HANDHELD RAMAN SPECTROMETER

CODE HHL-R240

Content

1.Overview

HHL-R240 is the latest of ultra-thin handheld Raman analyzer newly launched by INSIZE, small size, the device is less than 0.6 kg, smaller size and lighter weight, make HHL-R240 use and convenient to carry, make you no matter in the laboratory, workshop, warehouse, wharf or outdoor can easily complete identification and verification of raw materials.

HHL-R240 has excellent built-in Raman spectral recognition algorithm, which can easily identify substances and add its own spectral data.

Intuitive and friendly user interface enables technicians and non-technicians to easily complete the operation;High-quality hardware configuration and durable multivariable algorithm ensure the accuracy, consistency and reliability of the experimental results.

Raman spectroscopy is a legal analytical method approved by Chinese pharmacopoeia, American pharmacopoeia and European pharmacopoeia.

We provide comprehensive technical support and services, such as the establishment of spectral library, method and verification, IQ/OP/PQ certification support.

The following are the ICONS to note in this manual

 ： The laser warning icon indicates the presence of a danger associated with the laser's presence

 ： The ISO general warning icon indicates the security information that users must follow.This information relates to the risk of physical injury or death that may or may exist.

 ： The information icon reminds the reader of the facts and conditions associated with using the device.

1.1 Safety Warning and Labels

The HHL-R240 Handheld Raman System contains one Class 3B laser light source 785 nm laser excitation. The product complies with 21 CFR 1040.10, Laser and Laser Systems.

Please read through this user manual before operating the system.

1.2 Laser Emission Aperture and Beam Shutter

Located at the laser emission aperture, the laser emission label indicates that the laser energy emission occurs at the corresponding port. The unit is equipped with CDRH compliant laser safety measures including soft key switch and emergency laser stop key. The laser emission aperture is located on the unit’s front where the sampling accessory is also installed. The laser warning label is also located on the rear

panel of the system together with the manufacture identification. The laser warning label displays the laser safety, wavelength and power of the laser source. The manufacturer's general identification includes warning information and also displays the manufacturer name, address, model number, serial number, manufacturing date, and power supply specifications.

The laser hazard zone is within 20cm (7.87 inches) to the tip of the point-and-shoot adaptor.

Figure 1.2.1 Laser port warning label

Figure 1.2.2 Teltag

CAUTION: The unit should be powered down if the shaft is removed. Users are strongly recommended to avoid any unnecessary removal of the shaft.

2. Getting to know Your HHL-R240

Warranty seal labels are positioned on both sides of the system under the rubber jacket. Any attempt to open the panel(s) of this device will break these seals and void the warranty.

2.1 System Contents

ITEM	PART NO.
One HHL-R240 unit	1
5V/3A Power adaptor	1
USB Cable	1
Sample Adaptor	1
Polystyrene rod	1
HHL-R240 Handheld Raman System User Manual	1

2.2 Power Socket

The power socket and USB Port is located at the left of the unit. The power socket not only can be used to charge a battery, also can be used to connect a computer to copy data and print reports. As shown in Figure 2.2.1.

Figure 2.2.1 Power socket & USB Port

CAUTION: Disassembly/modification of instruments is strictly prohibited without the permission of the company, which may lead to instrument damage or even threaten personal safety.

2.3 Power Button

The **power button** is located at the right of the unit. It will power on/off when long press the power button, and it will always on display when soft-touch it.

CAUTION:

1): When the laser indicator light is on, the surface laser light is on. At this time, the power is high. Do not put the probe tube to human eyes or skin to prevent burns. Only the company's equipped batteries can be used, and a certified adapter or connector could be used to charge the instrument.

2): When charging, it is recommended to insert the charging socket first, and then insert the plug to prevent electric shock.

2.4 Detect Button

The “Detect Button” is used to collect spectral when the user want to use the function of **SCAN**, **ID**, **SELF-CHECK**, It is similar to the **START** and **DETECT** key on the corresponding functional interface.

2.5 Camera

The camera pixel has 13 million pixels, it is used to scan the barcodes or QR codes.

2.6 Laser Probe

The user should aim the probe tube at the sample to be tested when measuring. For different samples, the distance between the probe tube and the object to be tested needs to be fine-tuned to ensure that the laser

emitted by the probe can focus on the surface of the object to be tested, so as to keep the lens surface clean and prevent accidental damage.

CAUTION:

1) When the laser indicator light is on, the surface laser light is on. At this time, the power is high. Do not put the probe tube to human eyes or skin to prevent burns.

2) During the test, the probe shall not be oriented towards the window or sunlight, etc., which may cause deviation to the experimental results.

2.7 Sample adapter

A standard sample adapter can be used for dark room testing in vials of solid, powder or liquid. It can be test through the way of directly against the sample, if the customer does not divide the sample into vials or other small packages, just adjust the distance between the laser probe and the sample. Refer to section 2.6 laser probe.

2.8 Home Screen

The main interface contains six function keys, There are six function keys on the main interface, it includes Settings, Spectral Library, Detection, History, User Management and Resource Manager. The details can be explained, and refer to the following chapters.

2.9 Permission List

Name	Detail
Spectral data	**Create Spectral Data**
	Revise Spectral Data
	Delete Spectral Data
Spectral Library	**Create Library**
	Delete Library
Method	**Create Method**
	Revise Method
	Delete Method
Audit Trail	**Revise Audit Trail**
	Delete Audit Trail
Detect Record	**Revise Detect Records**
	Delete Detect Records
	Export PDF

	Export TXT Files
Scan	**Scan**
Identification	**Identification**
Self-Check	**Validation**
Electronic Signature	**Supervisor Signature**
	Approver Signature
User Management	**Create Roles**
	Revise Role
	Delete Roles
	Create User
	Disable User
	Delete User
	Revise User PWD
	Revise User Role
Backup	**Data Backup and Recovery**
Other	**System Setting**
	Wavenumber Calibration

3. Direction for use

3.1 Power On/Off

Power On: Complete installation, it will enter screen of the first boot up when long press the Power Button for 2-3 seconds，refer to Fig3.1.1 initial login screen, access to user name and PSW screen refer to Fig3.1.2 Account & PWD login.

Figure 3.1.1 Initial Login Screen

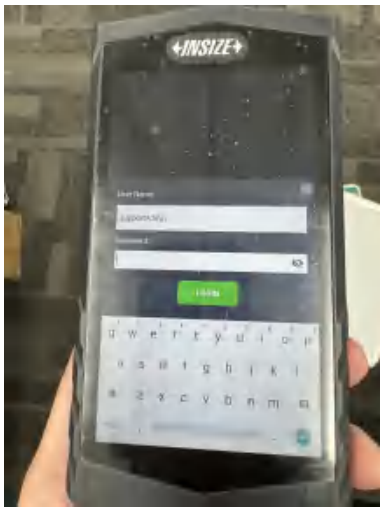


Figure 3.1.2 Account & PSW Login

Power Off: It will display “Power off” when long press the Power Button for 2-3 seconds, click the “Power off” and it will power off. As shown in figure 3.1.3.

Figure 3.1.3 the screen of Power off

3.2 Login

3.2.1 First Time Login

When first time the Pharm-ID is turned on, it will enter the interface of login, as shown in figure 3.1.2. The user name of first login is “supportAdmin”, and the passwords is “123456”, and it will enter the interface of first Revise PWD when the long press the key of Login, as shown in figure 3.2.1.1. Input new PWD and confirm, the click the Save key, it will display a prompt that finish operation, return to upper level, as shown in figure 3.1.2.2. It will enter the login screen again, as shown in figure 3.2.1.3. It will enter the main screen when input new PWD and click LOGIN. As shown in figure 3.2.1.4.

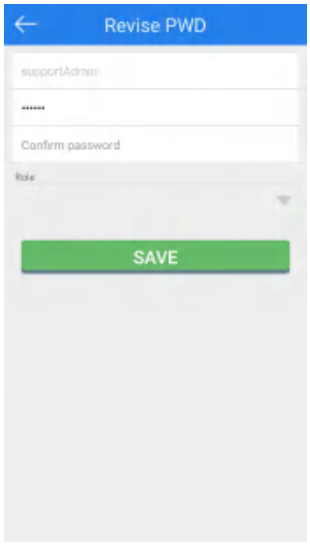


Figure 3.2.1.1 the screen of the first login and revise PWD

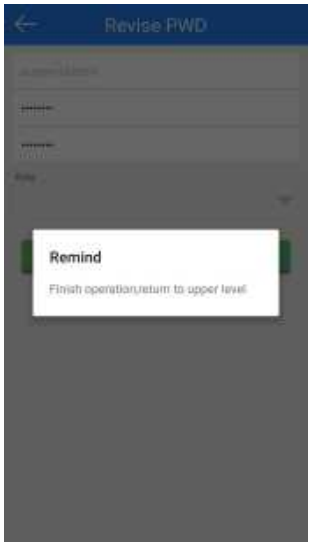


Figure 3.2.1.2 the prompt screen after revise PWD

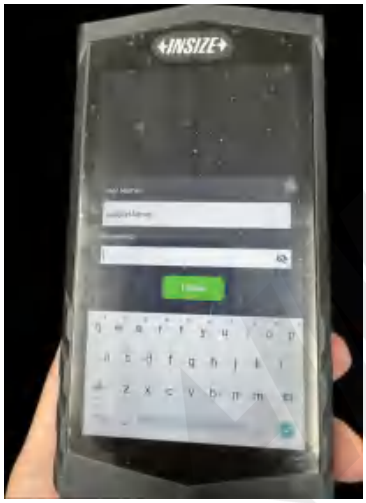


Figure 3.2.1.3 the login screen after revising PWD

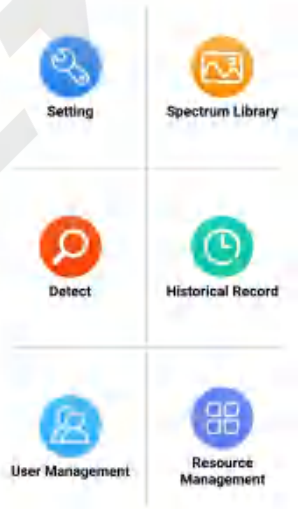


Figure 3.2.1.4 the main screen

3.2.2 User Login

At the User login screen, as shown in Figure 3.2.2.1, it will autosave user name of the last login. Enter the user name and password and press Login. The user name and user type must need to create by user management.

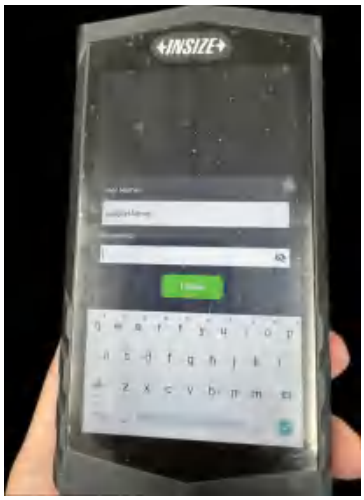


Figure 3.2.2.1 Other users login screen

When the wrong user account information, the system will prompt “wrong password”, as shown in figure 3.2.2.2, and the system will allow three trails before the system locks out the user. After the system is locked out, the user will be waiting for two minutes and try again with the correct account information. As shown in figure 3.2.2.3.

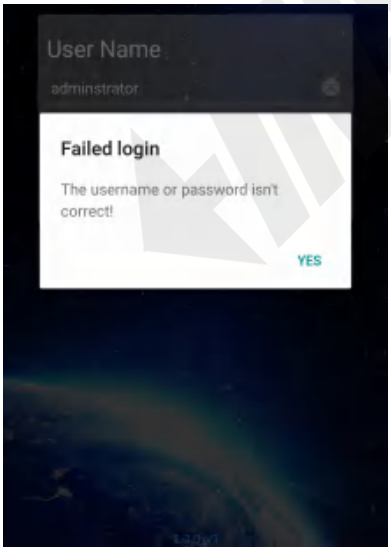


Figure 3.2.2.2 Display error password

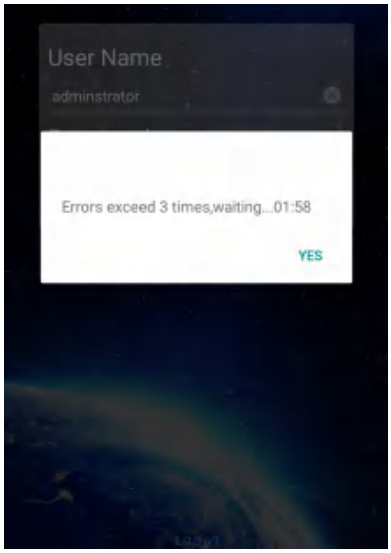


Figure 3.2.2.3 Locking User

3.2.3 EXIT

Enter the Setting screen through click the Setting key on the main screen, it can log out of the account or switch users through click the EXIT key, such as shown in figure 3.2.3.1.

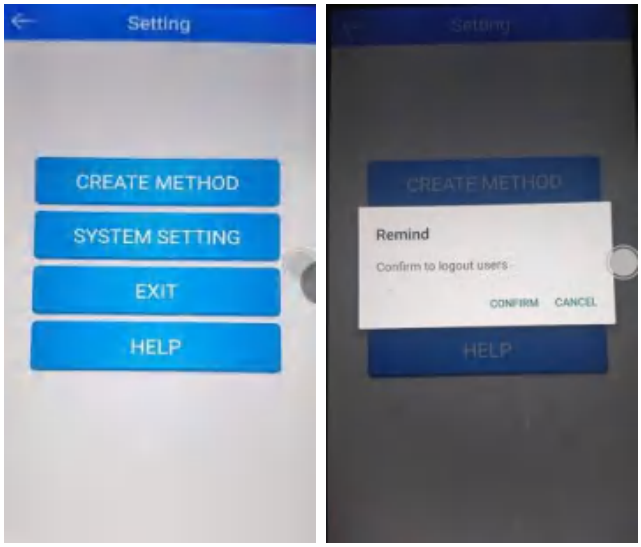


Figure 3.2.3.1 Screen of EXIT

3.3 User Management

Press User Management icon on the home screen. There are two function keys when press User Management and enter the screen. You can create a new role or user in this screen by press the function keys. As shown in figure 3.3.1.

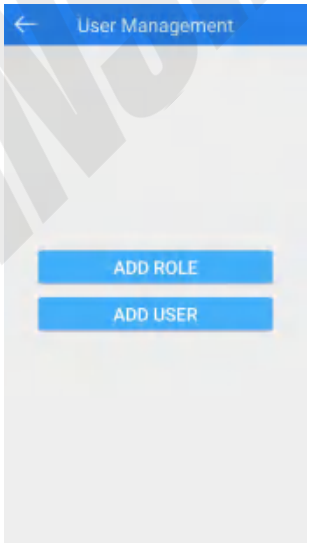


Figure 3.3.1 User Management interface

3.3.1 Add Role, Delete Role and Revise Permission

Add Role: Click the Add Role on the menu, followed by pressing Create. Enter a new role name and select permissions, click Save to create the new role. A finishing message “completed” will be displayed at the

bottom of the screen and the role will be created. There are roles list on the screen when press the Add Role to accessin figure 3.3.1.1, 3.3.1.2, 3.3.1.3.

