Diagnostic Automation / Cortez Diagnostics, Inc.
IMMUNO DIAGNOSTICS

Operation Manual

V 1.0 for instrument

DATSR-100

Test strip reader

Diagnostic Automation/ Cortez Diagnostics, Inc.
21250 Califa St, Suite 102 and 116, Woodland Hills, CA 91367 USA Phone: 818-591-3030, Fax : 818-591-8383
Email: onestep@rapidtest.com Website: www.rapidtest.com

Foreword

Thank you for purchasing our reader. This operation manual describes how the instrument works and the operation guide, please read carefully before operating it. Keep operation manual for later use when you meet with difficulties.

Opening check

Please check the instruments as well as all accessories with packing list when you first open it. If you find any wrong or missing, please contact distributor or manufacturer.

1.1. Contact Information

Diagnostic Automation, Inc.

21250 Califa Street, Suite 102 and 116

Woodland Hills, CA 91367

Customer Service and Sales

Website: www.onestep@rapidtest.com

Phone: 818-591-3030

Fax: 818-591-8383

Service/TAC

Phone: 818-591-3030

E-Mail: tech@rapidtest.com

Version No.： V 1.0

Safety warning and guidelines

1 Important information for safe use

Users should have a clear main idea on how to use this instrument before operate, do read this operation manual carefully.

Any improper operation without reading manual is forbidden, otherwise instrument may cause injury or electric shock.

Do read manual carefully and operate safely according to this guidelines.

2 Security

The operation, maintenance and repair of the Instrument should comply with the basic guidelines and the remarked warning below. If you don't comply with them, it will have effect on the scheduled using life of the Instrument and the protection provided.

Indoor use only.

Power off when you finish your work. Pull off the connector plug when there's long time no use of the Instrument and cover it with a cloth or plastic paper to prevent from dust.

Pull the connector plug from the jack at once in the following cases, and contact the vendor:

- There is some liquid flowing into the Instrument;
- Drenched or fire burned.
- Abnormal operation: such as abnormal sound or smell.

3 . The maintenance of Instrument

Sample holder should be cleaned by the cloth stained with a little alcohol. If there is smutch on the Instrument, clean them by soft cloth stained with cleaning cream.

Contents

FOREWORD II

SAFETY WARNING AND GUIDELINES III

CONTENTS V

CHAPTER 1 BRIEF INTRODUCTION 1

CHAPTER 2 FEATURES 2

CHAPTER 3 OPERATING GUIDE 4

1. INSTRUMENT AND ACCESSORIES INSTRUCTION 4

2. FUNCTIONS INSTRUCTION 4

3. BASIC OPERATING OF DETECTION 5

CHAPTER 4 SOFTWARE OPERATION 7

1. SELF-CHECKING 7

2. MAIN INTERFACE 7

3. TEST 8

4. REPORT 11

5. SYSTEM INTERFACE 16

5.1. TIME SETTING 17

5.2. LANGUAGE SETTING 17

5.3. PRINT SETTING 17

5.4.SCREEN CALIBRATION 18

6. REPAIR 19

6.1. PLATFORM 20

6.2. UPDATE 20

6.3. RESET 21

6.4. ITEM **21**

CHAPTER 5 TROUBLE SHOOTING **25**

Chapter 1 Brief introduction

DATSR-100 test strip reader is an innovative meter for reader immunochromatographic rapid test cards or test strips. This reader can make rapid, high sensitivity and repeatability detection, avoiding reading mistake by eyes.

Features :

1. Friendly users' operating system,
2. Easy and simple detection procedure,
3. Efficient, detection time only 10S,
4. Multi-functions, varies software compliance to different test cards,
5. Unique function of qualitative detection,
6. Internet, wireless internet function extendable.

Chapter 2 Features

1. Working condition

Ambient temperature: 5℃~ 35°C

The relative humidity: ≤80%

Power: DC12V 4A

2. Basic parameters

No.	Item	Parameter
1	Weight	3kg
2	Dimension （W×D×H）	320mm×195mm×156mm
3	Power	48W
4	Wavelength range	525±30nm
5	Detector	silicon photo detector
6	Repeatability	CV≤3%
7	Stability	relative drift value ≤3%(within 2 hs)
8	Display	800×480 6.2inch display
9	Printer	Thermal printer
10	Memory type	4GB Nand Flash
11	Man-machine interface	Mouse
12	Operating system	freeRTOS+emwin

