



SU-10VET

Handheld Veterinary Urine Analyzer



Convenient

Small in size and light in weight



Easy

Onscreen display or easy printing via a handheld printer



Efficient

Automatically captures and reports strip results



Fast

Only 70 seconds per strip



Reliable

High reproducibility, semi-quantitative urine chemistry results



Application

Livestock farm, animal hospital, pet hospital, lab, animal disease control and prevention center. etc.

10Test Items

- Leukocytes
- Blood
- Urobilinogen
- Specific Gravity
- Nitrite
- Ketone
- Protein
- Bilirubin
- PH
- Glucose

Wireless printer

- optional



Specification Comparison

	SU vet Series 
Screen	LCD screen
Key pad	Capacitive touch key
Speed	140 tests / hour (fast mode), 50 tests / hour (normal mode)
Test items	10
Dimension	110*68*27mm
Capacity	1000 recent test results
Printer	Wireless Thermal Printer (optional)
Interface	Mini USB
Battery	Lithium battery



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PROKAN

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Vet Urine Analyzer SU-10VET

Operation manual

Ver: 1.0.00

July , 2018



Important information

- 1) Thanks for choosing our Semi-automatic urine analyzer. Please read the manual carefully before using the instrument.
- 2) The instrument's anti-electric shock grade is class II ,overvoltage category is class II ,pollution level is level 1.
- 3) The instrument has the function of data storage. We assume no responsibility for customer's expense due to data loss which is caused by instrument damage or improper operation.
- 4) Unauthorized maintenance is prohibited, or we will terminate the after-sale service enjoyed by customer.
- 5) We strongly suggest you using the matching urine strips provided by us in order to ensure the accuracy of the test.
- 6) We reserves the right of final explanation of the manual. We have the right to modify the manual without notice, at the same time assuming no responsibility for that.

- 7) We reserves the right to design the instrument and change the specifications without prior notice.
- 8) When there is a little difference between the graphic in the manual and the actual object, which is resulting from printing ,please in kind prevail.
- 9) Only on the condition that operation meets the following three requirements, will be responsible for the safety, reliability and performance of the instrument.
 - 1) Assemblage, expansion, reset, improvement and maintenance are all conducted by personnel qualified by us;
 - 2) Relevant electrical instruments meet national standards;
 - 3) Instrument operation is conducted in accordance with the manual.

Intellectual Property Rights

The intellectual property rights of the manual and its corresponding product belong to us.

Without the written consent of um medical Any individuals and organizations are prohibited to copy, modify, and translate part of the manual without our written consent.



Warning and safety tips

- 1) Before using the instrument, you need to know relevant professional medical knowledge.
- 2) Please use the instrument strictly according to the manual, otherwise the protection provided by the instrument itself may be damaged. Any incorrect operation may result in inaccurate results.
- 3) To avoid bacterial infection, you'd better wear protective gloves during the whole process of operating the instrument.
- 4) Be careful when dealing with urine samples and wasted strips, any incorrect operation sequence may result in bacterial infection.
- 5) Please be sure to use the dedicated power adapter for the instrument, incorrect use may cause fire or electric shock.
- 6) When using the AC power, please do not leave the instrument alone.
- 7) When the instrument is used by children, the disabled or patients, or in the vicinity of them,

close monitoring is necessary.

- 8) To ensure the accuracy of the test results, testing during charging is inadvisable.
- 9) To ensure the battery life, please charge under shut down state.
- 10) Please pull the power plug immediately after charging completion by using the adapter.
- 11) Do not place the instrument in the liquid or in the place where it might fall into the liquid.
- 12) To avoid the instrument failing to work which is caused by drop collision, please do not put the instrument in the place where it is easy to drop.
- 13) Do not use the accessories which are not provided or recommend by us.
- 14) Please stop using the instrument, if the instrument works abnormally or is damaged.
- 15) Do not make the instrument or its cord exposed to overheated surface.
- 16) Do not place any items on the top of the instrument.
- 17) Unless the manual particularly requires, do not put any items into or make them fall into the test port of the instrument.

18) Do not use the instrument in places where there are aerosol droplets or oxygen is managed.

19) Do not use the instrument in the outdoor where the environment cannot meet the requirements of instrument use.

20) Users can install on their own by consulting section 1.4 of this manual, there is no need to receive training. If you have any question, please contact our after-sale service department.

Please keep these instructions

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Chapter 1 Introduction

1.1 Brief introduction

1.1.1 Product name

Urine analyzer

1.1.2 Features

- 1) Compact size, fashionable appearance, easy to carry
- 2) Wireless thermal printer (optional)
- 3) Capacitive touch key, sensitive induction
- 4) Built-in 1200mAh chargeable battery

1.1.3 Application scope

This instrument can semi-quantitatively test the biochemical components in Vet urine sample for medical institution use, which can provide reference for clinical examination and diagnosis. It can test 10 items, corresponding abbreviations are as follows:

Item	Abbr.
Leukocytes	LEU
Nitrite	NIT
Urobilinogen	UBG
Protein	PRO
pH	pH
Blood	BLD
Specific-gravity	SG
Ketones	KET
Bilirubin	BIL
Glucose	GLU

1.1.4 Contraindications

Not applicable

1.1.5 Technical specifications

Test principle	Light reflectance
-----------------------	-------------------

Storage	1000 results
Throughput	300samples/hour (fast mode) , 60 samples/hour (normal mode)
Interface	Mini USB interface (charge, data transmit)
Screen	LCD screen
Key	Five capacitive touch keys
Printer(optional)	2.4 GHz wireless printer (Chinese report and English report)
Net weight	Host : 160 g, printer : 130 g
Host power	DC 5V , 1A
Internal power	DC 3.7V, 1200mAh
Adapter power	AC 100~240V, 50Hz, Rated Voltage: AC 220 V
Dimensions(mm)	68W×110D×27H
Input consumption	2W