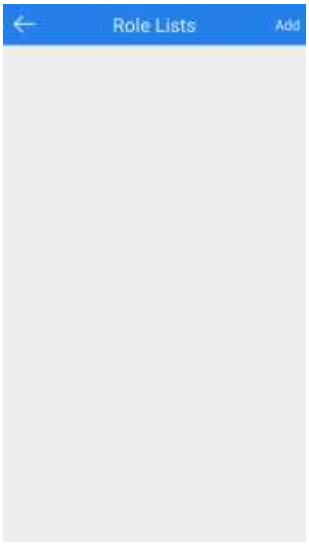


Figure 3.3.1.1 Add Role interface

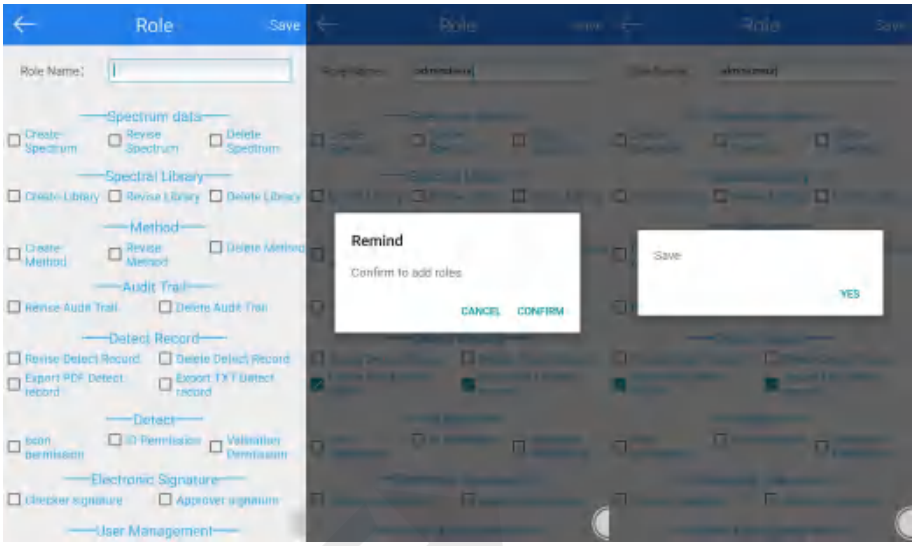


Figure 3.3.1.2 Permission interface

Figure 3.3.1.3 Role Lists

**Revise Role`s permission:** You can revise role`s permission through click the role and enter the role permission interface. As shown in figure 3.3.1.4.

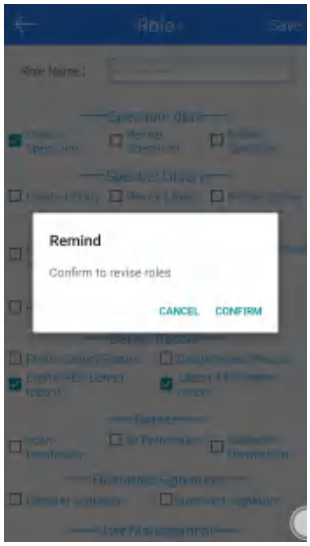


Figure 3.3.1.4 The screen of revise the permission

Delete Role: You can delete the role through long press the role name, and there are prompt message “Confirm to delete role”, “Yes” is delete, you can cancel through press other space. As shown in figure 3.3.1.5.

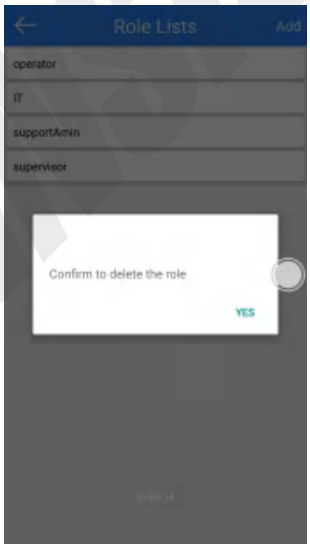


Figure 3.3.1.5 Delete the role

3.3.2 Add User, Delete User, Revise User PWD, Disable User

Create User: Press Add User on the menu, followed by pressing Create. Enter a new user name and password. Then confirm the password. The user name can be any letters, numbers, spaces, and special characters. The password allows 6-20 characters with a combination of upper and lower letters, numbers. Press the arrow “ ” and can select user role`s type, and press Save to create the new user account. A

fishing message “Finish and return back to previous layer”. Press the space and return back to previous layer. As shown in figure 3.3.2.1, 3.3.2.2, 3.3.2.3.

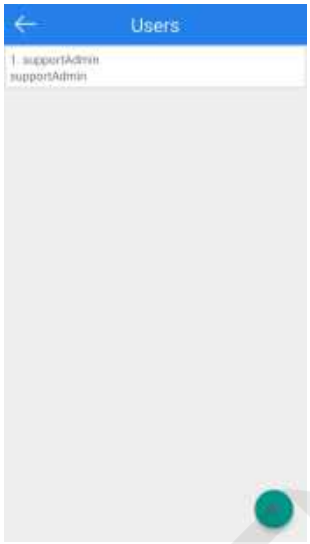


Figure 3.3.2.1 Add User interface

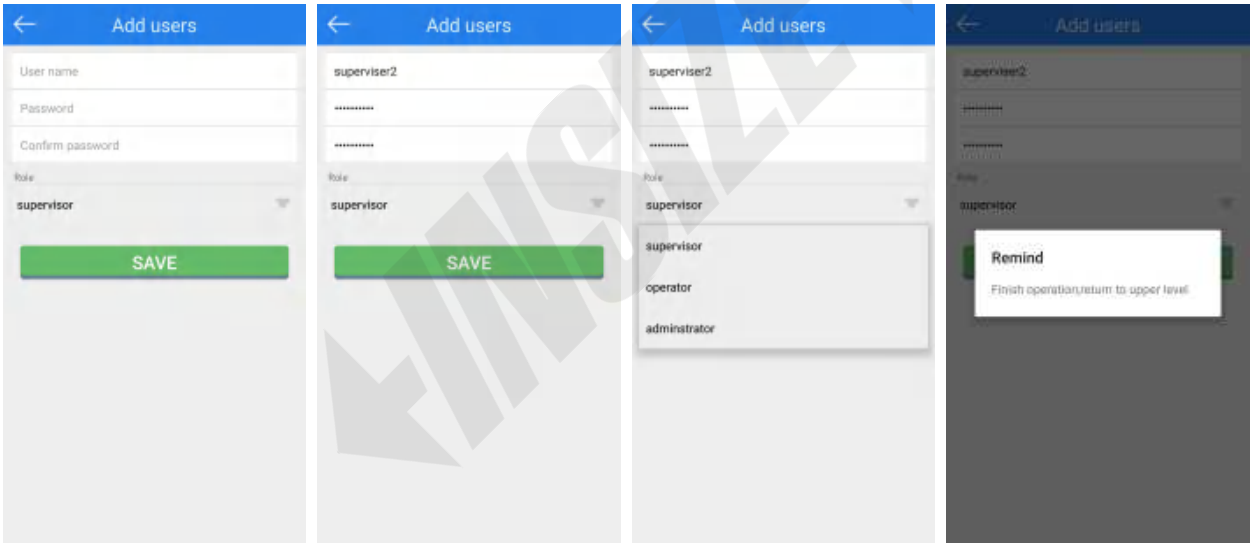


Figure 3.3.2.2 Create User account interface

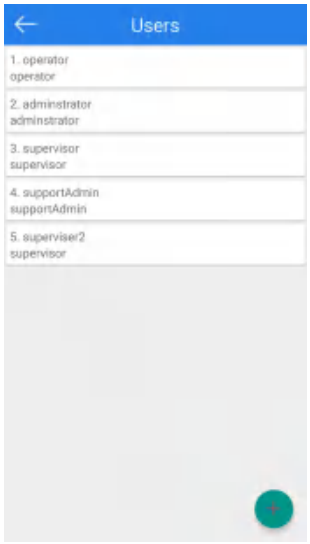


Figure 3.3.2.3 Role Lists interface

Delete User: You can delete the role through long press the role name, and there are prompt message "Confirm to delete the user", "Yes" is delete, you can cancel through press other space. As shown in figure 3.3.2.4.

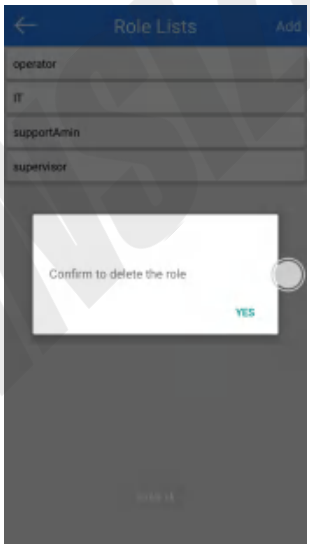


Figure 3.3.2.4 Delete the user

Revise User PWD: You can revise user PWD through click the role and enter the revise user interface. As shown in figure 3.3.2.5.

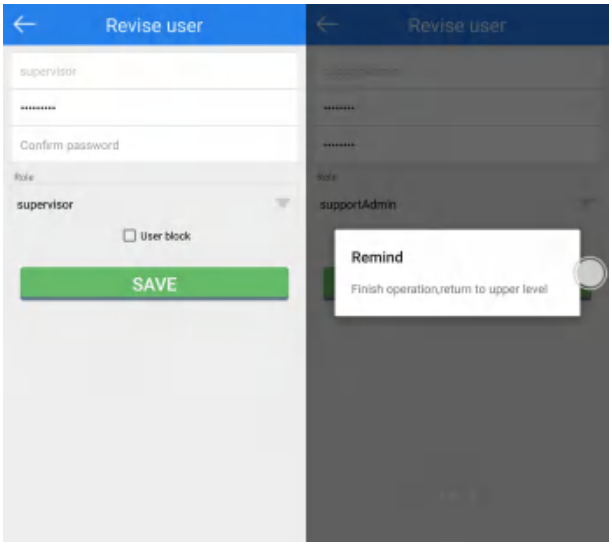


Figure 3.3.2.5 Revise User PWD

Disable User: Enter the screen of revise user, it will finish the function of ban user when check the box in front of the User Block. The detailed process: "Home Screen--User Management--Add User--User Lists--Revise PWD—Check the box--Save". As shown in figure 3.3.2.6. And it will prompt "Locked User" when next login. As shown in figure 3.3.2.7.

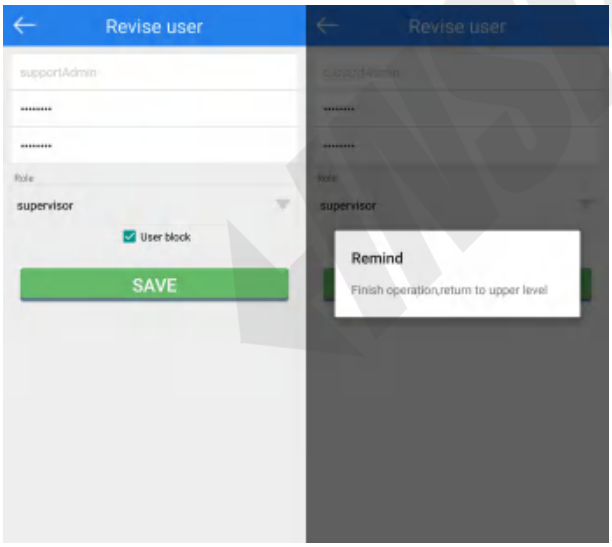


Figure 3.3.2.7 The fugure of Ban User

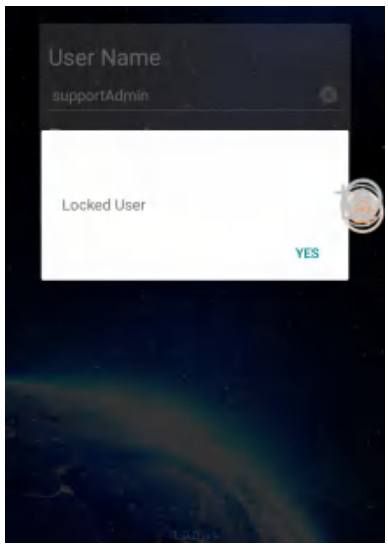


Figure 3.3.2.8 Account locked warnign

Unlock User: It need the user that has the permission of user management enter the interface of user lists, then click the name of ban user and enter. The detailed process: "Home Screen--User Management--Add User--User Lists—Click the User name--enter the PWD—Cancel clicking, User block--Save". As shown in figure 3.3.2.9.

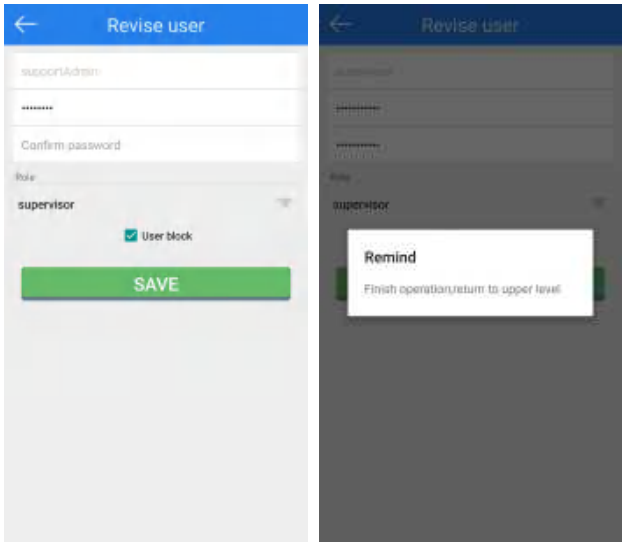


Figure 3.3.2.9 Unlock User

3.4 Setting

The Settings function contains CREATE METHOD, SYSTEM SETTING, EXIT, HELP and so on. Click the setting button on the main interface, and then enter the system setting interface, as shown in figure 3.4.1 below.

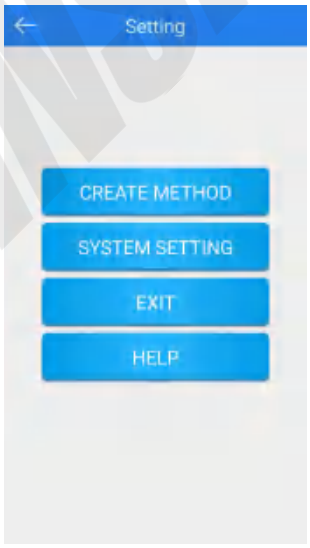


Figure 3.4.1The screen of System Setting

3.4.1 Method Setup

Click Method Setup includes two functions, ID method and Scan Method, Fig 3.4.1.1.