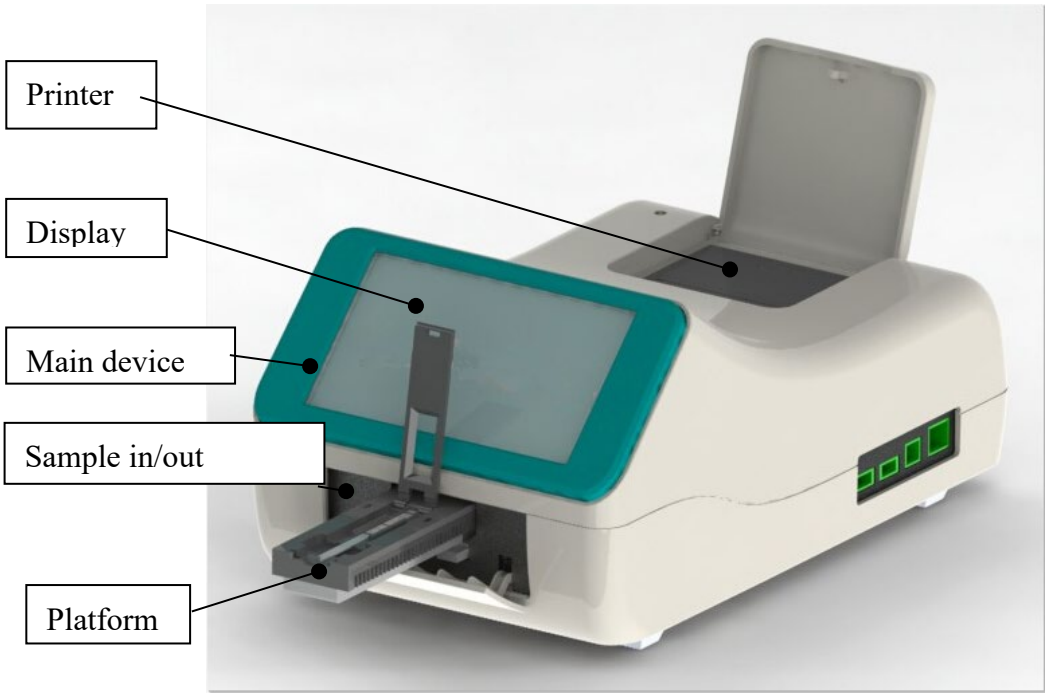
Chapter 3 Operating guide

This part introduces instrument structure, operating preparation, please read carefully before operating.

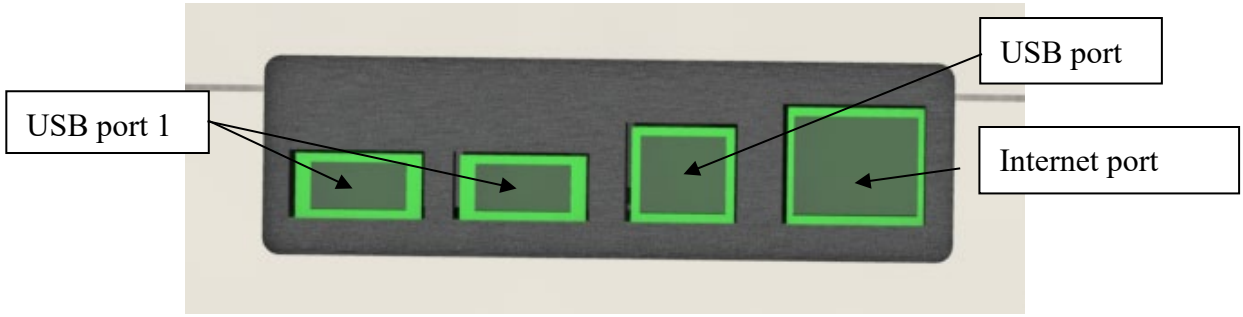
1. Instrument and accessories instruction

Instrument includes main device, power adapter (12V 4A), mouse. User can operate this instrument by touch screen as well as mouse. A strip is equipped with this instrument for calibration, not for detection.

2. Functions instruction



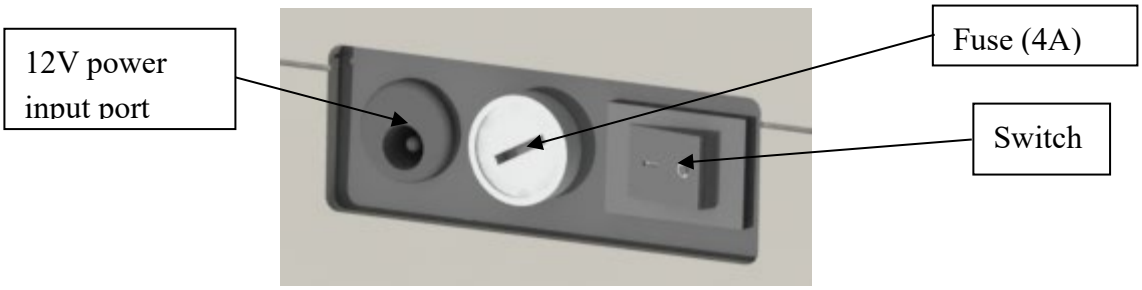
Front view



Right side view

USB port 1, for data transportation, accessories connection, software upgrade,

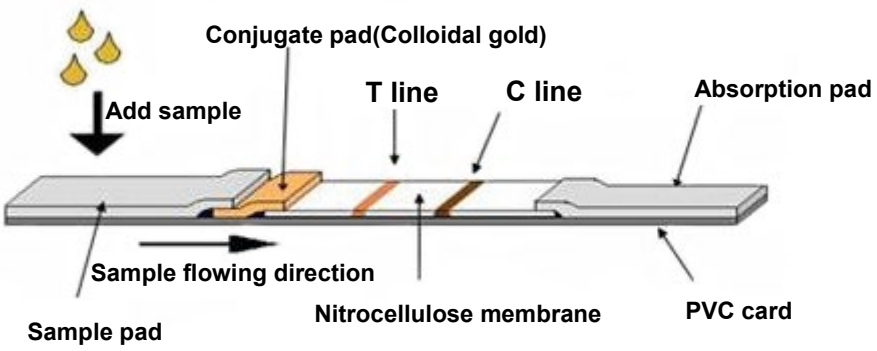
USB port 2 and internet port is extendable for future use.



