

InSight[™] V-CHEM

Veterinary Chemistry Analyser

Operator's Manual



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Thank you for purchasing InSight V-CHEM Veterinary Chemistry Analyser. This manual is intended for operators who have completed the training course offered by Woodley Equipment Company or Woodley Equipment Company’s authorised dealers. Please read and understand the Operator’s Manual carefully before operating the system.

Notes

Safety Precautions

To use the analyser safely and effectively, please observe the following precautions:

Prevention of System Failures and Flammability

The instrument must be installed correctly according to the installation environment and the installation conditions shown in this manual.

Preventing Electric Shocks

Never remove the covers secured by screws, such as the rear cover and side covers, unless being guided by the authorised personnel of Woodley Equipment Company. If liquid spills or leaks occur inside the system, contact Woodley Equipment Company or an authorised Woodley dealer. Careless operation with liquid present may result in an electric shock.

Preventing Infection

If samples used with the system are mishandled, there is a risk of being infected. Do not touch the samples with bare hands. Be sure to wear gloves to protect yourself from infection. Should any samples come into contact with your skin, thoroughly wash the area that came into contact with the sample and consult a physician. Immediately wipe off any contaminants from the system.

Handling Reagents

Reagent beads may contain acids or corrosive substances. The operator does not come into contact with the reagent beads when following the recommended procedures. In the event that the beads are handled (for example, cleaning up after dropping and cracking a reagent disc), avoid ingestion, skin contact or inhalation of the reagent beads.

Treating Waste

Used reagent discs contain animal blood. Follow good laboratory safety practices when handling and disposing of used discs. For proper waste disposal methods, refer to your local government guidelines. For proper handling of substances with a bio-safety level 2, refer to your Centres for Disease Control/National Institutes of Health manual.

Section 1 General Information

1.1 Intended Use

InSight V-CHEM Veterinary Chemistry Analyser provides quantitative in-vitro determination of clinical chemistry analytes in lithium-heparinised whole blood, heparinised plasma or serum. The entire analysis requires 100 µL of sample and is capable of providing results in 8 minutes.

1.2 Introduction

InSight V-CHEM System is based on microfluidics technologies. It consists of a portable analyser and single-use disposable reagent discs. The analyser contains a variable-speed motor to spin the disc, a photometer to measure analyte concentrations, a microprocessor for system control and data acquisition calculation and a capacitive touchscreen for communicating with the analyser. Each reagent disc is a self-contained, clear, plastic disc with a plastic film on top, 7.8cm in diameter and 0.68cm thick and contains freeze-dried reagent beads in cuvettes around its edge. All of the blood separation and sample diluent mixing are carried out within the disk itself by the centrifugal force generated by the rotation of the motor. The device uses an external scanner or built-in scan module to read the disc information.

To perform the analysis, the operator collects a blood sample (lithium-heparinised whole blood, plasma or serum), pipettes the sample into the reagent disc, places the disc into the analyser drawer at the front of the analyser and enters patient information. After the analysis is complete, there is an option to print the report. Results are also stored in the analyser's memory and can be transmitted to an external printer, computer, memory stick or laboratory information systems/electronic medical record systems (LIS/EMR).

Note: This manual includes analyser and computer screenshots. These screenshots are for reference only. All screens represent typical use and installation, although it may be different from the screen on your system.

1.3 Technical Support

Woodley Equipment or your authorised representative can answer questions regarding the operation of the InSight V-CHEM Veterinary Chemistry Analyser.

1.4 Symbols Used in Labelling

The following symbols are found on the back and side of the analyser:



Direct current



Caution. Refer to any accompanying documents



Biohazard. In accordance with good laboratory practice, consider all material from animal sources to be potentially infectious and handle them with the same precautions used with patient specimens (see Treating Waste).



In Vitro Diagnostic Products

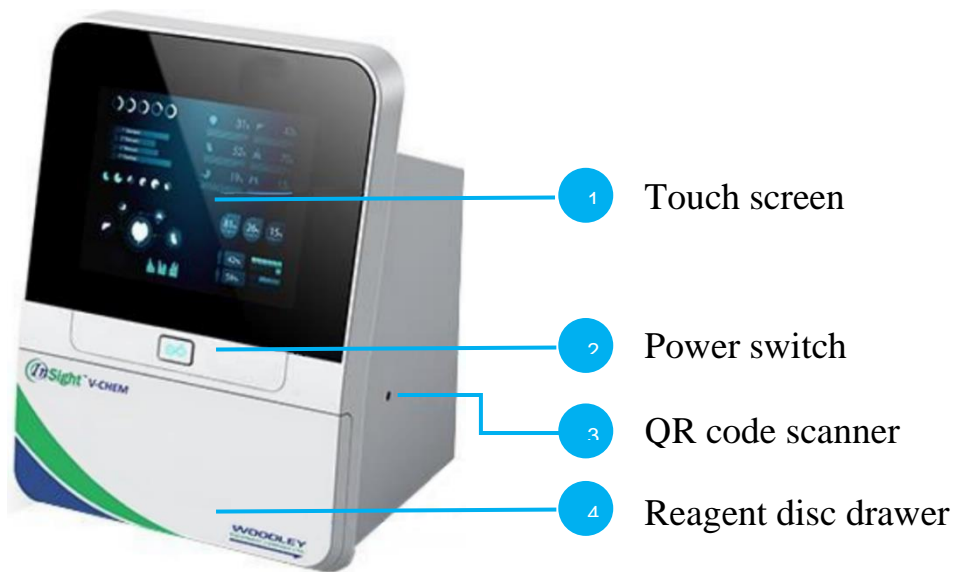


USB connection

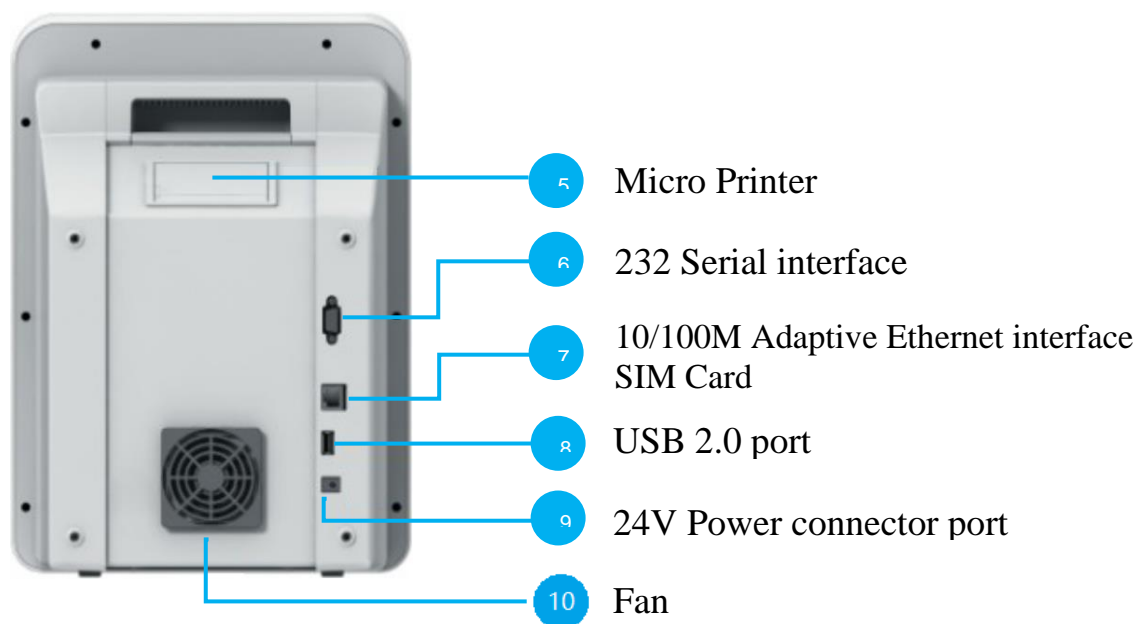
Section 2 Installation

2.1 Unpacking V-CHEM

1. Take the InSight V-CHEM Veterinary Chemistry Analyser out of the shipping carton. Place the analyser on a level surface that is free of hair, dust and other contaminants. Do not place the analyser in direct sunlight or near any other heat source.
2. The following figures show the functional description of each part.



The front of the analyser



The rear of the analyser

3. Check the components received with the InSight V-CHEM Veterinary Chemistry Analyser against the Packing List to make sure everything required to set up the analyser is included.

2.2 Analyser and Environmental Specifications

Analyser Dimensions:	260 (L) × 260 (W) × 370 (H) mm
Weight:	Ca. 5.9kg
Mode of Operation:	Continuous
Ambient Operating Temperature:	10~30°C (50–86 °F), indoor use
Atmospheric Pressure:	86.0 kPa~106.0 kPa/2000 m (6562 ft)
Humidity:	40%~85%
Power Requirements:	120 VA
Main Supply Voltage:	100-240 volts AC, 50-60 Hz
Reaction Temperature:	37±0.2°C (98.6±32.36 °F)

2.3 Setup

1. Set up the analyser on a surface as follows:
 - On a level surface with nothing blocking the reagent disc drawer
 - Free of vibration and sudden jolts
 - Free of hair, dust and other contaminants
 - Located in an ambient operating temperature of 10–30 °C (50–86°F)
 - Away from direct sunlight and all other potential heat sources
 - At least 30 cm (12 inches) away from any walls to provide adequate ventilation and access to the power connection and USB ports
2. Plug the power cable into the analyser. Then, plug the detachable power supply cord into the power adapter and into a grounded electrical outlet.

Caution: To prevent power surges or drain, **DO NOT** plug the analyser into the same circuit as a centrifuge or any other high-current device. Woodley Equipment also recommends using a surge protector of the same type used for computers.



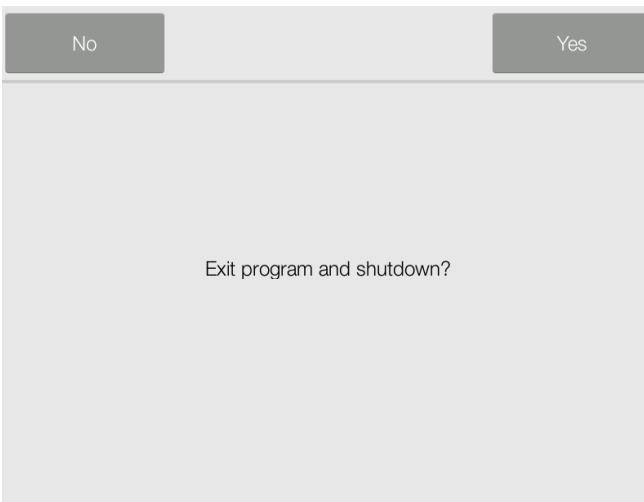
3. Press the Power button to turn on the analyser. During the self-testing and warming period, the display will show the image on the left.


Note: The analyser may require additional time for the heaters to warm the analyser to operating temperature under low ambient temperature.



4. After passing the self-testing and reaching operating temperature, the analyser is ready to run the first reagent disc and will display the image on the left.

5. Check the analyser date and time to ensure they are correct. Refer to **Section 5.2, 'Changing Date and Time'** for directions.



6. Shutdown the analyser by pressing  on the main page, then turn off the power button.

7. The analyser's built-in thermal printer prints patient and control results.

8. Reference ranges are preset in the analyser. The range values can be changed using the Customising Reference Range feature described in **Section 5.3**.

Section 3 Basic Operations

3.1 System Description

1. InSight V-CHEM Veterinary Chemistry System consists of a portable analyser and disposable single-use reagent discs. Each reagent disc contains all the reagents needed to perform a panel of tests on a single sample.
2. InSight V-CHEM Veterinary Chemistry Analyser uses centrifugal and capillary forces to process heparinised whole blood samples and distribute diluted plasma to the reaction chambers (cuvettes) in the reagent disc. Serum and heparinised plasma samples are processed in a similar manner. The analyser optically measures the chemical reactions and calculates analyte concentrations from these measurements and from encoded calibration data contained on the QR code on the reagent disc pouch.
3. Results are stored in the analyser memory and can be printed using the built-in thermal printer or downloaded to an external personal computer for InSight V-CHEM Data Manager (IVDM). The touchscreen display provides easy communication with the analyser. The touchscreen shows procedural instructions, indicates the status of the analyser and presents any error messages. For error message details, see **Section 8**.

3.2 Sample Requirements

1. The analyser only accepts lithium-heparinised whole blood, plasma or serum samples.

Note: When collecting the sample in lithium heparin collection tubes, fill the tube at least half-way so the anticoagulant does not become too concentrated in the sample.

2. Only use lithium-heparinised plasma or serum for performing lactate dehydrogenase (LDH) tests.
3. A sample size of 100 µL is required.
4. Whole blood must be analysed within 60 minutes of collection or separated into plasma or serum.

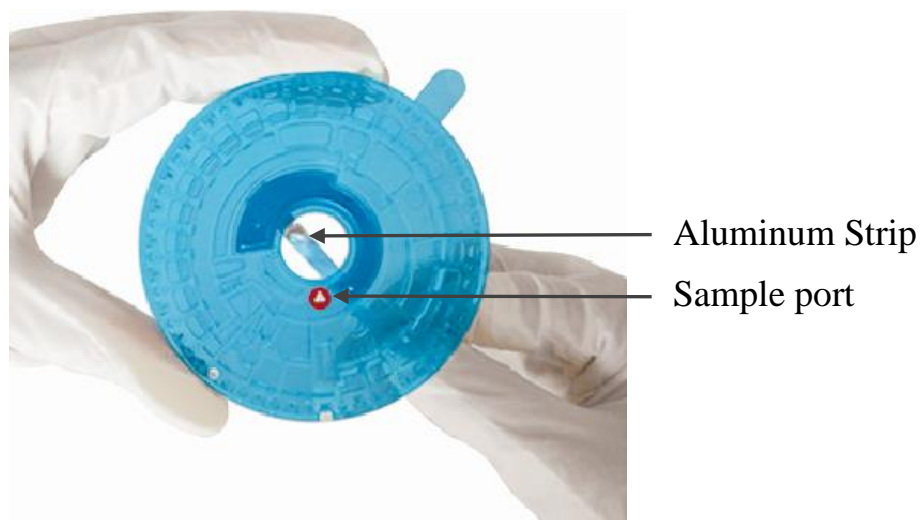
Note: If not analysed immediately, plasma or serum can be stored at room temperature for no longer than 5 hours after centrifugation. If storage for more than 5 hours is required, refrigerate the sample in a capped tube at 2 - 8 °C (36 - 46 °F) for no longer than 48 hours or store it at -10°C for up to 5 weeks in a freezer with no self-defrost cycle. Under these conditions, there will be no clinically important changes in most analyte concentrations.

Caution: To prevent haemolysis, do not refrigerate or shake whole blood.

3.3 Preparing the Reagent Disc

A total of 29 cuvettes are located around the periphery and some of the cuvettes contain test-specific lyophilised reagent beads needed to perform one or more tests on a single sample.

Open the disc pouch at the notch on the top right edge of the package. Take the reagent disc out and pull out the aluminium strip at the bottom to separate it from the panel as shown:



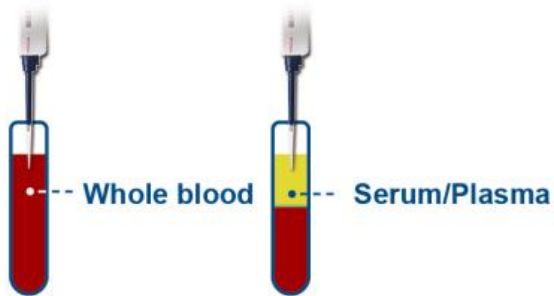
OR



The new versions of the disc do not have a blue protection film.

Note: Whole blood samples obtained by venipuncture must be homogeneous before transferring a sample to the reagent disc. Gently invert the collection tube several times just prior to sample transfer. Do not shake the collection tube; shaking may cause haemolysis.

1. Dispense sample: Use the 100 μ L volume pipette to dispense sample;



- a. Use the 100 μ L volume pipette. Place a clean pipette tip on the end of the pipette.
- b. Holding the pipette with four fingers, press the top button of the pipette with your thumb to the stop position and hold.
- c. Immerse the pipette tip below the sample level and slowly release the button to draw up the sample. Remove the pipette from the sample. Make sure there are no air bubbles in the tip.

2. Adding sample 100 µl;



- d. Ensure the pipette tip is vertically inserted into the sample well in the rotor, then tilt 45°. Press the top button slowly until all the sample is dispensed into the rotor.
- e. After adding the sample, discard the tip into a biohazard container.

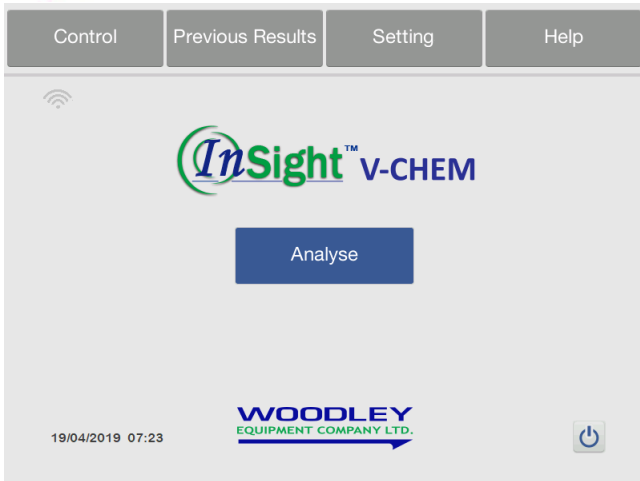
Caution: Ensure the whole blood sample is gently inverted before pipetting. Do not violently shake to avoid haemolysis.

Note: Disc Storage and Handling

- Store each reagent disc as described on its label. This keeps the disc's reagents stable until the expiration date printed on the disc's foil pouch. The analyser will automatically reject any expired disc.
- Discs can be used directly from the refrigerator (stored at 2 - 8 °C (36 - 46 °F)) without warming.
- Do not expose discs - in or out of their foil pouches - to direct sunlight or to temperatures above 32 °C (90 °F).
- Inspect the unopened foil pouch for tears and punctures. A torn or damaged pouch can allow moisture to reach the disc and reduce reagent performance.
- Once the pouch is opened, discs must be used within 20 minutes. Do not place the disc back in the refrigerator for later use.
- Keep discs clean. Handle them only by their edges to avoid smudges on the optical surfaces. Use a lint-free tissue to remove any spilled blood from disc surfaces.
- Wear powder-free gloves while handling reagent discs or operating the analyser. Powder can disrupt the analyser's optical components.
- Hold reagent discs flat after introducing the sample or control to avoid spillage.
- Discs are fragile - always handle with care. Inspect every reagent disc for damage before use. Never use a damaged disc.

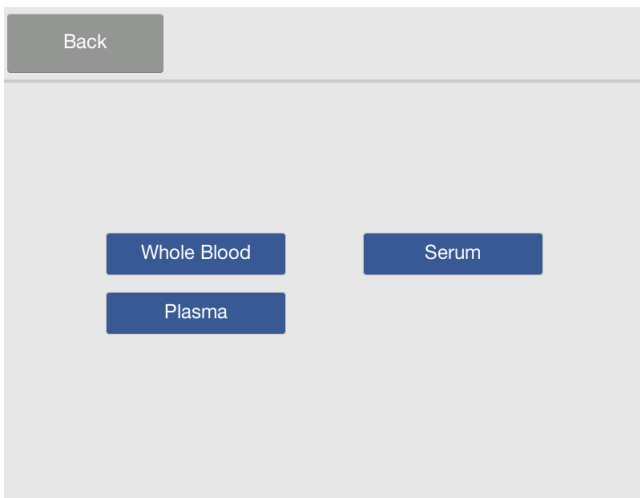
3.4 Sample Analysis

This section includes detailed, step-by-step instructions for performing analysis using the analyser.

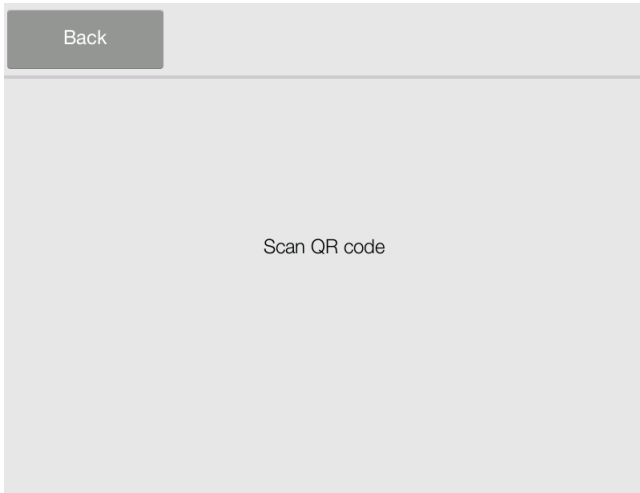


1. After passing the self-testing, the analyser will display the main screen (operating interface) as the image on the left shows.

2. Press 'Analyse' to start the analysis.



3. Select 'Whole Blood', 'Serum' or 'Plasma' depending on the sample type.



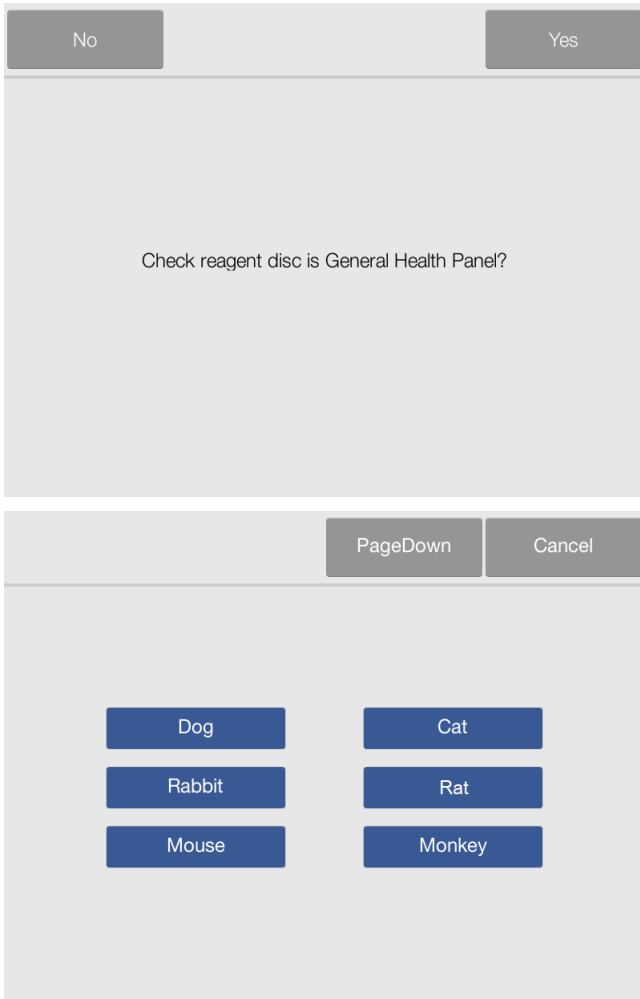
4. The screen for scanning the QR code is then displayed.