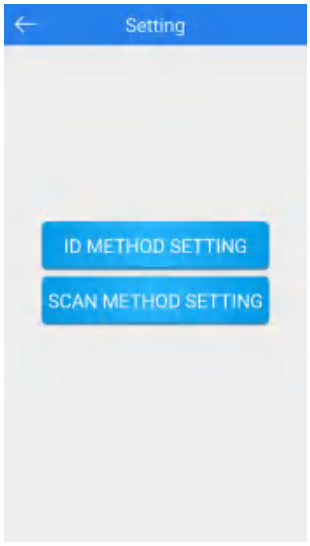


Figure 3.4.1.1 The interface of Method Setting

ID Method：Click ID Method，refer to 3.4.1.2 Method list, Click Add to access create method.

Fig 3.4.1.2 Methods list

The first step input method name, scan bar code or input bar code number, setup configuration including Algorithm setting(standard number of spectrum: 20, it means that the user must collect spectrum is 20), Instrument parameters: Integration, Laser output, Delay detect and so on. The Integration includes automatic and manual, the manual range of integration time is 1ms to 1 hours. The range of Laser output is 0 to 350mW. The range of delay time is 0s to 1800s. as shown in figure 3.4.1.3 ID Method parameters setup interface.

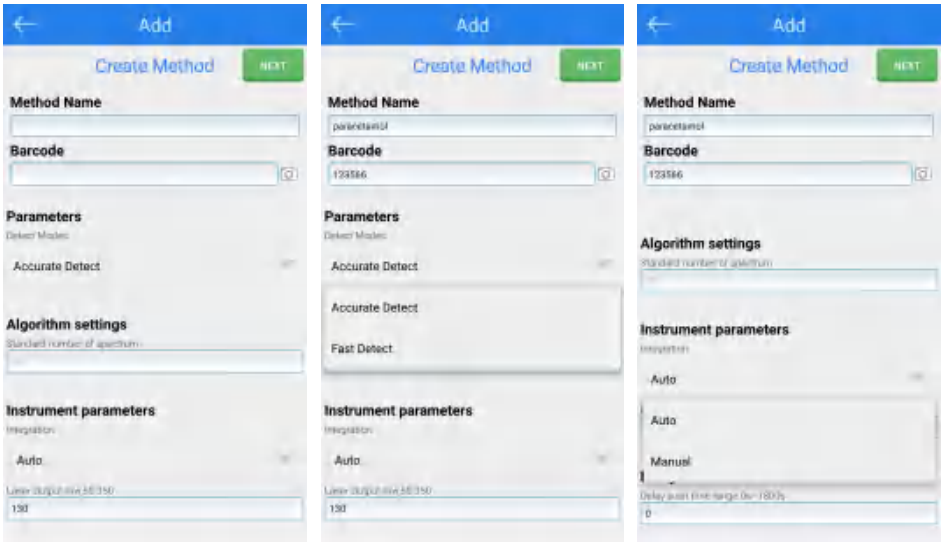


Figure 3.4.1.3ID method configuration interface

The 2nd step access to add standard spectrum, refer to Fig3.4.1.4 the first spectrum acquisition interface, Click BACK can return parameters setup interface, but spectra acquired can be lost, Click "NEXT" appears warning info " Check if the 3 piece of data is normal", the"1/20"indicates current numbers of spectra acquired, Click "detect" to collect spectra, refer to Fig3.4.1.5 displaying the first spectra finish detect, click " detect" can collect spectra again, click " complete" to access to the next spectra detect interface, refer to fig3.4.1.6 the 2-20 pieces of spectrum interface, click " detect" can collect the 2nd spectra data, compete detect interface refer to 2-20 spectrum complete, refer to Fig3.4.1.7 HQI indicates the current spectra compared with the first spectra matching degree, it's recommend to select HQI>95% or 85%~100% to create method and save spectrum, otherwise there is potential errors and deviation. System can automatic reminding users if HQI fall within the range of 85%-95%, users can decide at discretion if save current spectra or not, if HQI<85%, system can remind users refer to Fig3.4.1.8.

Fig3.4.1.4 The 1st spectra acquired

Fig3.4.1.5 Complete the 1st spectra acquisition

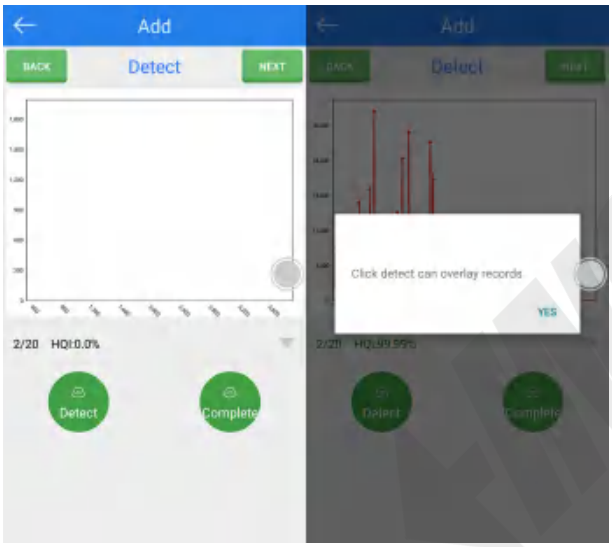


Fig3.4.1.6The 2-20th spectrum acquired

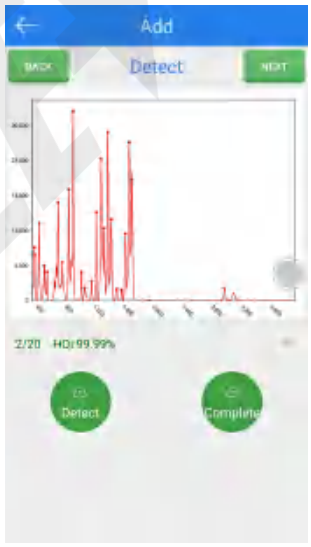


Fig3.4.1.7 Complete the 2-20th spectrum acquisition

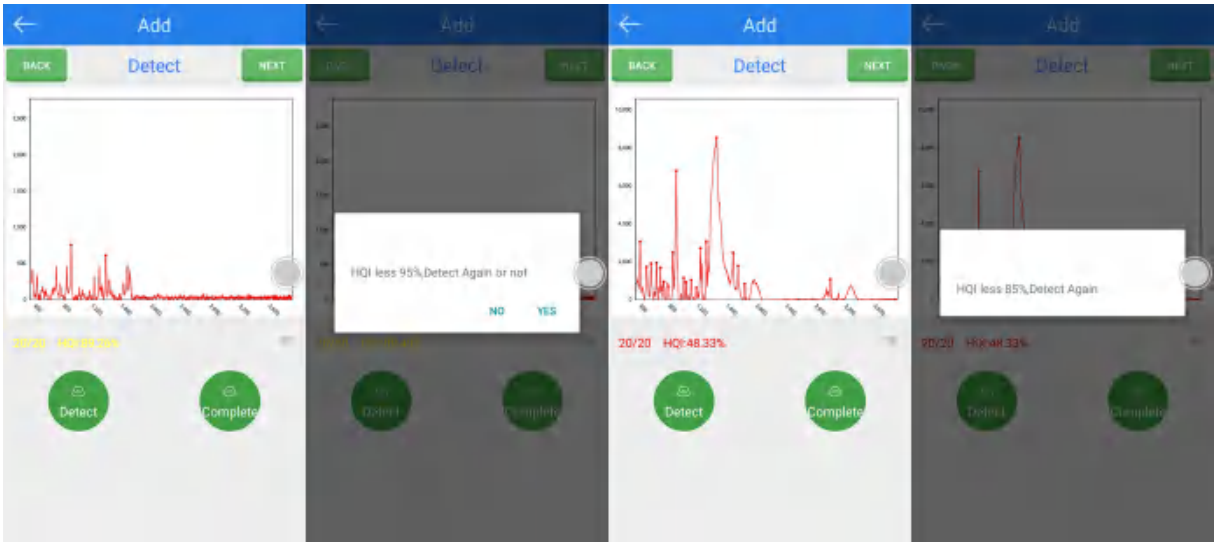


Fig3.4.1.8 HQI< 95% or < 85% warning

The third step: After finishing the 20 pieces of spectral data collection, click the next can access to add materials, refer to Fig3.4.1.9 input materials info, input materials name and CAS number, and select save method in the file of library, including standard data library files and user self-built library file, Click “Complete” can refer to Fig3.4.1.10 interface successful save method, then return to ID method list interface Fig3.4.1.11.

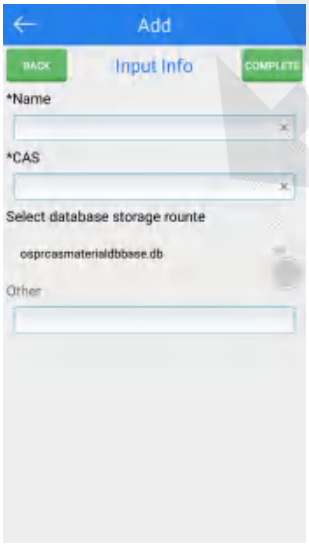


Fig 3.4.1.9 Fill in material info

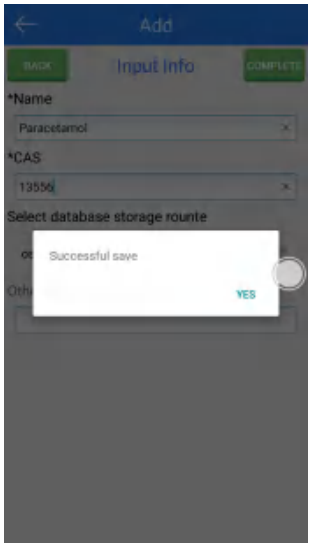


Fig 3.4.1.10 Fill in material info & well saved

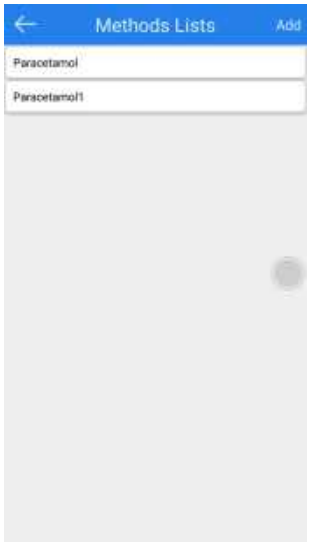


Fig 3.4.1.11 ID Methods list

Scan Method: Click “SCAN METHOD SETTING” in Method Setup Interface, access to SCAN method lists interface, Click “Add” can access Scan Method interface, refer to Fig 3.4.1.12 setup configuration interface, Click “Save” can save parameters refer to Fig 3.4.1.13 interface, return to Method List interface refer to Fig 3.4.1.14.

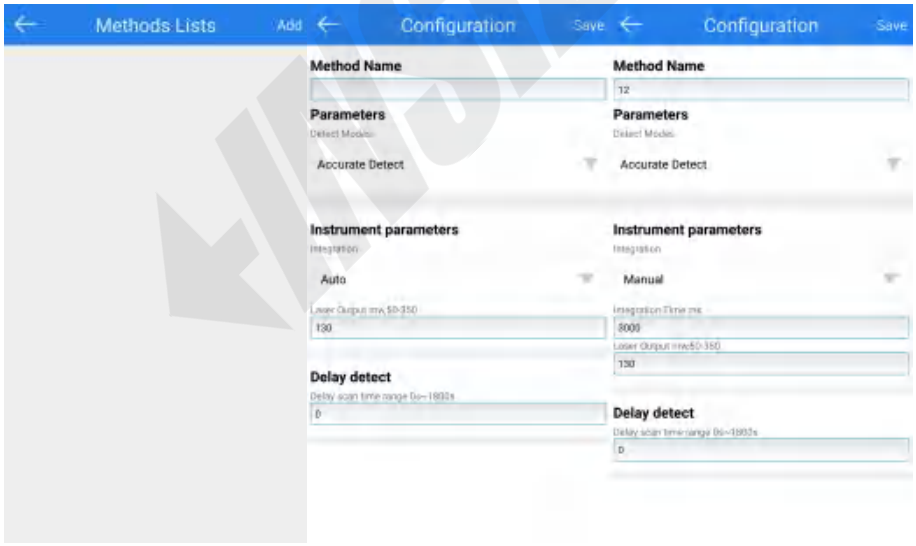


Fig 3.4.1.12 Configuration Screen

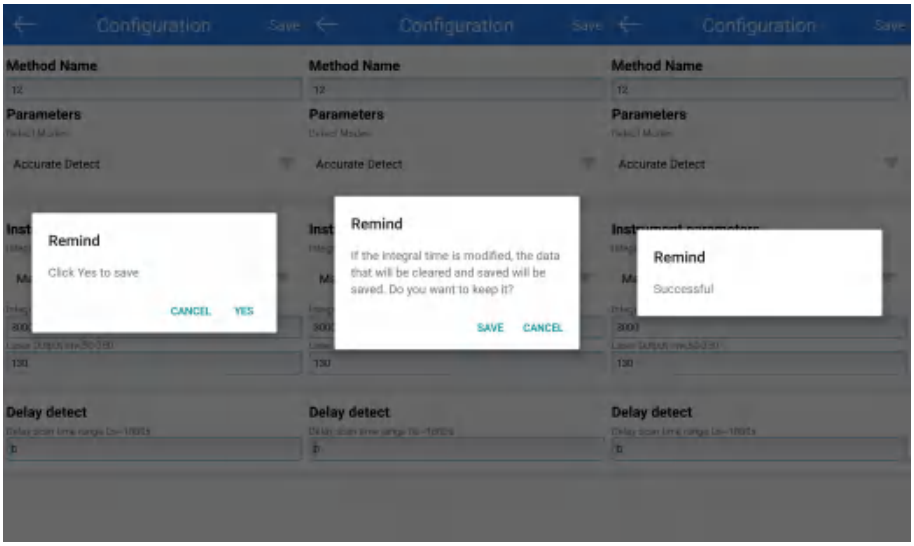


Fig 3.4.1.13 Scan Methods well saved

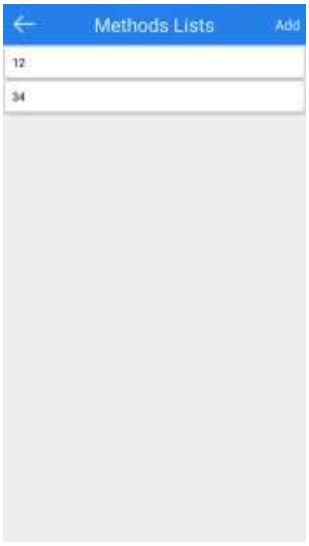


Fig 3.4.1.14 Scan Methods list

3.4.2 Revise Method

Access to "Method setup list interface" refer to Fig 3.4.1.11 & 3.4.1.14, click either method to make revisement.

Revise ID Methods: firstly revise parameters of methods, then revise methods spectrum, (If parameters have changed, it will remind users all spectrum required to input again; if parameters keep unchanged, users can access to select which number of spectra to make revise, Then revise material name and path under methods refer to operation of Fig3.4.2.1 revise configuration screen, Fig 3.4.2.2 warning of revising configuration, Fig3.4.2.3 Revise spectra screen (be selectable of which number of spectra) Fig 3.4.2.4 Revise material info and storage path screen.

