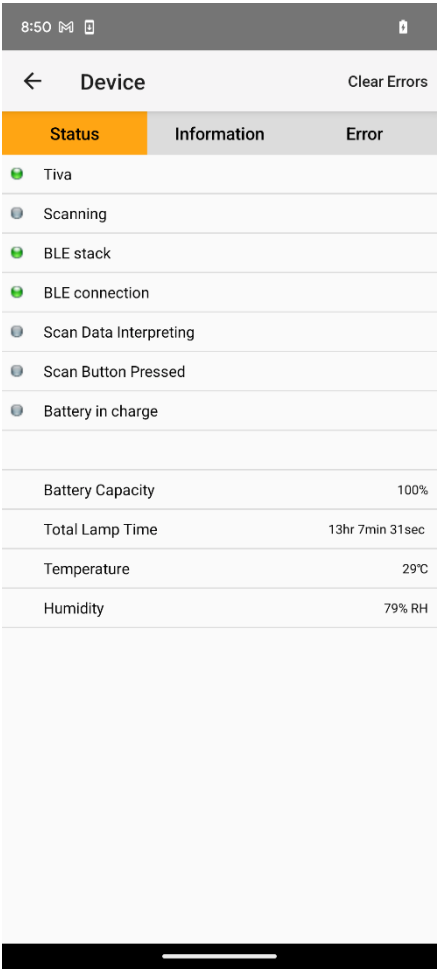
# Device Information

# Device Information – Status/Information

Device information could be accessed by any status bar.



Connect BLE Scan Error Status Bar

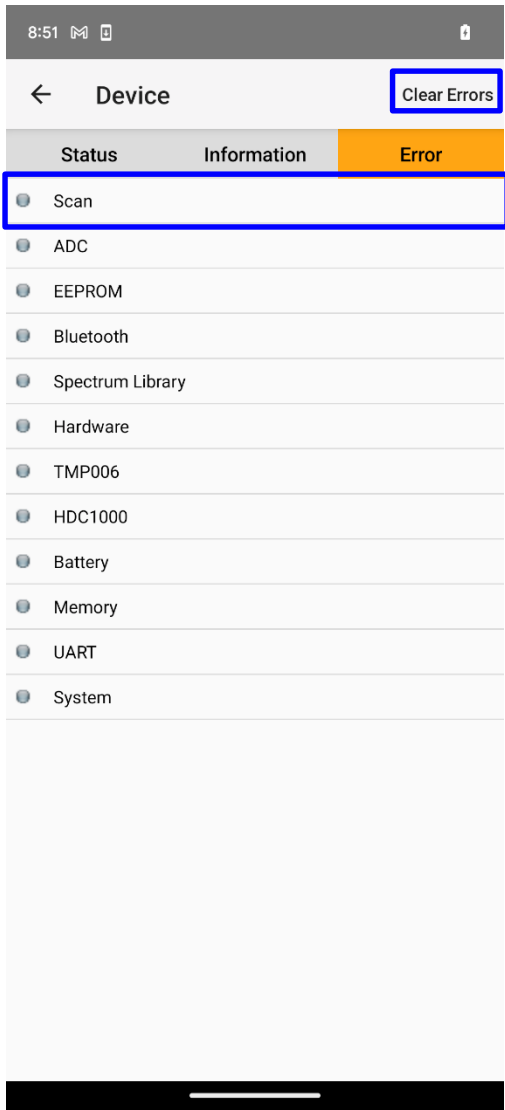




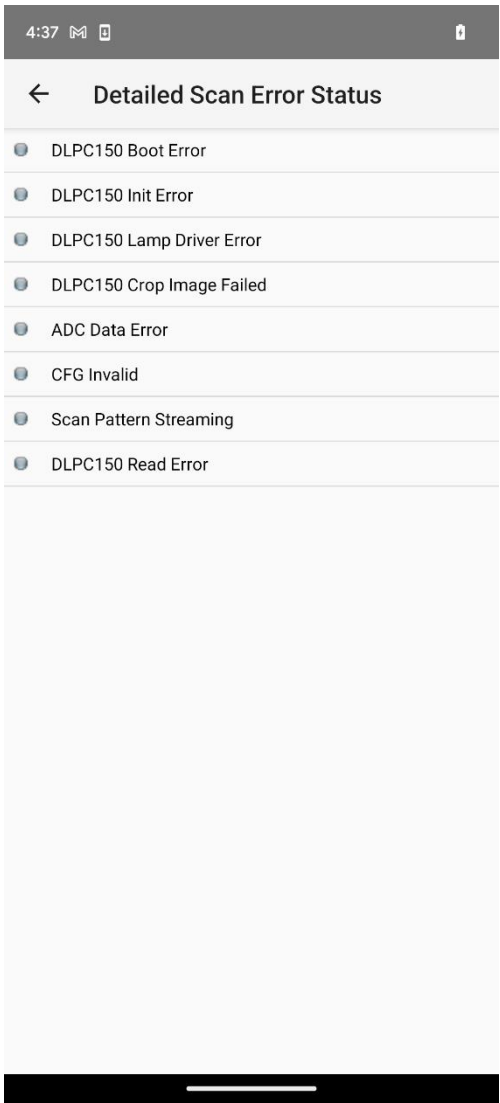
# Device Information – Error



“Clear Errors” clears device error and return to home page.



Press to see the error details.



# Thank You



責任・創新・卓越・開創

Responsibility Innovation Superiority Entrepreneurship