5. Scan the QR code on the label of the foil pouch. The QR code contains the disc information e.g. disc identification code, lot number, expiration date and calibration data etc.

Note: Please check before scanning that the QR code label is flat and the light in the surrounding environment is sufficient.



- a. Built-in Scanner: Place the QR code in front of the QR scanner on the right side of the analyser. Hold still to scan the QR code.



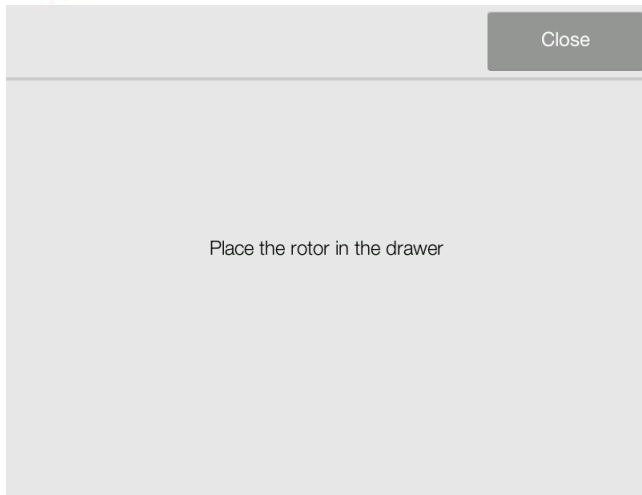
- b. Once the scan is complete, a prompt with the disc type name will display on the screen.

- c. Press **'Yes'** to confirm it is the right disc type to run the patient sample.

OR

- d. Press **'No'** to cancel the disc information and scan a new disc.

- 6. Confirm the disc type. Enter the patient details interface. Press **'Page Down'**/**'Page Up'** and select the patient's species.



7. After you have selected the patient's species, the disc drawer will open and the screen will prompt you to put in the disc. The interface is shown on the left.

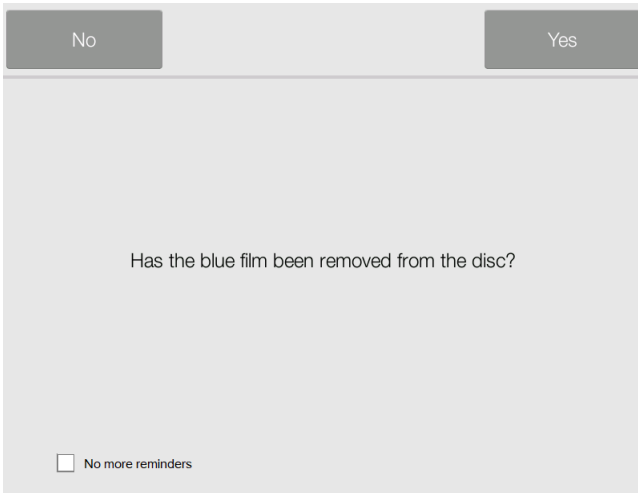


8. Dispense the patient sample into the disc according to the procedure in **Section 3.3**.

Place the disc in the recessed area of the drawer. Remove the blue protective film.

9. Press '**Close**' to close the drawer.

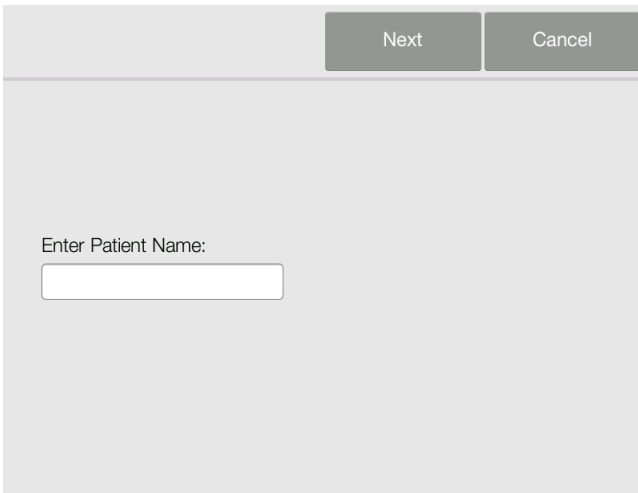




A confirmation dialog box with a light gray background. At the top, there are two buttons: 'No' on the left and 'Yes' on the right. The main text in the center asks, 'Has the blue film been removed from the disc?'. At the bottom left, there is a checkbox labeled 'No more reminders'.

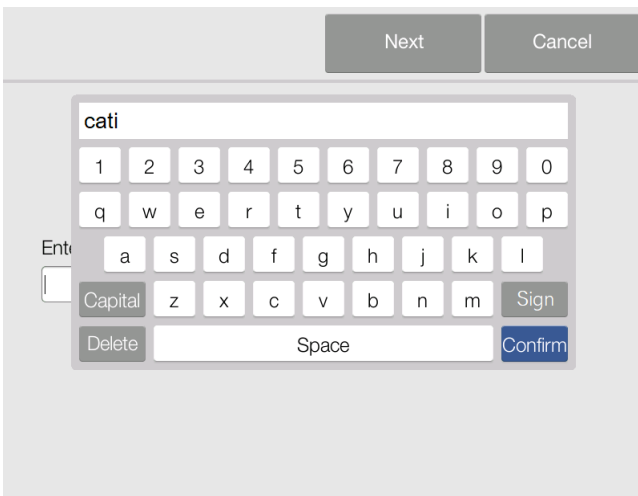
10. Press **‘Yes’** to confirm the blue film has been removed and the disc drawer will close.

Note: If you are using a new version of the disc, there won't be a blue protection film. Run the test directly after adding the sample into the black sample port.



A screen for entering patient information. At the top right, there are two buttons: 'Next' and 'Cancel'. Below them, the text 'Enter Patient Name:' is followed by a white rectangular input field.

11. Input the patient's name. Then, press **‘Next’**.

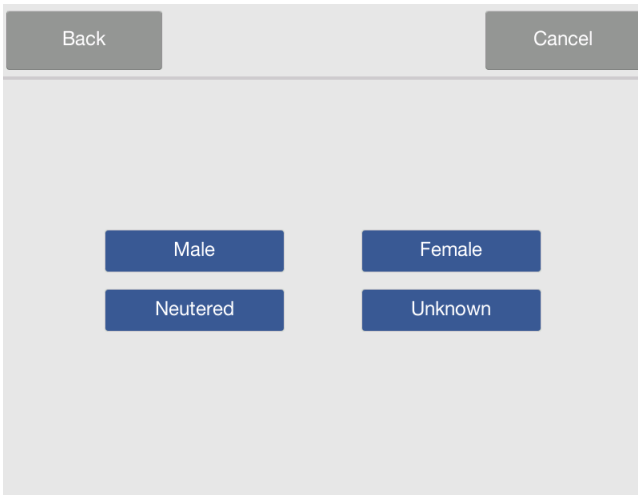


An on-screen keyboard interface. At the top right, there are two buttons: 'Next' and 'Cancel'. Below them, a text input field contains the text 'cati'. The keyboard layout includes a numeric row (1-0), a QWERTY row, an ASDFGHJKL row, a row with 'Capital', 'z', 'x', 'c', 'v', 'b', 'n', 'm', and 'Sign', and a bottom row with 'Delete', 'Space', and 'Confirm'.

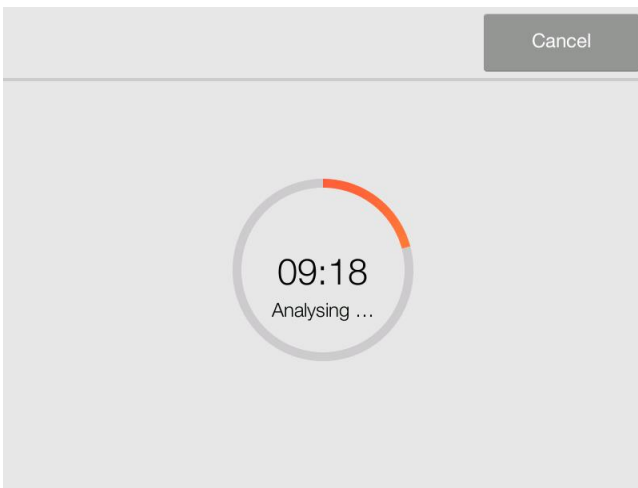
12. Input the patient owner's name, press 'Next'.

13. Input the patient's ID, press 'Next'.

14. Input the patient's age, press 'Next'.



15. Select the patient's gender.



16. After completing the patient information, the analyser will display a progress bar and analysis countdown timer.

Open

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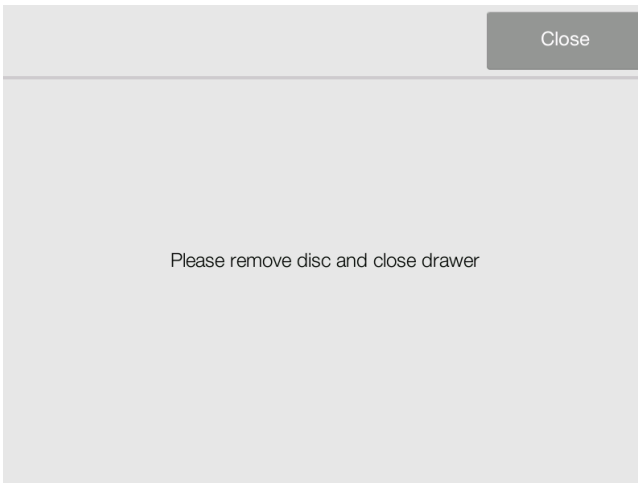
Species: Cat Patient name: catl Owner: cheri
 ID: 333 Gender: Male Age: 2year2month

Sample Type: Serum
 LOT: 00081-1-0136-0223-55-190430-88

Parameter	Result	Flag	Ref Range	Unit
ALB	48.9	↑	27-45	g/L
TP	66.7		54-82	g/L
GLO	17.8		15-57	g/L
A/G	2.7			
Ca2+	5.81	↑	2-2.95	mmol/L
GLU	0.06	↓	4.11-8.84	mmol/L

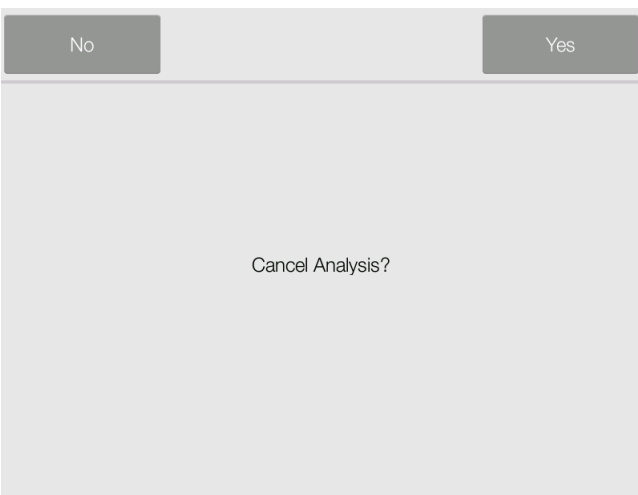
Report Data Time: 15/11/2018 16:33 Operator: Reviewer:
 The results relate only to the sample tested

17. After the analysis is complete, the analyser stores the results in the memory and displays the results on the screen as shown. By default, the analyser automatically prints the results of the analysis from the analyser’s built-in printer. If the results do not print automatically, they can be recalled from the database and printed — see **‘Previous Results’** in **Section 3.7**.

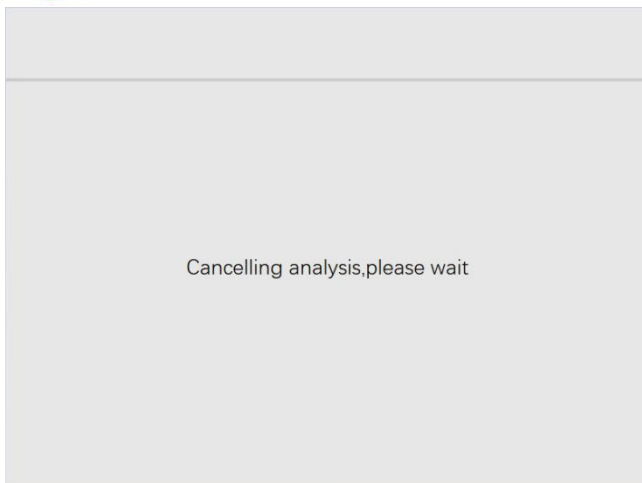


18. Press **‘Open’** to open the drawer and remove the disc from the drawer. Then, press **‘Close’** to close the drawer and return to the main screen. The analyser is now ready to perform another test.

3.5 Cancelling Analysis

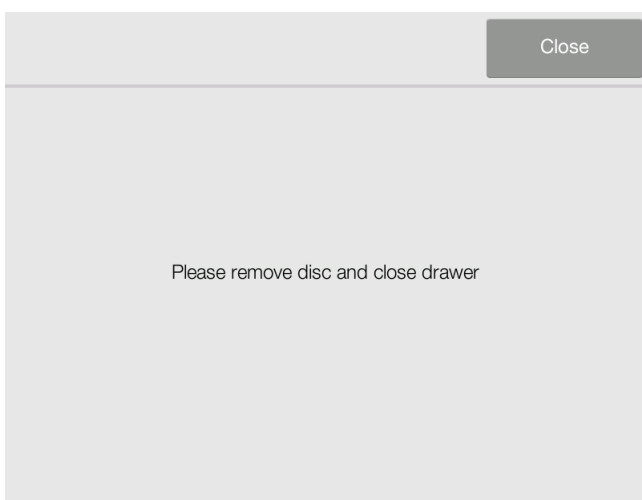


1. Occasionally the analysis has to be cancelled. Press **‘Cancel’** on the screen. The display will ask for confirmation to cancel the analysis.



2. After pressing 'Yes' to confirm, the analysis will be cancelled and the drawer will open automatically.

Note : Sometimes the analyser may need several minutes to open the drawer because internal procedures need to be completed.



3. Remove the disc from the drawer, and press 'Close' to close the drawer and return to the main screen. The analyser is now ready to perform another analysis.

3.6 Report

A typical report printout is shown on the right. The heading of a report printout includes information such as Sample Patient Name, Owner Name, ID Number, Gender, Age, Sample Type and Lot Number. The test results section is printed in five columns: Analyte Name, Analyte Result, Indicator, Reference Range and Specified Units. The end of the report printout includes information such as the sample indices, test date and time and blank areas for the operator and reviewer to sign.

Woodley Equipment Co
Ltd.

Species: Dog
Patient name: Z
Owner:
ID:
Gender:
Age:
Sample Type: Serum
LOT: 30001-1-0136-0223-62-190150-85

Item Name	Result	Indicator	Ranges	Unit
ALB	43.6		25-44	g/L
BUN	7.88		2.5-8.9	mmol/L
CRE	124	↑	27-115	umol/L
BUN/CRE	16			
Ca2+	2.50		2.15-2.95	mmol/L
P	1.55		0.94-2.13	mmol/L
K+	4.15		3.7-5.8	mmol/L
CO2	15		12-27	mmol/L

Lipemia
Report DateTime: 2019-03-09 09:43
Operator:
Reviewer:
The results relate only to the sample tested

Interpretation of Results

1. Results outside the reference range are indicated in the results by a ‘down arrow’ symbol ↓ or a ‘up arrow’ symbol ↑ printed next to the analyte concentration.
2. Results outside the dynamic range are indicated in the results by a ‘less than or equal’ symbol ≤ printed next to the lowest value of the dynamic range, or a ‘greater than or equal’ symbol ≥ printed next to the highest value of the dynamic range.
3. The symbols ‘--’ are printed in place of numbers when a result is abnormal. A result may be abnormal due to reagent deterioration, interference of endogenous substances (such as haemolysis, icterus and lipaemia) in the sample, interference of exogenous and therapeutic substances in the sample or a concentration outside the analyser’s reportable range. When a chemistry result is replaced with --, the reason will be shown on the bottom of the report. Repeat with a new disc. If the result still

doesn't report, please contact Woodley Equipment or your local authorised dealer.

4. Samples are checked for physical interference from haemolysis, lipaemia and icterus. When some of the indices exceed the pre-established limit, the corresponding index (HEM, LIP, or ICT) is printed on the bottom of each result card to inform the operator about the interference.

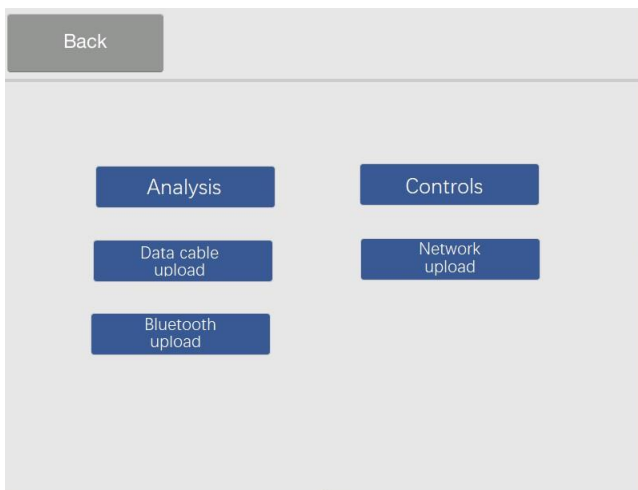
Note: If the sample is identified as haemolysed, collect a new sample and run another reagent disc. If the new sample is still haemolysed, use an alternative testing method or send the sample to a reference laboratory.

Samples with haematocrit in excess of 60% packed red cell volume may appear on the result card as HEM. These samples may be spun down to obtain plasma, then re-run in a new reagent disc.

3.7 Previous Results

The results obtained by the analyser are stored in the analyser memory and can be recalled and printed again as needed. If the analyser is connected to an external computer or a USB storage device, the results can be transmitted to *InSight V-CHEM Data Manager*.

The Recall function is available from the analyser's Main Screen. The operator can search results by **ID** or view patient results by date.



1. On the main screen, press '**Previous results**'. The display will show the image on left. Then select '**Analysis**'.

Back Search

Species: All Patient name:

Owner: Gender: All

ID:

From Date: 19/04/2019 To Date: 19/04/2019

2. Input the Patient name, Owner, ID, etc. and select the date range. Press **‘Search’** to search reports.

Back Page Up Page Down Upload

	Species	Patient name	Owner	Date	Gender	ID	Test
1	fox			30/04/2019	Female		General Health Panel
2	Mouse			30/04/2019	Female		General Health Panel
3	Mouse			30/04/2019	Female		General Health Panel
4	Mouse	aa	e	30/04/2019	Male	123456	General Health Panel
5	猪	emmy	emma	30/04/2019	Neutered	1	General Health Panel
6	Dog	ceshi		23/04/2019	Neutered		General Health Panel
7	Dog	as	dy	23/04/2019	Female	258	General Health Panel
8	Sheep	1	2	23/04/2019	Male	9	General Health Panel
9	Cat	lay	17	23/04/2019	Male	5	General Health Panel
10	Cat	11	17	23/04/2019	Male	4	General Health Panel

3. The analyser then displays a list of reports sorted by search conditions. Press **‘Page Down’/‘Page Up’** to scroll through the list. Select **‘Upload’** to upload the reports to InSight V- CHEM Data Manager and select the method for the results to be updated, as shown in the picture on the left.

Back

RS232 port USB port

Network Bluetooth

Back	Page Up	Page Down	Print	
Woodley Equipment Co Ltd.				
Species: Mouse ID: 123456 Sample Type: Serum LOT: 00081-1-55-190430-141	Patient name: aa Gender: Male	Owner: e Age: 1 year		
Parameter	Result	Flag	Ref Range	Unit
<input checked="" type="checkbox"/> ALB	42.2	↑	25-30	g/L
<input checked="" type="checkbox"/> TP	58.6		35-72	g/L
<input checked="" type="checkbox"/> GLO	16.4		4-26	g/L
<input checked="" type="checkbox"/> A/G	2.6			
<input checked="" type="checkbox"/> Ca2+	2.16		1.7-2.6	mmol/L
<input checked="" type="checkbox"/> GLU	6.54		3.4-9.8	mmol/L

4. Select a report in the list to show detailed results.

The Recall function is available from the *InSight V-CHEM Data Manager*. The operator can search results by Species, Gender, Age, ID or view patient results by date. Please refer to **Section 8**.

Section 4 Calibration and Quality Control

4.1 Calibration

InSight V-CHEM Veterinary Chemistry Analyser is calibrated by the manufacturer before shipment. The analyser performs hardware self-calibration whenever the power is turned on. Each reagent bead used in the reagent disc is calibrated to a reference method and/or reference material by the manufacturer before shipment. The QR code printed on the foil pouch of the reagent disc contains the disc-specific calibration data and provides the analyser information to measure analyte concentrations.

4.2 Quality Control

Performance of the analyser or the reagent disc can be verified by running controls. A control is a biological sample or solution that is analysed for purposes of quality control. The composition of the control must be such that the solution closely matches that of a biological specimen for characteristics of importance to the analyser. Assayed controls are provided with expected values of the analytes for guidance.

For V-CHEM quality control material with acceptance ranges, please contact Woodley Equipment Company. Other serum or plasma-based controls may not be compatible. Quality control materials should be stored as described in the control package insert.

We recommend that you run a quality control test:

- At least every 30 days
- Whenever laboratory conditions have changed significantly
- When training or retraining of personnel is indicated
- When test results do not match patient symptoms or clinical findings
- With each new lot of reagent

Samples and controls are analysed identically by the analyser. However, using the **Control** option stores control results separately from patient results in the analyser database. Control results can be printed on a report immediately after control analysis or whenever the control results are recalled.

