AnyScan 300

Operating Manual

Urine Chemistry Analyzer

Contents

1. Introduction ---------- 3
2. System Description ---------- 3
2.1 Principles of Measurement ---------- 3
2.2 Components ---------- 4
2.3 Technical Information ---------- 6
3. Instrument Installation ---------- 6
3.1 The instrument and parts ---------- 6
3.2 Installation ---------- 7
4. Main Process ---------- 8
5. Calibration ---------- 9
6. How to operate instrument ---------- 11
6.1 General Mode ---------- 13
6.2 One by One Mode ---------- 15
6.3 Quick Mode ---------- 17
6.4 Registration ---------- 18
7. System Setup ---------- 20
7.1 System Clock Set ---------- 20
7.2 System Configuration ---------- 21
7.3 Registration ---------- 23
7.4 Data Base ---------- 24
7.5 DB Block Control ---------- 26
8. How to Clean the Strip Loader Plate after Use ---------- 27
9. Troubleshooting & Maintenance ---------- 28

1. Introduction

Urine test strips simplify laboratory diagnosis through ease of use, high sensitivity and specificity. These benefits allow you to identify pathological changes in the urine quick and reliably. The addition of the Urine Analyzer to the urinalysis process allows for standardization and efficiency of urine test by eliminating potential sources of error associate with the visual reading of test strips, such as improper lighting at the workplace, or different color discrimination by the user or different timing when the values are read. The urine test strips that shall be used with the instrument are multi parameter strips for the determination of specific gravity, pH, leukocytes, nitrite, protein, glucose, ketones, urobilinogen, bilirubin and blood in urine.