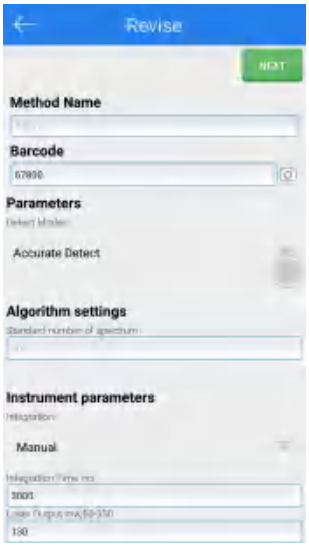


Fig 3.4.2.1 Revise parameters

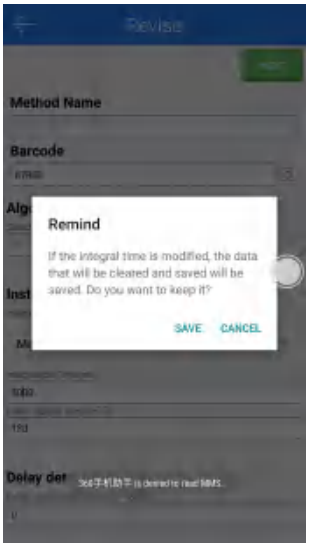


Fig 3.4.2.2 Remind parameters revised

Fig 3.4.2.3 Revise spectra (which number of spectra)

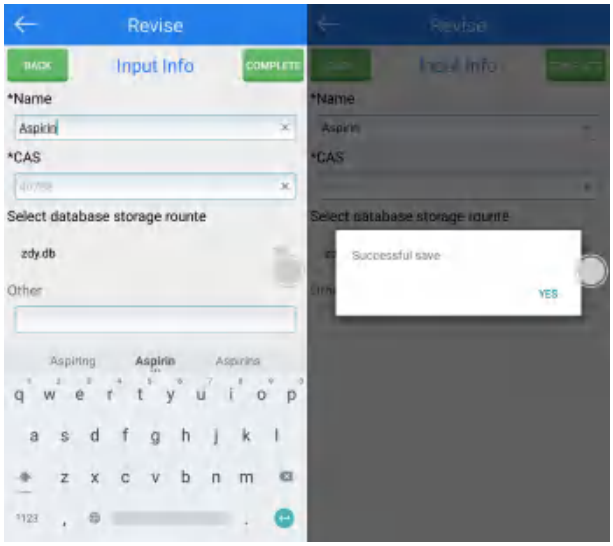


Fig 3.4.2.4 Revise material info and storage path

Revise Scan Method: Click one method name to access revise interface refer to Fig3.4.2.5 Scan Method revise interface, Click "Save" can save Scan method parameters info, refer to Fig3.4.2.6 interface of successful save interface.

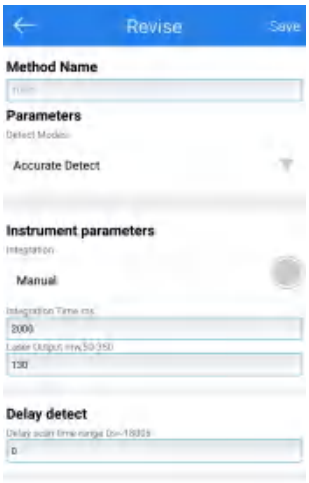


Fig 3.4.2.5 Revise Scan Methods

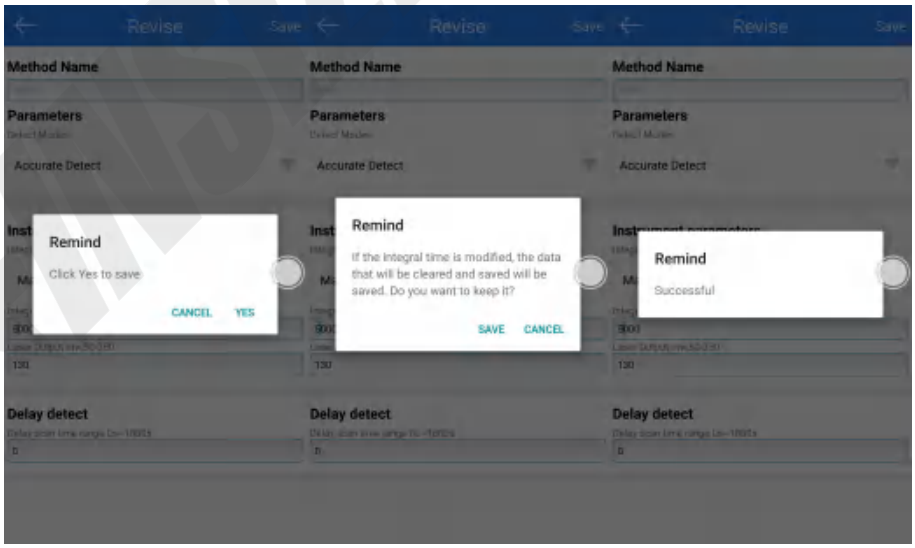


Fig 3.4.2.6 Well saved

CAUTION: The above revised cannot revise methods name, CAS, other info user can revise at discretion. It can revise all info except method name and CAS.

3.4.3 Delete Method

Access to "Methods list", long press one method, click "Delete", click "yes" to delete. Click blank to return refer to Fig3.4.3.1 & Fig3.4.3.2 Delete methods screen (Scan / ID methods)

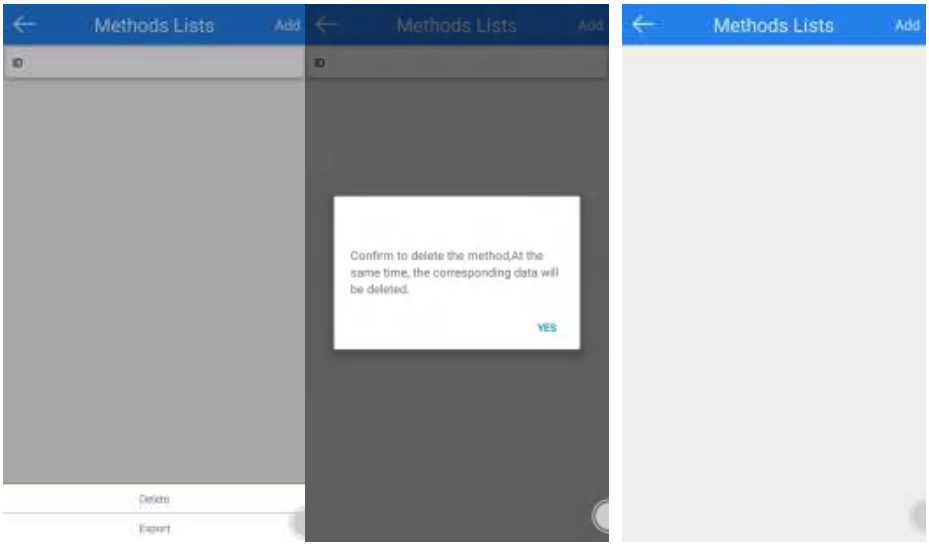


Fig 3.4.3.1 Delete methods screen（Delete ID methods）

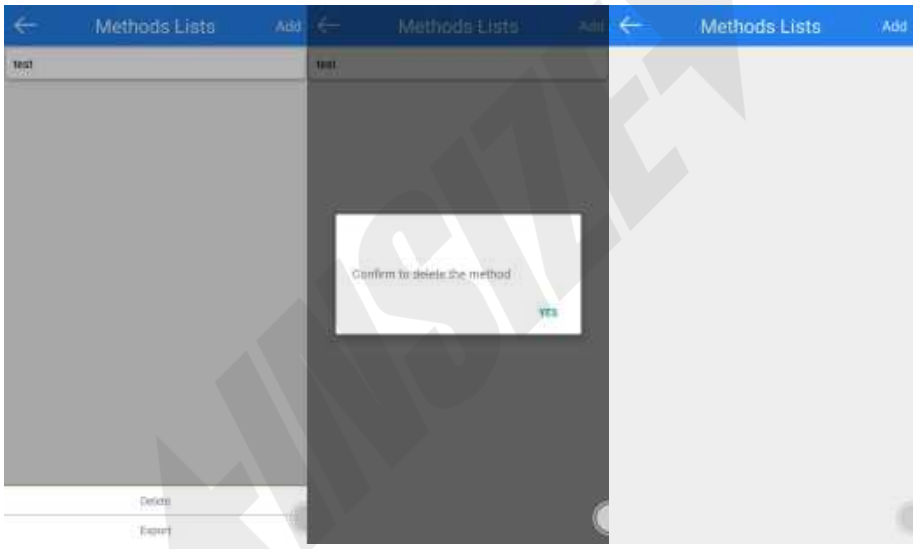


Fig 3.4.3.2 Delete methods screen（Delete Scan methods）

3.4.4 Export data, methods and report

Access to “Methods list”, long press any Methods，Click “Export”，Click “Report Export”，Edit file name, click “OK” can export PDF report，refer to Fig 3.4.4.1and Fig 3.4.4.2（ID/SCAN Methods）；Click “Data Export”，can export txt file of standard spectral library under ID methods, refer to Fig 3.4.4.3. Access to resource management can transfer data and report from Raman device to PC.

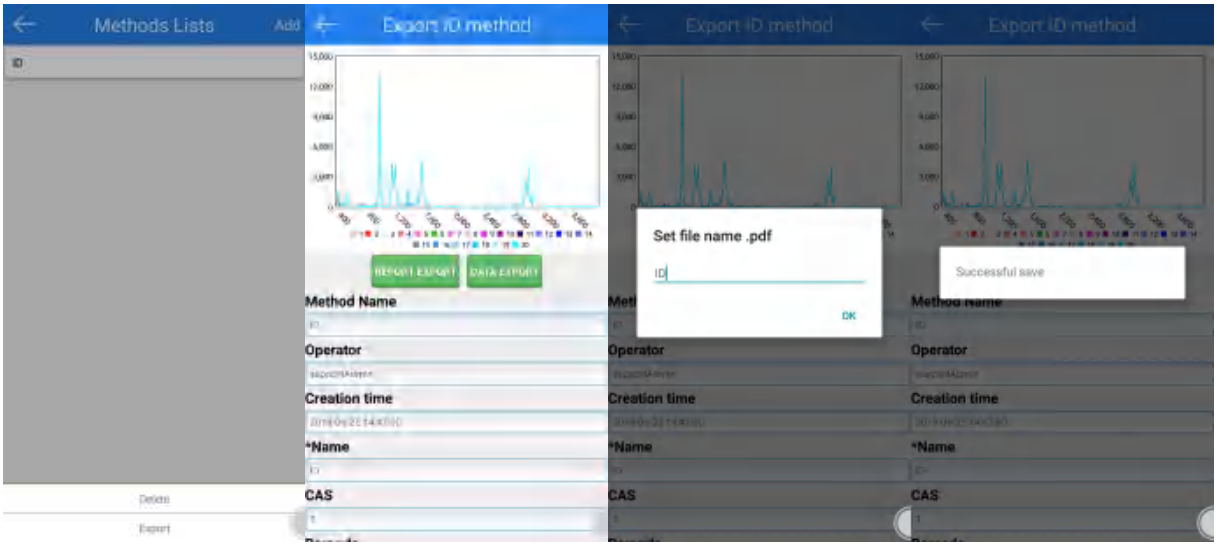


Fig 3.4.4.1 Export Methods Report

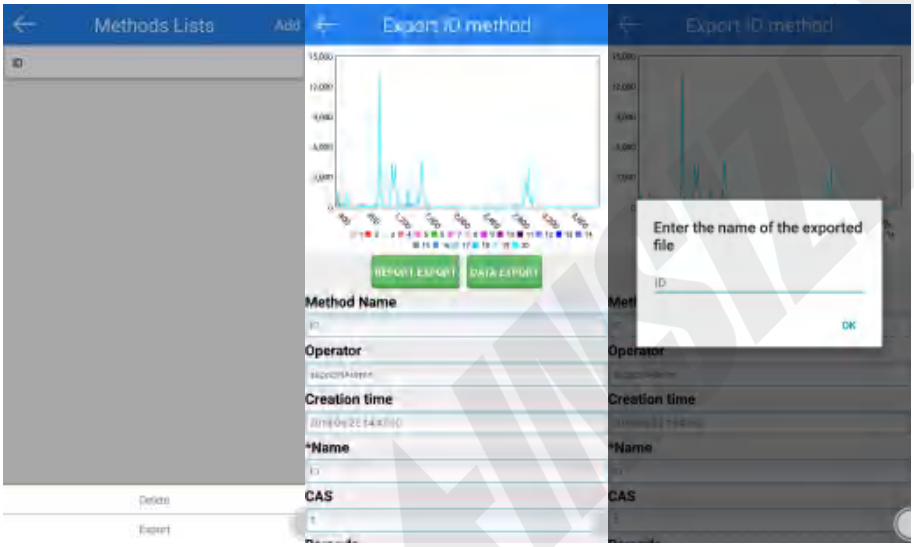


Fig 3.4.4.1 Export Methods Data

3.4.5 System Setting

Click “system setting” can access interface of Fig3.4.5.1

Change validation periodically: Password will become invalid after setting validation period refer to Fig3.4.5.2

Change passwords periodically: password can be changed in this setting period,refer to Fig3.4.5.3

Account locked times: if exceeding maximum errors times of PSW input can result in being locked account, refer to Fig3.4.5.4

USB setting shut on/off: this will allow or forbid user to export data to PC or import data from PC

Status Bar shut on/off: this allow user to return back to home screen or run more operation refer to Fig 3.4.5.5

Power off: it allow user to power off instrument from here

Restart: it allow users to restart instrument

INSTALL APK: it allow users to upgrade software by installing the latest software .APK format

System Time: users can change system date and time in here, refer to fig 3.4.5.6.