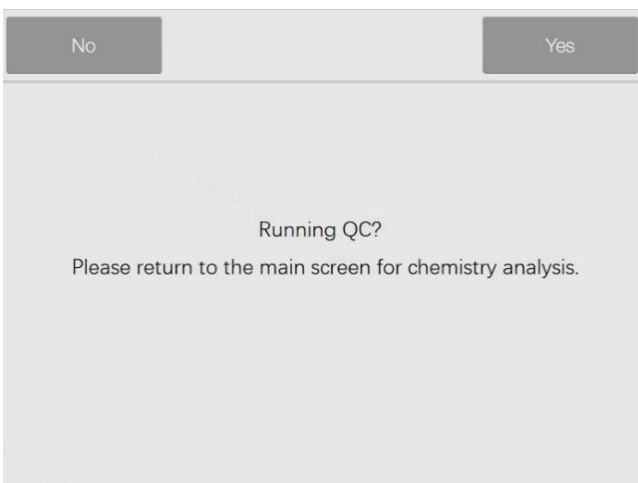
Handle the control as described in the control package insert. Please contact Woodley Equipment for assistance in interpreting control results. The analyser automatically stores control results in a memory separate from the patient results memory. The Recall function can be used to search for specific control results without searching through all patient results stored in memory.

Caution: Discs are fragile — always handle with care. Do not use a disk that has been dropped. Inspect every reagent disc for damage before use. Never use a damaged disc.

4.3 Control Analysis



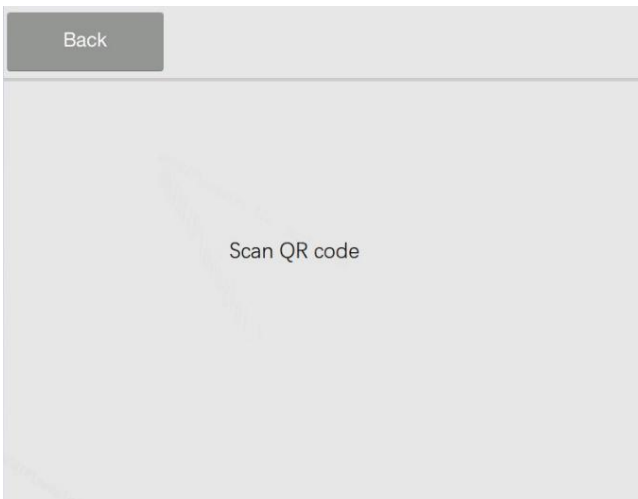
1. On the main screen, press '**Control**'. Controls can be run whenever the analyser displays the **Main Screen**.



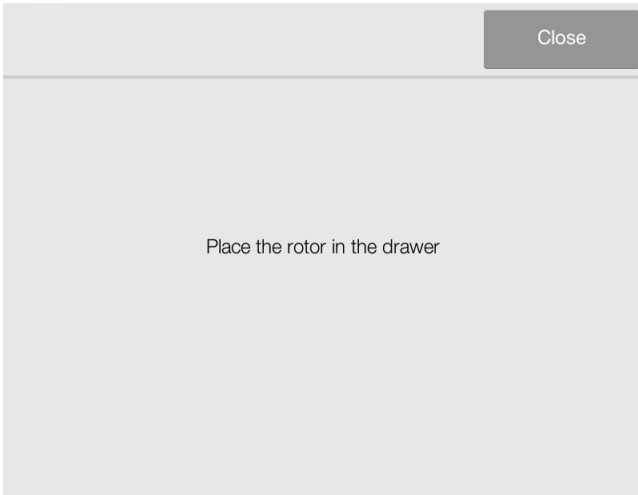
2. The Main Screen will then display '**Running QC**' options. Select '**Yes**'.



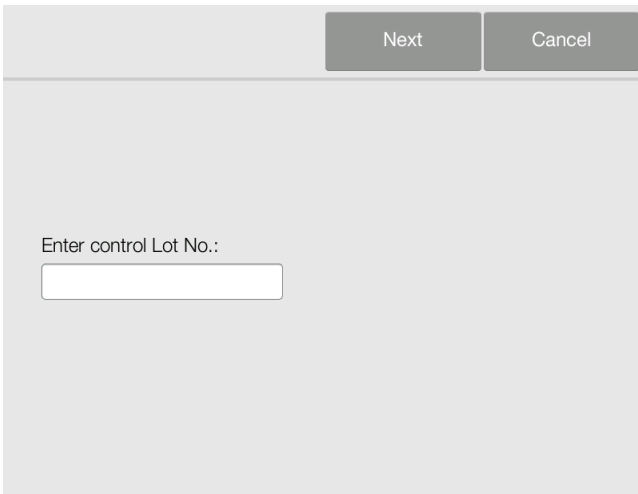
3. The Main screen will show ‘**Matrix selection interface**’. Select the correct type. The analyser will prompt you to scan the QR code



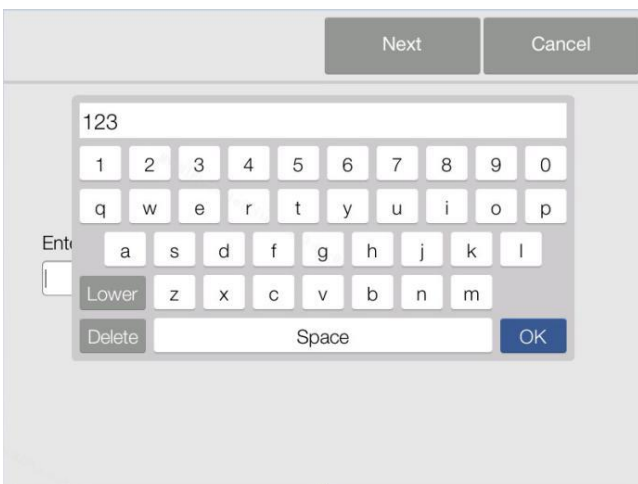
4. Scan the QR code on the foil pouch of the reagent disc as described in **Section 3.4 Sample Analysis**.

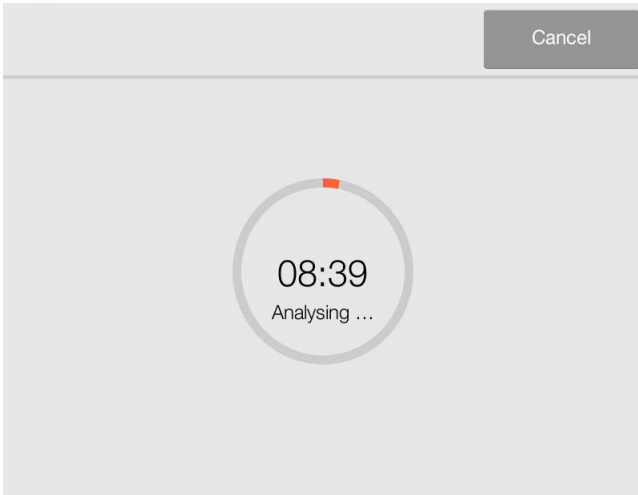


5. Dispense the control material in the disc as described in **Section 3.3. Preparing the Reagent Disc**. Place it in the drawer of the analyser to start analysis.

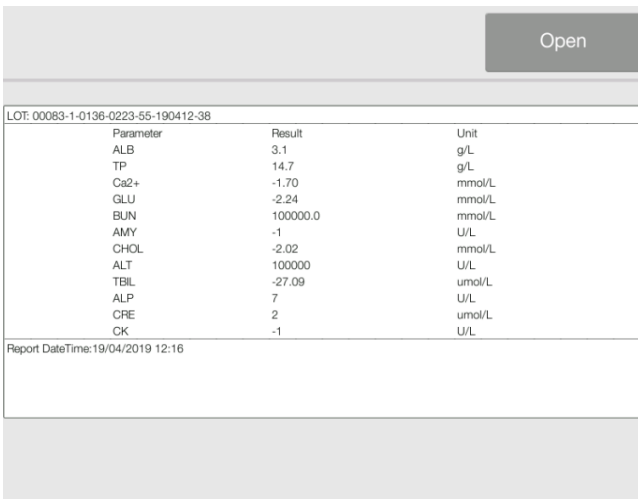


6. Input the control Lot number. Press 'Next' to show the progress bar with a countdown timer.

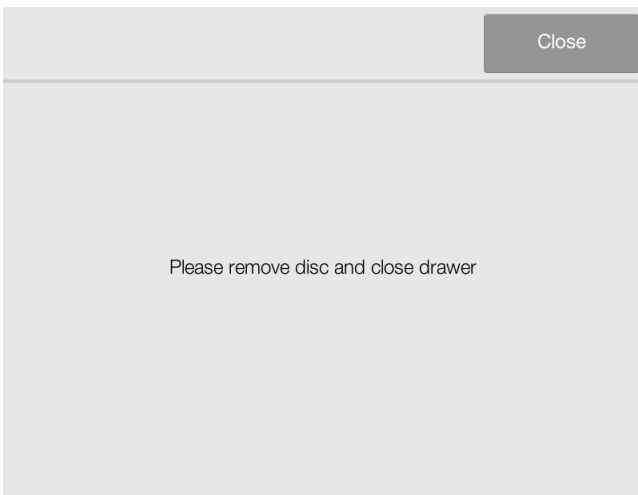




7. Countdown timer.



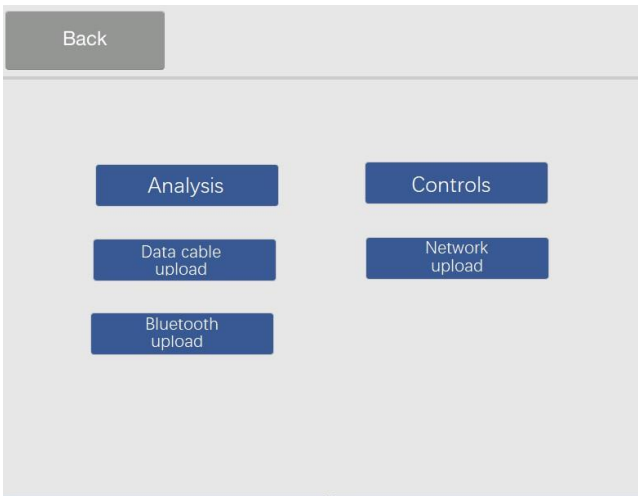
8. After the analysis is complete, the analyser stores the results in the database. Compare control result to range printed on the control data sheet.



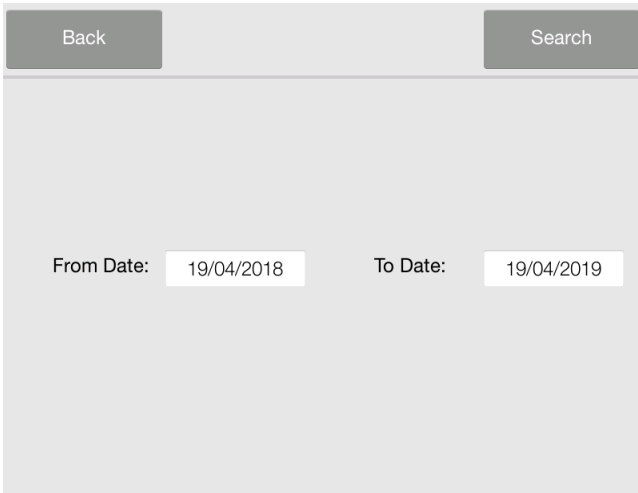
9. Press ‘**Open**’ to open the drawer and remove the disc from the drawer Then press ‘**Close**’ to close the drawer and return the analyser to standby mode.

Note: If control results are out of range, repeat. If still out of range, please contact Woodley Equipment.

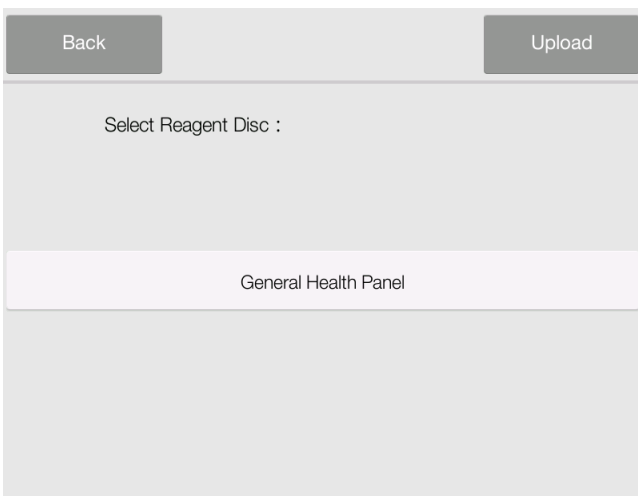
Recalling Control Results



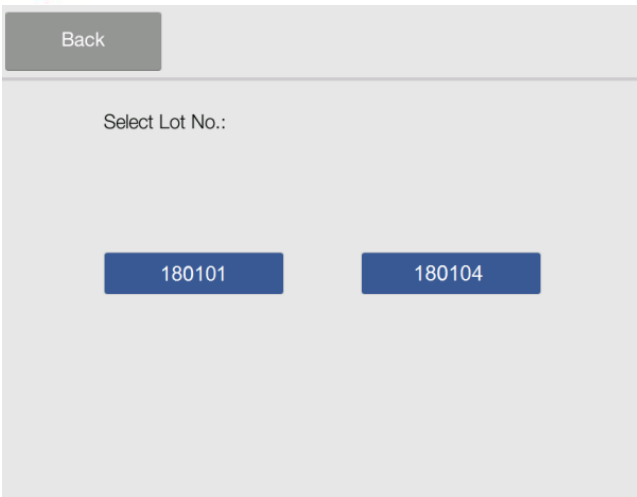
1. On the main screen, press ‘**previous results**’. Then, select ‘**Controls**’.



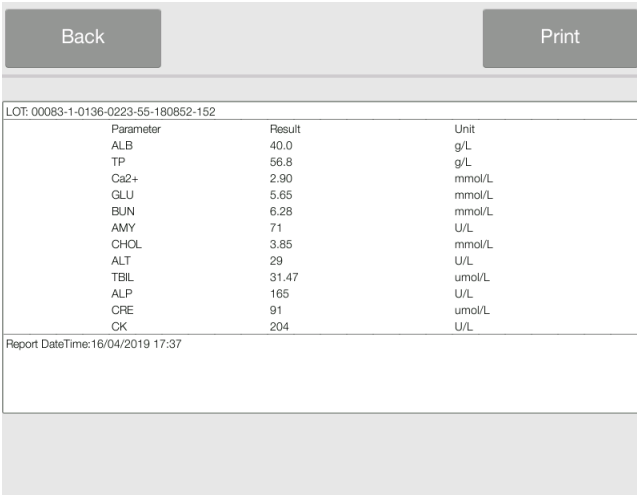
2. Enter the date range to search control reports.



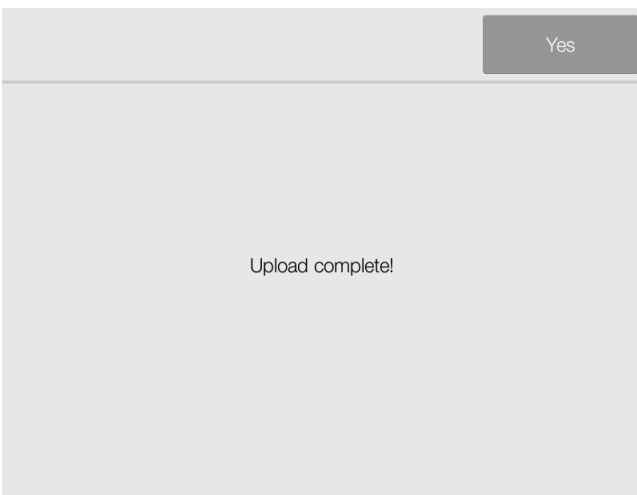
3. Select reagent disc type.



4. Select control Lot number.



5. The detailed results of the specific control report will show. Press **'Print'**.

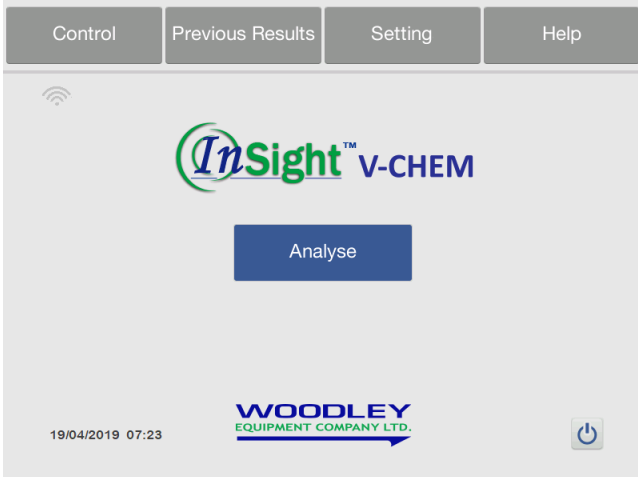


6. The control results can be uploaded to the Data Manager software by pressing **'Upload'** as in **Step 3**.

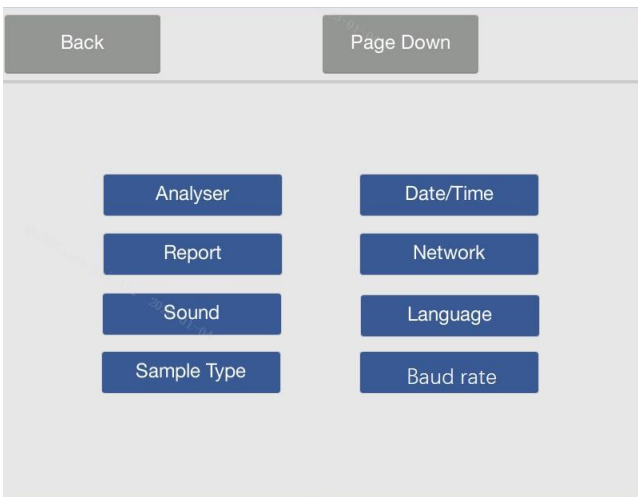
Section 5 Configuring the Analyser

This section describes how to configure the analyser.

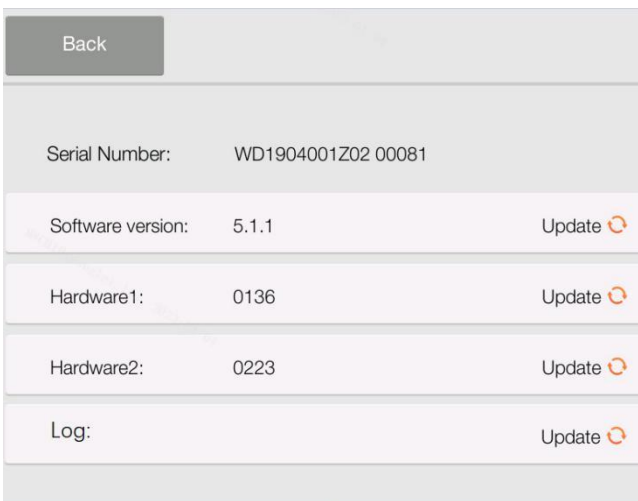
5.1 Analyser Information



1. On the Main Screen, press **'Setting'**.

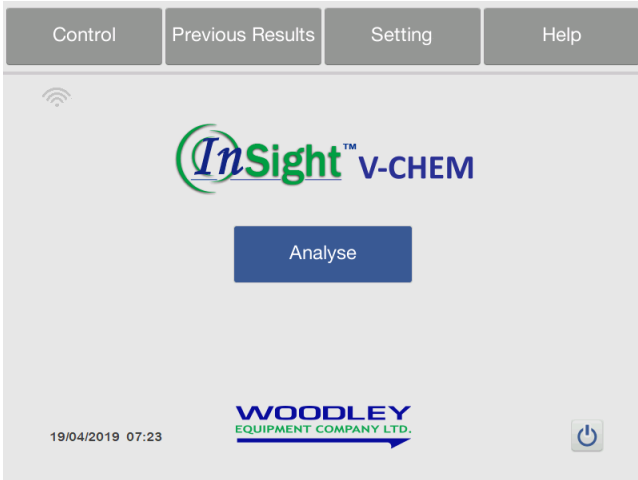


2. Then press **'Analyser'**.

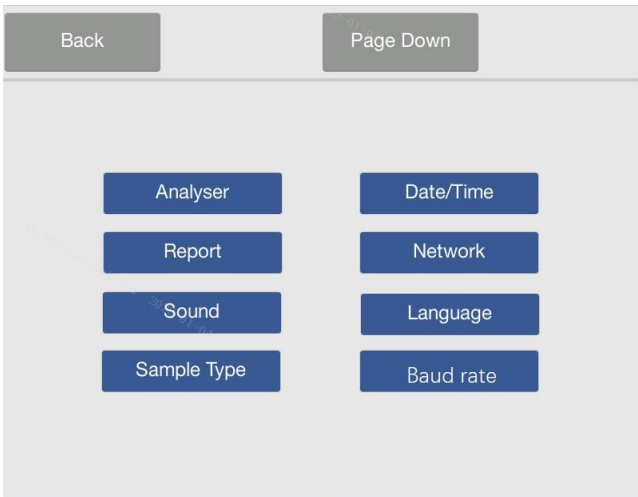


3. The display will show the analyser information. Press **'Update'** to install the latest version.

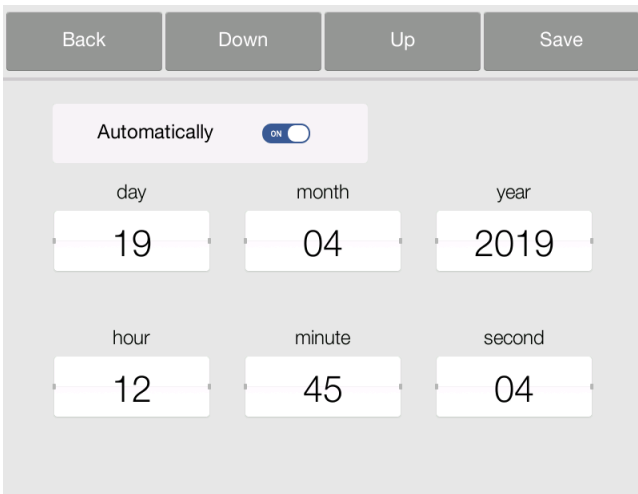
5.2 Changing Date and Time



1. On the Main Screen, press '**Settings**'.



2. Then press '**Date/Time**'.

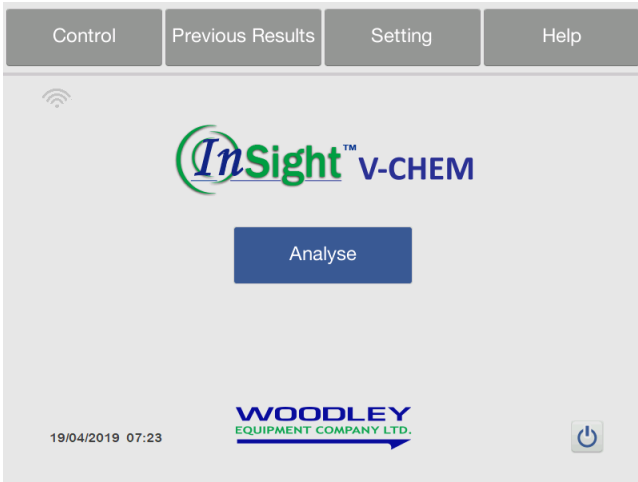


3. The display will show the Set '**Date/Time**' screen. Automatically synchronise network time when the network is connected. Use '**up**' / '**down**' to adjust the year, month, day, hour, minute and second. Press '**Save**' when Date / Time is set.