1.1.6 Reference range

Item	Traditional unit	IU	Local identify
LEU	Negative	Negative	-

	15 Cells/ μ l 70 Cells/ μ l 125 Cells/ μ l 500 Cells/ μ l	15 Cells/ μ l 70 Cells/ μ l 125 Cells/ μ l 500 Cells/ μ l	+ +1 +2 +3
NIT	Negative Positive	Negative Positive	- +
UBG	0.2~1 mg/dl 2 mg/dl 4 mg/dl 8 mg/dl	3.2~16 μ mol/l 32 μ mol/l 64 μ mol/l 128 μ mol/l	- +1 +2 +3
PRO	negative Trace 30 mg/dl 100 mg/dl 300 mg/dl >2000 mg/dl	Negative Trace 0.3 g/l 1.0 g/l 3.0 g/l >20.0 g/l	- + +1 +2 +3 +4

pH	5-8.5	5-8.5	5-8.5
BLD	Negative 10Trace(Non-hemolysis) Trace(Hemolysis) 25 Cells/ μ l 80 Cells/ μ l 200 Cells/ μ l	Negative 10Trace(Non-hemolysis) Trace(Hemolysis) 25 Cells/ μ l 80 Cells/ μ l 200 Cells/ μ l	- + + +1 +2 +3
SG	1.000-1.030	1.000-1.030	1.000-1.030
KET	Negative 5 mg/dl 15 mg/dl 40 mg/dl 80 mg/dl 160 mg/dl	Negative 0.5 mmol/l 1.5 mmol/l 4.0 mmol/l 8.0 mmol/l 16.0 mmol/l	- + +1 +2 +3 +4
BIL	Negative Small 1mg/dl	Negative Small 17 μ mol/l	- +1

	Moderate 3 mg/dl	Moderate 50µmol/l	+2
	Large 6 mg/dl	Large 100µmol/l	+3
GLU	Negative	Negative	-
	100 mg/dl	5 mmol/l	+-
	250 mg/dl	15 mmol/l	+1
	500 mg/dl	30 mmol/l	+2
	1000 mg/dl	60 mmol/l	+3
	>2000 mg/dl	110 mmol/l	+4

* Comparison results specific units, please refer to the specification or supporting the test strip bottle label.

1.1.7 Instrument life

The instrument can be normally used for 5 years.

1.2 Appearance

1.2.1 Host

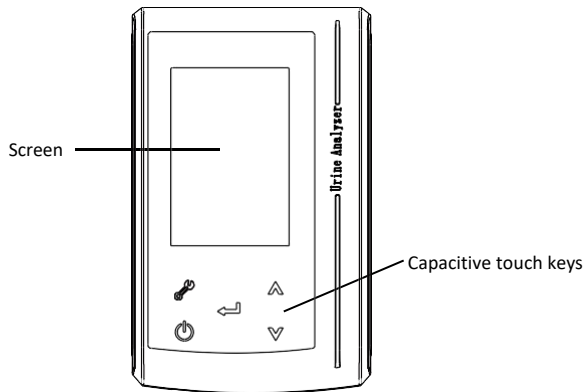


Figure 1: The front of the device

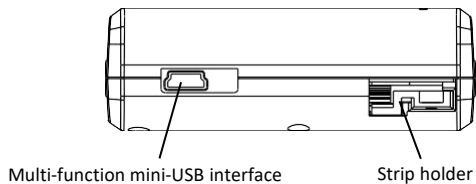


Figure 2: The fore-side of the device

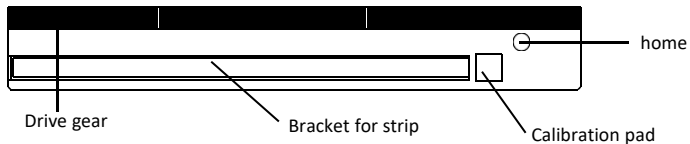


Figure 3: Strip holder

1.2.2 Printer (optional)

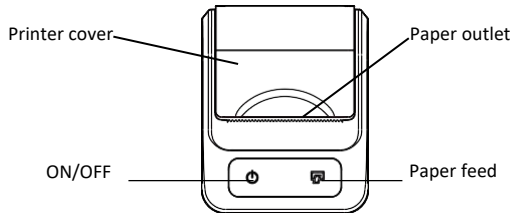


Figure 4: The front of the printer

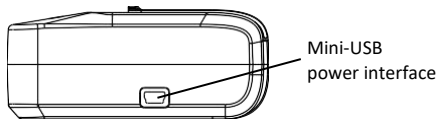


Figure 5: The right side of the printer

1.3 Function

- Power On auto-check (POST). Alarm if there is an error (see the appendix 1 about error code)
- 2.4 GHz wireless printer(optional)
- 1200mAh chargeable battery
- Compatible from 1 to 10 items strip
- 1000 results storage
- Convenient for test and carrying
- Testing part independent from printing part, convenient for carrying, high selectivity
- Support Bluetooth data transmission, strong mobility
- Removable strip holder, convenient for cleaning, reducing pollution

1.4 Installation

1.4.1 Unpacking

After opening the package, please check the delivered goods against the packing list as well as the appearance of the instrument. If you find anything missing or damaged, please contact our after-sale service department. Please fill out the warranty card, and send it to our company, so we can track the quality of product and carry out after-sale service.