Rear view

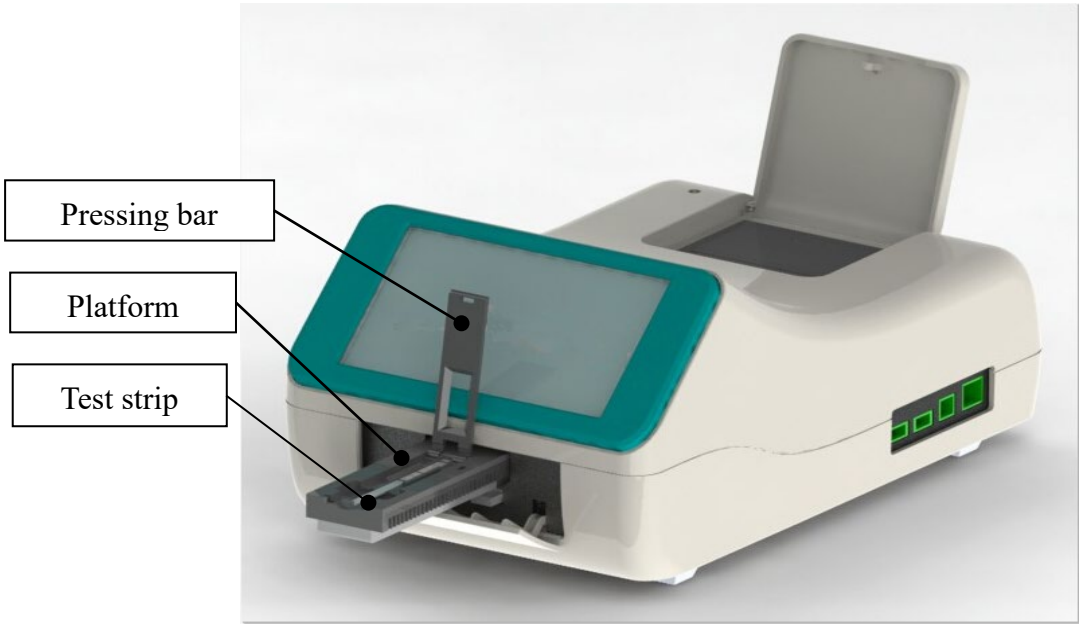
3. Basic operating of detection

Standard test strip structure as picture below, detect sample positive or negative (concentration) by measuring reflection of light intensity of T and C line. This instrument is also suitable for some test strip has several T line.



Standard test strip structure

Basic steps for sample test:



Sample platform

Please check power cable, mouse, keypad (optional) all connected well before turning on instrument, if this is first time using or software upgrading, please insert the software U disk to USB port at side.

Then, turn on instrument for self-checking. Choose sample test interface, the sample platform will come out automatically, open the pressing bar, put the test strip to sample platform properly. Measure the sample according to the step on the next chapter.

Remarks: Please put down the pressing bar properly for not affect result.

Sample platform is changeable. Pull the sample platform outward to make it lose from the base, then life it upward 20 degree, then take out.

Install it onto the base oblique, and put it flat, push it inside to make tight with base. Shake it tenderly to check if it is installed completely.

Chapter 4 Software operation

1. Self-checking

Self-checking includes self-checking, software updating, system initialization, please wait...

Fig 1 self-checking

2. Main interface

Including Test, Report, System, Repair, Help. After self-checking finished, it will turn to Test interface. Switch to other pages by clicking the according area icon at above, please. Print and delete function are available after testing.

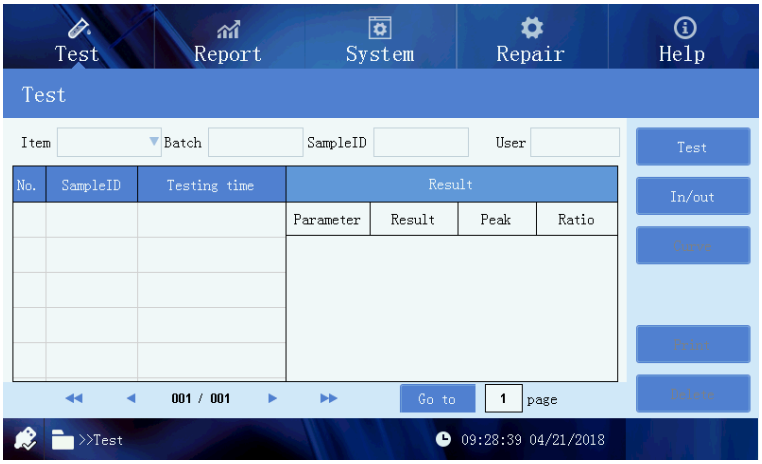


Fig 2 Test page

The icon on the bottom left show the connection status of U disk.

Means connection success, means connection failed.

3. Test

Test interface as Fig 2. Click the arrow of item to choose the one needed, as Fig 3.

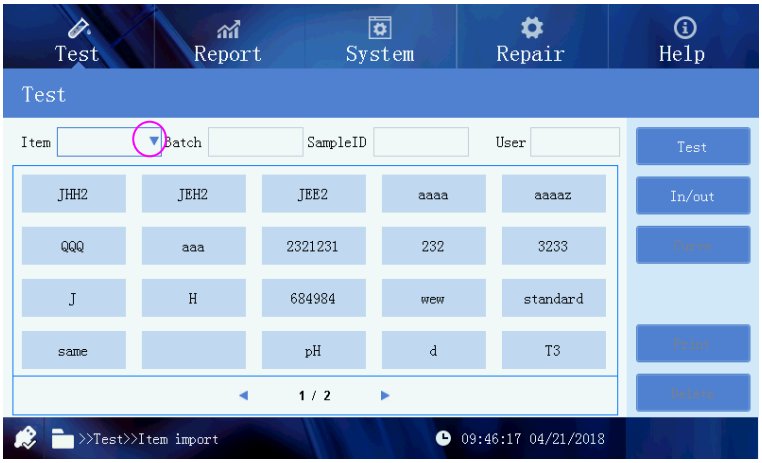


Fig 3 Test item

Click blank after Batch to input batch No., as Fig 4. Click “Enter” to finish.

Fig 4 Input batch No.

Input the sample ID as Fig 5, click “Enter” to confirm and quit.