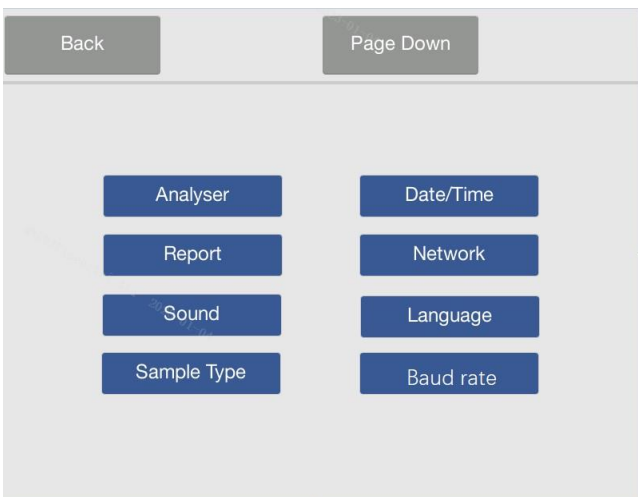
5.3 Report Layout

Using the Report Layout feature, the operator can set the reported content as needed.

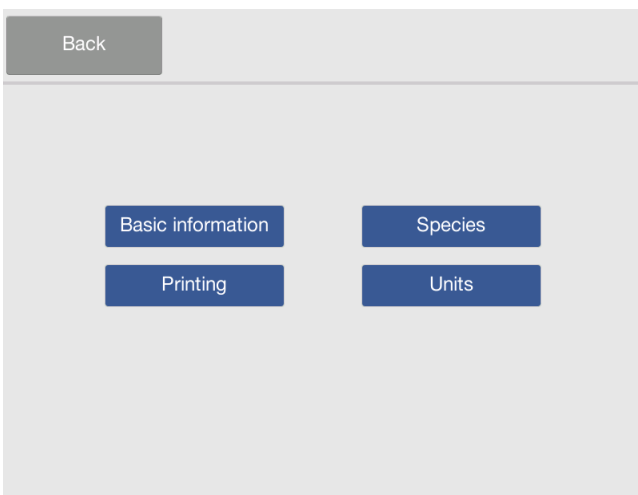
Header: Hospital Name and Patient info.



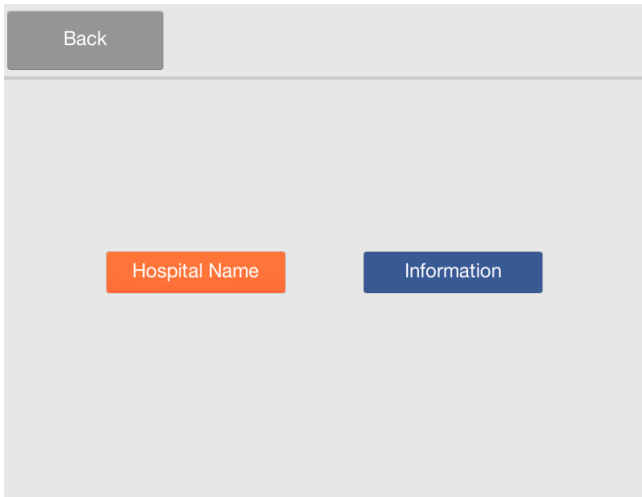
1. On the **Main Screen**, press **'Settings'**



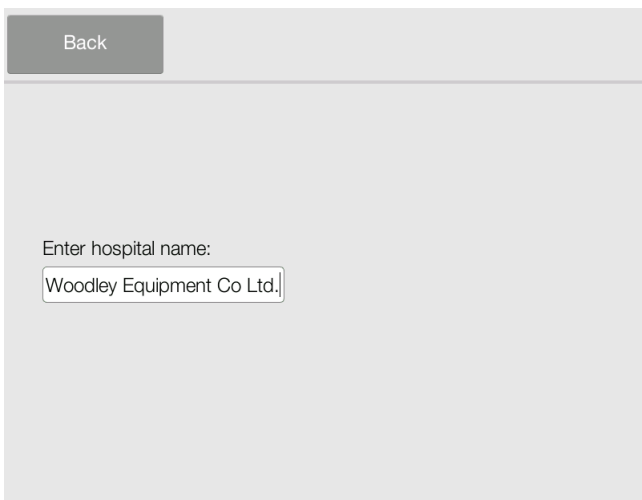
2. Then press **'Report'**.



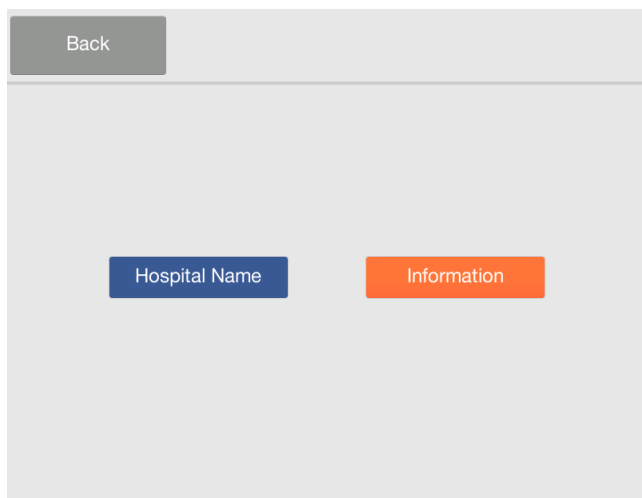
3. Then press **'Basic information'**.



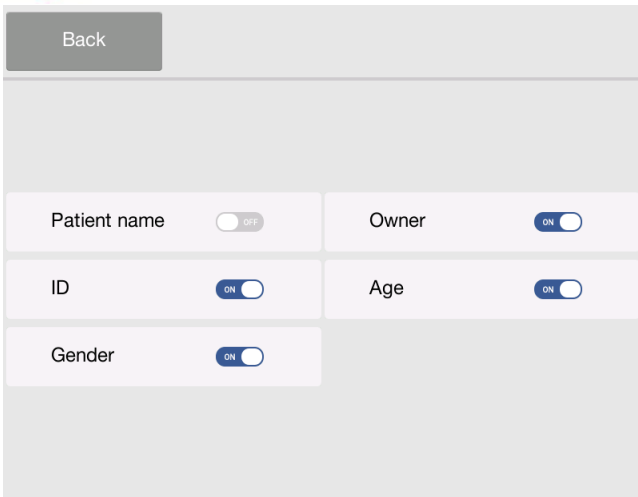
4. Select '**Hospital Name**'



5. Enter the hospital name to be displayed on the report.

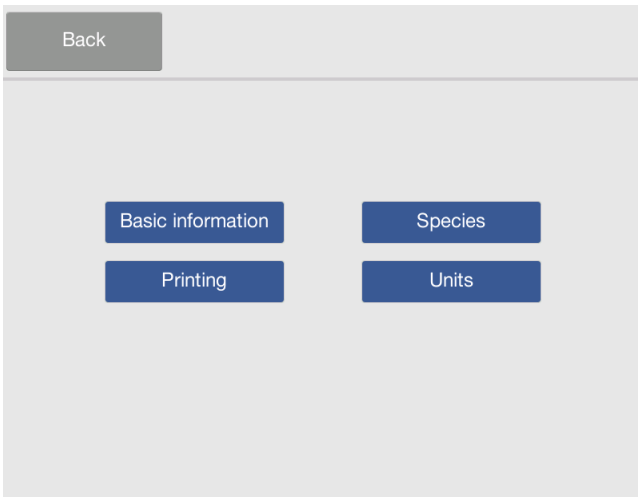


6. Press '**Information**'

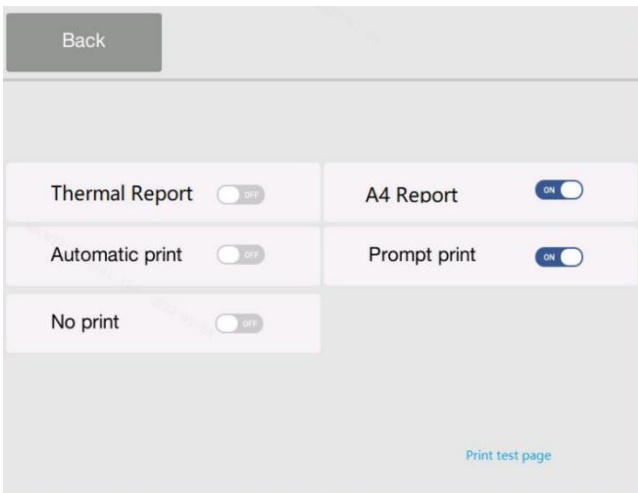


7. Select the content to be displayed on the report.

Printing



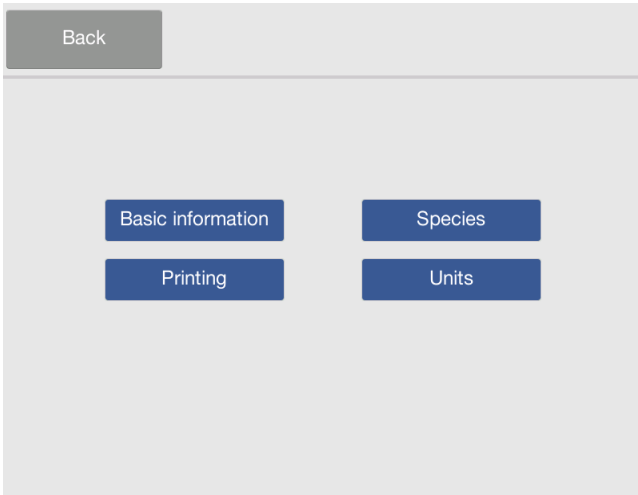
1. On the Main Screen, press **'Settings'** → **'Report'** → **'Printing'**



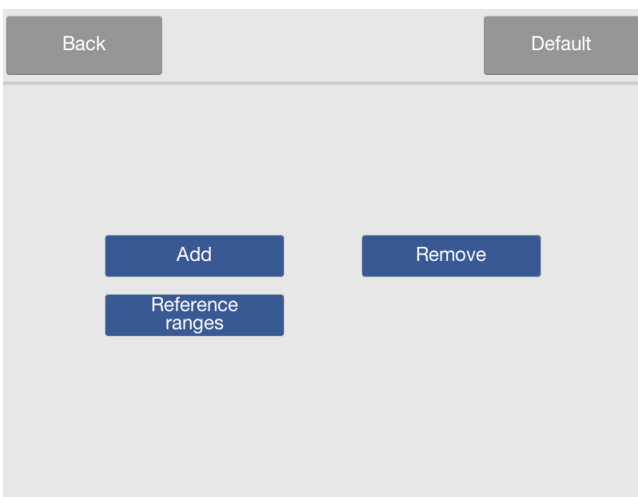
2. Select the content to choose the reports print form.

Species: Add/Remove Reference Ranges

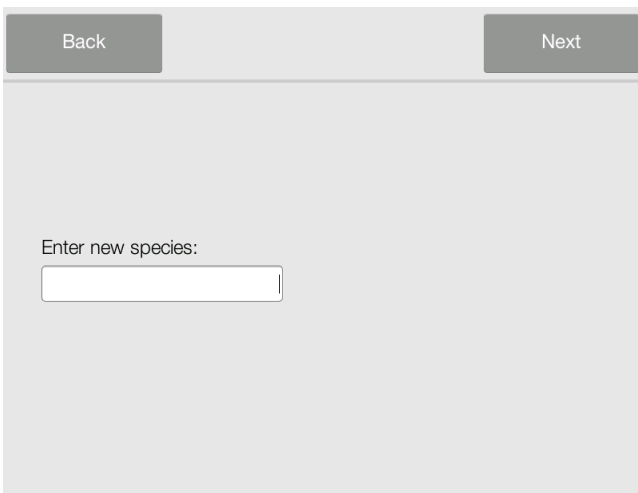
The analyser includes a number of factory-set reference ranges for use in analysis. The operator can modify these ranges as needed, as well as create or remove custom ranges or return all factory ranges to their default settings.



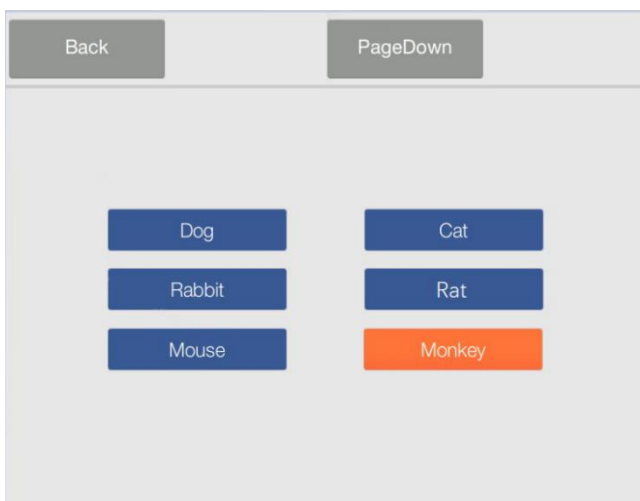
1. On the Main Screen, press '**Settings**'
→ '**Report**' → '**Species**'.



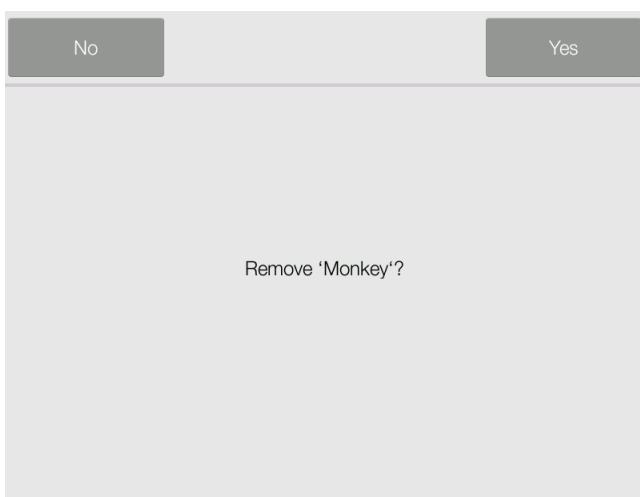
2. Then, the screen displays options for users to add or remove a species, or view the reference ranges list.



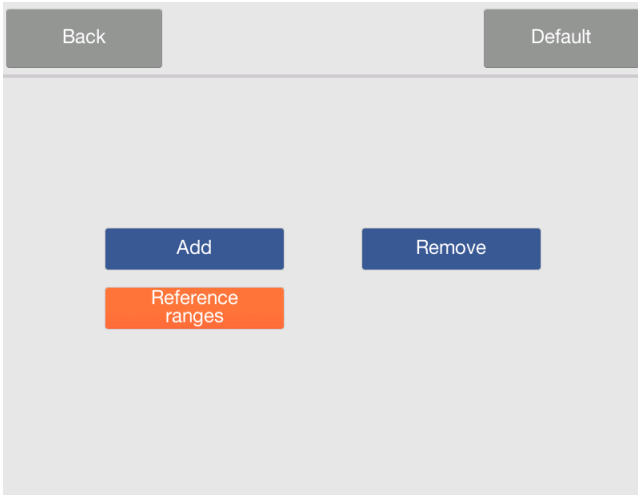
3. Press '**Add**' and input the species name to add a new species. Then press '**Next**' to select '**Juvenile**' or '**Adult**', input reference ranges, press '**Save**'.



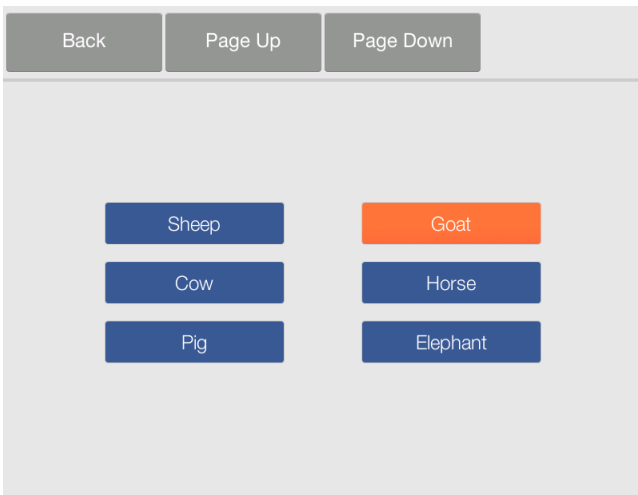
4. As in step 2 press '**Remove**'. Use '**Page Up**'/'**Page Down**' to select a species.



5. After pressing '**Yes**' to confirm, the selected species will be removed.



6. Press **'Reference ranges'**



7. Then select a species.



8. Then select **'Juvenile'** or **'Adult'** to show parameters list.

Back		Page Down		Save			
ALB	19	43	g/L	ALP	0	980	U/L
ALT	0	43	U/L	AMY	0	185	U/L
AST	0	225	U/L	BUN	2.1	12.2	mmol/L
CHOL	0.72	6.48	mmol/L	CK	0	1500	U/L
CO2	10	34	mmol/L	CRE	25	132	umol/L

9. Use **'Page Up'/'Page Down'** to go through the list. Input values and press **'Save'** to store the changes.

Units

Back	
Basic information	Species
Printing	Units

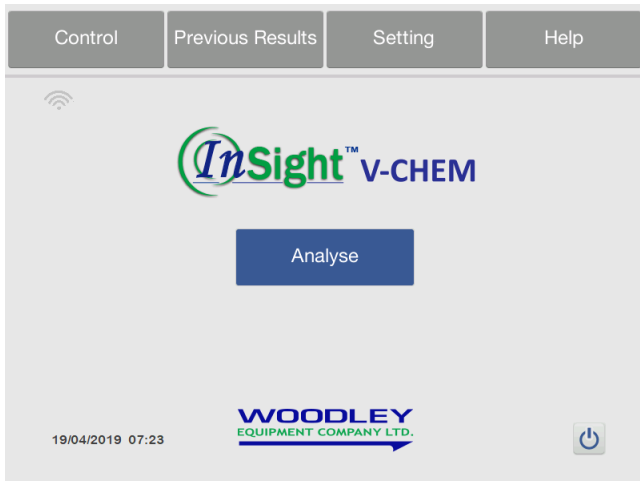
1. On the Main Screen, press **'Settings'** → **'Report'** → **'Units'**

Back	
Common <input checked="" type="checkbox"/>	SI <input type="checkbox"/>

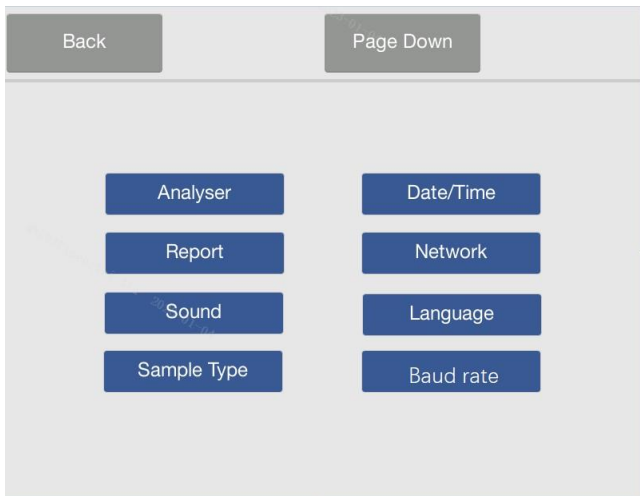
2. Select the unit to be displayed on the report.

5.4 Network Connection

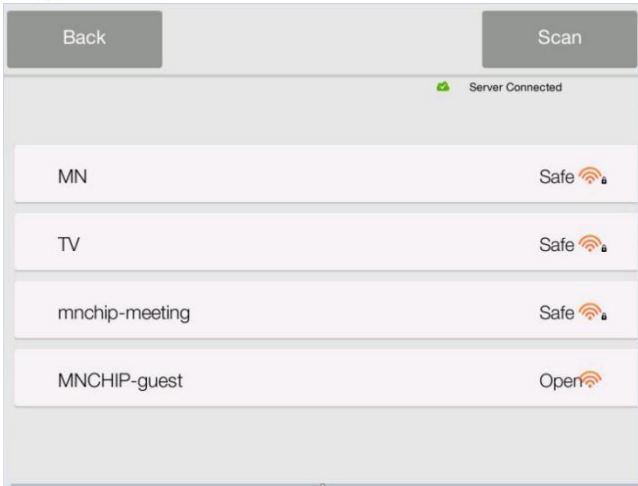
The analyser has a built-in Wi-Fi and 3G module. Connecting to the internet can help you automatically download the new version of the software upgrade or uploading error logs to the Cloud server. Technical support engineers will review the error log to diagnose the analyser's problem.