Operating environment:

Temperature: 5℃~35℃;

Humidity: Less than 80%RH;

Avoid the wet, corrosive gas, dust, strong electromagnetic interference.

This instrument uses the non-removable lithium battery.

Power requirement:

Host: DC 5V, 1A; AC 100~240V, 50Hz.

Rated voltage: AC220V

1.4.2 Install the host

Taking the printer portion (optional) and test section out from the packaging carton. Checking whether the appearance of the instrument is intact.

Place the host horizontally and take the adapter out, then connect the AC power and the host. Once you connect the cable the battery will be recharged.

1.4.2.1 Install the printer

Place the printer horizontally and connect the adapter, clearing obstacles between the printer and the host to avoid impeding the wireless data transmission. Only when the printer is connected to the adapter, can it work normally.

1.4.2.2 Install the print paper



1) Open the printer cover



2) Open up the cover completely and remove the waste paper




3) Remove the paper package, put the paper in the groove, thermal facing forward
















4) Align the paper to the cutting edge, close the cover

Chapter 2 Instrument operation

2.1 Keypad

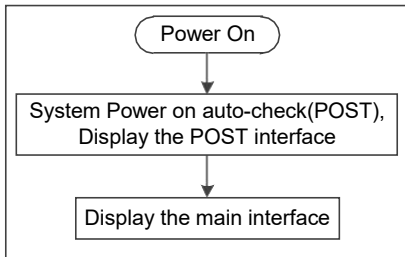
key	function	operation
	Function (With printing)	Short press once in the main interface to enter the print (current result) interface
		Short press twice in the main interface to enter auto print configure interface
		Short press thrice in the main interface to enter sensitivity configure interface
		Short press four times in the main interface to enter time configure interface
		Short press five times in the main interface to enter strip type configure interface
		Short press six times in the main interface to enter data delete interface
		Short press seven times in the main interface to enter all results print interface

		Long press in the main interface to enter factory default restore interface
	Function (Without printing)	Short press once in the main interface to enter sensitivity configure interface
		Short press twice in the main interface to enter time configure interface
		Short press thrice in the main interface to enter strip type configure interface
		Short press four times in the main interface to enter data delete interface
		long press in the main interface to enter factory default restore interface
	Exit	short press, exit
		Long press, ON/OFF
	Confirm	Short press in the main interface to enter normal test count down interface
		Long press in the waiting to test interface to enter fast test
		Other interfaces, short press to save and exit
	Up	Long press, number increase continuously

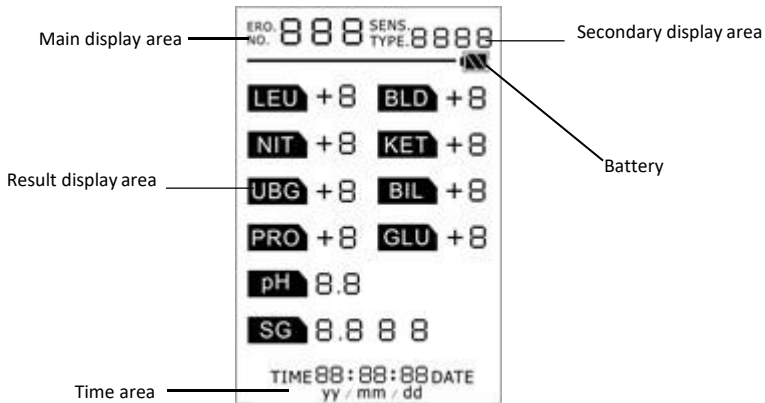
		Short press, number increase in 1 increment
	Down	Long press, number decrease continuously
		Short press, number decrease in 1 decrement
 + 	Combination (Printing language setting)	In the main interface, press  and press  at the same time to enter the printing report language selecting interface, now press to combine the printer
		Operating in the same way as above to enter the printing report language selecting interface, now press or  to switch language
 + 	Combination(S witching between bluetooth and USB)	In the main interface, press  and press at the same time to switch Bluetooth or USB communication mode

2.2 Power on

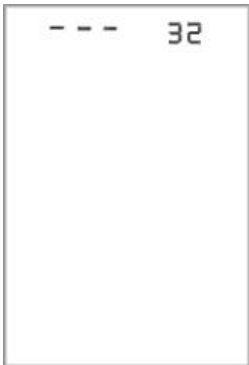
2.2.1 Power ON process





2.2.2 Display

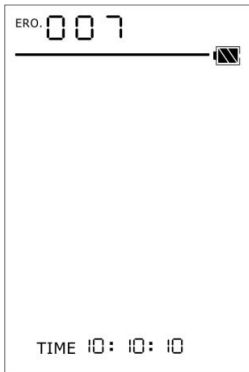


2.2.3 Power on auto-check (POST)





The delivery should be installed in the delivery cabin. Long press exit key  about 2 seconds, the power light will be lighted, at the same time the POST interface will display and the motor begin to rotate. The POST interface is as shown on the left, the secondary area display the version of the software.(The software version in the device may be higher than this picture shows. This manual needn't be updated unless there is change in function and operation)

 **Notice: low battery can't boot the machine.**



After several seconds' POST, the error code (see appendix 1) will be shown in the main display area if there is any mistake. The ERO. Led will blink to remind user, at the same time the instrument will generate a "Di~" sound.

The left picture shown that the instrument hasn't past the POST, the corresponding error code is 007.