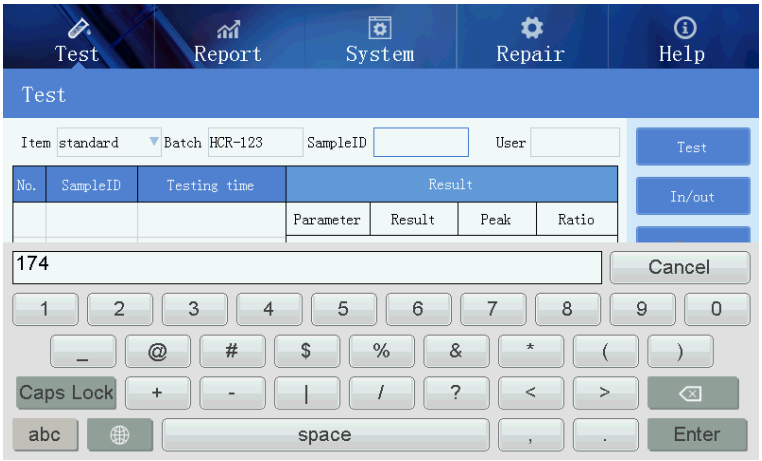


Fig 5 Input sample ID

Remark: Item, sample ID are requested for test, or there will be a dialog window if vacant. Batch No. is optional.

Enter the tester input interface by click the text box on the right side of tester, as Fig 6. Click “Enter “to complete input.

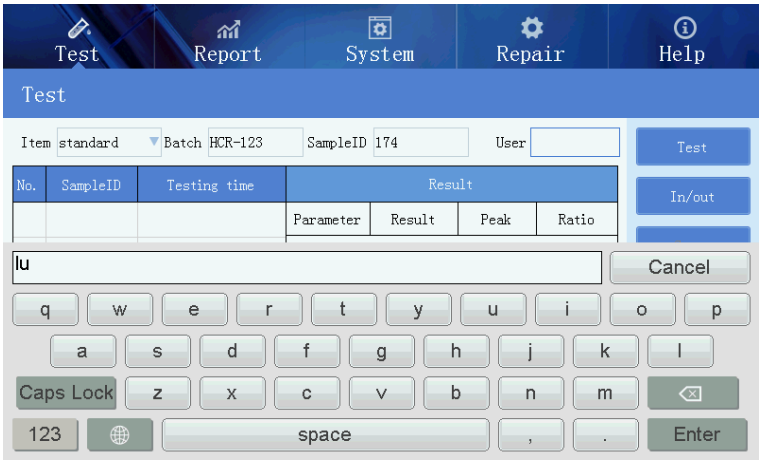


Fig 6 Edit Tester

Test: Click “Test”, the sample platform will automatically move into the instrument and run the test. The test result will be displayed after test finished, as Fig 7.

Fig 7 Test result

In/out: Under the condition of non-test status, click “In/Out” to control sample platform in and out the instrument.

Curve: After test complete, press “Curve” to display the test curve of current sample. As Fig 8.

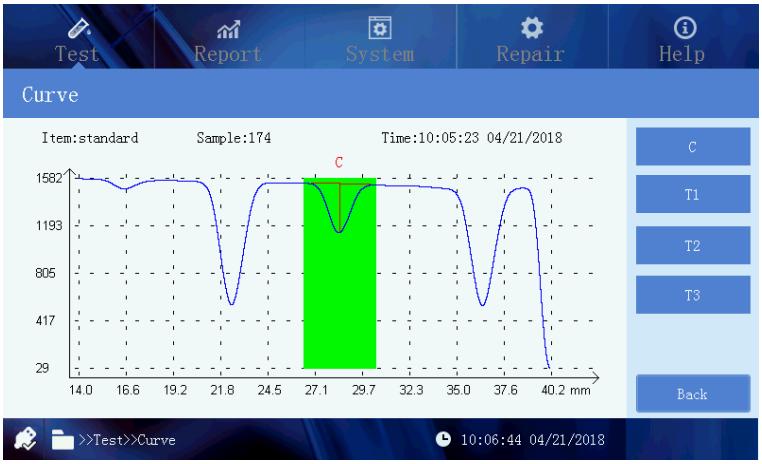


Fig 8 Detection curve

Print: Click the button to print the current test result.

Delete: Selected result can be deleted by click “Delete”, as Fig 9.

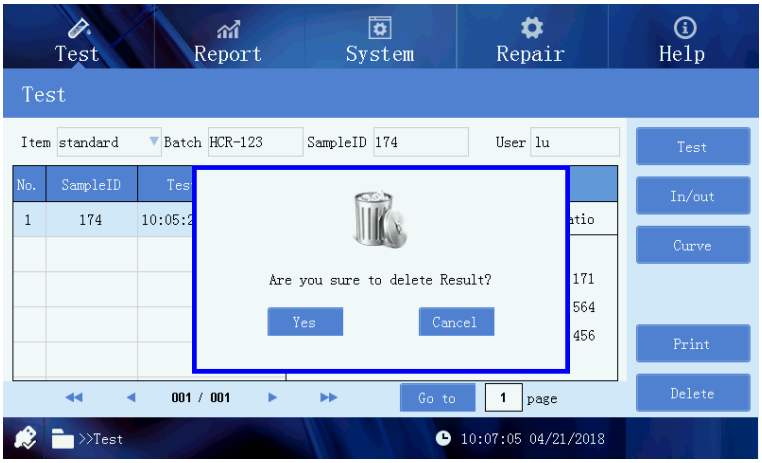


Fig 9 Delete interface

Click “OK” to delete the test result.