Language: users can select your own language, refer Fig 3.4.5.7

Wify: Users can connect your wifi from here,refer Fig 3.4.5.8

GPS: This can know where the users are,refer Fig 3.4.5.9

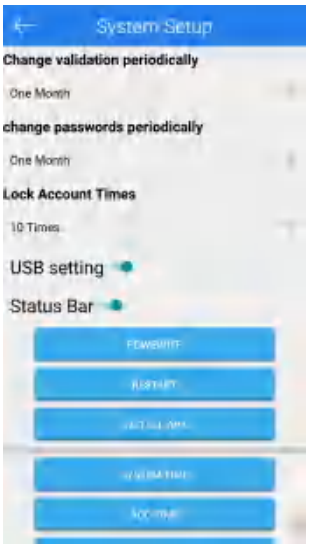


Fig 3.4.5.1 System setting

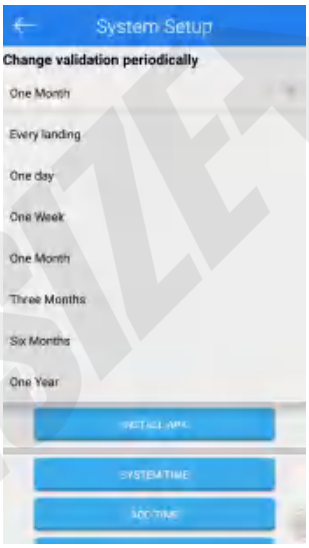


Fig 3.4.5.2 Change validation periodically

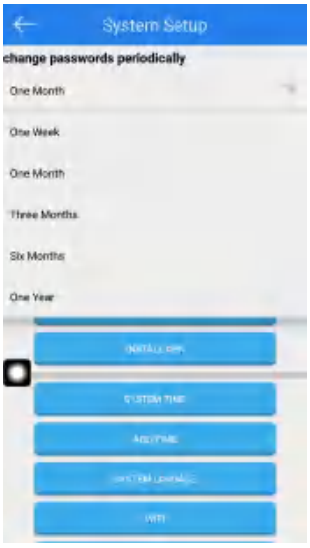


Fig 3.4.5.3Change passwords periodically

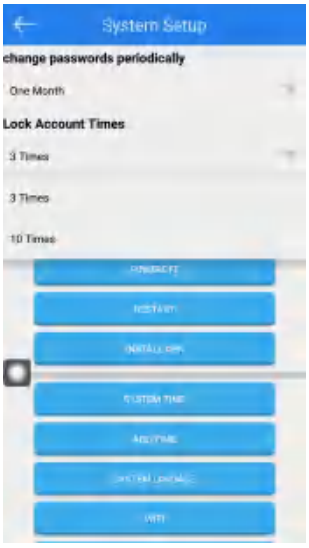


Fig 3.4.5.4 Account locked times

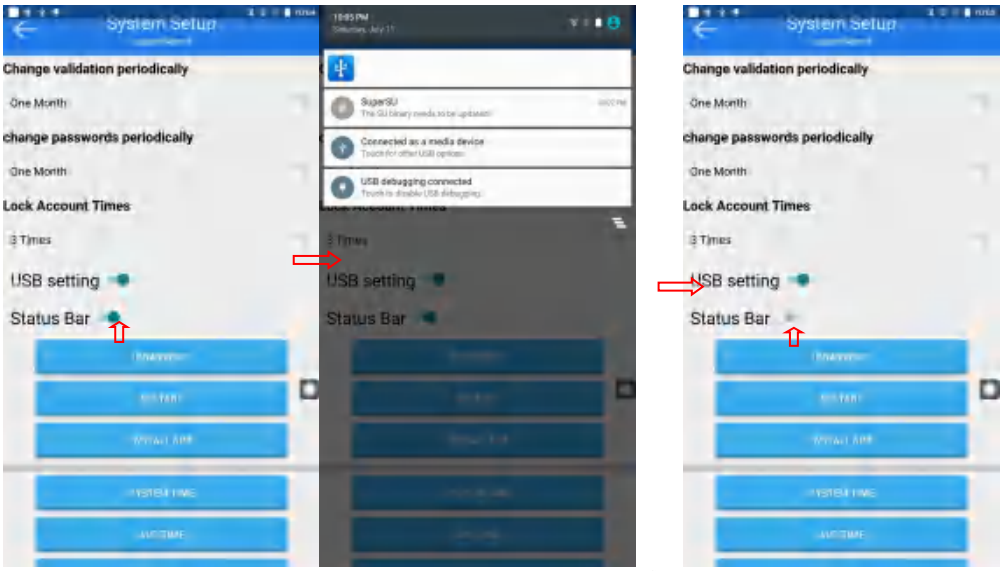


Fig 3.4.5.5 Status Bar on and off

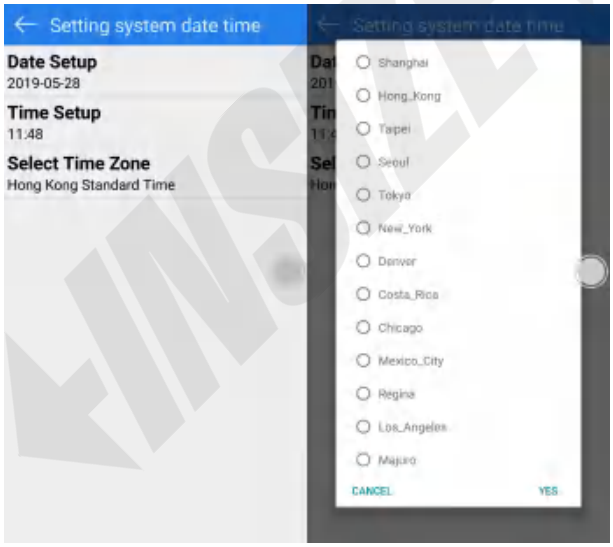


Fig 3.4.5.6 Revise system time

Fig 3.4.5.7 Language setting

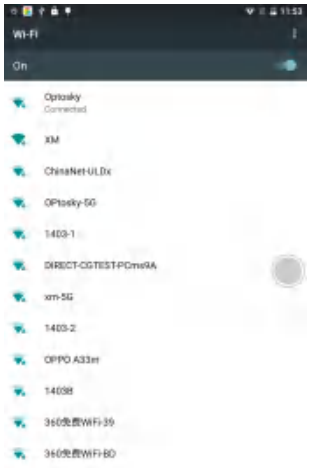


Fig 3.4.5.8 WIFI setting

Fig 3.4.5.9 GPS setting

3.4.6 Exit

User can click EXIT to switch or exit account, click “confirm” can logout, and click “Cancel” to return, refer to Fig3.4.5.1.

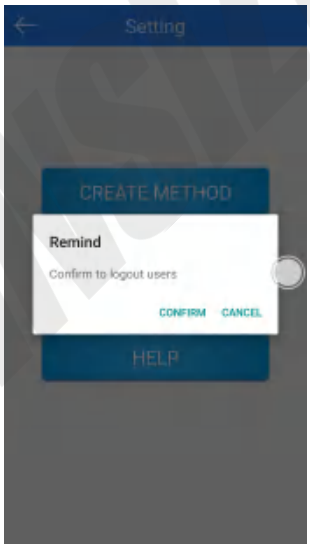


Fig3.4.6.1 EXIT screen

3.4.7 About

Click “About” access to About interface, you can see system info, software version, company name, company address, contact, website etc. refer to Fig3.4.7.1.

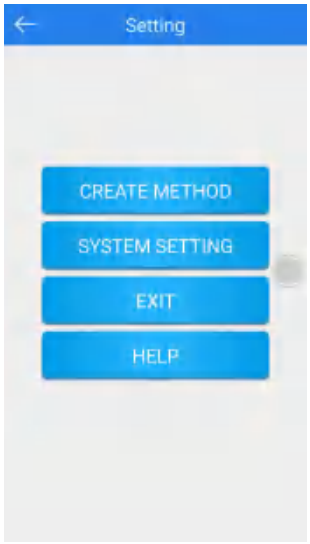


Fig 3.4.7.1 About screen

3.4.8 Help

Click “Help” access to help interface, you can see system operation instruction and user manual, refer to Fig3.4.7.1.

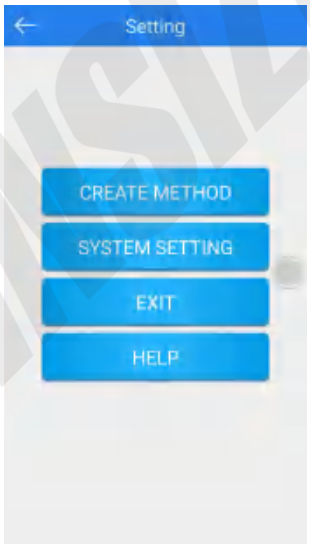


Fig 3.4.8.1 Help screen

3.5 Spectral Data

Click “ Library” access to library interface refer to Fig 3.5.1, Click “ Select Library” access to library interface refer to Fig 3.5.2.

Fig3.5.1 Library screen

Fig3.5.2 Database screen

3.5.1 Add Database

Click “Add” can built up new database file refer to Fig3.5.1.1.

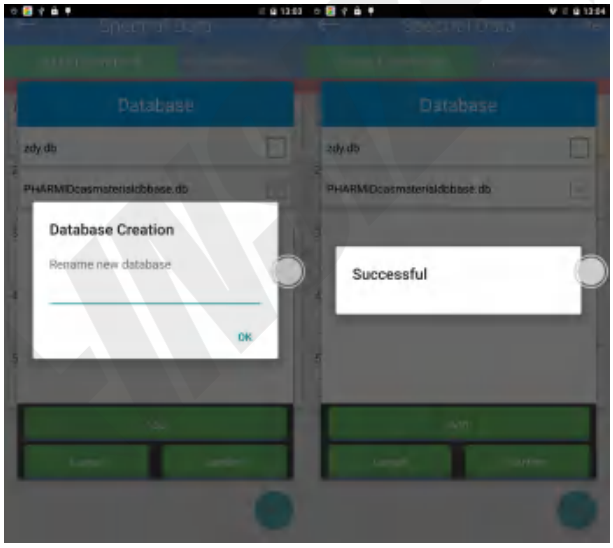


Fig3.5.1.1 Add database screen

3.5.2 Select Database

Click box to select database file refer to Fig3.5.2.1.

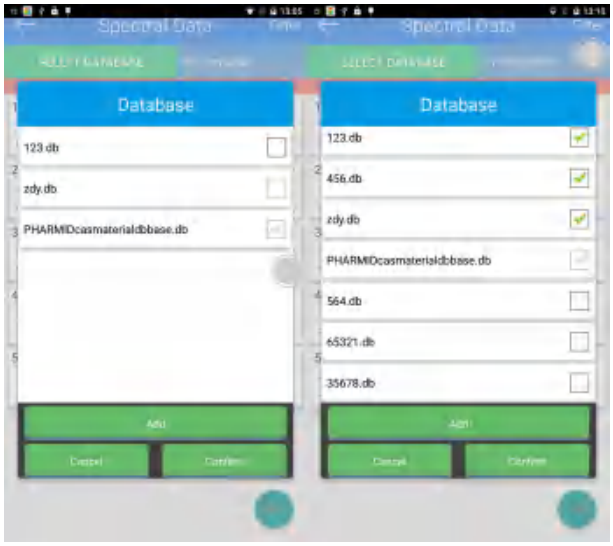


Fig3.5.2.1 Select database screen

3.5.3 Delete Database

Long press database file to delete the database refer to Fig3.5.3.1.

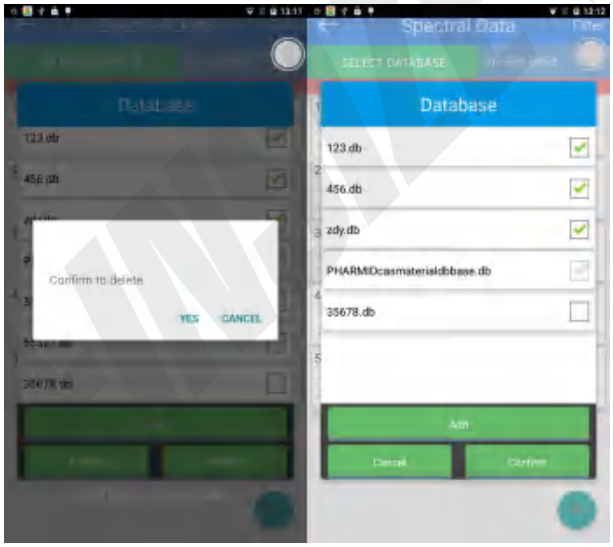


Fig3.5.3.1 Delete database screen

3.5.4 Add Spectral Library

Access to library interface, click “+” button to enter add spectral library interface, the first step access to acquire spectra interface refer to Fig3.5.4.1, Prior to click “Select button” access to select scan method interface refer to Fig3.5.4.2. Click detect and acquire spectra refer to Fig3.5.4.3. When process bar reach up to 100% interface appears material spectra information, click NEXT enter “Add materials-input material info interface”, refer to Fig3.5.4.4, it shall input material name and CAS, select save path, click complete system appearing “saving” refer to Fig3.5.4.5, it can successfully be saved after complete refer to Fig3.5.4.6, Click “ yes” return to library interface of Fig3.5.1.

Fig3.5.4.1 Add spectra data screen

Fig3.5.4.2 Select Scan methods

Fig3.5.4.3 Being acquired spectra

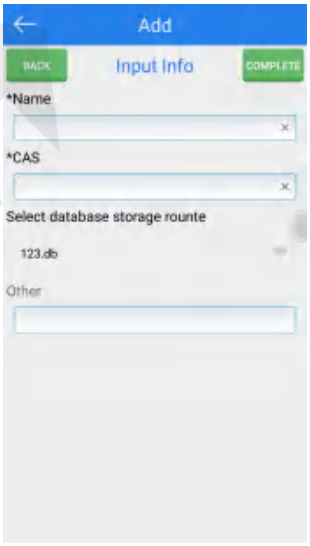


Fig3.5.4.4 material info input

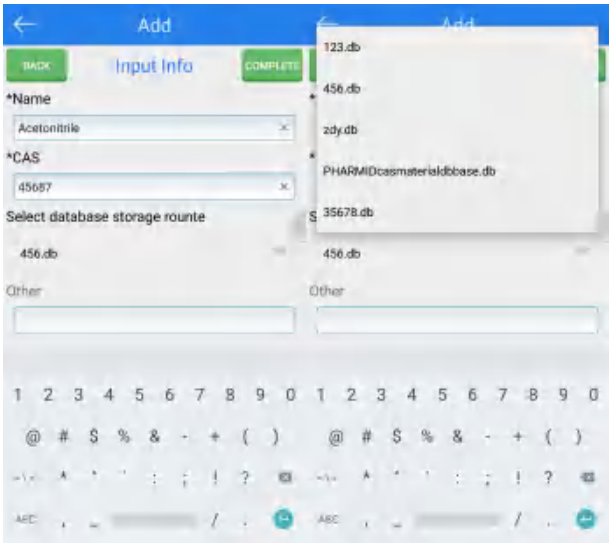


Fig3.5.4.5 Being saved screen

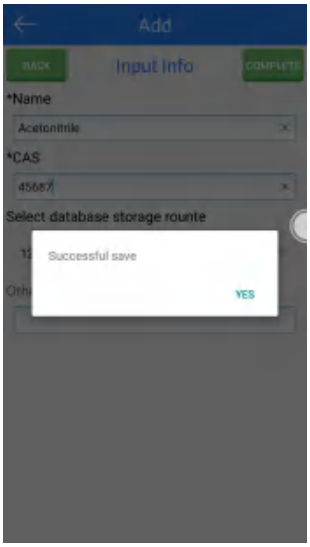


Fig3.5.4.6 Well saved screen

3.5.5 Delete Spectral Data

Long press spectral library can popup “Are you sure to delete data” refer to Fig3.5.5.1, click “Confirm” can delete, and click cancel can return to spectral library interface.