 Notice: if it can't past the POST, and shows the error code, long press the exit key  to power off, try to power ON again until it past the POST.



It will enter the main interface after the POST, shown as left picture. It was an 10 items interface and the NO. 001 represent the next test number is 001 and there is no record in the instrument.

2.3 Begin to test

i Notice: please wearing the protective gloves when doing the test to avoid infection!

Step 1: Ready for strip, and dip it into sample for 2~3s;

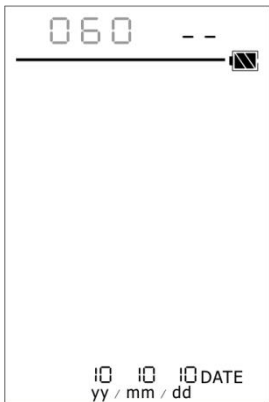
Step 2: Put the strip on the absorbent paper horizontally to absorb the extra liquid on the edge;


Step 3: Put the strip into the slot of the delivery, align the end of strip to the slot limit.



ⓘ Notice: In order to ensure the accuracy of the test sample, please use within the validity period of the supporting strips; strip is completely consumed or over the period of validity of please contact our company to buy details (including the type, quantity, storage conditions, etc.) according to the purchase contract.


The back of the strip must fully contact with the surface of the slot;

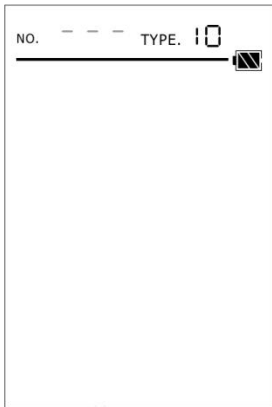
When absorbing the liquid, please only absorb the liquid on the edge, and not to absorb the liquid on the back of the strip. If both of the surface of the slot and the back of the strip are dry, they will get loose and easy to slide, otherwise the result will be inaccurate.



After placing the strip, user can short press the confirm key  in the main interface or data query interface, the instrument will enter the waiting to test interface, shown as the left picture, after 60s countdown time the test will begin.

 **Notice: short press the exit key  in any interface it will exit to main interface !**

If there is an error after you press the confirm key , please refer to the error code in appendix 1.



The interface is shown as the left picture during the test, the “---” in the main display area will display in cycle, and the test process will last for 5~20s, please be patient and do not touch the instrument until the test finished.



ⓘ Notice: During testing, please do not move or touch the strip holder, otherwise the result will be inaccurate.







The instrument will give you an error prompt for strip misplaced, strip slided or no strip during testing, at the same time the instrument will generate a “Di~~” sound. The corresponding error code is 034, as the left picture shows.












The result will display on the screen after the test finished, as is shown on the left, the date is the current date.

i Notice: short press the exit key  in the test result interface to enter main interface, or you can short press the confirm key  to begin another test.

2.4 Data query

Press the up  or down key  in the main interface to query the recent test result, press the up  or down key  again to query the data in other numbers.






 **Notice:** press the exit key  in the data query interface to enter main interface or you can short press the confirm key  to begin another test. Short press the function key  once to print the result, long press the up  or down key  will display continuous scrolling of data, that's convenient to query corresponding data.

 **Notice:** look in the appendix 1 to query the error code if it shows error after pressing the up  or down key  !

2.5 Print the result report (Limited for the instrument with printing)


This instrument use international-open 2.4 GHz band to realize short distance data transmission, link the adapter and place it in an open place (no obstacle) to get a good performance.







Before printing test report, user can long press the exit key  without losing and short press the function key  at the same time to choose the language of the report, then the secondary display area will display 'CH' or 'En'. Short press the up  or down key  at this interface can switch the language, 'CH' stands for Chinese, 'En' stands for English, then press the confirm key  to save and exit this interface.

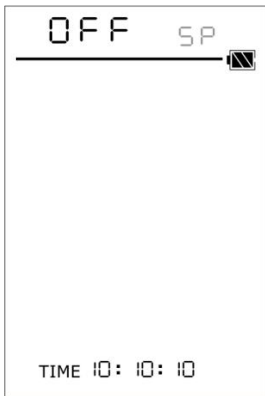
2.5.1 Single-page printing







After the test finished, the current result will display on the screen, user can short press the function key  once, the “P-” will blink in the secondary area as is shown on the left.

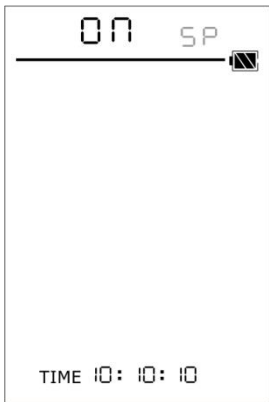
Short press the confirm key  once at this time to print the result in current number, short press the up  or down key  to switch to other results, short press the confirm key  once to print.

2.5.2 Auto printing



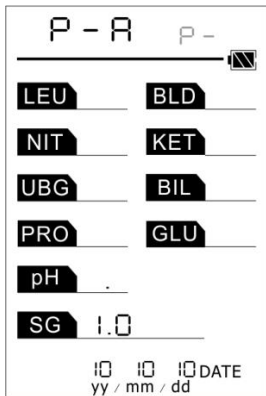
Short press the function key  twice in the main interface, the “SP” led will blink in the secondary display area, which is as shown on the left, the default “OFF” led will display in the main display area which represent the auto printing function is close, short press the up  or down key  to turn on the auto printing function.





 **Notice: auto printing is used to print the report after every test automatically.**



The left picture means the state of auto printing function is on, press **▲** or **▼** to close auto printing function, now short press the confirm key **↵** to finish configuration and return to the main interface.