4. Report

Into Report interface by clicking Report icon, as Fig 10:

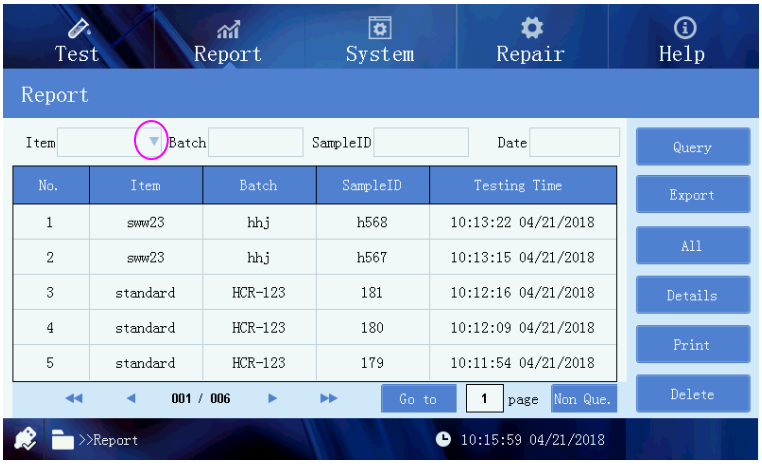


Fig 10 Report page

All results showing on the report page when you enter into this page first time, which also include Query function. For example: click “Item” to choose one like Fig 11, click “Standard” and then “Query”, result will show as Fig 12.

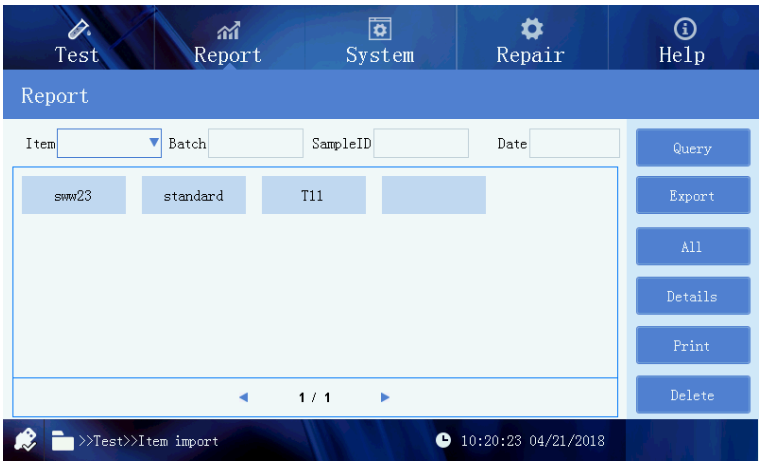


Fig 11 Choose one item

Fig 12 Result for “Standard”

Remark: Please choose icon in Fig 11 if you want to clear the test item you have choose.

Input the batch No. , Sample ID, test date and etc., then click “Query” to check test result. Like Fig 13:

Fig 13 input 2 query conditions

Test result can be selected by date, too. As Fig 14:

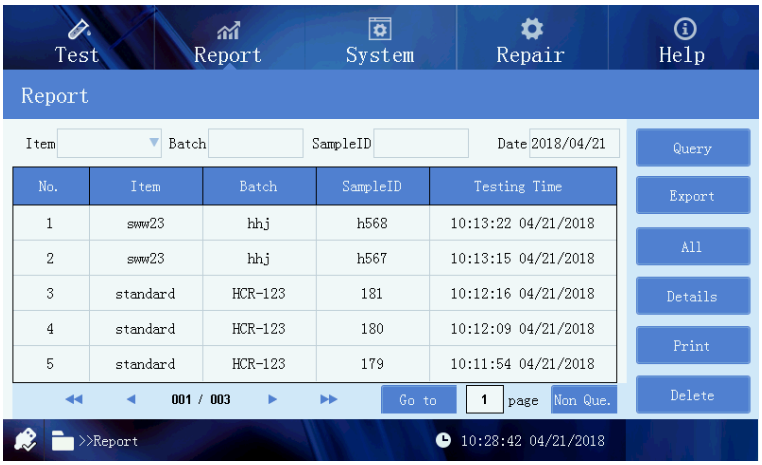


Fig 14 Selected by date

Remarks: Click "Non Que" to clear all conditions.

Export: Insert U disk to the port which on the right side of instrument, then export the selected single or multiple test results to U disk.

All: Under the condition of no selected data, click "ALL" to select all results to "Export"

or “Delete”. Click “ALL” again for deselection.

Remark: Export icon is not available unless insert U disk. All five icons are not available if there is no test result.

Details: After completing test, click one of the result to check “Details” as Fig 15.

Fig 15 Result details

Click arrow or input page No. to switch page, as Fig 16:

Fig 16 Switch to a certain page

5. System interface

Click “system” icon at upper area of screen.

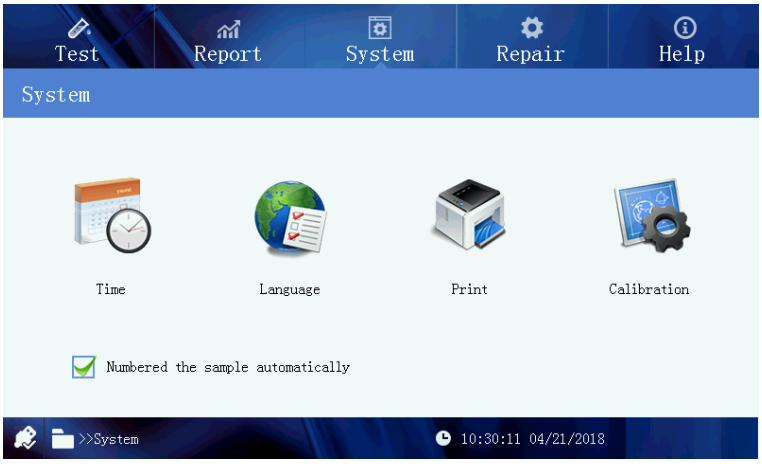


Fig 17 System interface

There are 4 mainly icons in this interface: time setting, language setting, printer setting and calibration. Icon for Sample ID numbered automatically also display in this interface.

Related to the sample ID numbered automatically, please have the brief introduction as below:

① The last 9 numbers of the sample ID will be numbered automatically.

For example: after choose the numbered automatic function, insert “AA” as the sample ID, then the system will be numbered automatically start from AA, AA1, AA2 till to AA999999999; If insert “000000001” as the sample ID, then the system will be numbered automatically start from 000000001,2,3 till to 999999999.