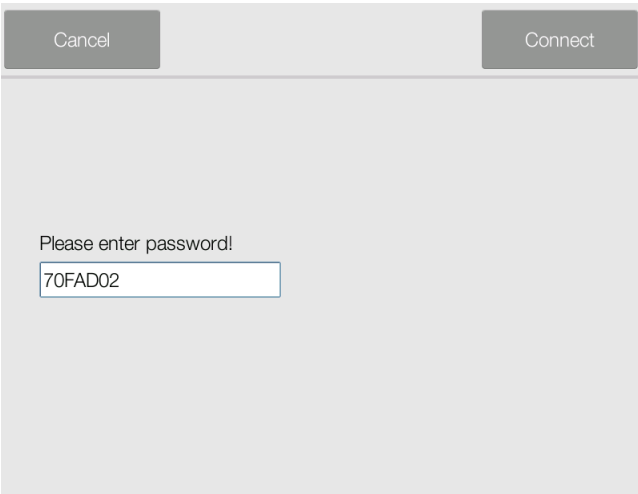
1. On the Main Screen, press '**Settings**'



2. Then press '**Network**'.

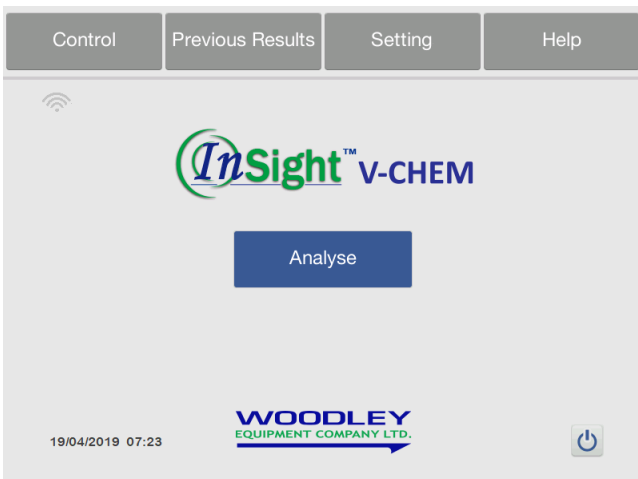


3. Choose a wireless network.

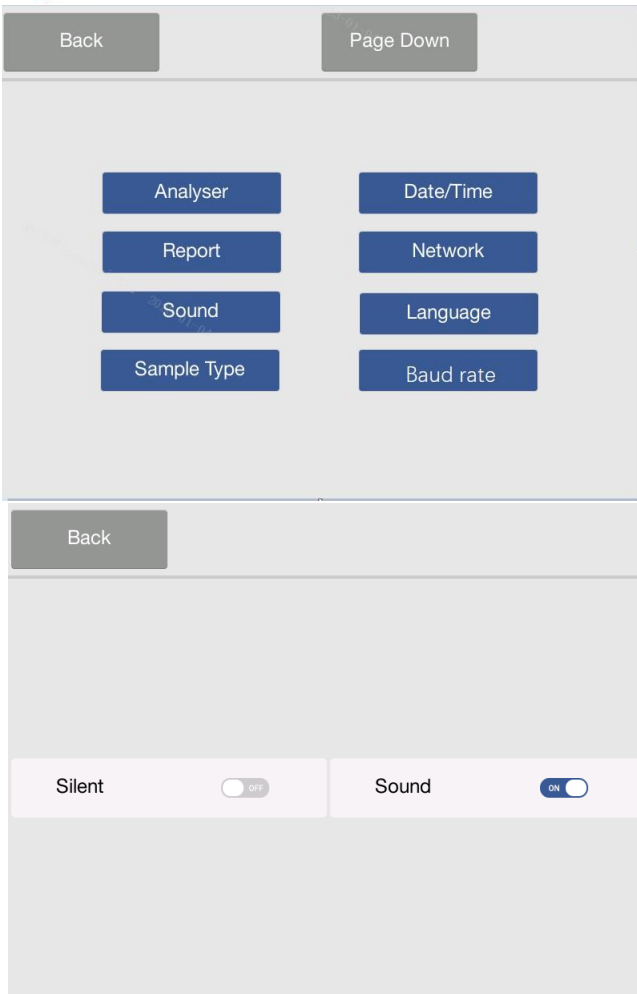


4. If you are connecting to a secured network, input the password (the password is only available with letters and figures). Then press **‘Connect’**.

5.5 Setting Sound



1. On the Main Screen, press **‘Settings’**



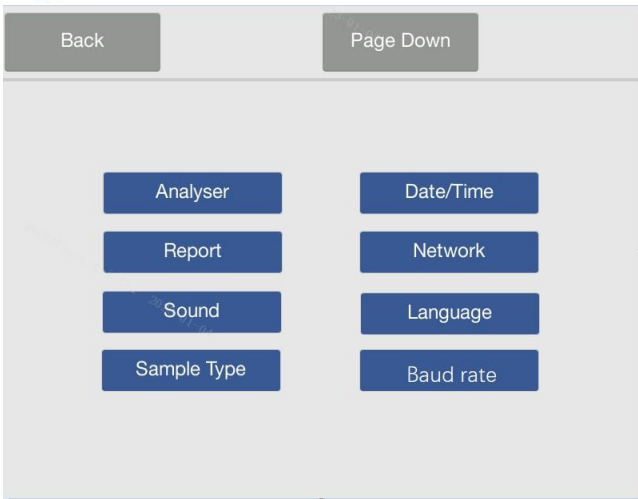
2. Then press **‘Sound’**.

3. User can select **‘Sound’** or **‘Silent’** mode. The sound is the prompt tone of opening the analyser and finishing the analysis.

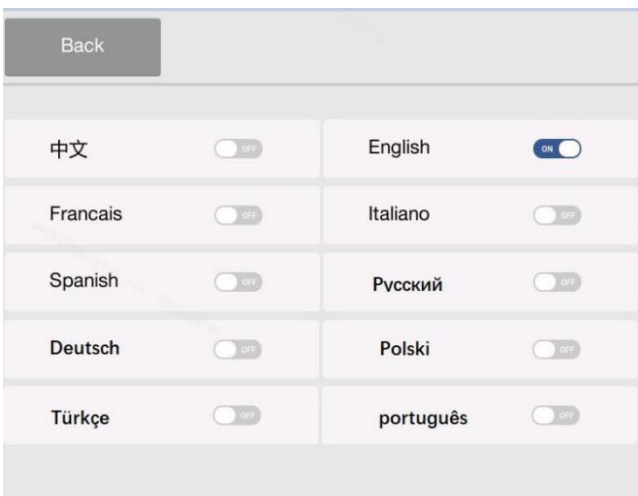
5.6 Setting Language



1. On the Main Screen, press **‘Settings’**.

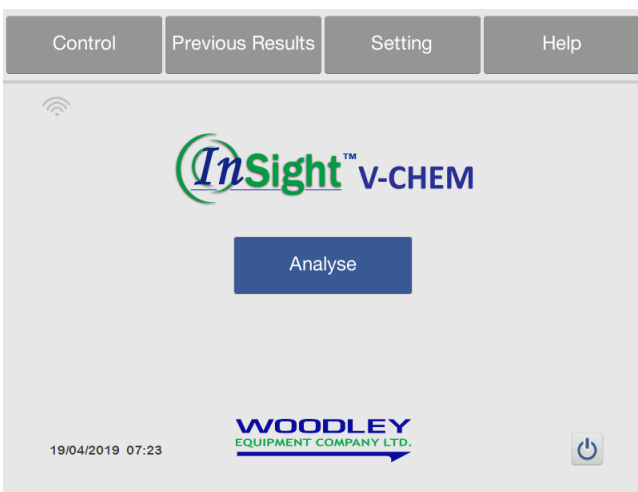


2. Then press **‘Language’**.

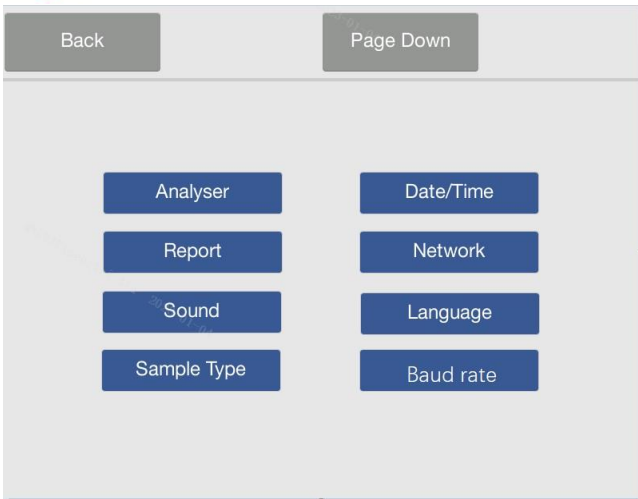


3. The user can select the language required.

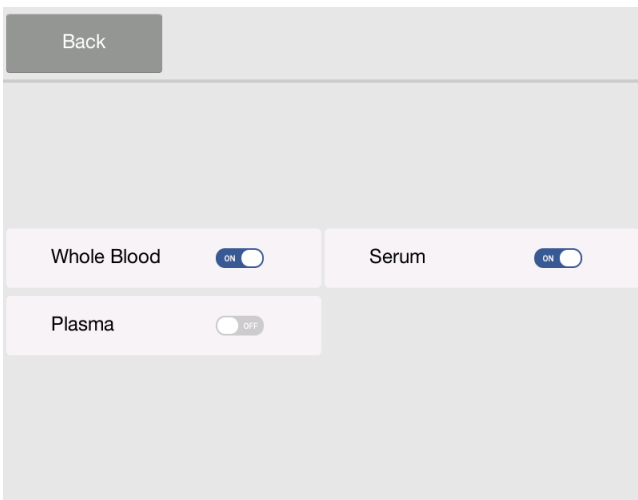
5.7 Sample Type



1. On the Main Screen, press **‘Settings’**.



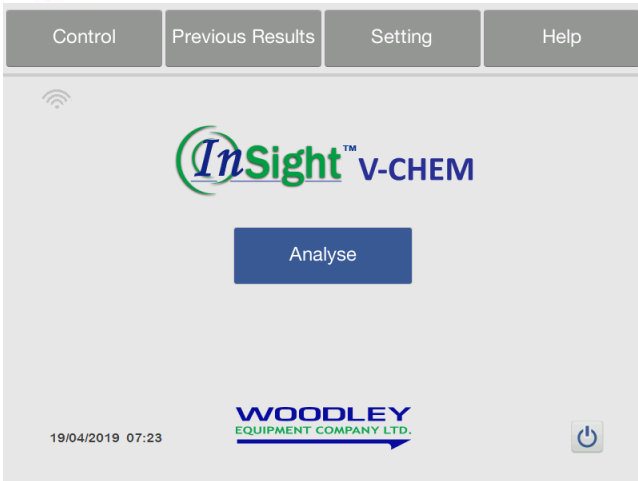
2. Then press 'Sample Type'.



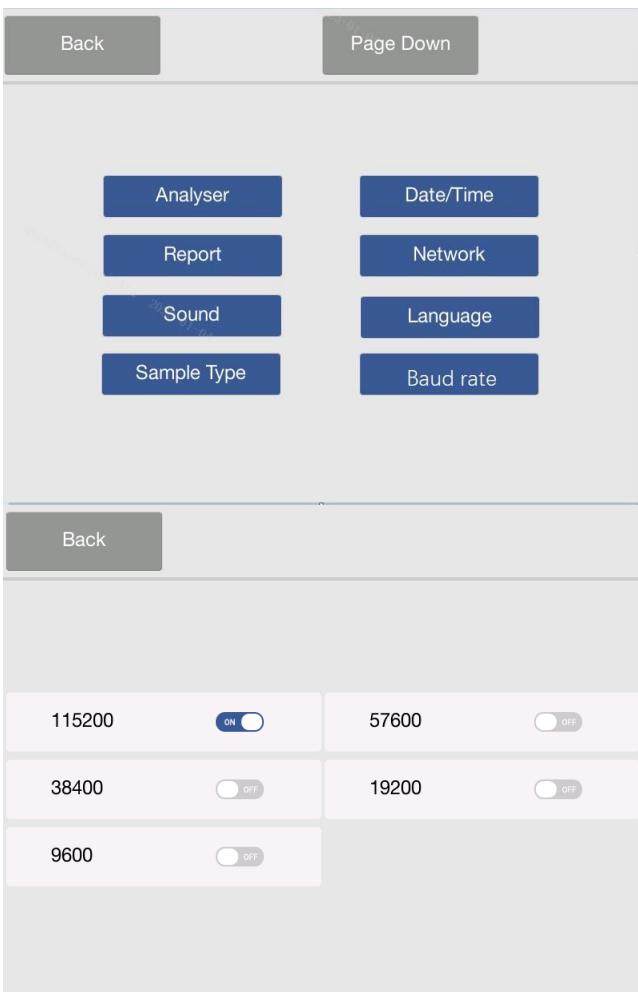
3. The user can select 'Whole Blood', 'Serum' and 'Plasma' testing mode.

5.8 Baud Rate

A data transmission rate (bits/second) for modems, used to communicate with hospital LIS system and IVDM (See **Section 8**).



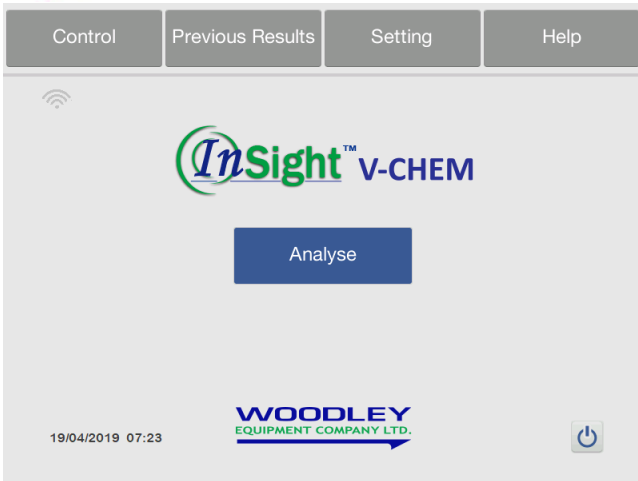
1. On the Main Screen, press **'Settings'**.
Then press **'Baud rate'**.



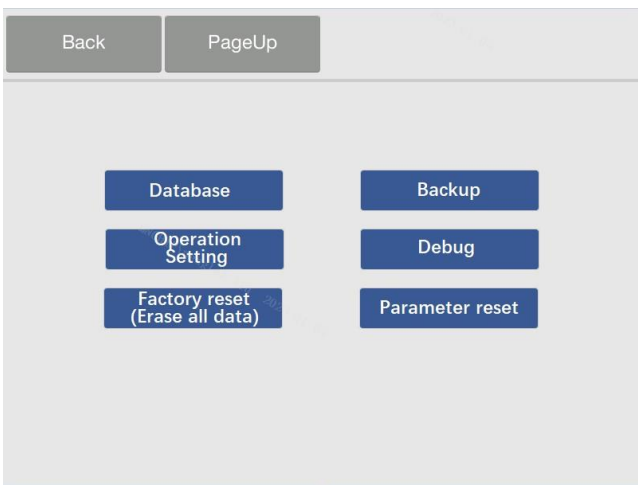
2. The user can select one mode. The default value is 115200.

5.9 Backup

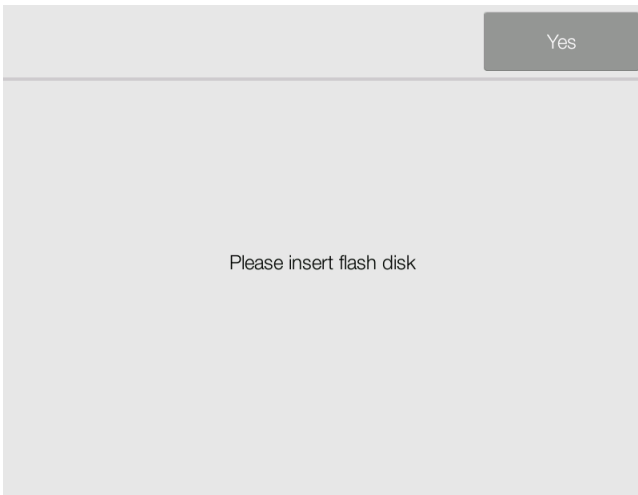
Press the **'Backup'** button and insert USB drive, data and log can be saved.



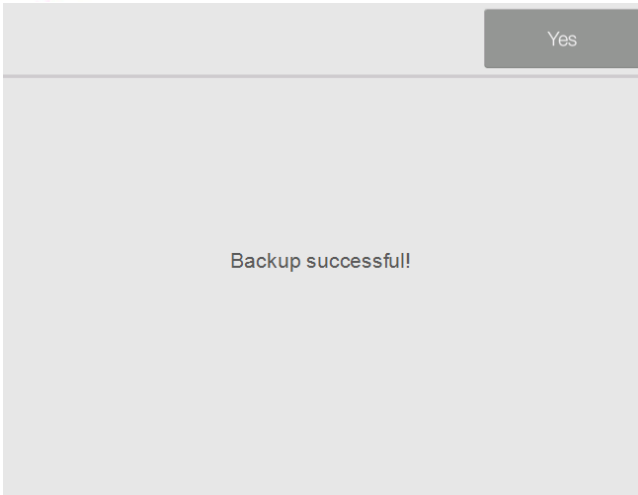
1. On the Main Screen, press **'Settings'**.



2. Press **'Page Down'** → **'Backup'**.

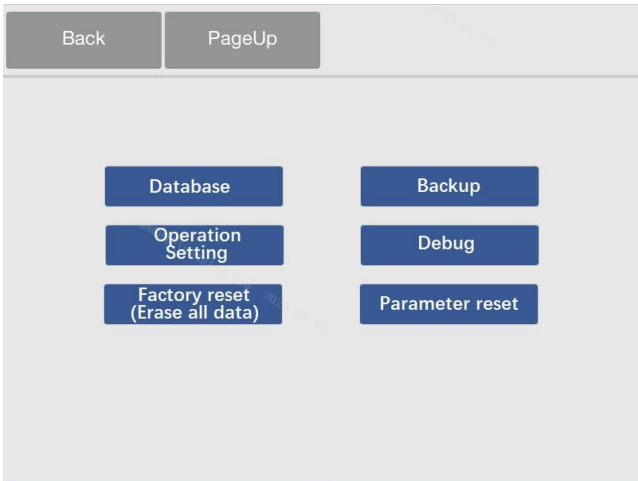


3. Insert the USB drive and press **'Yes'** to backup.

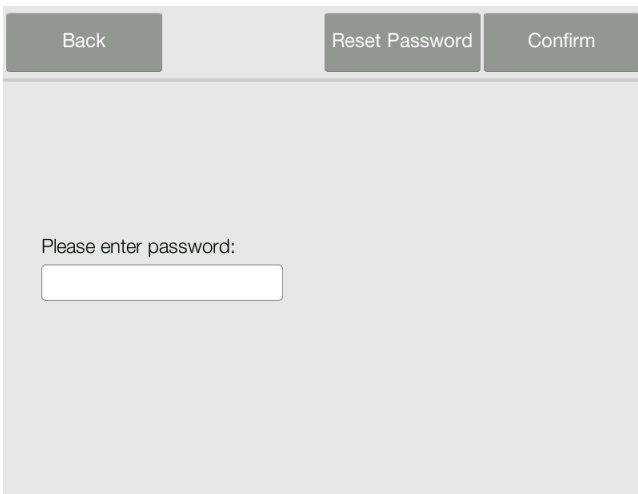


4. Then it shows 'Backup successful'.

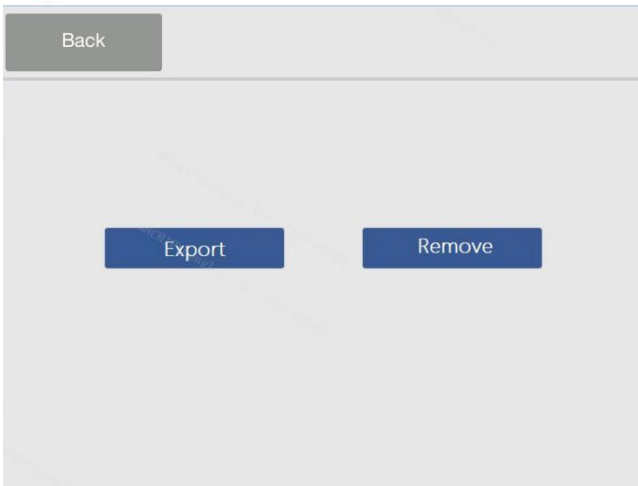
5.10 Database



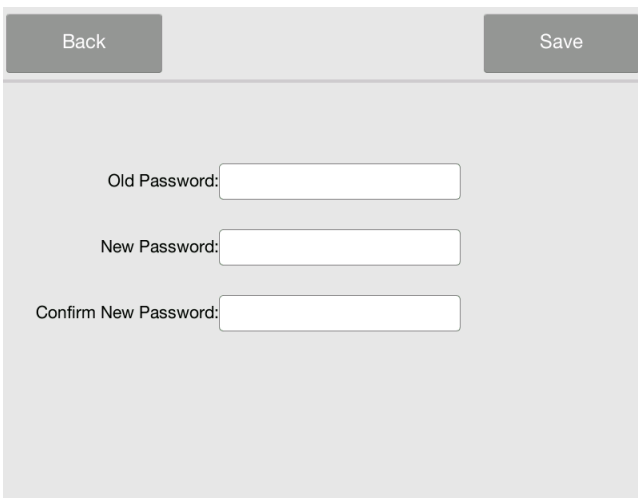
1. Press 'Page Down' → 'Database'.



2. Then enter the password (*initial password:123456*), press 'Confirm'

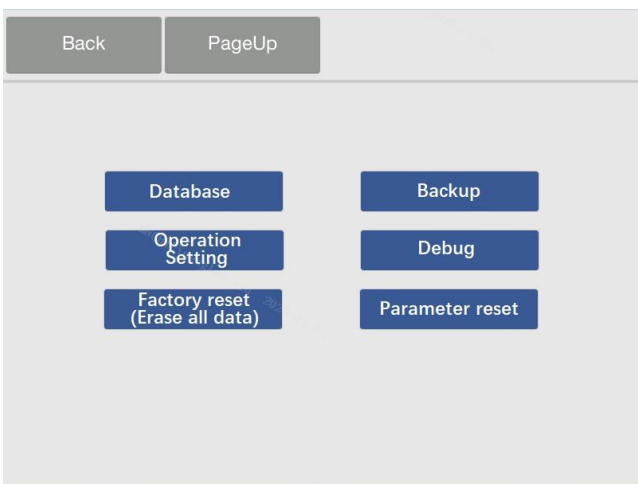


3. Chose **'Export'** or **'Remove'**.



4. If the password needs to be reset, press **'Reset Password'**. Enter the old and new passwords. Press **'Save'** to reset the password.

5.11 Operation Setting

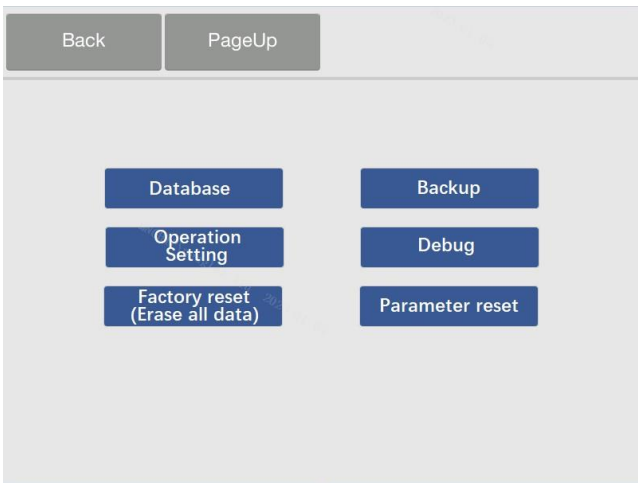


1. Press **'Operation Setting'**.



2. Select the options, then prompt information will be shown during operation.

5.12 Debug/Factory reset/parameter reset



1. These reset functions are used for device debugging. Consult Woodley Equipment Company before use.

Section 6 Troubleshooting

6.1 Electrostatic Discharge

If the analyser experiences an electrostatic discharge while running a sample, it may cause the system to ‘Crash’. The test should be cancelled immediately once the test times out (or countdown timer stops). Then turn the analyser off and back on after a few minutes. The analyser will return back to normal after this operation.