2. System Description

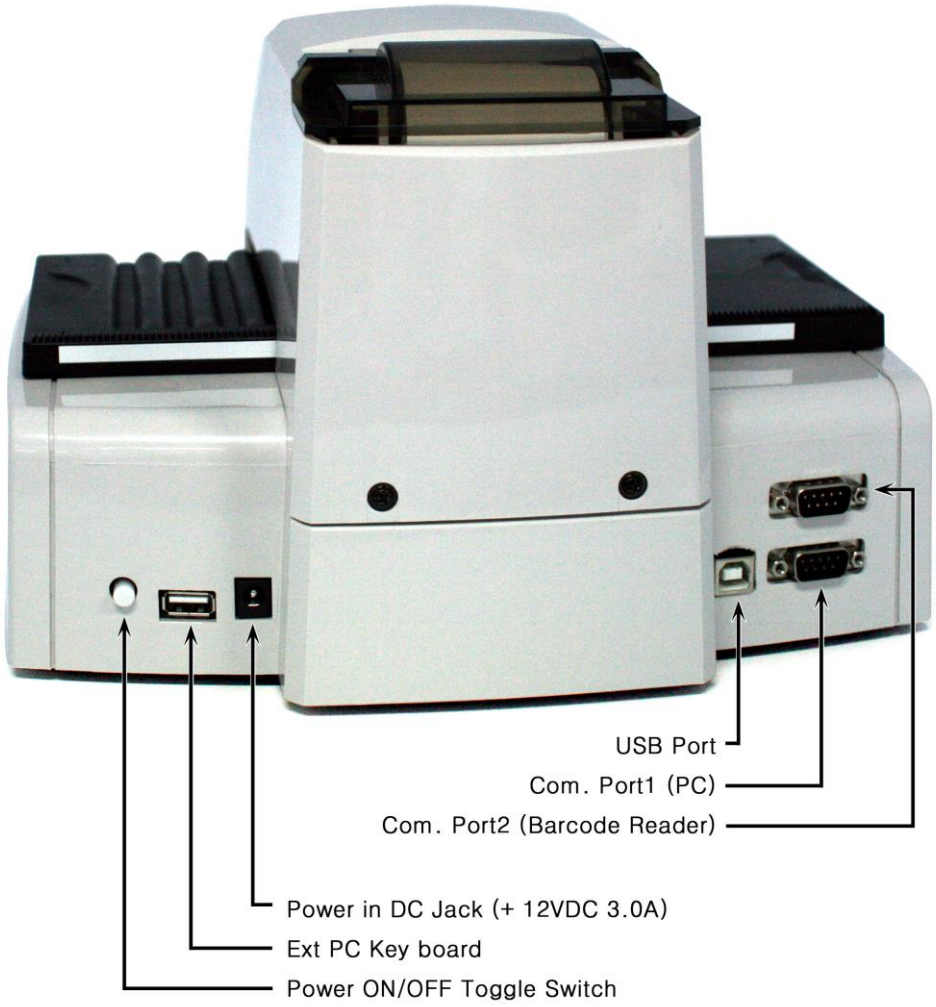
2.1 Principles of Measurement

The AS300 is a urine strip reader and analyzer device for laboratories. The reader is semiautomatic; the forwarding, reading and evaluating are automated. The only thing the operator has to do is to dip the strip into the sample and place it on the strip loading plate.

The AS300 is a reflectance photometer. The strip is illuminated by white light, and the reflected light from the strip is detected by the Sensor. The RGB signals are digitized, and this digitized image is interpreted by the processor. The intelligent image analyzer SW locates the strip and the pads, and based on these color data the parameter values are determined. The results including the date and time of the measurement, sequence number and the ID are stored and printed out by the internal printer.

2.2 Components

View from above


USB Port
Com. Port1 (PC)
Com. Port2 (Barcode Reader)
Power in DC Jack (+ 12VDC 3.0A)
Ext PC Key board
Power ON/OFF Toggle Switch

View of rear

2.3 Technical Information

Measurement Method	Reflectance Photometer
Wave Length	460, 550, 650 nm
Dimensions	275*250*170mm
Weight	1300g
Power Supply	Input: 100-250V Output: DC 12V, 3A
Throughput	300 / Hour (Max 800 tests/hour)
Memory	Up to 100,000 samples
Printer	Thermal Printer
Serial Communication	RS232C interface port
Available extras	Keyboard / Barcode Reader (Scanner)

3. Instrument Installation

3.1 The instrument and parts

AS 300
Strip Loading Plate: Right 2EA
AC adapter 100-240V / 12V DC 3A : 1EA
Power Cable: 1EA
Thermal printer paper: 1 Roll
Calibration Strip: 1 Bottle
Operating Manual CD
Serial RS-232C cable
USB Cable(AB type)

Optional accessories

Barcode Reader (Scanner)
PC Keyboard

3.2 Installation

1) Carefully unpack the Urine Analyzer and place it on a firm and level surface. Do not place the analyzer in direct sunlight or under any direct light source.

2) Insert the plate: Grasp the plate end and insert it along the visible sliding rail until it gets between motor gear and bearings sufficiently.

3) Insert the printer paper roll



⇒ ⇒

4) Unpack the adapter and connect it to the socket in the backside of AS300. Plug the adapter into the wall socket. Use only the provided adapter. Use of other type adapter can cause defective measurement and general failure.

5) In case of viewing the test results in your computer connect the serial cable to a serial port COM1 of AS300 and a port for COM1 in the back of computer. Open the PC management program in the connected computer. Then you can see the test results automatically in your computer after testing

6) To use a Barcode reader/scanner to identify samples etc., plug it into the Serial Port (COM2) on the backside of the AS300.

7) To use keyboard to identify samples etc., plug it into the socket on the backside of the Urine Analyzer and input the patient's ID.

The AS300 is now ready to use.

4. Main Process

Step 1. Put the plate into the middle of the instrument and connecting AC adapter to the port on the backside of instrument and power on.

Step 2. Automatically the Instrument executes System Check and then the plate moves to the middle of the reader.

Step 3. Calibration (Refer to 5 Calibration)

Step 4. **Measurement MODE**

On condition the plate is stopped, place each strip dipped in the urine by one by one.

At this time, there are three selective modes for detecting the test strips.

1) **General Mode**: Calculate placing time of 'whole strips'. (press start(▶) key '**after**' putting 1st test strip on the groove located in the nearest to center of instrument, place next test strip (max. 10 test strips) and then press **End (ENT)** key after placing the last test strip) **(Refer to 6.1 General Mode)**
2) **One by One Mode**: Recognize placing time of 'each strip'. (press start(▶) key '**after** ' putting 1st test strip on plate like general mode and press another next(▶) key whenever you place each additional strip(max. 10 test strips) and then press **End (ENT)** key after placing the last test strip) **(Refer to 6.2 One by One Mode)**
3) **Quick Mode:** Place all test strips and then press **End (ENT)** key. **(Refer to 6.3 Quick Mode)**

Step 5. Waiting

Standby AS300 until the color incubation of 1st strip is completed.