2.5.3 Print all results



Short press the function key  seven times in the main interface until the interface is shown as left picture, the main display area will display the “P-A”(abbreviation for “Print All”), the “P-” led will blink in the secondary display area, short press the confirm key , the P-A will be blinking, short press confirm key  once again to begin to print all results, short press the exit key  to exit.

2.6 Data transmission


The instrument can upload test data to the other instrument needed for convenient management. The function needs support of corresponding software, please contact our salesman to buy the software.

USB and Bluetooth communication mode switching: in the main interface, press confirmation key  and press , we can switch the communication mode. During the switch, if you hear “Di” twice, it means the instrument has been switched to Bluetooth communication mode. If you hear “Di” for three times, it means the instrument has been switched to USB communication mode. After Switching, the instrument will keep the communication mode until the next switch.

Method 1: upload data to the computer through a computer terminal USB interface, please use our dedicated USB data line, we strongly recommend that you should not use other USB data line! First of all, please make sure the computer has installed software and USB driver (USB driver installation method referring to Chapter 2.16). Then power up the instrument, making sure that

the instrument has been switched to USB communication mode. Connect the instrument to the computer through the USB data line and run the computer software. After making sure of a successful connection, the user can select the required data to upload to the computer.

Method 2: update data to the computer with Bluetooth or intelligent terminal through Bluetooth. First of all, power on the instrument, making sure that the instrument has been switched to Bluetooth communication mode. Then open the computer terminal software (confirming that the computer has Bluetooth adapter) to search for Bluetooth devices. Find the name of the device you need and connect it. After making sure of a successful connection, the user can select the required data to upload to the computer.




 **Note: 1.after startup, the default communication mode of the instrument is the communication mode chosen during the last usage.**

2. TX,RX:Bluetooth:2402-2480MHz SRD:2405MHz;

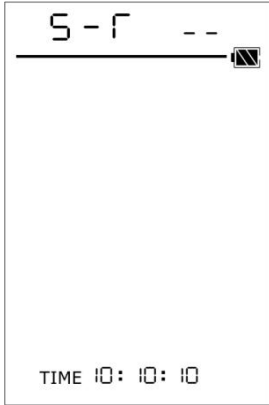
RF-Output Power : Bluetooth:-1.78dBm SRD:-6.86dBm







2.7 Delete data

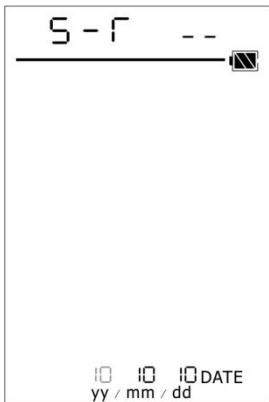


Short Press the function key  six times (four times for the device without printing) in the main interface, the interface will switch to the interface as the left picture shows. The main display area will display the “dEL” (abbreviation for delete), the “dL” led will blink in the secondary display area. Short press the confirm key  once, the screen begin to blink and generated a “Di~~” sound to remind user if it’s going to delete the data. Short Press the confirm key  again to delete data, press any other keys to exit.

2.8 Time configuration




Short press the function key  four times (twice for the device without printing) in the main interface until the screen display as the left picture shows. The main display area display the “S-T” (abbreviation for set time), “--”led in the secondary display area will blink. Current time is displayed in the bottom of the screen, the hour led blinks which represent we can change the hour of time. Short press the up  or down key  once to change the hour, short press the confirm key , the hour led stop blinking and minute led begin to blink, short press the confirm key  once after the minute is setup, second led begin to blink then, short press the confirm key  once after the second is setup, it will enter the date configuration.

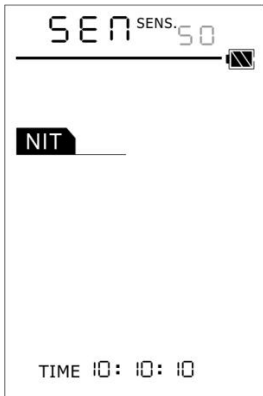



Date configuration





The year led begin to blink then, use the same way as time configuration to setup the year, month, day until the configuration is over. If everything is correct it will return to main interface, if the time is a wrong value it will return to time configuration interface.

 Notice: you will return to main interface if you set the right time format.

2.9 Sensitivity adjustment





Short press the function key  thrice (once for the device without printing) in the main interface to enter the interface shown as left picture. The main display area display the “SEN” (abbreviation for sensitivity), sensitivity of corresponding item will blink in the secondary display area (the left picture means the sensitivity of NIT is 50 percent).

Press up  or down key  to adjust the sensitivity of current item. Press confirm key  to begin next item. Press exit key  to return to main interface and save the configuration.

2.10 Fast test and normal test

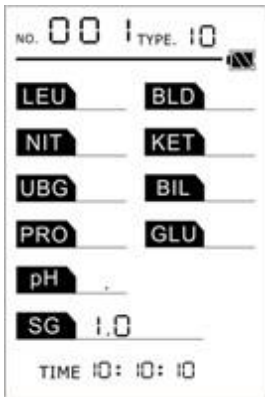



Normal test: short press the confirm key  in the main interface, then the main display area will display the 60s countdown time. After that time countdown, the instrument will do the test automatically.



Fast test: To be convenient, you can long press the confirm key  in the waiting to test interface to start the test right now.

Notice: To make the sample fully react with the test strip, we do not recommend user to do the test with fast test. The operation is limited to the strip has been dipped and placed outside the instrument for one minute.