6.2 Error Codes for Analyser and Troubleshooting

The analyser will display warning and error codes when problems occur. These error codes will assist Woodley Equipment in diagnosing the problem. Before contacting Woodley Equipment, update the log and provide the serial number.

Error Code	Problem Description	Solution
0101	Multi-switch fault	<p><i>Please contact Woodley Equipment Company or your authorised dealer.</i></p> <p><i>Refer to the Maintenance Manual (Authorised dealers only)</i></p>
0102	+12V power fault	
0103	-12V power fault	
0105	AD (AD fault)	
0107	Optical module fault	
0108	LED fault	
0109	Optical output is unstable	
0202	Drawer open fault	
0203	Drawer close fault	
0206	Motor speed fault	
0214	Optical components contamination	
0215	Software error	
0216	Software error	
0220	Temperature data transmission fault	

0221	PT100 fault		
0222	Upper NTC fault		
0223	Lower NTC fault		
0224	Upper heating film fault		
0225	Lower heating film fault		
0236	Optical fault		
0301	FPGA fault		
0302	Scan module fault		
0303	606 board fault		
0304	Hardware fault		
02133	The temperature control system fault		<ul style="list-style-type: none"> • Please check whether the ambient temperature range is 10-30°C. • Please clean or replace the dust-proof sponge. • Please turn off the power and restart.
02134	The temperature control system fault		
02135	Temperature collection software failure		

6.3 Error Codes for Reagent Disc and Troubleshooting

Error Code	Problem Description	Solution
02081	Insufficient sample	According to Section 3.3 , add correct sample volume. Repeat the analysis with a new reagent disc.
0233	The diluent container is not opened properly	
0210	Reagent disc fault	
0211	Reagent disc fault	
0234	Reagent disc fault	
0250	Reagent disc fault	
0212	Reagent disc has expired	Load an in date rotor.

0231	Haemolysis	Please collect a new sample for testing.
0232	Lipaemia	Recommend repeating the analysis with a new disc after high speed centrifugation of the sample.
0235	The whole blood sample may have clotted or the haematocrit volume is too high and blocks the flow channel	It is recommended to centrifuge into serum or plasma for testing.
0238	Abnormal results	Please check whether the correct sample volume was applied and the foil tab was removed from the rotor correctly. Repeat test with a new rotor.

Section 7 Maintenance

The analyser requires minimal maintenance. Clean the outside of the analyser weekly with a mild detergent and a soft, damp cloth. The air filter needs to be cleaned once every month. Regular maintenance of the analyser ensures reliable operation.

7.1 Cleaning the Analyser

Cleaning the Case

Clean the analyser with a soft cloth, dampened with a mild, non-abrasive detergent or cleaning solution (10% bleach solution or 30% alcohol solution). Do not spray or pour any detergents, solutions or other liquids directly onto the analyser.

Cleaning the Display

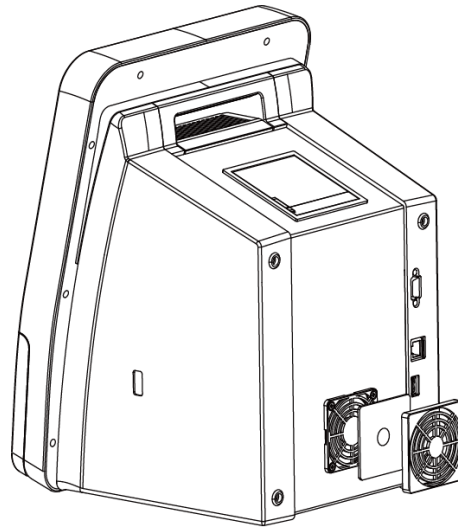
Clean the analyser's screen using a soft, lint-free cloth dampened with a glass-cleaning fluid or window cleaner. The screen can be disinfected using a 10% bleach solution. Apply the solution to a lint-free cloth and then wipe the screen.

Note: Do not use any cleaner containing alcohol. Do not spray cleaner directly onto the display — dampen the cloth instead.

7.2 Cleaning the Air Filter

The air filter at the rear of the analyser should be cleaned once per month. Check the air filter more often than once per month if the analyser is located in an environment with excessive dust or dirt. To clean the air filter:

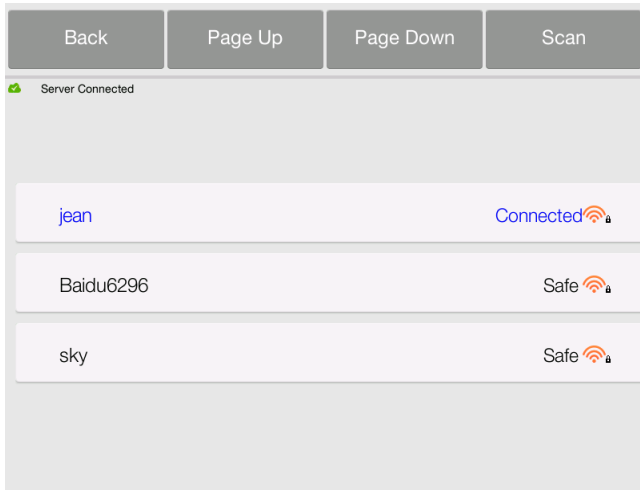
- a. Unplug the analyser and remove the power cord from the rear of the analyser.
- b. Open the fan cover and remove the black mesh filter.
- c. Wash the filter in warm soapy water and dry completely.
- d. Place the clean, dry filter back on the fan and tighten the fan cover.
- e. Plug the power cord into the rear of the analyser.
- f. Plug the power cord into the power source.



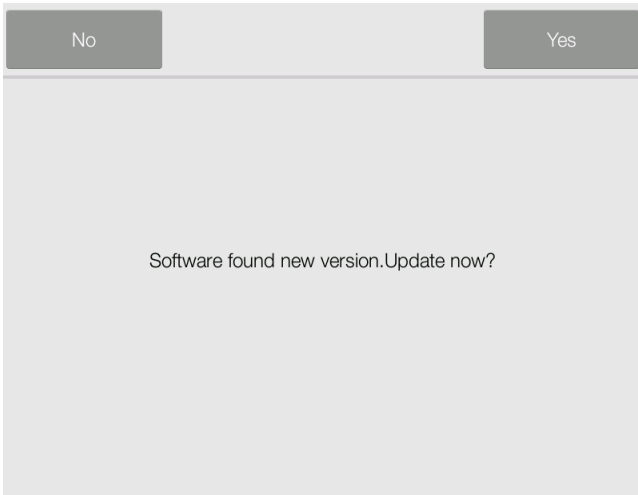
7.3 Updating the Analyser Software

Woodley Equipment provides software updates to registered analysers through the server. Whenever a new software version is released, it will be uploaded to the Woodley Equipment server immediately.

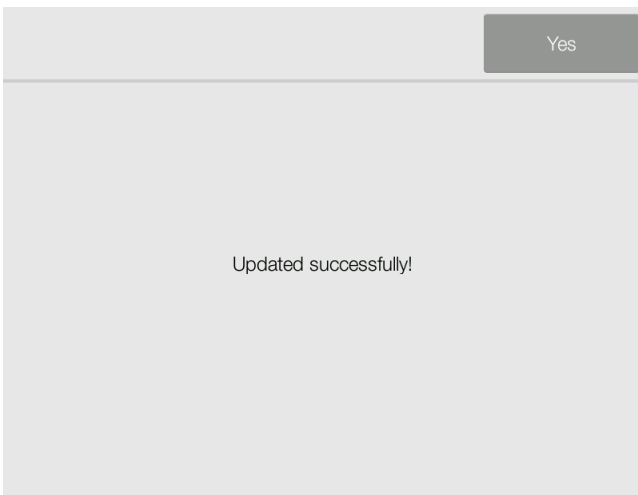
7.3.1 Automatic Update



1. Connect to a Wi-Fi network following the procedure in **Section 5.4 Network Connection**.

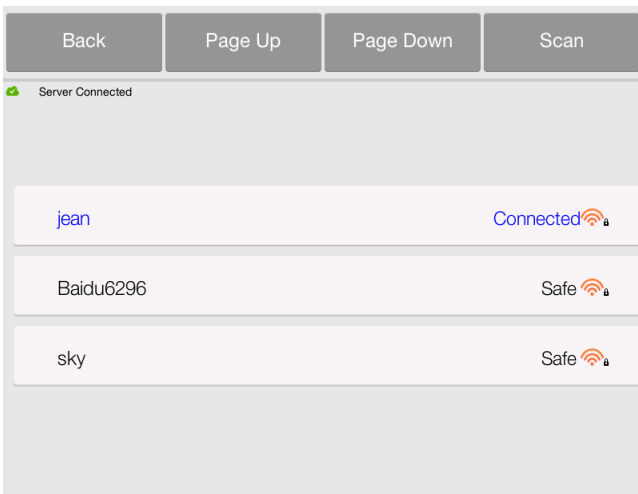


2. A 'new version' window will pop-up automatically when a new version of the software is available.
3. Press 'Yes' to confirm.

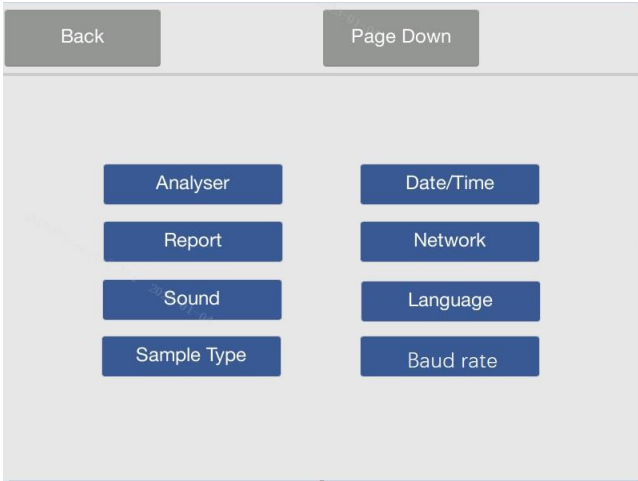


4. After pressing 'Yes' to confirm, when updated successfully, the analyser will reboot.

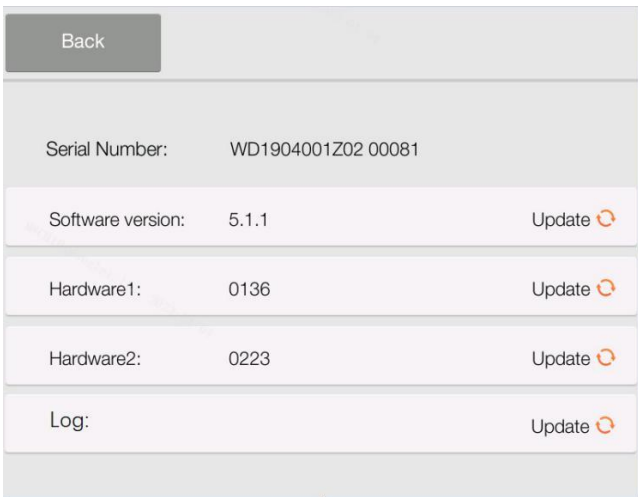
7.3.2 Manual Update



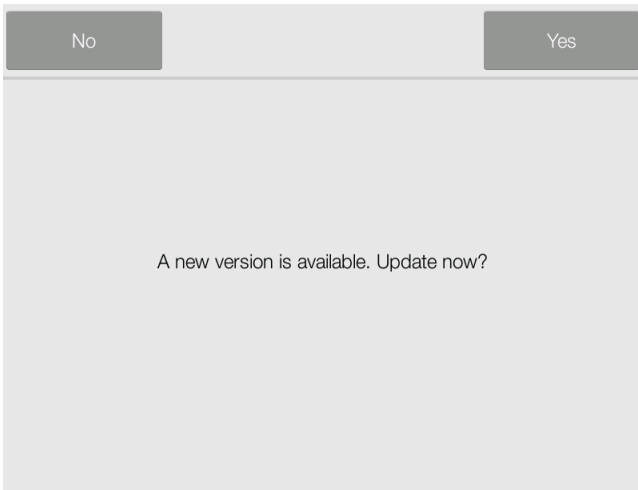
1. Connect to a Wi-Fi network following the procedure in **Section 5.4 Network Connection**.



2. On the main screen, press ‘Settings’ and then press ‘Analyser’.



3. The analyser information page will display. Press ‘Update’ to update the software version or one of the hardware versions.



4. A ‘new version’ window will pop-up.

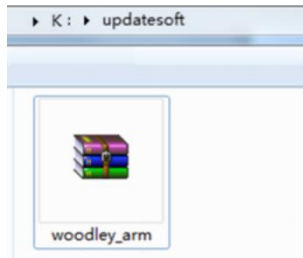
5. After pressing ‘Yes’ to confirm, when updated successfully, the analyser will reboot.

Caution: Do not disconnect network or turn off the analyser before the update is complete.

7.3.3 USB Drive Update



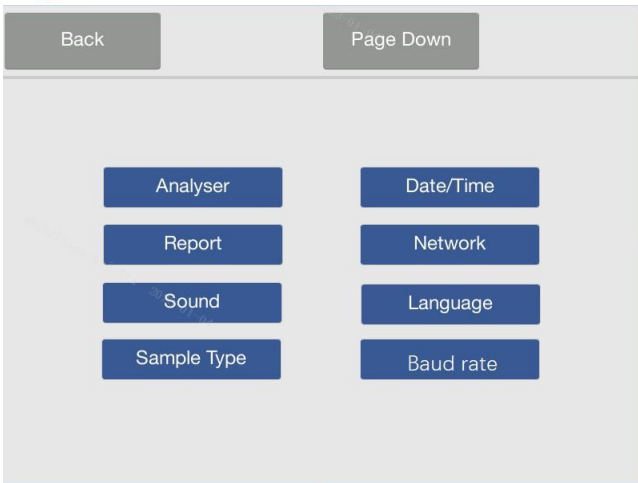
1. As an alternative method, the operating system can also be updated via the USB drive.



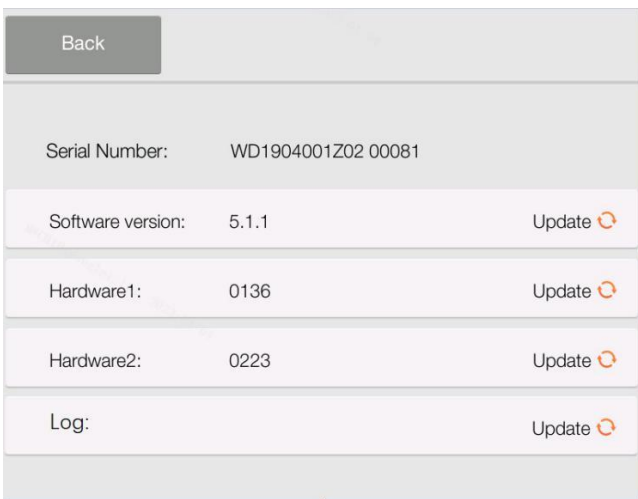
2. Please contact Woodley Equipment Company to receive the software via email. Please copy the software to the USB drive, create a file on the USB called 'updatesoft' and save the upgrade under this file.



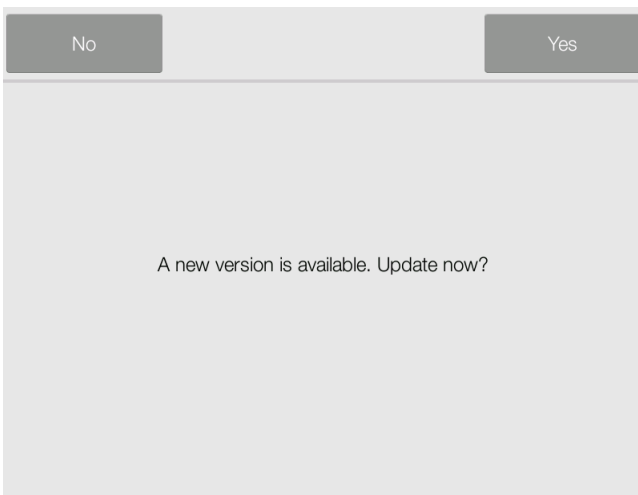
3. Plug the USB disk into the USB port at the rear of the device.



4. On the Main Screen press '**Settings**', then press '**Analyser**'.



5. The analyser information page will show. Press '**Update**' to update according to the software version.

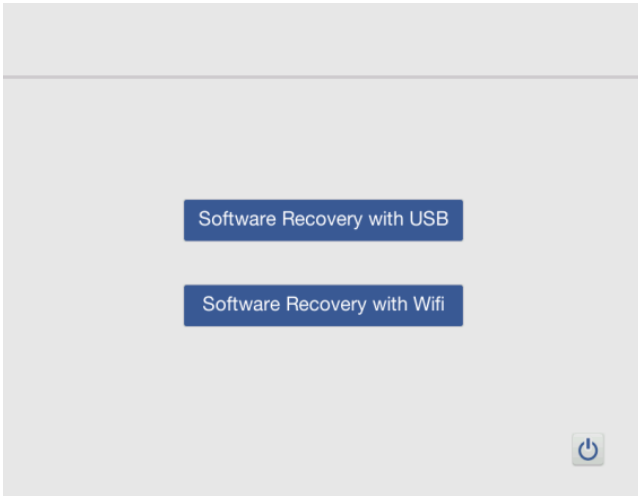


6. A 'new version' window will pop-up.

7. After pressing '**Yes**' to confirm, when updated successfully, the analyser will reboot.

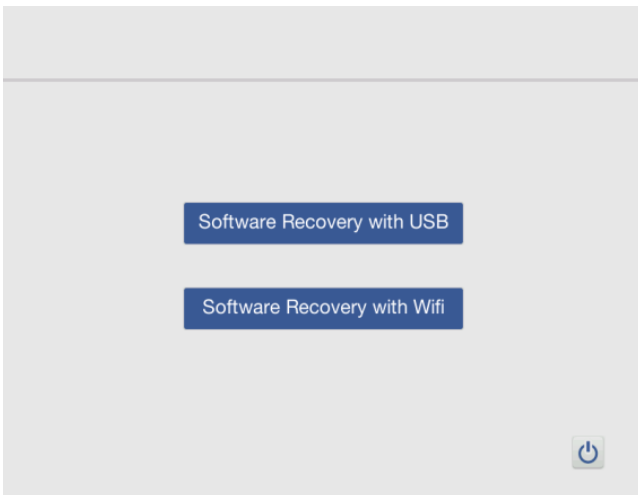
Caution: Please use a blank USB.

7.4 Software Recovery

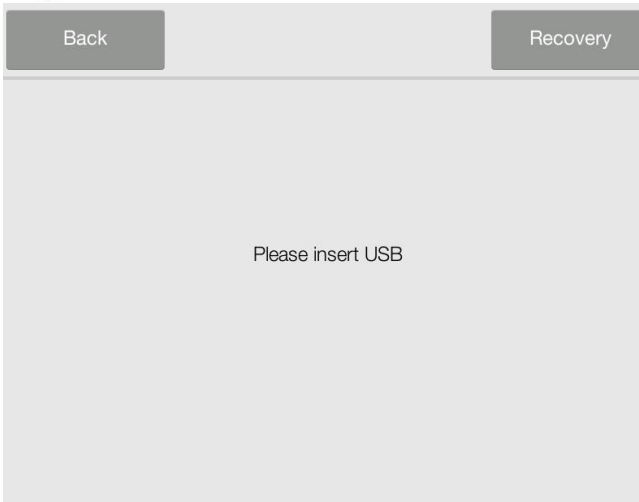


- a. If the analyser displays a recovery screen when the power is turned on, it means that the software has some basic files missing. You can use the USB drive or network to restore the system. If recovering via network, only the latest version can be restored.
- b. Using USB recovery, it will only restore to the corresponding stored version. It is also recommended to get the latest version.

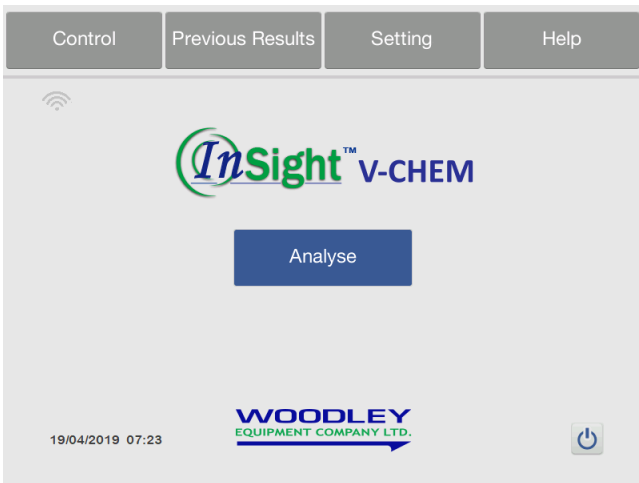
7.4.1 USB Drive Recovery



1. As an alternative, the operating system can also be recovered via a USB drive, please contact Woodley Equipment Company to receive the software via email. After downloading the software, please copy the software to a USB drive. Refer to **Section 7.3**.
2. Click **'Software Recovery with USB'** button.

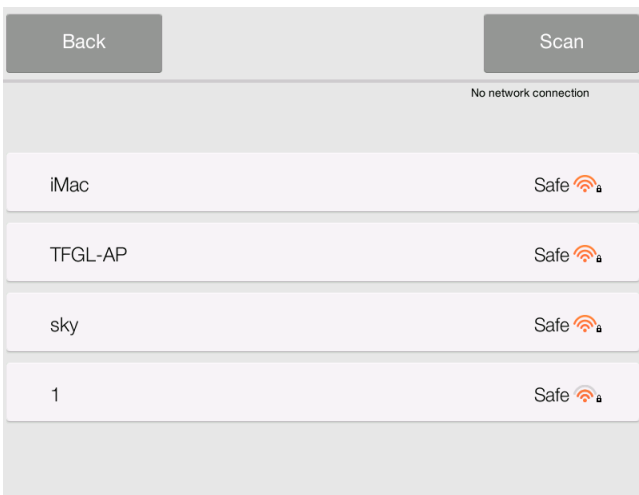


3. The USB flash recovery mode is displayed on the screen and the USB drive is inserted into the USB port on the back of the device. Click ‘Recovery’ in the upper right corner of the interface, the analyser will automatically recover and reboot after completion.