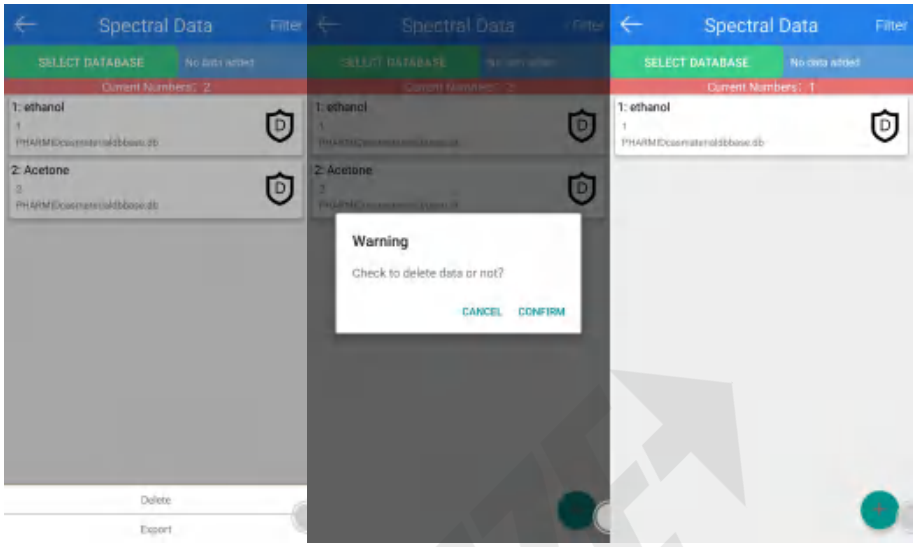


Fig3.5.5.1 Delete spectra data warning

3.5.6 Export report and data of standard spectrum

Access to Library， long press any spectra, click “Export”， Click “REPORT EXPORT” can export spectra report referto Fig 3.5.6.1；

Click “DATA EXPORT” can export txt file of spectra refer to Fig 3.5.6.2

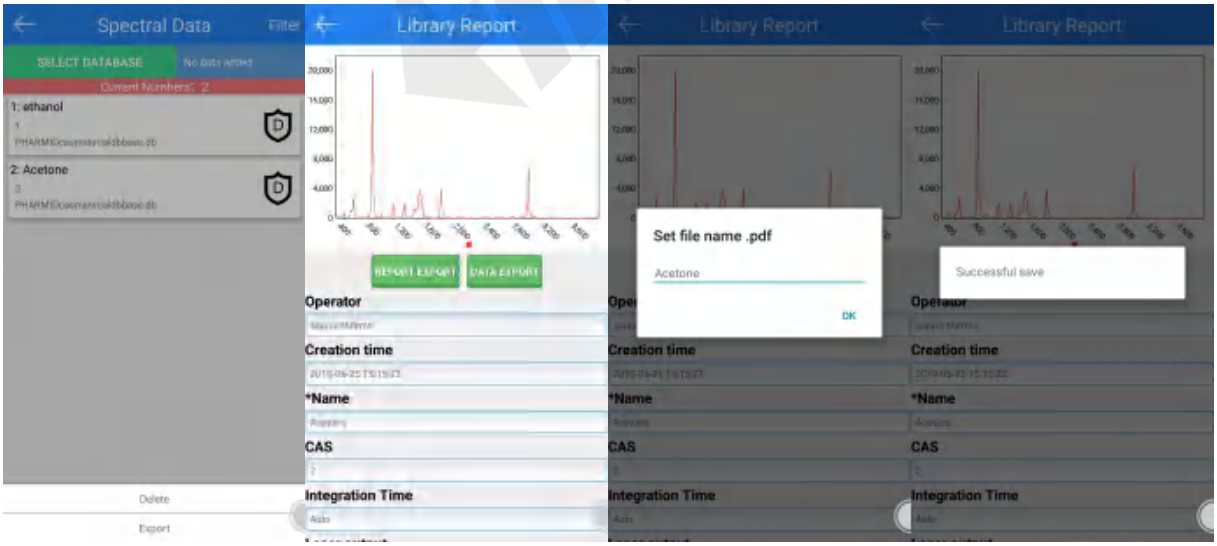


Fig3.5.6.1 Export Spectra Report

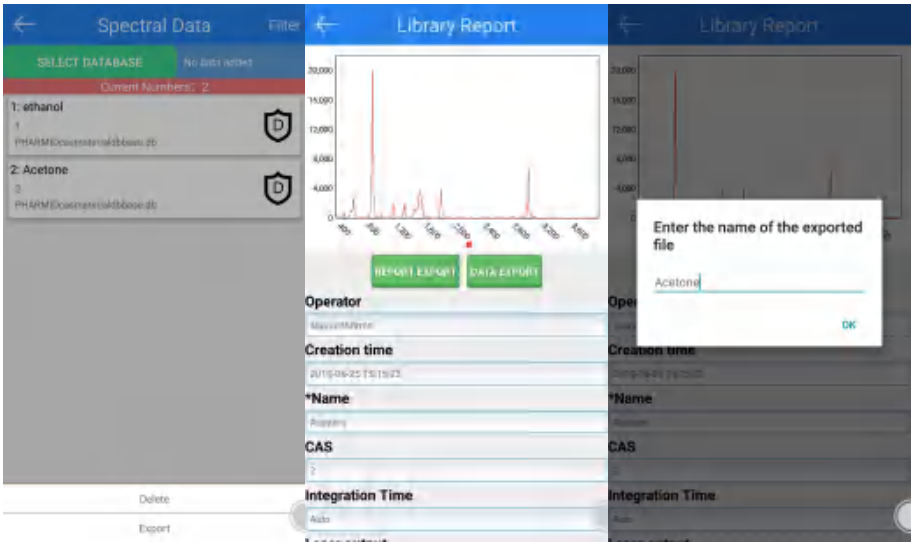


Fig3.5.6.2 Export data of spectra

3.6 Detect

Click “Detect” icon access to Detect interface, it contains three functions button “Scan”, Identification”, “Validation” refers to Fig3.6.1.

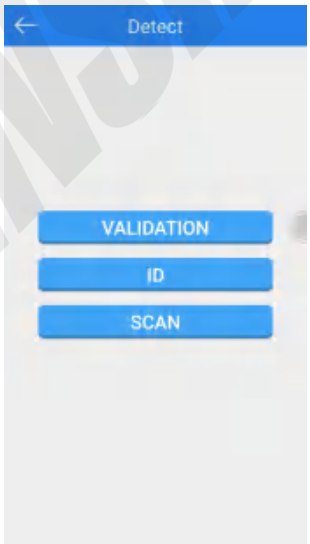


Fig3.6.1 Detect screen

3.6.1 Validation

Click “Validation” access to Validation interface refer to Fig3.6.1.1, Select Polystyrene, and click “Detect” to perform self-validation, input account name and PWD to confirm after completing validation refer to Self-Validation E-signature interface(Fig3.6.1.2). If the validation result pass can display “PASS” after

completing validation refer to Fig3.6.1.3 Self-Validation PASS interface". If validation result fail can display "FAIL", at the same time it can popup validation errors point refer to Fig3.6.1.4.

Fig3.6.1.1 Validation

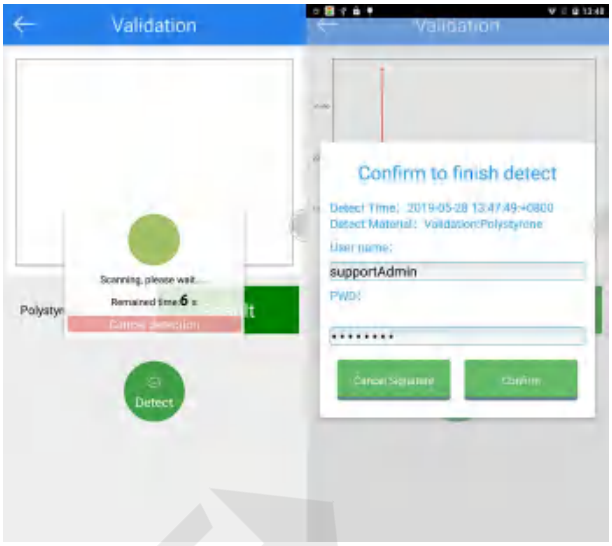


Fig3.6.1.2 Validation of e-signature

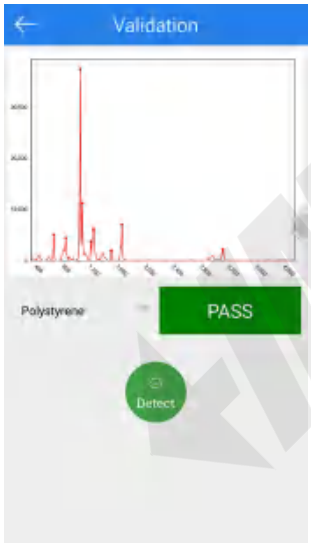


Fig3.6.1.3 Validation PASS

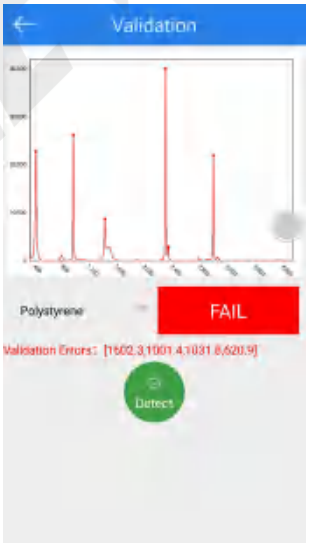


Fig3.6.1.4 Validation of FAIL

3.6.2 Scan

Click "Scan" can access to Scan interface refer to Fig3.6.2.1. It prior to click "Select" scan method refer to Fig3.6.2.2 Method selection interface, then click Scan can perform sample detect refer to Fig3.6.2.3. Fig3.6.2.4 screen appears after detection, if spectral library include standard spectra of material detected, it appears matched screen, and the left side appears HQI value, but if library excludes corresponding spectra appears Fig3.6.2.5, Users can input barcode number or scan barcode, input other info of the material, also add photo can take picture of the material sample or evident picture, then click "Complete" access to electronic signature refer to Fig3.6.2.6 E-signature screen after finishing detection.

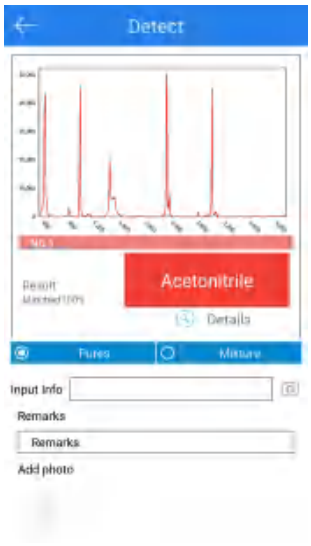
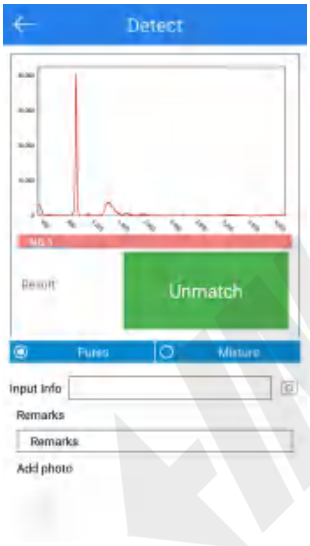


Fig3.6.2.1 Scan Fig3.6.2.2 Select Methods Fig3.6.2.3 Detecting Fig3.6.2.4 Complete Detection



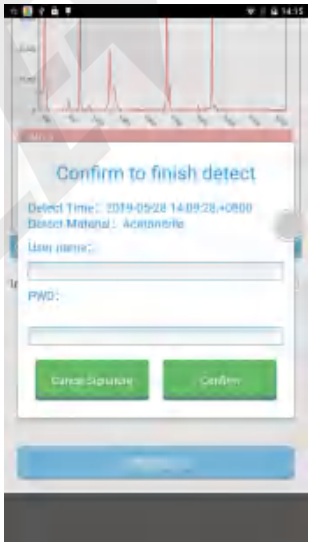


Fig3.6.2.5 Unmatched screen Fig3.6.2.6 E-signature after finishing detection

3.6.3 Identification

Click “ID” access to ID detect interface step refer to Fig3.6.3.1. Users can select methods refer to Fig3.6.3.2, input numbers of samples detected, relative information or barcode, click “NEXT” access to acquire samples spectrum interface refer to Fig3.6.3.3. The user can select pure or mixture to perform detect, it also displays the current numbers of the sample, click “Start” can start detect the first sample refer to Fig3.6.3.4, then it appears Fig3.6.3.5 after successful acquisition.(The first sample acquired matched screen), otherwise Fig3.6.3.6 Fail to be matched screen), input info the same as previous chapter. Click “complete can access to E-signature while finishing detect of all materials refer to Fig3.6.3.7.

Fig3.6.3.1 ID Detect Setting

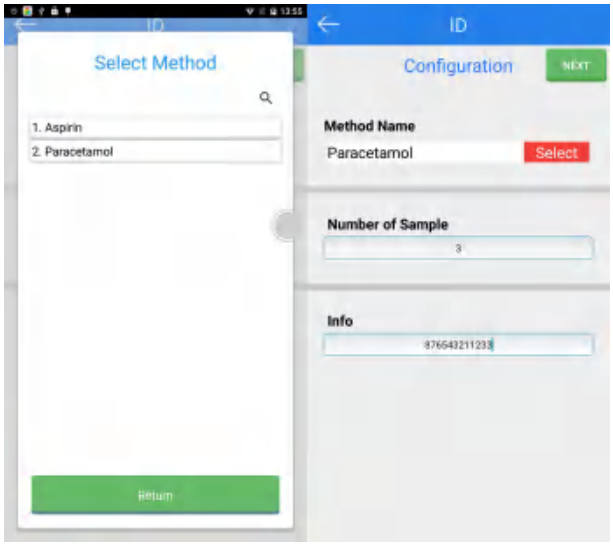


Fig3.6.3.2 Select Methods

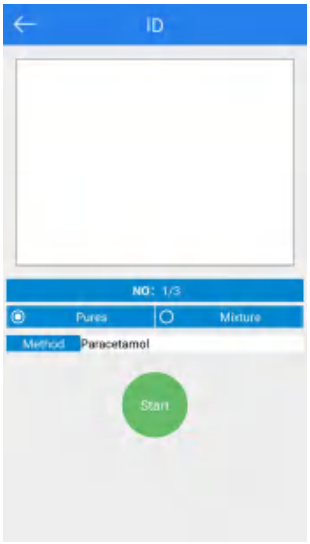


Fig3.6.3.3 ID Detect

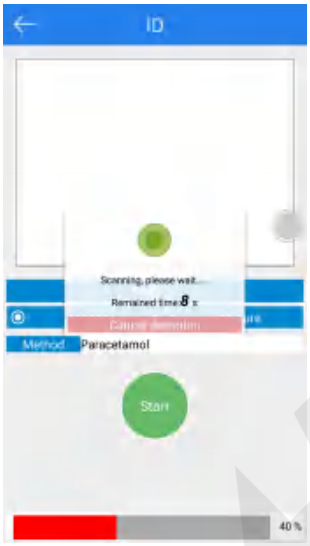


Fig3.6.3.4 The 1st Sample Detecting

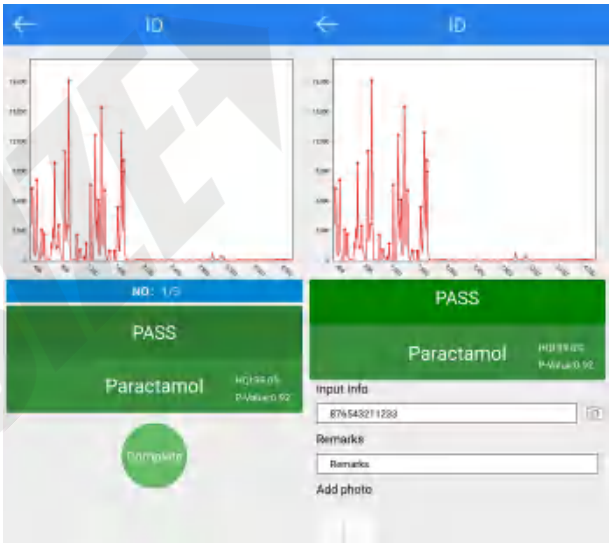


Fig3.6.3.5 Matched detect screen

Fig3.6.3.6 Fail to matched screen

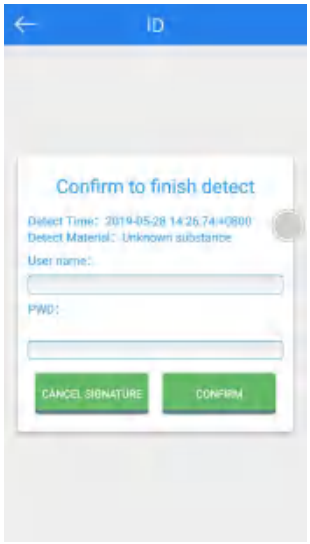


Fig3.6.3.7 Perform E-signature after ID scan

3.7 Historical Record

Click Historical Record access to screen below, including two functions of “Audit trail” and “Detect Records”refer to Fig3.7.1.