2.11 Test type configuration



Short press the function key  five times (thrice for the device without printing) in the main interface to enter the interface shown as the left picture. The display area will display “S-P” (abbreviation for set Para)、 “TYPE.”、 “PA”, current configuration will blink in the secondary display area.

Press up  or down key  to adjust the configuration, it can be configured from 1 to 10 items, and the corresponding item will be lighten.

Press confirm key  or exit key  to save configuration.

2.12 Measure principle and procedure

Measure principle: According to light reflectance principle, strip will show different colors for different samples.

Test procedure: Dip the strip into the sample for 2~3s then take out and absorb the liquid on the edge, and do not to absorb the liquid on the back of the strip. Put the strip into the slot and begin to test.

2.13 Test notes

If the strip is coated with too much sample, absorb the extra liquid on the two edge avoid getting too much extra sample into the instrument. The strip should be placed horizontally and facing up on the slot, gently pull it in until it stops.

When switched on, the instrument should be calibrated with quality control product every day, from that user can estimate whether the instrument needs to be adjusted. If necessary, do the sensitivity adjustment.

Note: Please use quality control good that has been registered with state food and drug administration, referring to "Bayer Group Status" index for reference standard.

2.14 Charge the battery




Please use a dedicated power adapter to charge the battery: Connect the USB line to the mini-USB in the host to charge the battery; or connecting the instrument to a PC USB interface with the USB line for charging directly.



- Notice: 1. Please do not use any other charger to charge the battery.**
- 2. You must charge the battery within 2 months to make the device work normally if it is not used for a long time.**
 - 3. During testing please ensure that the power is enough, low battery will lead an inaccurate result.**
 - 4. In case of battery charging failure, please contact our after-sale service department to replace the dedicated instrument lithium battery which has**

internal protection function. Its model is HYLB-1379B. Users shall not arbitrarily disassemble the original battery and replace it with other models.

2.15 Factory default restore

Long press the function key  in the main interface to enter restoring factory default interface. After this operation, the screen will flicker, press the confirmation key  to restore factory default. The sensitivity, test items, and the waiting time of test are all restored to factory default and the auto printing function is closed for the instrument with printing, that is, it will not automatically print the report after the test. If you press the exit key , it will not restore factory default.

2.16 Driver Installing

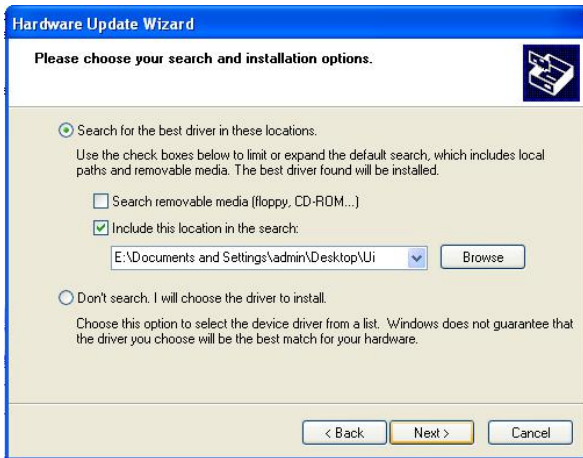
This instrument can update software through USB. Before updating, user should install driver, the procedure of driver Installing is as follows.

Step 1: Connect the instrument and the computer with the data line of USB.

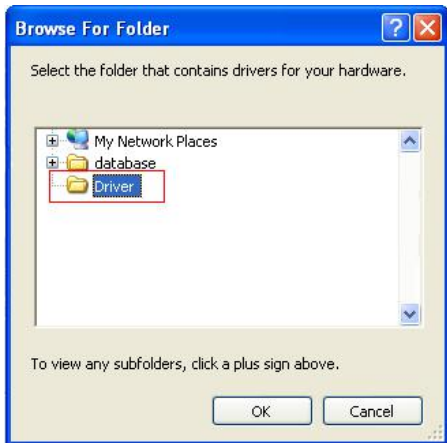
Step 2: Select “Install from the list of specific location [Advanced]”, then click “Next”.



Step 3: Click " Browse" to select the location of the driver document.



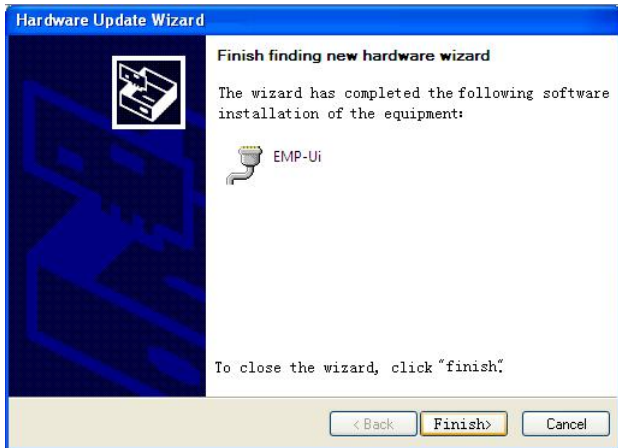
As follow picture shows, select “Driver” file, then click “OK”.



Step 4: As follow picture shows, the computer automatically install the driver.

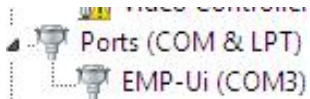


Step 5: Click "Finish" to finish driver installing. Find new hardware wizard



After installing driver, user can find out the instrument that you have installed, COM3 is the

connection port of USB and computer to achieve software update.



Chapter 3 Routine maintenance

3.1 Instrument cleaning

Please obey the procedure below:

Procedure 1: Power ON, wait the instrument finish POST.