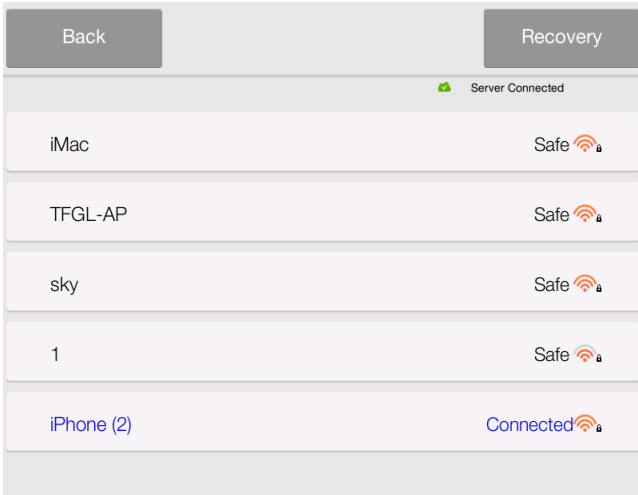


4. If the analyser can reboot normally and display the main screen, the system is successfully restored. If the above does not solve the problem, please contact Woodley Equipment Company.

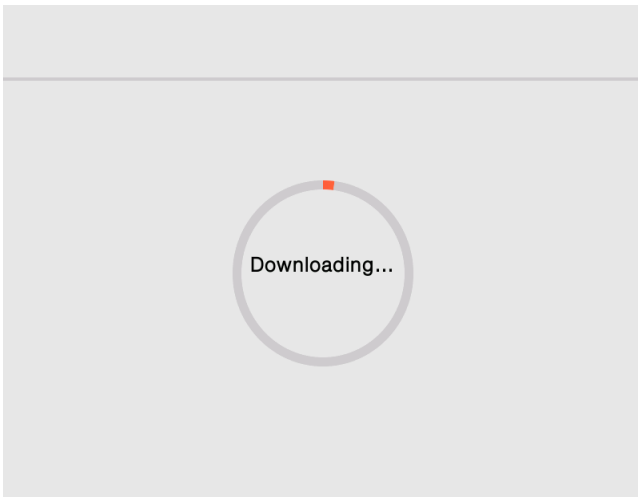
7.4.2 Wi-Fi Recovery



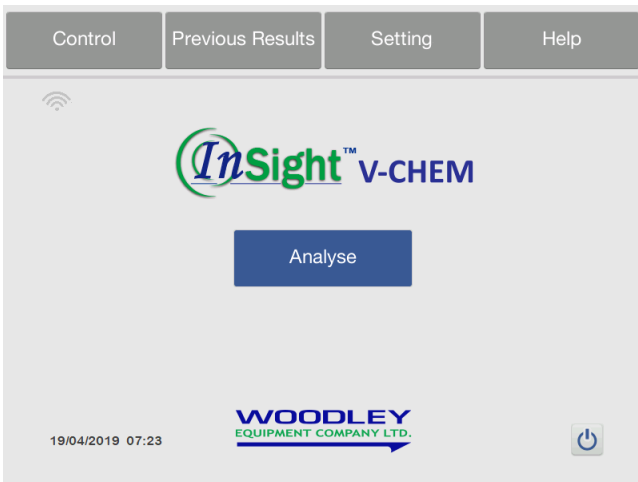
1. When the user needs to restore the system through the wireless network, click the ‘**Software Recovery with Wi-Fi**’ button. The ‘**Wi-Fi Recovery**’ screen will display the available wireless network resources.



2. When the network connection is successful, the **'Recovery'** button will appear in the upper right corner of the screen. Click the **'Recovery'** button.



3. The analyser will download the system program and automatically reboot upon completion.



4. If the analyser reboots normally and displays the main screen, the system is successfully restored. If the problem is not resolved, please contact Woodley Equipment Company.

7.5 Installing Thermal Printer Paper

1. Open the printer cover.
2. Remove the thermal paper package and remove a few centimetres of paper.
3. Place the paper in the printer in the direction shown with the non-printing surface in contact with the rubber roller.
4. Close the printer cover and make sure to expose a few centimetres of paper.
5. Remove the exposed paper.

Note: After installation, the thermal side of the paper should face down. If the paper is installed incorrectly, it will not print the report .



Section 8 InSight V-CHEM Data Manager

8.1 IVDM

InSight V-CHEM Data Manager (IVDM) is software that runs on Windows and interfaces with the InSight V-CHEM Veterinary Chemistry Analyser. It is primarily responsible for receiving and managing data from the analyser. Basic functions include hospital name settings, language selection, patient information editing, result query and printing, printer settings, test results export, etc.

8.2 Installing the IVDM

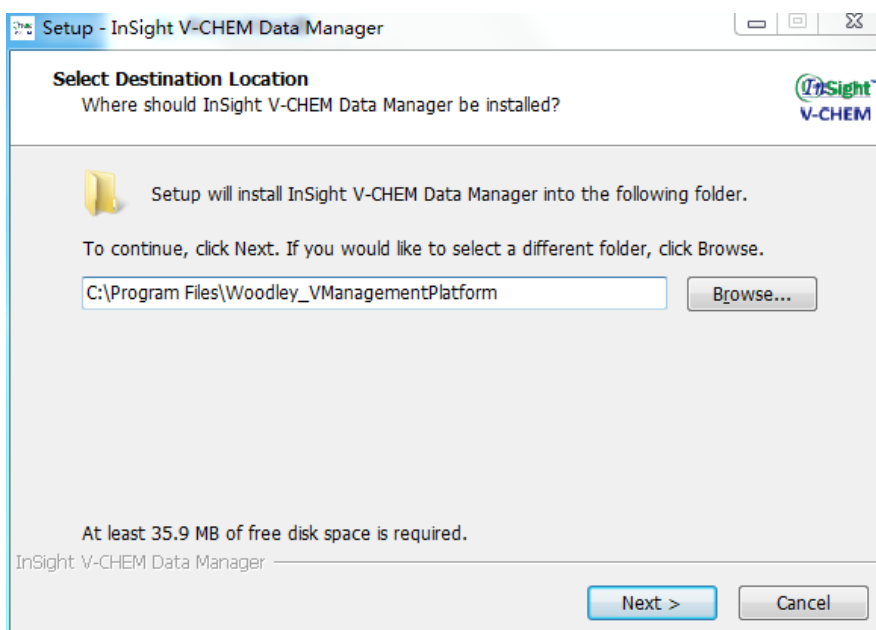
Please contact Woodley Equipment Company or your authorised distributor for the IVDM Installer.

Setting up the IVDM

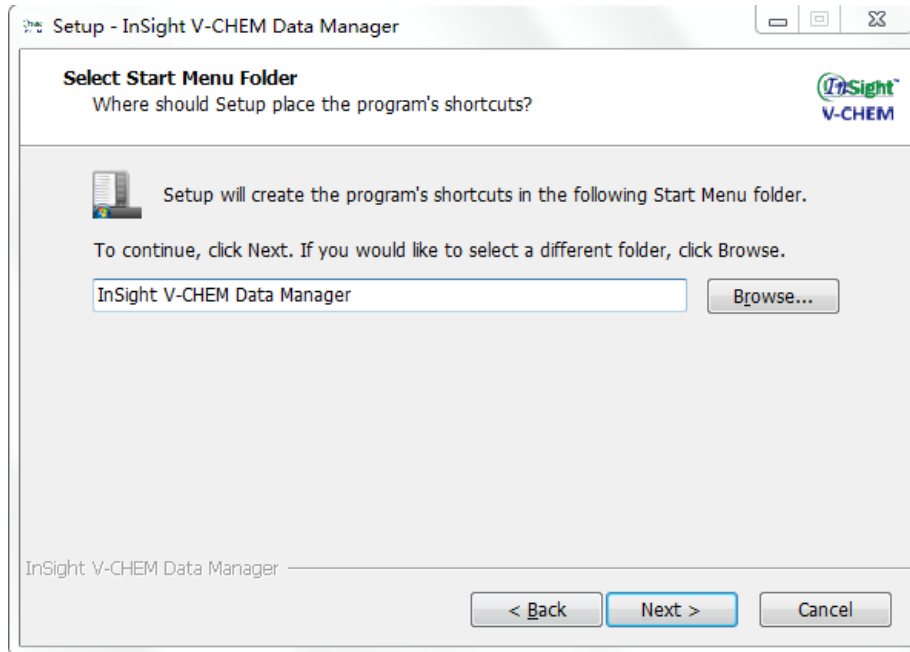
Note: Some anti-virus software may affect the installation. For the installation process, it is recommended to turn off anti-virus software.

Note: The IVDM can be installed on the system of Windows 7, Windows 8 and Windows 10. Please do not install on Windows XP, otherwise it may cause some errors.

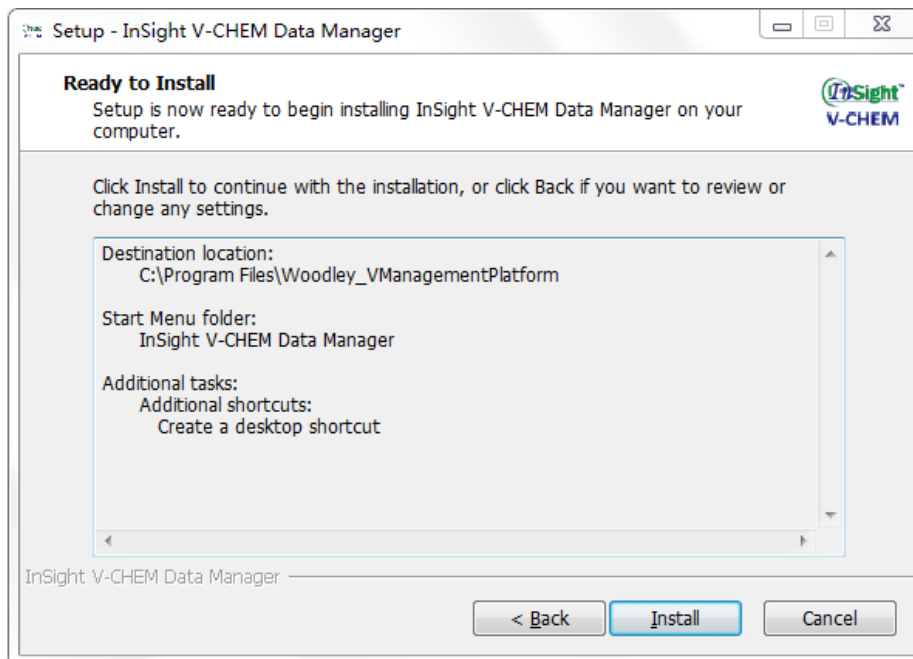
1. Start the installer and the installation prompt will appear. Please select the installation path then press ‘Next’.



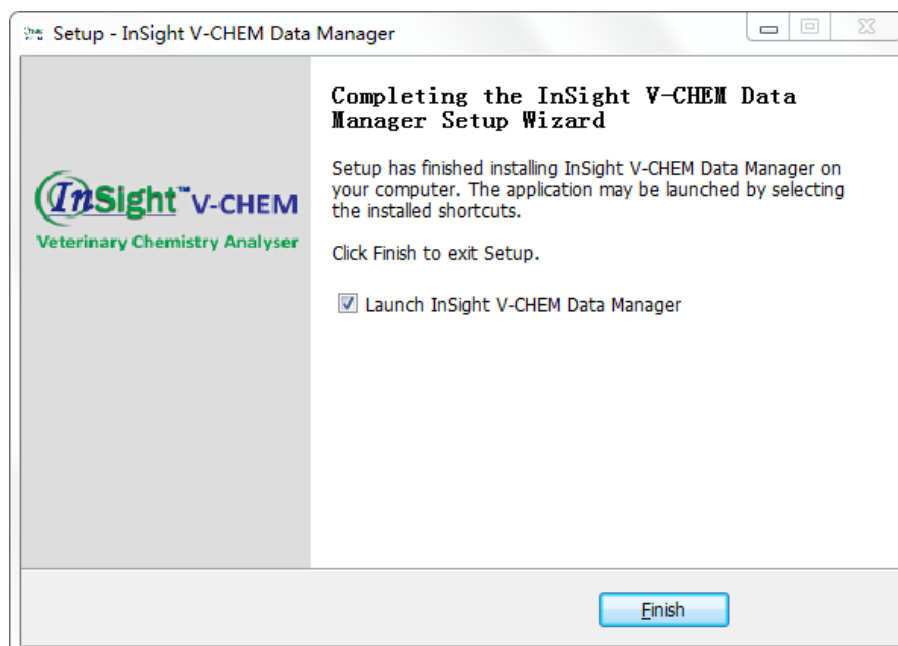
2. Select to create a program shortcut, click ‘Next’ to next step.



3. Click **Install** to start the automatic installation.



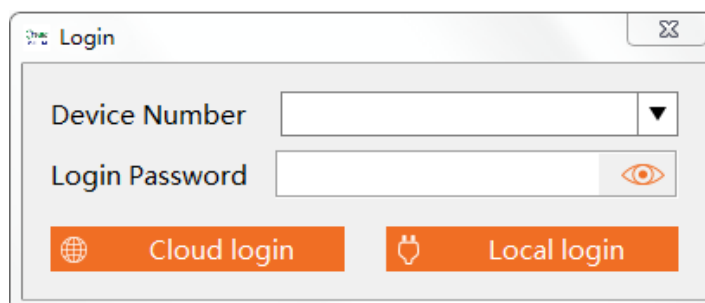
4. After the installation is complete, a confirmation dialog will pop up Click ‘Finish’ to complete the installation.



Note: When the installation has finished, there will be a shortcut on the desktop of the PC.

8.3 Login

Open the 'InSight V-CHEM Data Manager' and enter the '**Login**' interface.



Local login: Use the data cable to connect to the InSight V-CHEM Veterinary Chemistry Analyser and PC. There is no need to input any information, click '**Local login**'.

Note: Before connecting via the data cable, make sure the analyser is powered off or rebooted after the connection, otherwise data transfer is not possible.

Cloud login: When using cloud login, the InSight V-CHEM Veterinary Chemistry Analyser and the PC with IVDM must be networked. The device transmits data to the cloud server through Wi-Fi and the IVDM software downloads the data from the server to the PC. To view the device ID and login password, go to 'System Settings' →

‘Device Information’ in the InSight V-CHEM Veterinary Chemistry Analyser, enter the complete device ID and login password in the IVDM software and click ‘Cloud Login’.

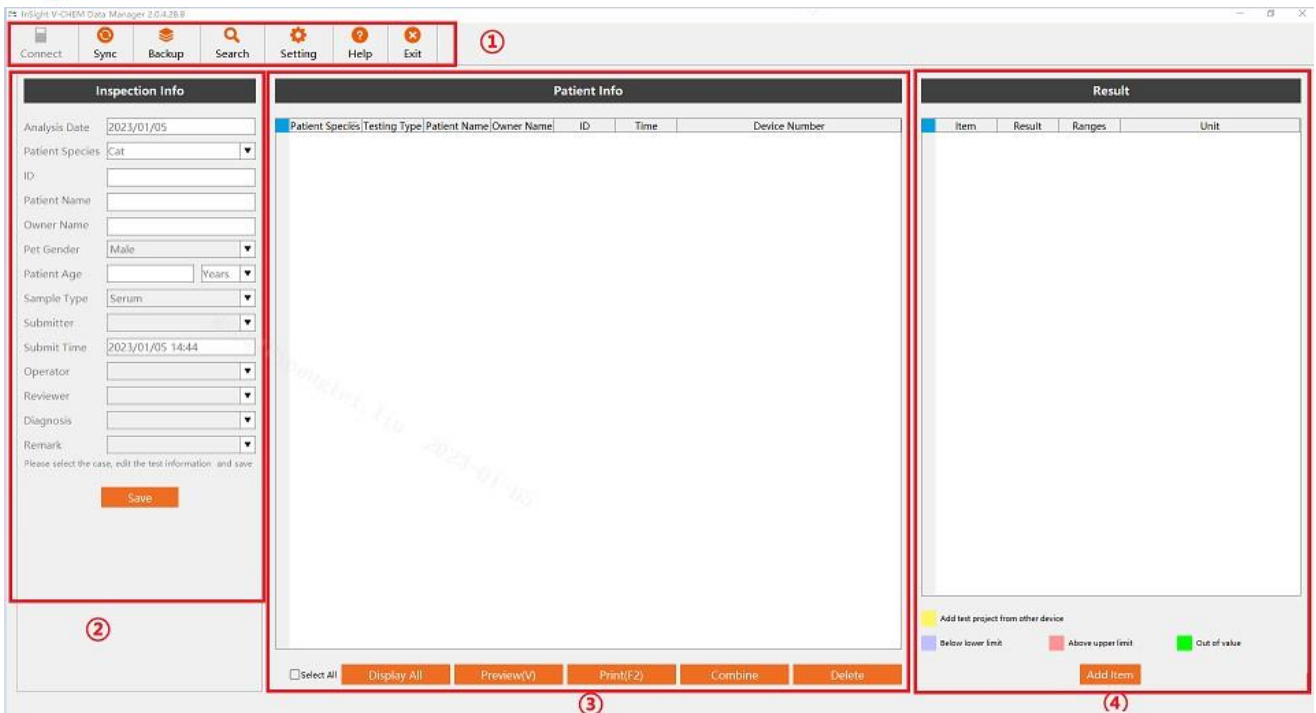
Note: When you open the IVDM software again, click ‘Cloud Login’. The software will default to the previously matched device.

Note: If the ‘Device Info’ does not display login password, then it indicates that the device has no Internet access. Please return to the ‘System Settings’ → ‘Communication’ to reconnect to the network.

8.4 ‘Main Screen’ Description

The main interface of IVDM is divided into four functional areas. Please refer to the yellow symbols in the figure below. Shortcut toolbar ①, for data interface selection and connection, data backup and lookup, setup and help. Inspection information area ②, displaying the currently selected patient information and modifying the related information. The data selection area (patient info) ③ is mainly used for selecting a patient report to be printed. The data display area (Result) ④ is mainly used to show the patient result and ranges of the printed content.

When the test result is within the reference range, the background is ‘light yellow’; when the test result is lower than the lower limit of the reference range, the background is ‘blue’; when the test result is higher than the reference range the upper limit is ‘red’; If you combine the results of different test equipment, the results of adding other types of equipment (not the results of this chemistry analyser), the background is ‘dark yellow’, each column can be edited.



Inspection Info: Display the patient information of the corresponding record, you can edit it, click ‘**Save**’ to save the modified ‘**Test Information**’.

Patient Info: The test record matching the query is displayed, and the test record of the day is displayed by default.

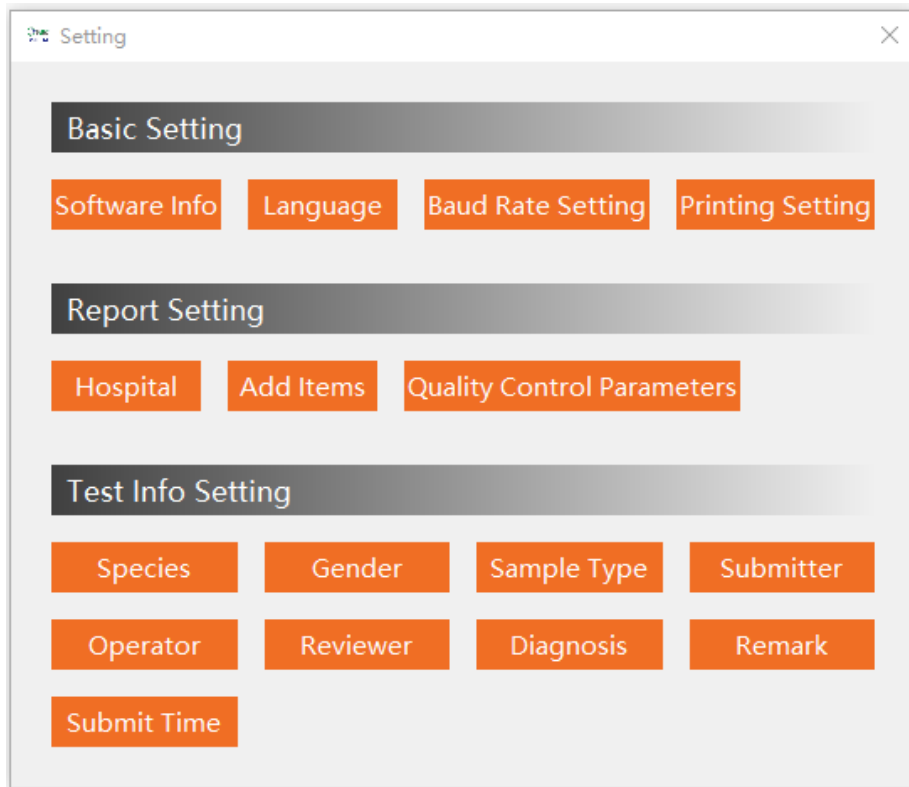
- Click ‘**Select All**’: select all test records.
- Click ‘**Display All**’: display all test records.
- Click ‘**Preview**’: Preview all selected test record reports or click ‘**Quick Export**’ to export PDF.
- Click ‘**Print**’: print the selected test report, select the printer, then click ‘**OK**’ to print. Click ‘**Close**’ to modify the report form or cancel printing.
- Click ‘**Combine**’: Merge selected test records and generate new test records.
- Click ‘**Delete**’: cancel the selected test records.

Result: The patient test results corresponding to the selected test record are displayed.

- **Modify test results:** This function can be used by the operator to modify the test results of certain items. Double-click the test value to modify the test results.
- ‘**Add Items**’: add other test items.

8.5 Setting

Click 'Setting' in main screen



Basic Settings

1. Software Info: show the information of the software, click 'Update Software' to upgrade the software.
2. Language: select the language.
3. Set Baud Rate: set the baud rate for data transmission under 'Wired Login'.
4. Printing settings :

Results suggest options: 'chart'/'arrow'.