② After re-start the device for measure, the sample ID should be insert again.

③ Revised the sample ID manually.

For example, revise 000000001 to 111111111, then the next sample ID is 111111112

Remark: Suggest the user numbered the sample start with the letter. For example “A”, “B” etc. before the number “01”, “001”, “000000001”, such as “A01” “A001” “B000000001”

5.1. Time setting

Click “time” icon to set time and date,

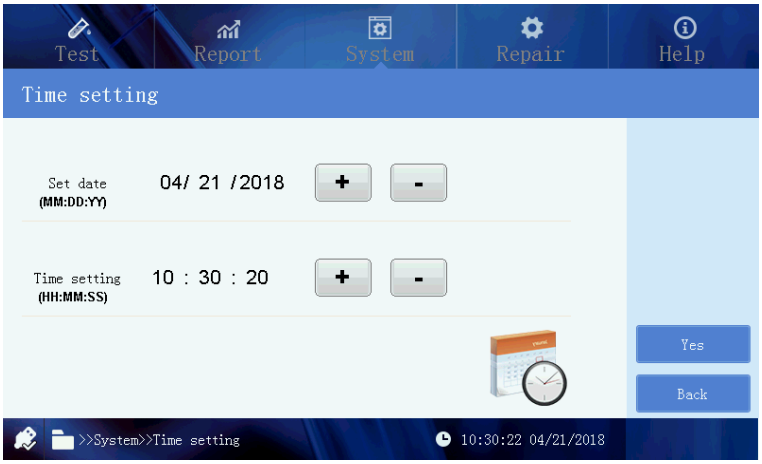


Fig 18 Time setting

5.2. Language setting

Click “Language” icon to set language, as Fig 19:

Fig 19 Language setting

5.3. Print setting

Click “Print” icon to set print method:

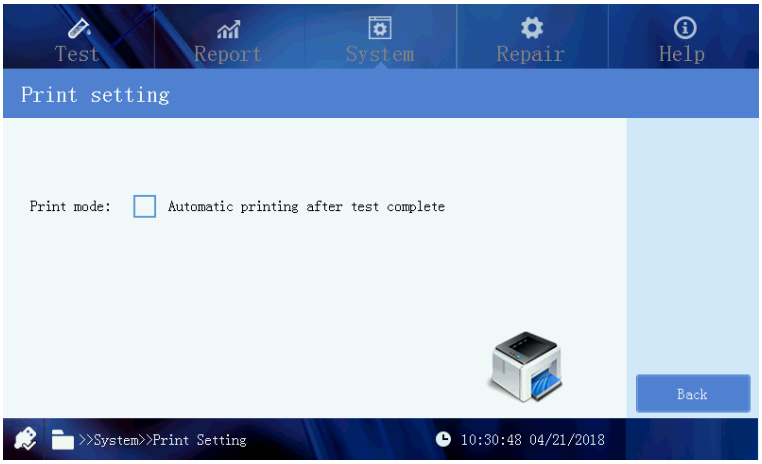


Fig 20 Print setting

Mark in the square box to set automatic or not as Fig 20.

Click “confirm” to save new setting and turn to system interface, click “Return” to keep previous setting and turn to system interface.

5.4. Screen calibration

Click “Calibration” icon to start screen calibration, like Fig 21:

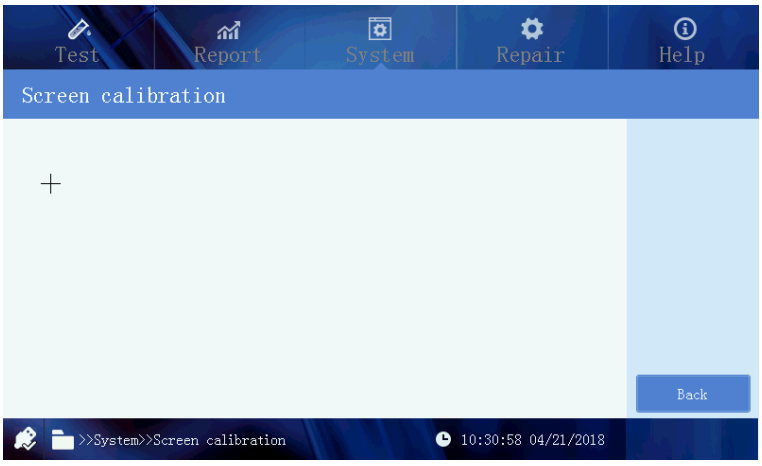


Fig 21 Calibration

Click on the cross cursor on the screen accurately to calibrate the screen. Totally 4 cross cursors around the screen and will be displayed one by one, the last cursors will be on the central of screen. Please click them accordingly. After the calibration finished, the screen will turn to gray automatically, please power off and restart the device to completion of calibration work.

6. Repair

Click “Repair” icon and input password, as Fig 22:

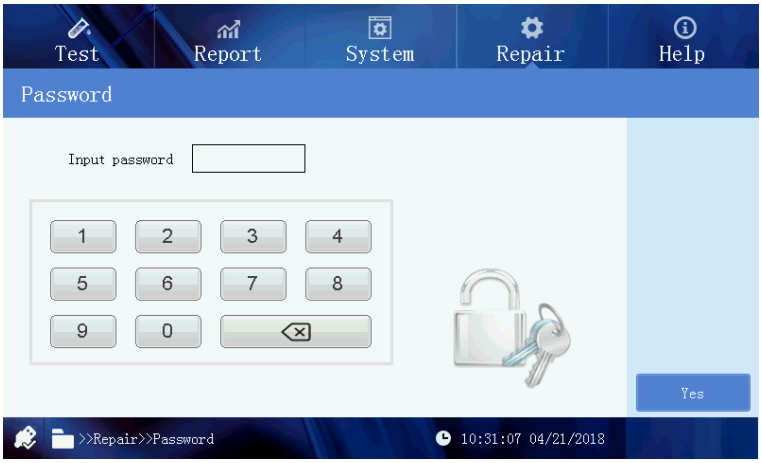


Fig 22 Repair- input password

Input the password and click “Confirm” to enter into the maintenance interface. It include “platform setting” “ Software Update” “Factory reset” and “Method set”, See as Fig 23.