Procedure 2: The bracket will automatically come out.

Procedure 3: Hold the host tightly and pull out the bracket in the front of the host.

Procedure 4: Use distilled water to wash the bracket especially the slot, wipe the whole
bracket with cleaning dry paper.

Procedure 5: Hold the host tightly, re-install the bracket along the direction that opposite to
the direction you pull out the bracket.

Procedure 6: Wipe instrument appearance with a soft cloth dipped in neutral liquid.

If the dirt is too severe, use neutral cleaning solution and soft brush to scrub, use distilled water to flush, After flushing, you can dry the water on the surface first, then wipe the instrument with absorbent paper, finally dry after disinfection with alcohol.



Note: 1. Do not pollute the calibration block when you do the cleaning.

2. You can use neutral cleaning solution and wet cloth to wipe the surface of the instrument.

3.2 Instrument maintenance

- 1) Keep both the instrument and environment clean, prevent the screen from collision, and prevent the touching keys from aimless touch.
- 2) You should clean the slot every day after all the test is done.
- 3) No repairing and dismantling the instrument voluntarily, if there are any quality problems, please call customer service hotline and any maintenance can only be conducted by authorized service engineer.

3.3 Waste disposal

1. You should obey the local biohazard waste disposal regulations to discard the wasted samples, strips and protective gloves.

2. After the expiration of the service life of the instrument, the scrap of the instrument shall be conducted according to local relevant standards of disposal of electronic products waste.

3.4 Frequent problems handle

Breakdown description	solution
Cannot boot	Check the power source, charge it if necessary.

Note: Users' unauthorized maintenance is prohibited after instrument breakdown. Please immediately contact our after-sale service department, if unauthorized maintenance makes the instrument stop working.

Chapter 4 Packing、 store and transport

This instrument is packed with a hard carton; the EPE and foam inside make it rugged and shock-proof. There are some simple shockproof systems in the package which adapt air, rail, road and ship transport. But prevent it from snow, rain and collision. if it has been stored more than 3 month, get it out and power on for 4 hours to check if it is OK. Place the package in the warehouse according to the direction on the package. Do not tightly close to the ground, walls and roof.

Storage and transport: temperature:-20°C~+55°C

Humidity: less than 85%RH

Chapter 5 EMC related instructions

5.1 Electromagnetic declaration

Table 1

Guidance and manufacturer's declaration - electromagnetic emissions		
Urine analyzer is intended for use in the electromagnetic environment specified below. The customer or the user of the urine analyzer should assure that it is used in such an environment.		
Emissions test	Compliance	Electromagnetic environment - guidance
RF emissions GB 4824	Group 1	Urine analyzer uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic instrument. Urine analyzer is suitable for use in all establishments, including domestic establishments and those directly
RF emissions GB 4824	Class B	
Harmonic emissions GB 17625.1	Not applicable	
Voltage fluctuation /	Complies	

scintillation emissions GB 17625.2		connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.(Rated power <75W, harmonic emission unlimited).
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Table 2

Guidance and manufacturer's declaration - electromagnetic immunity			
Urine analyzer is intended for use in the electromagnetic environment specified below. The customer or the user of the urine analyzer should assure that it is used in such an environment.			
Immunity test	IEC 61326 Test level	Compliance level	Electromagnetic environment - guidance
electrostatic discharge GB/T 17626.2	±4 kV Contact ±8 kV Air	±4 kV Contact ±8 kV Air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30 %.

Electrical fast transient/burst GB/T 17626.4	± 1 kV for power supply lines	± 1 kV for power supply lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge GB/T 17626.5	± 1 kV Line to line ± 2 kV Line to ground	± 1 kV Line to line ± 2 kV Line to ground	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines	5 % U T (95 % dip in U T) for 1 cycle 40 % U T (60 % dip in U T)	5%UT, for half a cycle. 40%UT, for 5 cycles. 70%UT,for	Mains power quality should be that of a typical commercial or hospital environment. If the user of The urine analyzer requires


GB/T17626.11	for 5 cycles 70 % U T (30 % dip in U T) for 25 cycles	25 cycles.	continued operation during power mains interruptions, it is recommended that the urine analyzer be powered from an uninterruptible power supply or a battery.
Power frequency (50/60 Hz) magnetic field GB/T 17626.8	3A/m	3A/m	If abnormal work situation occurs, it may be necessary to position the urine analyzer further from sources of power frequency magnetic fields or to install magnetic shielding. The

			power frequency magnetic field should be measured in the intended installation location to assure that it is sufficiently low.
Note: U T is the A.C. mains voltage prior to application of the test level.			

Table 3

Guidance and manufacturer's declaration - electromagnetic immunity			
Urine analyzer is intended for use in the electromagnetic environment specified below. The customer or the user of the urine analyzer should assure that it is used in such an environment.			
Immunity test	IEC 61326 Test level	Compliance level	Electromagnetic environment - guidance
			Portable and mobile RF communications instrument should be used no closer to any part of the urine analyzer, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.