- A5 Portrait Print: place A5 paper with a width of 14.8 cm and a height of 21 cm in the printer to print a report sheet
- A5 Landscape Print (default): place A5 paper with a width of 21 cm and a height of 14.8 cm in the printer to print a report sheet

- A4 Print: place A4 paper in the printer to print the report sheet
- A4 clinical significance printing: print with clinical significance of the test report, the default choice of A4 paper

Report Setting

1. Hospital: input the hospital name.
2. Add Items: use this function to combine the test items from other devices to one report, after the change is complete, click ‘Save’ → ‘Exit’.
3. Quality Control Parameters: Use this function to amend the quality control lot number, expiry date and target value. Make changes and after completion, click ‘save’ and ‘exit’.

Test Info Setting

Modify the ‘**Test Info**’ in the main interface. The hospital can preset each item in the ‘**Test Info Settings**’ as needed and the setting items will be displayed in the report form.

Note: Samples that are affected by sample interference (haemolysis/lipaemia/icterus) will be highlighted ‘red’ under the ‘patient info’.

Pet Gender	Male	▼	6	<input type="checkbox"/>	Dog			313	2019-02-24 10:25
Patient Age	2	Years	7	<input type="checkbox"/>	Cat			312	2019-02-16 18:40
Sample Type	Plasma	▼	8	<input type="checkbox"/>	Dog			311	2019-02-16 09:49
Submitter		▼	9	<input type="checkbox"/>	Dog			310	2019-02-14 09:55
Submit Time	2019/03/12 08:54		10	<input type="checkbox"/>	Dog			301	2019-01-29 15:59
Operator		▼	11	<input type="checkbox"/>	Dog				2019-01-17 15:56
Reviewer		▼	12	<input type="checkbox"/>	Cat			293	2019-01-13 11:47
Diagnosis	Lipemia	▼	13	<input type="checkbox"/>	Dog			291	2019-01-12 10:28
Remark		▼							

8.6 Advanced Settings

1. Change Inspection Information

Select a patient and change the basic information from the inspection information area. Click **‘Save’** when the modification is complete.

The screenshot shows the InSight V-CHEM Data Manager interface. The top navigation bar includes icons for Connect, Sync, Backup, Search, Setting, Help, and Exit. The main area is divided into two panels: 'Inspection Info' on the left and 'Patient Info' on the right.

Inspection Info fields include:

- Analysis Date: 2019/05/13
- Patient Species: Cat
- ID: [Empty]
- Patient Name: [Empty]
- Owner Name: [Empty]
- Pet Gender: Female
- Patient Age: [Empty] Years
- Sample Type: whole blood
- Submitter: [Empty]
- Submit Time: 2019/05/08 16:47
- Operator: [Empty]
- Reviewer: [Empty]
- Diagnosis: [Empty]
- Remark: [Empty]

A red box highlights the **Save** button at the bottom of the Inspection Info panel.

Patient Info table:

	Patient Species	Patient Name	Owner Name	ID	Time	Device Number
1	<input type="checkbox"/> Cat			123	2019-05-09 17:24	unset
2	<input type="checkbox"/> goat				2019-05-09 17:08	unset
3	<input checked="" type="checkbox"/> cat				2019-05-08 17:17	unset
4	<input type="checkbox"/>				2019-05-08 16:31	unset
5	<input type="checkbox"/>				2019-05-08 16:17	unset

At the bottom of the Patient Info panel, there are buttons for: Select All, Display All, Preview(V), Print(F2), Combine, and Delete.

2. Display All

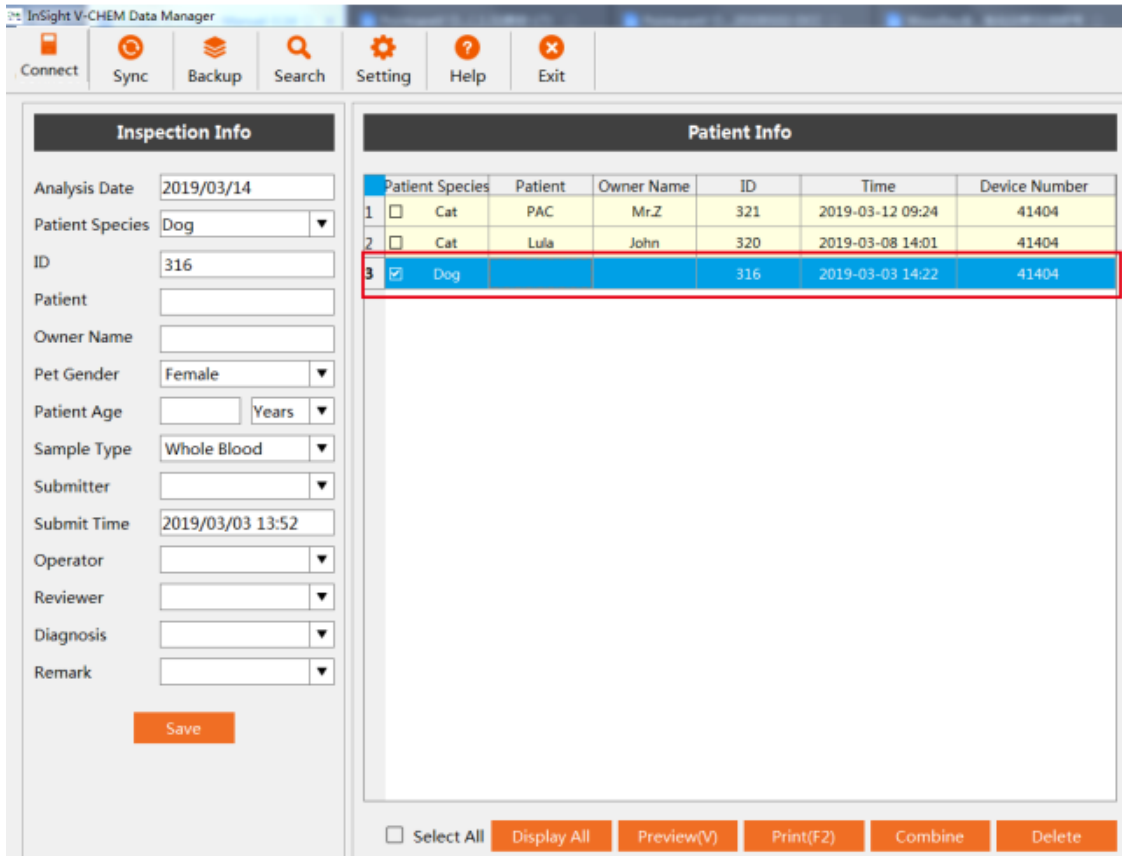
The **‘Analysis Date’** area of the main screen usually only displays the data for the selected date. If you want to display all test results, you can use the **‘Display All’** function.

The screenshot shows the InSight V-CHEM Data Manager interface. The top navigation bar includes icons for Connect, Sync, Backup, Search, Setting, Help, and Exit. The main area is divided into two panels: 'Inspection Info' on the left and 'Patient Info' on the right. The 'Inspection Info' panel contains various input fields such as Analysis Date (2019/05/13), Patient Species (Cat), ID, Patient Name, Owner Name, Pet Gender (Female), Patient Age, Sample Type (whole blood), Submitter, Submit Time (2019/05/08 16:47), Operator, Reviewer, Diagnosis, and Remark. A 'Save' button is located at the bottom of this panel. The 'Patient Info' panel displays a table with columns: Patient Species, Patient Name, Owner Name, ID, Time, and Device Number. The table contains five rows of data. Row 3 is highlighted in blue. Below the table, there are several buttons: 'Select All', 'Display All', 'Preview(V)', 'Print(F2)', 'Combine', and 'Delete'. The 'Display All' button is highlighted with a red box.

3. Combine

When the same patient has been tested using different discs, it is possible to combine the two test reports into one and the merge function can be used. First, select the reports to be merged, click the ‘**Combine**’ function and the system will generate a new report. If there are the same test items in the combined test results, the average value of the same items is taken and the different items are displayed separately.

Patient Info						
	Patient Species	Patient	Owner Name	ID	Time	Device Number
1	<input type="checkbox"/> Cat			321	2019-03-12 09:24	41404
2	<input type="checkbox"/> Cat			320	2019-03-08 14:01	41404
3	<input type="checkbox"/> Dog			316	2019-03-03 14:22	41404



4. Delete:

Select a result and use the ‘**Delete**’ function to delete it.

Note: If the data is deleted by mistake, it can be recovered by resynchronising the data from the analyser.

5. Add Item:

Select a test result, click ‘**Add Item**’. It will add a new line of items, double-click the blank space to add the corresponding content you require.

Note: The item you wish to add can’t be same as an existing item.

The screenshot shows the InSight V-CHEM software interface. At the top, there are menu options: Setting (gear icon), Help (question mark icon), and Exit (X icon). The main area is divided into two panels: 'Patient Info' and 'Result'.

Patient Info Table:

	Patient Species	Patient	Owner Name	ID	Time	Device Number	
1	<input type="checkbox"/>	Cat	PAC	Mr.Z	321	2019-03-12 09:24	41404
2	<input type="checkbox"/>	Cat	Lula	John	320	2019-03-08 14:01	41404
3	<input checked="" type="checkbox"/>	Dog			316	2019-03-03 14:22	41404

Result Table:

	Item	Result	Ranges	Unit	
1	<input checked="" type="checkbox"/>	ALB	33.2	25 -- 44	g/L
2	<input checked="" type="checkbox"/>	TP	67.1	54 -- 82	g/L
3	<input checked="" type="checkbox"/>	GLO	33.9	23 -- 52	g/L
4	<input checked="" type="checkbox"/>	A/G	1.0		
5	<input checked="" type="checkbox"/>	Ca2+	2.86	2.15 -- 2.95	mmol/L
6	<input checked="" type="checkbox"/>	GLU	6.06	3.89 -- 7.95	mmol/L
7	<input checked="" type="checkbox"/>	BUN	4.12	2.5 -- 8.9	mmol/L
8	<input checked="" type="checkbox"/>	P	1.17	0.94 -- 2.13	mmol/L
9	<input checked="" type="checkbox"/>	AMY	2424	400 -- 2500	U/L
10	<input checked="" type="checkbox"/>	CHOL	4.52	3.2 -- 7	mmol/L
11	<input checked="" type="checkbox"/>	ALT	46	10 -- 118	U/L
12	<input checked="" type="checkbox"/>	TBIL	3.33	0 -- 10.3	umol/L
13	<input checked="" type="checkbox"/>	ALP	66	20 -- 150	U/L
14	<input checked="" type="checkbox"/>	CRE	55	27 -- 115	umol/L
15	<input checked="" type="checkbox"/>	BUN/CRE	19		
16	<input checked="" type="checkbox"/>	CK	183	20 -- 200	U/L

At the bottom of the Result table, there is a legend: Yellow for 'Add test project from other device', Blue for 'Below lower limit', Red for 'Above upper limit', and Green for 'Out of value'. An 'Add Item' button is located at the bottom right.

This image is a close-up of the 'Result' table from the previous screenshot, focusing on rows 14 through 16. Row 14 shows 'CRE' with a result of 84. Row 15 shows 'BUN/CRE' with a result of 19. Row 16 shows 'CK' with a result of 178. A red box highlights the 'CK' row. A 'Warning' dialog box is overlaid on the table, displaying a yellow warning triangle and the text 'The item already exist!' with a 'Yes' button.

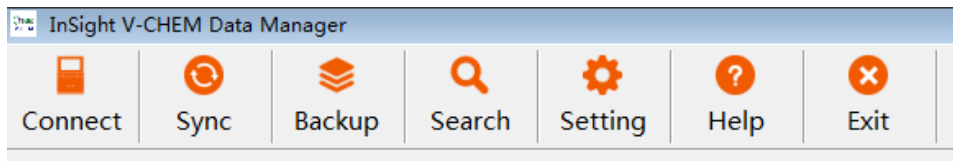
8.7 Logout and Switch to Cloud Login

Click 'Exit': close the management platform software. Click 'Switch', the 'Login' screen will pop-up, follow the same steps as 8.3 Login.

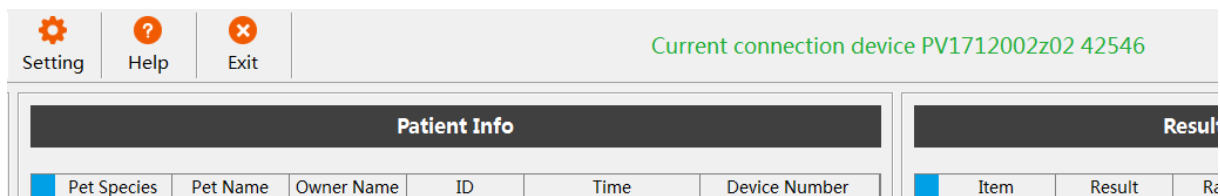
Note: This function will only work under 'Cloud Login'. The computer must be connected to the internet.

The screenshot shows the 'InSight V-CHEM Data Manager' interface. At the top, there are three buttons: 'Sync', 'Switch', and 'Backup'. The 'Switch' button is highlighted with a red box. A red arrow points from the 'Switch' button to a 'Login' dialog box that has popped up. The dialog box contains a 'Device Number' field with the value 'CV3456789012 99988', a 'Login Password' field with masked characters, and a 'Cloud login' button with a globe icon. The background shows the 'Inspection Info' section with 'Analysis Date' set to '2019/05/13' and 'Patient Species' set to 'Cat'.

8.8 Capture Results using IVDM



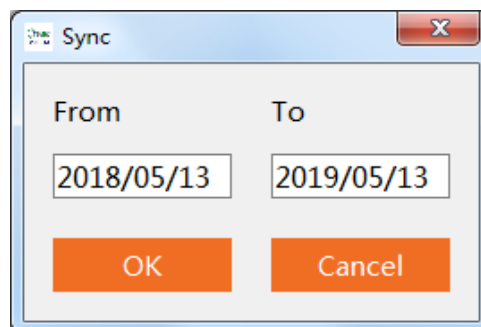
1. Click ‘Connect’, the management platform will search all devices currently connected, if the connection is successful, the currently connected device will be displayed on the right side of the main menu.



2. Click ‘Sync’, select the time and click ‘OK’ to synchronise the data in the device to IVDM.

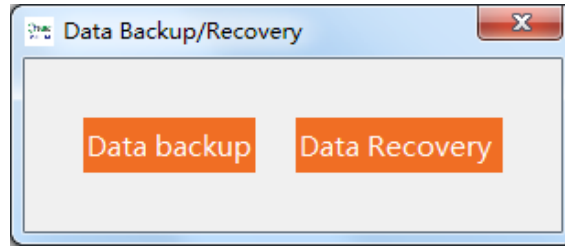
- Local connection: Synchronise data from the analyser to IVDM software.
- Cloud connection: Synchronise data from the server to IVDM software.

Note: When opening the IVDM software, the results from the day are automatically synchronised by default. If data synchronisation is unsuccessful, find the report in the InSight V-CHEM Chemistry Analyser’s Results Query and click Upload.



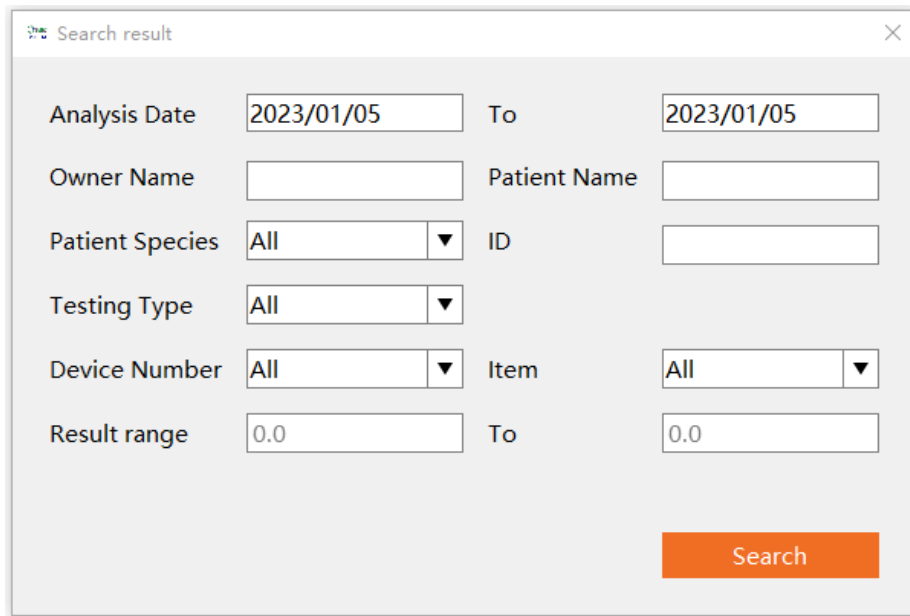
3. Click ‘Backup’ to backup or restore your data.

- ‘Data Backup’: Backup data from IVDM software to the specified path.
- ‘Data Recovery’: select the .mdb file you need to recover the data from.



4. Click '**Result**' to find the test records that meet the specified screening conditions. Enter any one or any combinations of test date range, name, medical record number, gender, age, device ID, project name and result range to screen report sheets
5. Click '**Query**' to display the screened test records that meet the conditions.

Note: If you want to display all the reports in IVDM software, click 'Show All' in the 'Main Interface'.



Analysis Date	<input type="text" value="2023/01/05"/>	To	<input type="text" value="2023/01/05"/>
Owner Name	<input type="text"/>	Patient Name	<input type="text"/>
Patient Species	<input type="text" value="All"/>	ID	<input type="text"/>
Testing Type	<input type="text" value="All"/>		
Device Number	<input type="text" value="All"/>	Item	<input type="text" value="All"/>
Result range	<input type="text" value="0.0"/>	To	<input type="text" value="0.0"/>

8.9 Report Printing

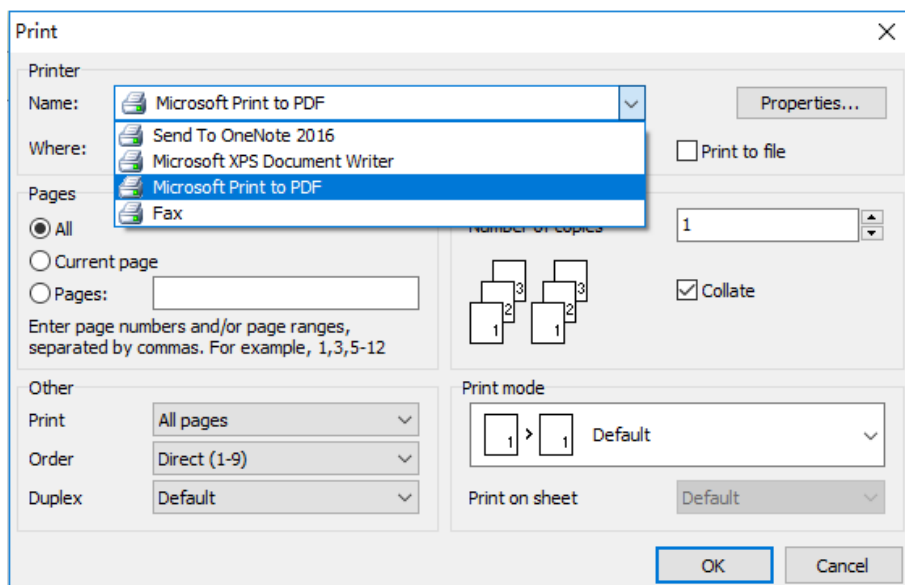
1. Report preview: Select one patient result, the print preview will be shown.

Biochemical Inspection Report				
Species: Cat	ID: 315	Patient Name:	Age:	Years
Owner Name:	Gender:			
Sample Type: Whole Blood	Diagnosis:			
LOT: 98123-35.6-01 46-0227-84-2206 50-0				
Item	Result	Indicator	Ranges	Unit
ALB	273		27-45	g/L
TP	722		54-82	g/L
GLO	449		15-57	g/L
AG	06			
Ca2+	233		2-295	mmol/L
GLU	456		411-884	mmol/L
BUN	725		3.6-10.7	mmol/L
P	138		1.1-2.74	mmol/L
AMY	2454		400-2500	U/L
CHOL	327		2.3-5.3	mmol/L
ALT	61		8.2-100	U/L
TBIL	424		0-10.3	umol/L
ALP	34		14-120	U/L
CRE	123		27-141	umol/L
BUN:CRE	15			
CK	232		0-530	U/L
Submit Datetime: 2019-02-28 12:47 Analysis Datetime: 2019-02-28 13:17 Print Datetime: 2019-05-10 20:03 Submitter: Operator: Reviewer: Remark: <i>The result is only responsible for this sample.</i>				

2. Report print: Reports can be printed using the printer installed on a Windows PC. Select the report to print, click ‘**Print (F2)**’.

The screenshot shows the 'InSight V-CHEM Data Manager' application window. It features a top navigation bar with icons for Connect, Sync, Backup, Search, Setting, Help, and Exit. The main interface is divided into two panels: 'Inspection Info' on the left and 'Patient Info' on the right. The 'Inspection Info' panel contains various input fields for patient details and analysis parameters. The 'Patient Info' panel displays a table of patient records. The table has columns for Patient Species, Patient Name, Owner Name, ID, Time, and Device Number. The third row, representing a 'cat' patient, is selected. At the bottom of the interface, there is a row of action buttons: 'Select All', 'Display All', 'Preview(V)', 'Print(F2)', 'Combine', and 'Delete'. The 'Print(F2)' button is highlighted with a red rectangular box.

Select the corresponding printer to print.



8.10 Troubleshooting

If the test results cannot be synchronised with IVDM, try the following solutions:

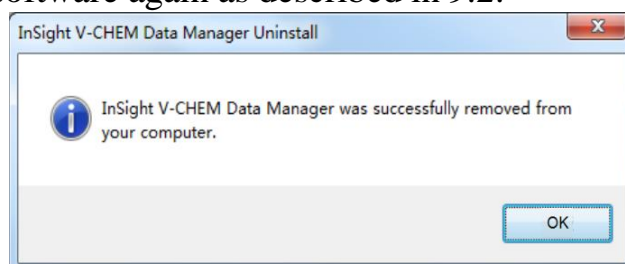
1. Update the analyser software version

Turn on the analyser, click '**Settings**'- '**Network**' to connect to WIFI/3G. After connecting to the Internet successfully, return to '**Settings**' - '**Analyser**' to update the analyser software to the latest version.

2. If it is '**local login**', please ensure that the data cable is connected correctly, then reboot the analyser and management platform software; if it is '**cloud login**', please make sure that the analyser and PC with the software installed are connected to the Internet.

3. Uninstall the IVDM software and re-install the latest version

Locate the uninstallation software in the installation documentation, click *unins000.exe*, start the uninstall feature and click '**Yes**'. The software will be removed from the computer. Install the software again as described in 9.2.





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