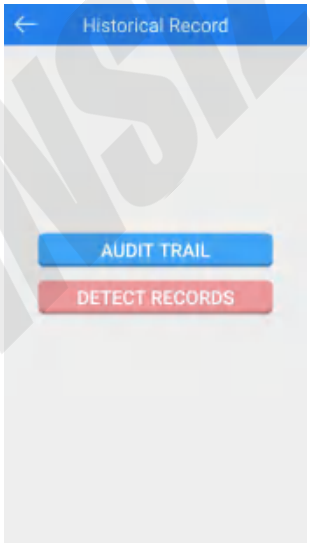


Fig3.7.1 History Record Sceen

3.7.1 Detect Records

Click Fig3.7.1 “DETECT RECORDES” can access to detect records screen refer to Fig3.7.1.1, you can see full records, click one record to access to detailed info refer to Fig3.7.1.2, including detect time, operator, e-signature info, barcode info, methods(name and parameters info), check status and more. Meanwhile user can click “Report Export” to export current report in pdf format refer to Fig3.7.1.3, click “Save” report, click “Data Export” can export current data file in txt refer to Fig3.7.1.4 file named. Click “Others” can see

other info of the material refer to Fig3.7.1.5. Click “Check” can perform check signature of current record refer to Fig3.7.1.6. Click “Spectral Overlap” can compare different spectrum refer to Fig3.7.1.7, click “ADD HISTORYCAL DATA” add history spectra to make comparison refer to Fig3.7.1.8. If user want to revise historical records, prior to click one piece of info to input revised info refer to Fig3.7.1.9, then click Save, it can appear warning: please input reasons for the change Refer to Fig3.7.1.10, input reason and click ok can revise relative info.

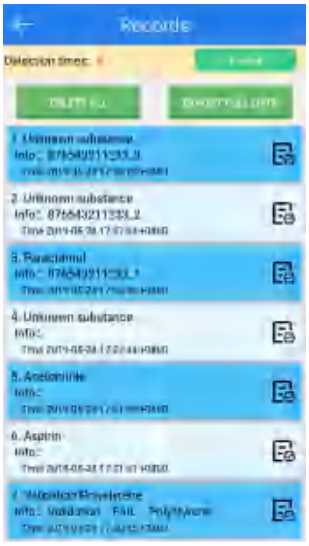


Fig3.7.1.1 Detect records

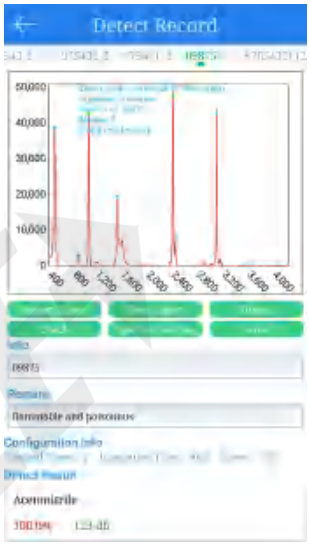


Fig3.7.1.2 A pieces of record info screen

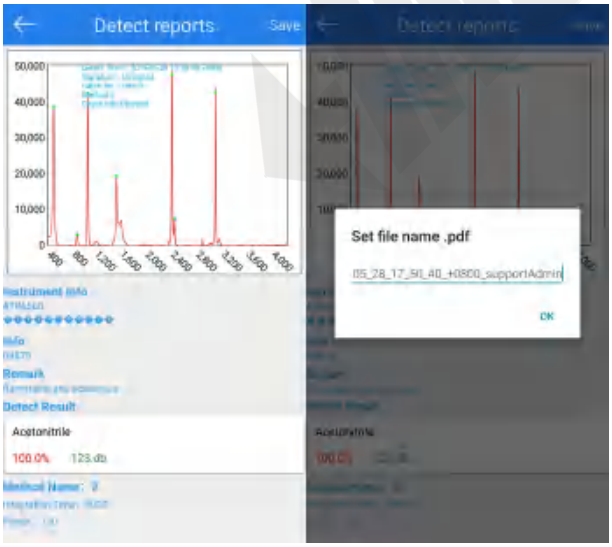


Fig3.7.1.3 Export pdf report screen

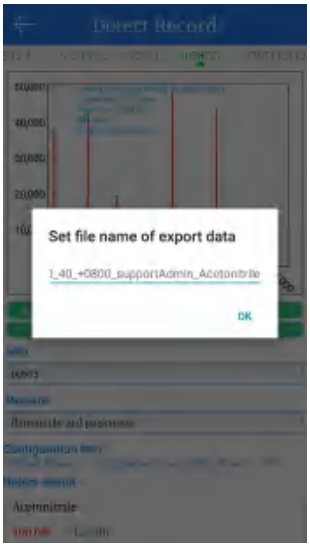


Fig3.7.1.4 Export TXT file

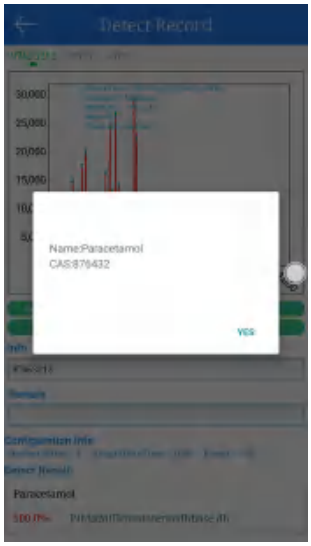


Fig3.7.1.5 Others

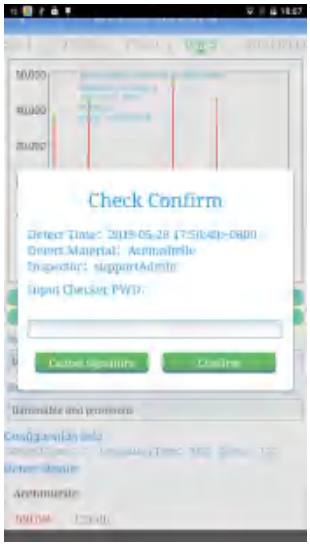


Fig 3.7.1.6 Check

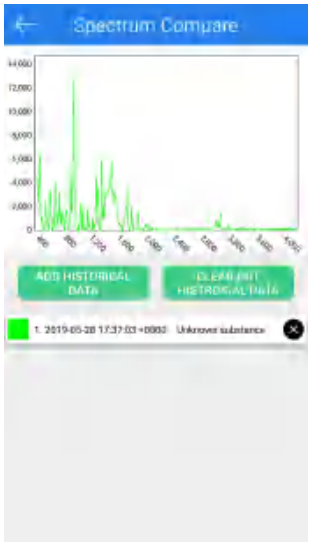


Fig3.7.1.7 Spectrum Compare

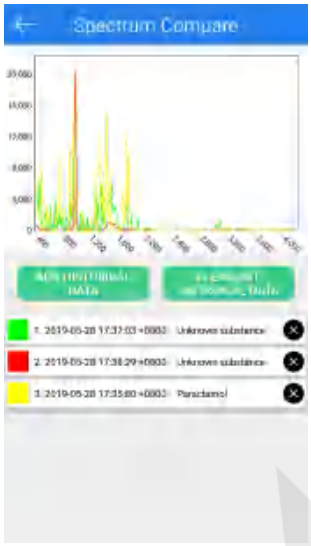


Fig3.7.1.8 Compare Result

Fig3.7.1.9 Revise Historical Records Screen

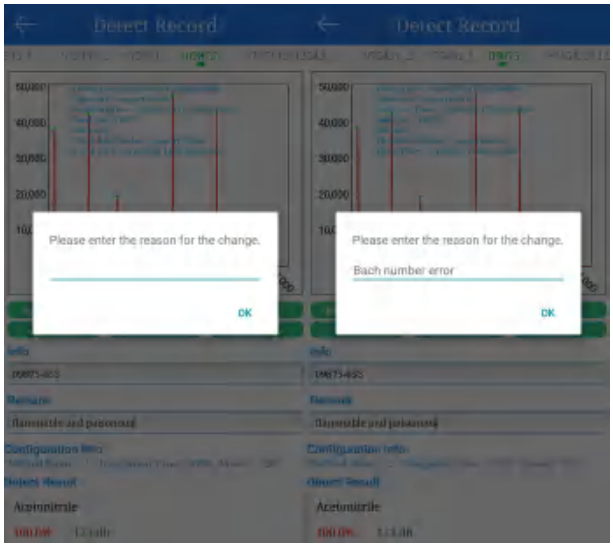


Fig3.7.1.10 Warning why change the historical records

Export all TXT/PDF/CSV: Click“Filter”refer to Fig3.7.1.11, input screening condition, check all of export records, click “EXPORT FULL DATA” refer to Fig3.7.1.12, select export file types of TXT/PDF/TXT, system can access to auto export interface, complete exporting pomp up success confirmation refer to Fig3.7.1.13, exporting file name: batch no. + detect time, export txt file route: Phone storage\INSIZE\txt；export pdf file route: Phone storage\INSIZE\pdf；export csv file route: Phone storage \INSIZE\csv, refer to Fig3.7.1.14

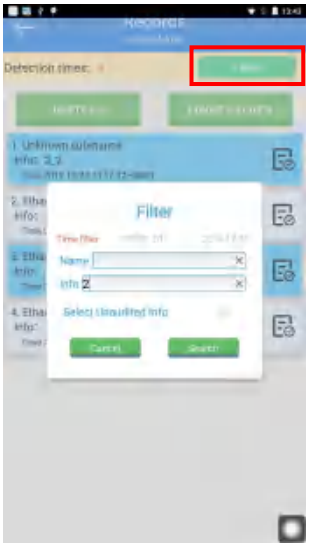


Fig 3.7.1.11 Filter setting

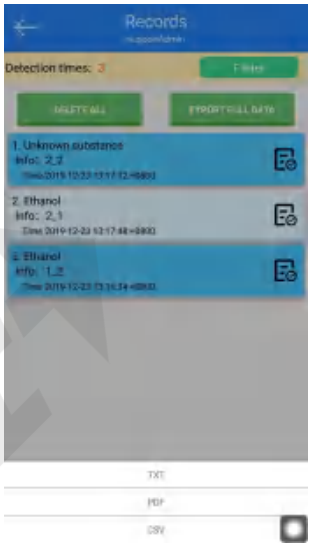


Fig 3.7.1.12 Filter records

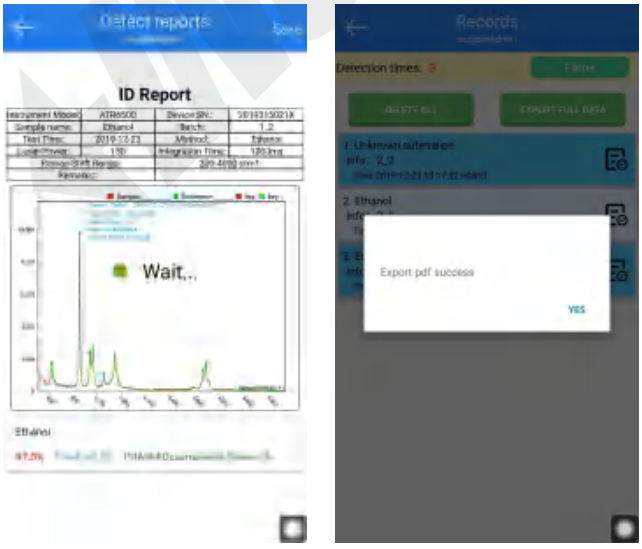


Fig 3.7.1.13 Export all reports

Fig 3.7.1.14 TXT/PDF/CSV storage files

3.7.2 Audit Trail

Click “AUDIT TRAIL” can access to audit trail screen refer to Fig3.7.2.1, any operation action can be recorded here.

Fig3.7.2.1 Audit Trail

3.8 Resource Management

Click Resource Management in menu can access to resource management screen refer to Fig3.8.1. Firstly, the user access to Setting- System setting- WIFI- connect to LAN or WIFI (refer to WIFI connect), then input FTP website into address bar on the top of file management of PC, （your PC and Handheld Raman need to connect to the same WIFI account）it can connect PC and Handheld Raman set refer to Fig3.8.2. The user can click “Export*** and Import*** to backup data or import relative data refer to Fig3.8.3. (data backup to PC, user shall copy them to other file to keep stored) or import data refer to Fig3.8.4(copy previous stored data to PC file of FTP, then click “Import**** on handheld Raman set can import relative data). Click “Delete all files” can delete all data in the file, return to Fig3.8.3 & Fig3.8.1.