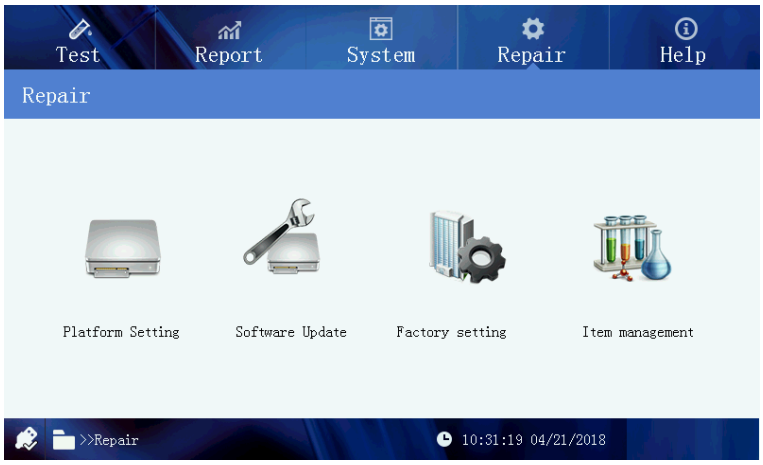


Fig 23 Repair interface

6.1. Platform

This interface is mainly for the adjustment of instrument before out of the factory, so no detail illustration on this manual.

6.2. Update

If you want to update software, click “Update” icon, a dialog window come out, and confirm, like Fig 24. Software update successfully like Fig 25.

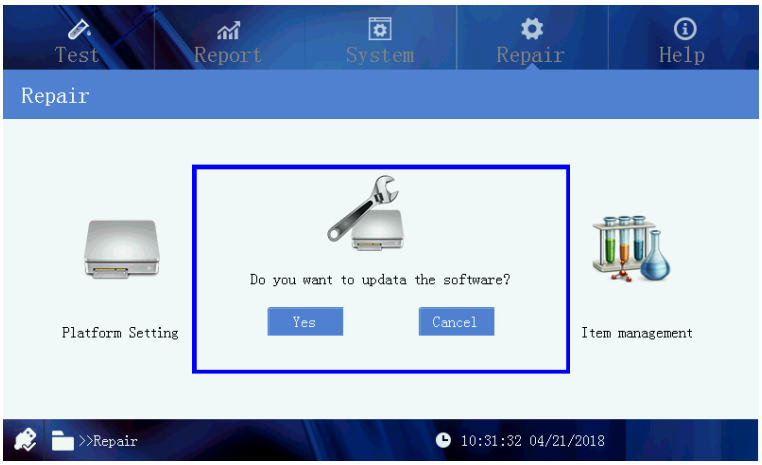


Fig 24 Software update

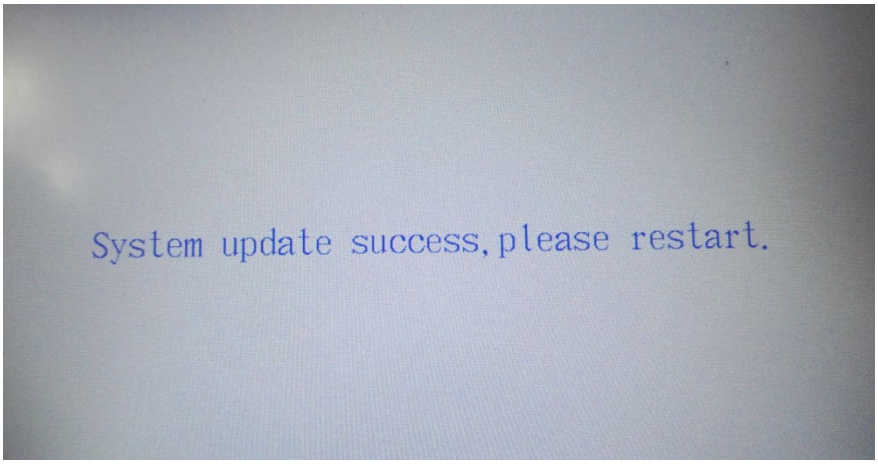


Fig 25 Software update finish

Turn off instrument, and restart it again.

6.3. Reset

Click“Reset” icon, a dialog window comes out, and complete it by pressing “confirm”.

Remark: After click the “reset” function, All the test data saved in the instrument will be cleared, please be careful.

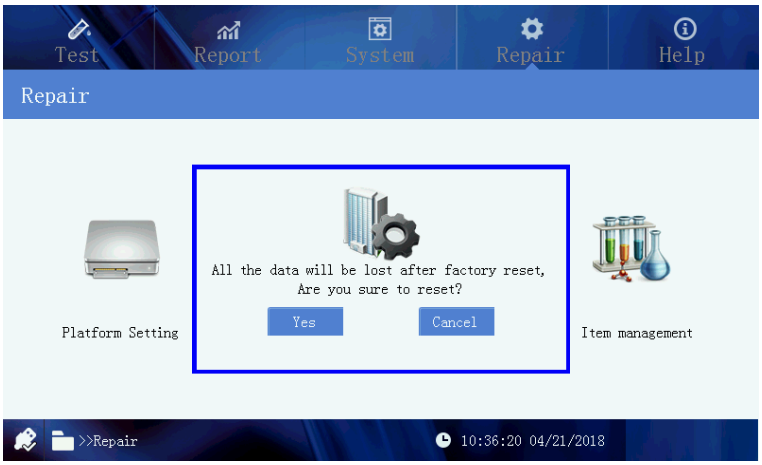


Fig 26 Factory reset

6.4. **Item**

Click icon “Item management” enter in to “method management” interface. All the existing method in the instrument will be display in this interface. It will be highlight display after click the specific method. See as Fig 27. Method delete function is available under this interface.