<p>Conducted RF GB/T 17626.6</p>	<p>3V(Effective value) 150 kHz to 80 MHz 3 V/m</p>	<p>3V(Effective value) 3 V/m</p>	<p>Recommended separation distance $d=1.2\sqrt{P}$ $d=1.2\sqrt{P}$ 80 MHz ~ 800 MHz $d=2.3\sqrt{P}$ 800 MHz ~ 2.0 GHz Where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in meters (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey, should be less than the compliance</p>
<p>Radiated RF GB/T 17626.3</p>	<p>80 MHz to 2,5 GHz</p>		

			<p>level in each frequency range.</p> <p>Interference may occur in the vicinity of instrument marked with the following symbol: </p>
<p>Note 1: At 80 MHz and 800 MHz, the higher frequency range applies.</p> <p>Note 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.</p>			
<p>a) Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the urine analyzer is used exceeds the applicable RF compliance level above, the urine analyzer should be observed to verify normal operation. If abnormal</p>			

performance is observed, additional measures may be necessary, such as re-orienting or relocating the urine analyzer.

b) Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.

Table 4

Recommended separation distances between portable and mobile RF communications instrument and the urine analyzer			
<p>The urine analyzer is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the urine analyzer can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications instrument (transmitters) and the urine analyzer as recommended below, according to the maximum output power of the communications instrument.</p>			
Rated maximum output power of transmitter W	Separation distance according to frequency of transmitter m		
	150 KHz ~ 80 MHz $d=1.2\sqrt{P}$	150 KHz ~ 80 MHz $d=1.2\sqrt{P}$	150 KHz ~ 80 MHz $d=1.2\sqrt{P}$
0.01	0.12	0.12	0.23

0.1	0.38	0.38	0.73
1	1.2	1.2	2.3
10	3.8	3.8	7.3
100	12	12	23

For transmitters rated at a maximum output power not listed above, the recommended separation distance d in meters (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

Note 1: At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.

Note 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

5.2 Instructions on electromagnetic compatibility and risk warning

After EMC test, the urine analyzer meets the requirements of standard GB / T 18268.1-2010 " Electromagnetic compatibility requirements of measurement, control and laboratory use electrical instrument, part 1: General requirements" and GB / T 18268.26-2010 "Electromagnetic compatibility requirements of measurement, control and laboratory use electrical instrument, part 26: Special requirements for in vitro diagnostic (IVD) medical instrument".

Please strictly comply with the following requirements in the use, otherwise it may cause electromagnetic interference to other instrument or reduce the urine analyzer's anti-electromagnetic-interference ability, or even make the urine analyzer lose its basic performance.

The urine analyzer is classified into class B belonging to I group of GB 4824-2013 and is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.

The instructions of portable and mobile RF communications instrument affecting medical electrical instrument: Portable and mobile RF communications instrument may affect the urine analyzer's normal performance. The customer or the user of the urine analyzer should assure that it is used at a certain distance from portable and mobile RF communications instrument, for recommended distance please see Table 4.

Length of power supply line of the urine analyzer should be no longer than 1 meter. If the connection line has a fault, please contact us to maintain or replace it, otherwise it may cause excessive electromagnetic interference. If the urine analyzer has a fault, please immediately contact us. We advise you not maintaining or replacing the component without permission, otherwise it may cause excessive electromagnetic interference.

Caution: Except the transducer and cable sold by the manufacturer of the urine analyzer as the spare parts for internal components, using other accessories, transducer and cable may make the urine analyzer increase the electromagnetic emission or reduce the electromagnetic immunity.

Caution: The urine analyzer should not be used closer to or stacking on other instrument, if using closer to or stacking on other instrument cannot be avoided, then the urine analyzer should be observed to verify normal operation.

Urine analyzer is a professional IVD instrument for self-testing. The following precautionary warnings need to be noticed:

a) It is recommended to evaluate the electromagnetic environment before using the urine analyzer;

(b) Using the urine analyzer in dry environment, especially where contain artificial materials (synthetic fabric, carpet, etc.) may cause damaged electrostatic discharge, resulting in incorrect test results;

(c) No using the urine analyzer near a strong radiation source (such as a non-shielded radio source), otherwise it may interfere with the normal performance of instrument.

Basic property: The coefficient of variation of analyzer reflectivity test results (CV, %) ≤ 1.0 .

Test method: Analyzer tests on the sample strips of a certain reflectivity for 10 times, then calculates the coefficient of variation of reflectivity (CV, %).





Work mode: 1) Ordinary work mode: After the boot, the analyzer entering the ordinary test work, the printer enters the normal working condition.

2) Continuous work mode: Through software settings, the analyzer working automatically and continuously, the printer to enter the normal working state.

Appendix 1 Internal exception tips

Error Code	Meaning
006	Key communication signal error
007	Transfer position sensor error, cannot detect the normal starting position (check if the motor have been stuck) (check if Hall element is damaged)
008	EEPROM write error
009	EEPROM read error
010	Time initialization error
011	Memory blank
012	Not enough memory(when there are 900 results) remind user to delete the data manually, you can still do the test
013	Failed to establish the upload
014	Upload request time out
015	Printer no-response
016	Printer BUF is full
017	No printing paper or Printer is opened
019	Printer data calibration error

020	Successful data transmission, but request time out, there isn't any replay from printer
021	Failed to transmit the data(no match wireless device)
024	No calibration block, or the block is too dark(white block's color is less than 400) (only happens when power on)
026	Wireless transmission error(wireless device is busy)
027	Horizontal offset error of the printer
028	Wide offset error of the printer
029	Sum error of the printer
030	Excess temperature of the printer
031	Printer exception
032	Data of the printer is 0 byte or exceeds the BUF
033	Printer error code is unknown or invalid
034	Strip misplaced, strip slide or no strip
038	No memory, cannot store any data(remind user to delete the data manually)
040	Calibration error after set the type of test paper

 <p>Recycle</p>	 <p>: Temperature limit</p>
 <p>: Danger, hazard area</p>	 <p>: Biological hazard</p>