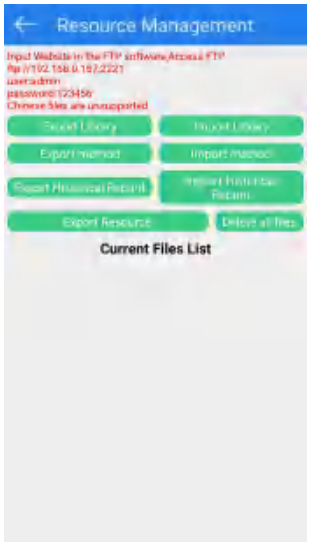


Fig3.8.1 Resource Management

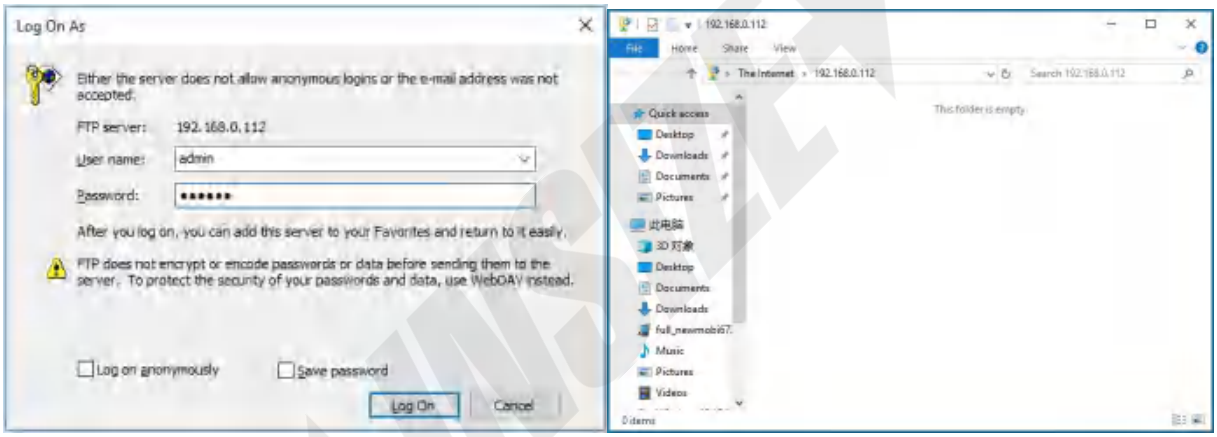


Fig3.8.2 PC successful connect to handheld Raman set screen

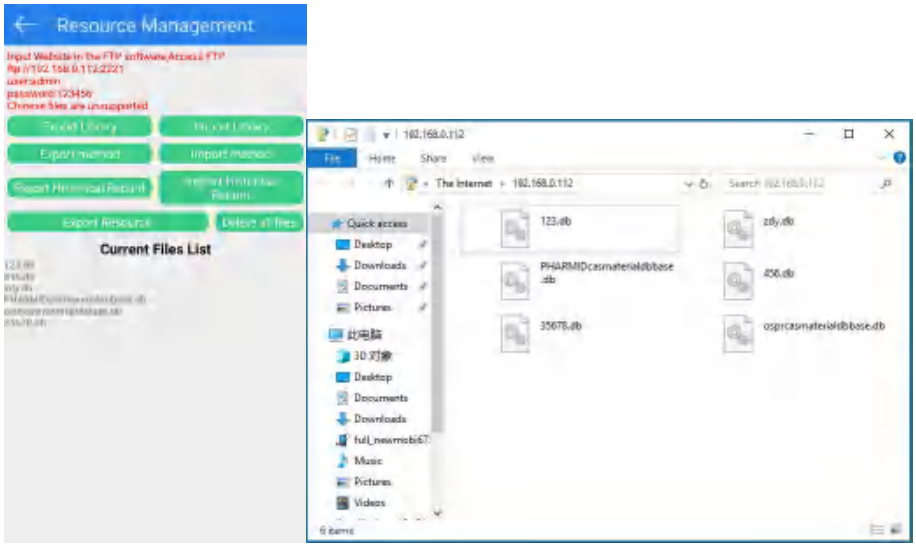


Fig3.8.3 Export data screen (left screen shown on handheld set, Right screen shown on PC)

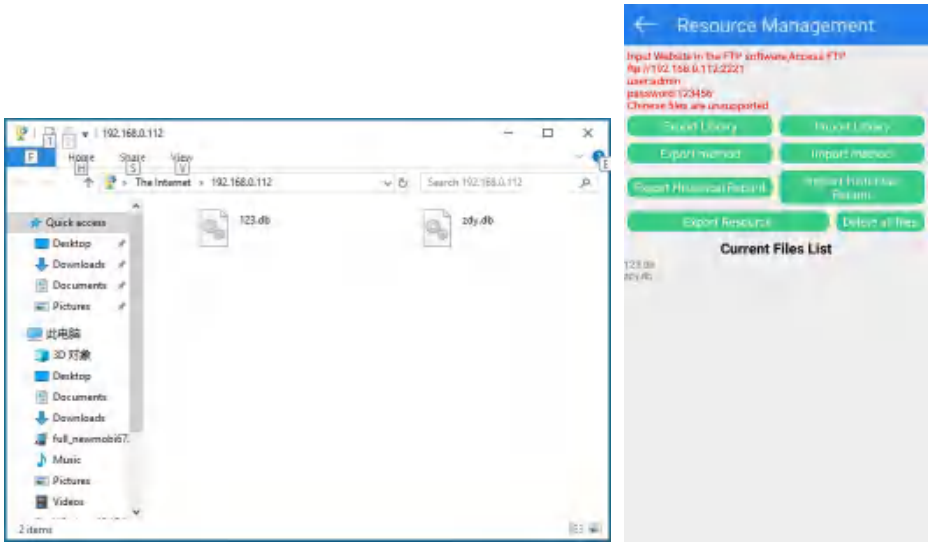


Fig3.8.4 Import data screen

3.9 Software Upgrade

If the software is not the latest and requires to upgrade to the latest version.
Firstly, uninstall the software, here are 3 ways to complete it.

Method 1:Swipe down from top of the screen, and follow steps of choose setting→home→choose launcher→ back-choose APPs→uninstall, refer to specific steps in Fig 3.9.1

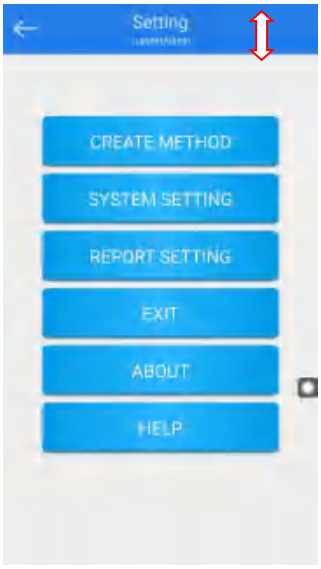
Method 2: and follow steps of settings→apps→choose PHARM-ID software→click→uninstall, refer to Fig 3.9.2,

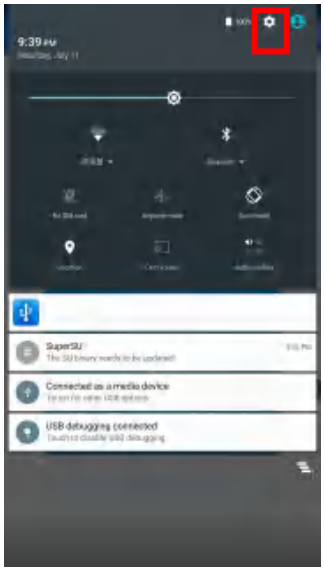
Secondly, install the latest software, here are three ways can complete it

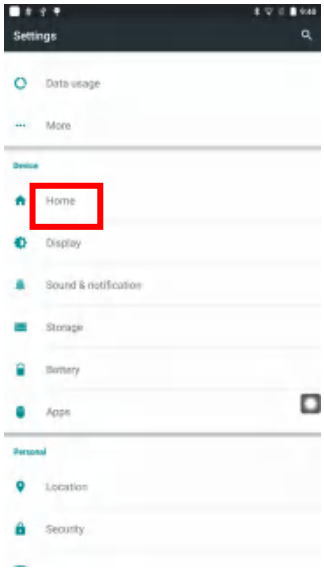
Method 1： Connect to PC by USB cable, copy and save the latest APK software to android device, double click apk software to complete installation.

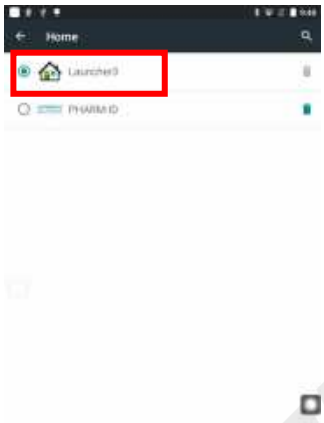
Method 2: Connect PC to instrument set through FTP, download updated software package to corresponding file in PC refer to Fig3.9.3 & 3.9.4,

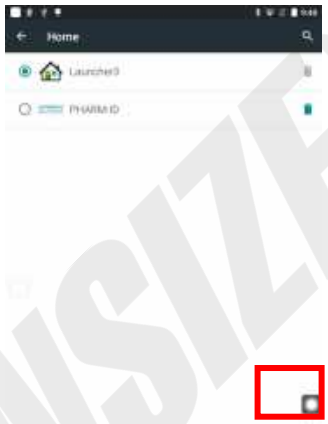
Then access to system setting. Click “Install apk can popup warning, users required to click the selected file, then click YES to access to installation refer to Fig3.9.5, access to installation procedure appears condition refer to Fig3.9.6, user can set software permission, then click INSTALL to access to installation procedure, successful installation can access to normal operation mode refer to Fig3.9.7.


Setting
CREATE METHOD
SYSTEM SETTING
REPORT SETTING
EXIT
ABOUT
HELP




Settings
Data usage
More
Home
Display
Sound & notification
Storage
Battery
Apps
Location
Security


Home
Launcher3
PHARM ID


Home
Launcher3
PHARM ID


Home
Launcher3
PHARM ID

Easy Softkey

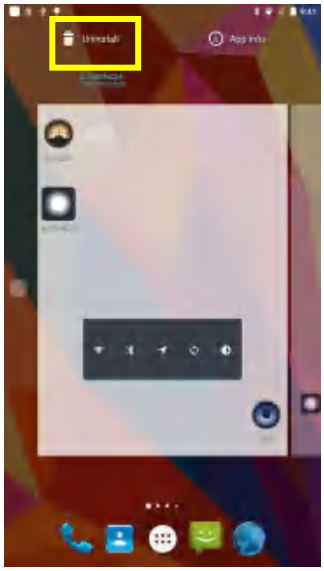

Uninstall
App info

Fig 3.9.1 status Bar on→setting→home→launchers→Iphone assistive touch→open app interface→choose APP→drag to uninstall

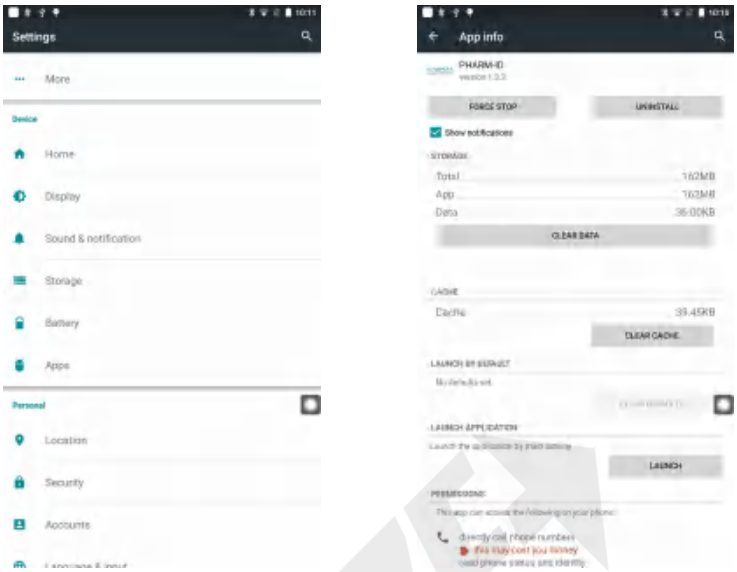


Fig 3.9.2 APPS→choose app→uninstall

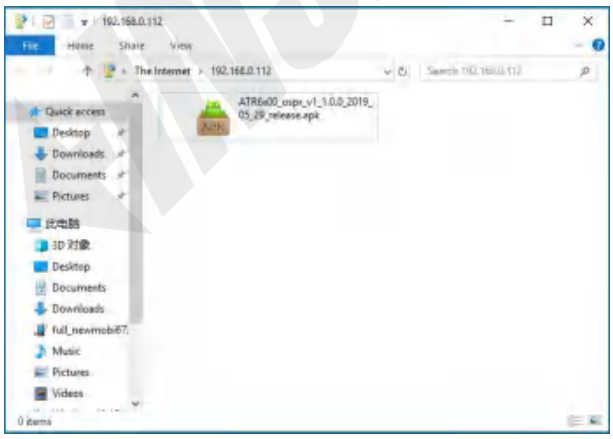


Fig3.9.3 Software is in copying and complete screen

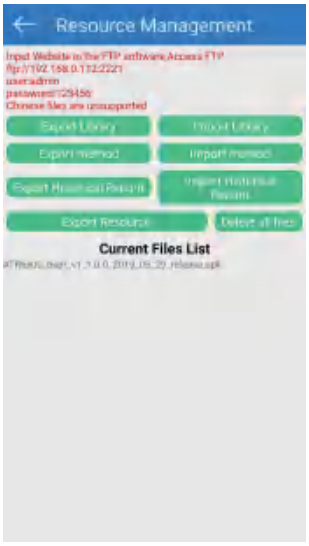


Fig3.9.4 The updated software package has been successfully copy in the Handheld set

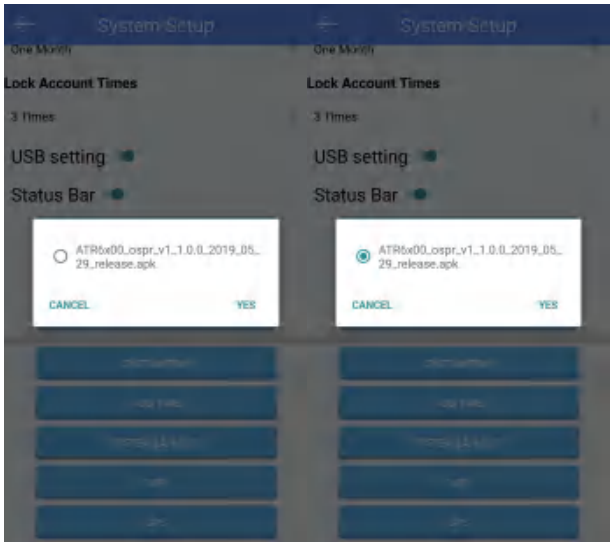


Fig3.9.5 Software installation warning

Fig3.9.6 Permission Set for Software installation

Fig3.9.7 Successful Installation

4. Technical Configuration

HHL-R240 System parameter	
OS	Android
Laser Wavelength	785 ± 0.5nm
Spectral Range	200-4000 cm^{-1}
Resolution	10 cm^{-1}
Touch Screen	5.5inches，1920×1080，Multi-Touch
Size	172×85×30 mm
Weight	0.45 kg
Communication Interface	WIFI、USB Type-C、Bluetooth、GSM