Fig 27 Item management

In case of import new items, please insert U disk, and import items to instruments as Fig 28.

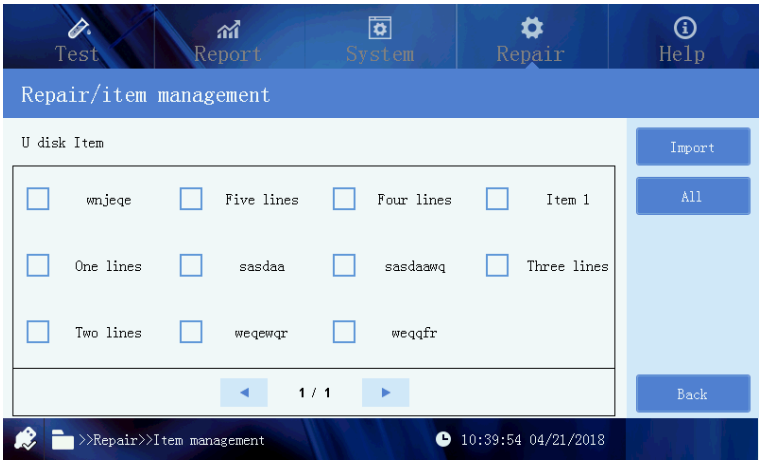


Fig 28 Import test item

Choose import items, and click “Import”.

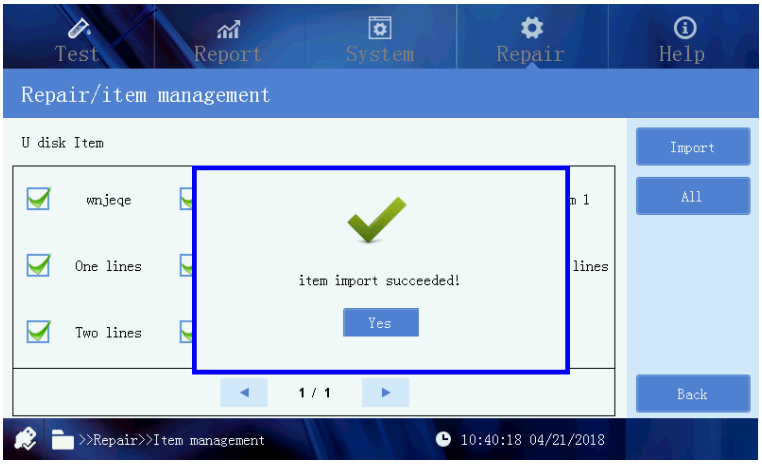


Fig 29 Item import finish

Items are imported to instruments as Fig 29, click “Return” to go back the maintenance page. Users also can choose items to delete.

The instrument can save the 100 pcs methods most, please delete some methods if you would like to save the new method after memory is full. See as Fig 30

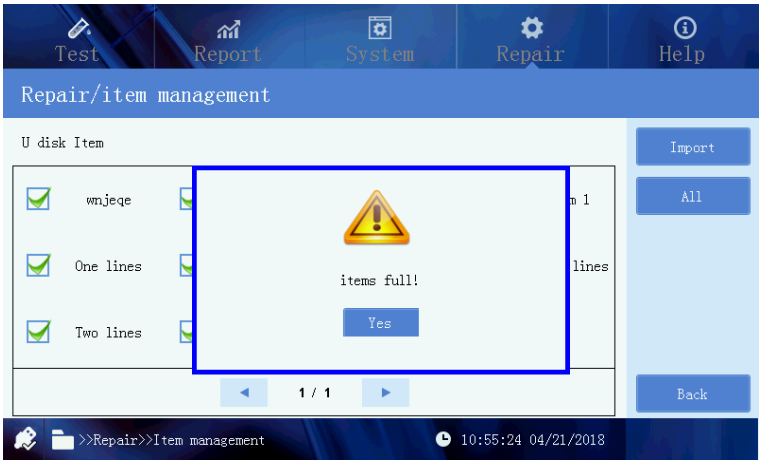


Fig 30 Memory is full for the method stored

Chapter 5 Trouble shooting

Analysis and solution

No.	Trouble	Analysis	Solution
1	Screen does not work after power on	No power supply	Check power supply
		Fuse defective	Change fuse
		Switch defective	Change switch
		Power adapter defective	Contact distributor or manufacturer
		Others	Contact distributor or manufacturer
2	Instrument can not be connected to PC	Instrument not turned on	Turn on the instrument
		USB cable defective	Change USB cable.
3	Instrument is shut down before sample platform is in.	Power cut off by accident	Check power supply, if normal restart instrument, or refer to No. 1
4	Sample platform is jammed	test strip is not laid flat	Stop detection, enter in to “Maintenance” interface to click sample in/out to take out test strip.
5	Result not precise	Upper part of sample platform is loose	Push the upper part in wards to fix.
6	E903 Weak light intensity	Weak light intensity or lamp is not powered	Contact distributor or manufacturer
7	E902 Strong light intensity	Intensity out of range	Contact distributor or manufacturer
8	E104 Problem on photoelectric switch or motor	Motor damage, out of step or damage to the photoelectric switch	Contact distributor or manufacturer
9	E602 Abnormal data	Sampler abnormality or data line is pulled	Contact distributor or manufacturer

10	E708 nan flash memory abnormality	Storage chip is damaged	Contact distributor or manufacturer
11	E705 Test record memory will be full	Excessive test record storage	Delete old the test records

Memo