Step 6. Reading

After the 1st strip finish color incubation, the instrument starts to measure.

Step 7. Remove Strips

As soon as AS300 finishes the measurement, it will be changed to waiting mode. At this time, operator can check the result by watching display or prints out with the naked eye and can throw away these already checked out strips.



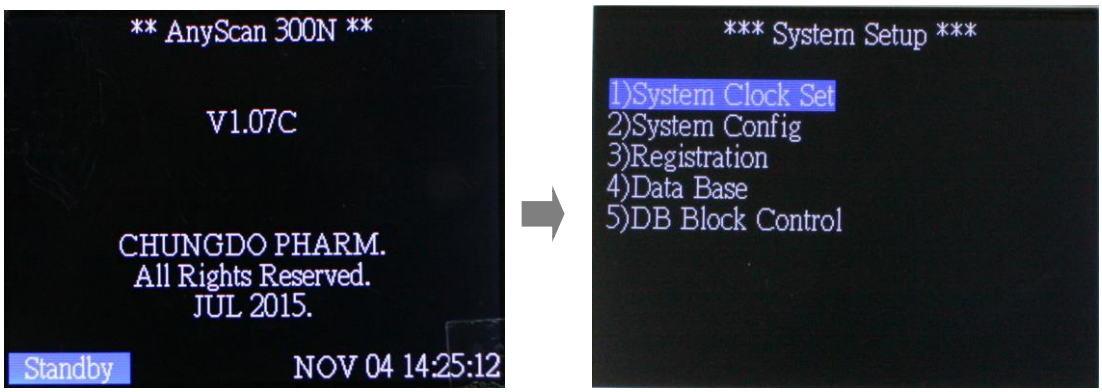
5. Calibration

The AS300 is factory calibrated before shipment by the manufacturer. The Calibration of instrument should be done prior to first use and then the same process from the 2nd time can be recommended to do in **every 4 weeks** with Calibration Strip in the package. Calibration strip is used for checking aging processes of the optical system and variation of other internal conditions of instrument. When strong variation is detected which may be caused, for instance, by contamination of the reference pad or low light intensity of a defective light source, an error message will be printed.

The Calibration Strips are plastic white standard strips with defined and constant reflectance characteristics. The Calibration Strip should remain in the vial until use and should be used only once. Do not touch in the middle areas of the strip. The plate should be clean and dry before a calibration is performed.

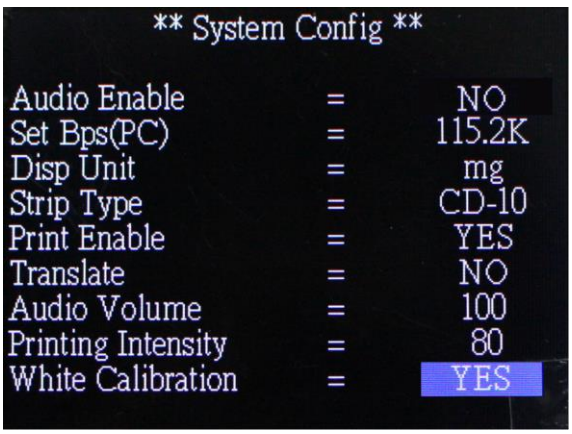
For calibration, proceed as follows:

1. In Standby Mode of **[Fig.5]** press **ESC** key twice to display "System Setup" **[Fig.5.1]**.



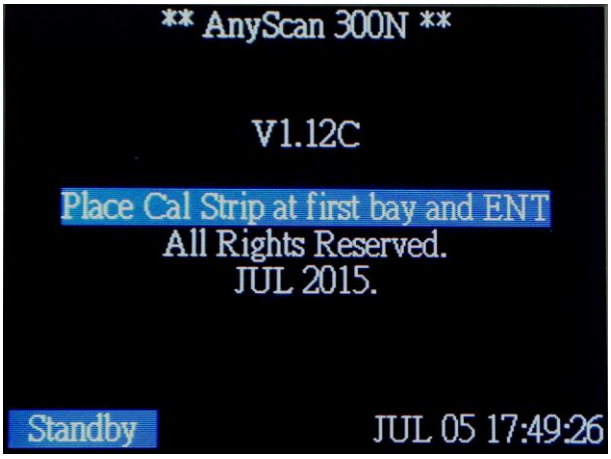
[Fig.5.1] System Setup Mode

2. Select the "2)System Config" menu in the * System Setup *



[Fig. 5.2] System config

3. Then move to White Calibration item by using up/down (▲/▼) keys.
   After adjusting "Yes", press ESC key twice for activation and then the display will be shown as [Fig. 4.4].



[Fig.5.3] White Calibration Mode

4. Put the 'Calibration Strip(CAL)' into **the 1st position of Strip Loading Plate** and then press **ENT** key**.** The calibration checking procedure can be stopped by pressing **ESC** key.

※ Caution : Please use Chungdo Phram's Calibration strip only .
There is nothing attaching in our Calibration strip.

5. After calibration finished, the result of calibration print out.
   If the calibrations values are between 333+/-10(323 ~ 343), it is OK.

6. How to operate instrument

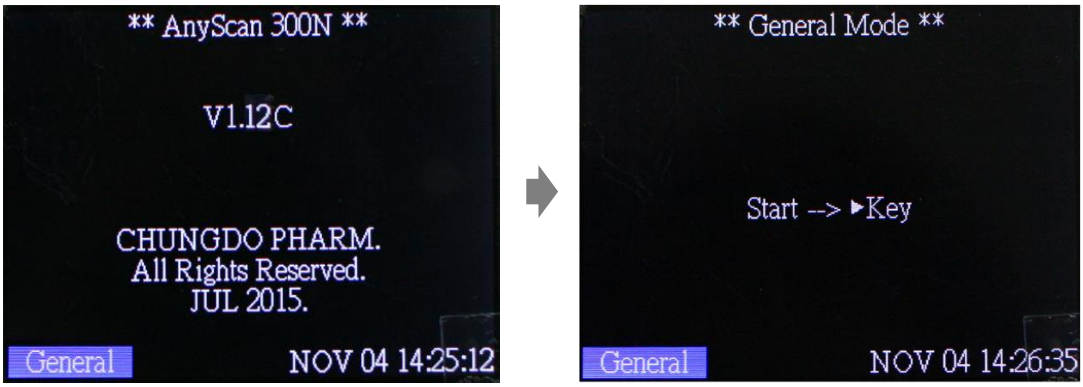
Turn on the Power switch on rear of instrument. Then the start page will be shown as **[Fig.6]** and the instrument checked the system automatically.

]

[Fig.6.1] Standby mode

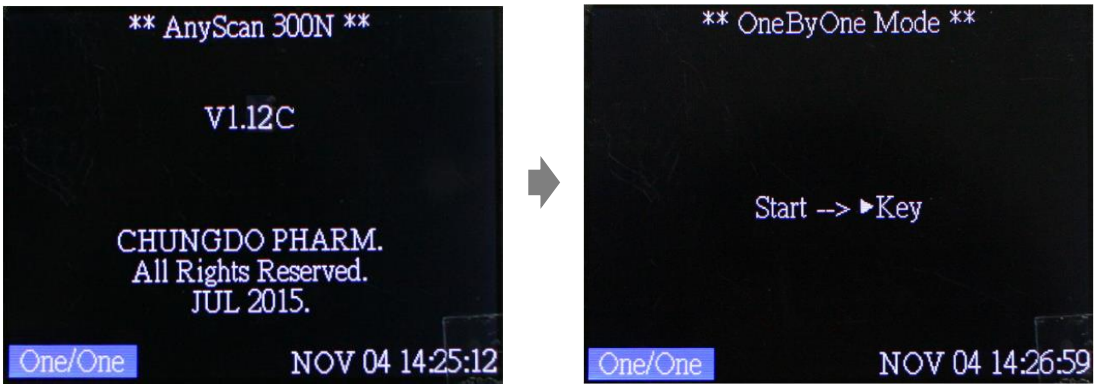
Depending on the method of measurement, 3 different measurement modes can be selected by Function Key (◀) and press **ENT** key to set.

6.1 General Mode



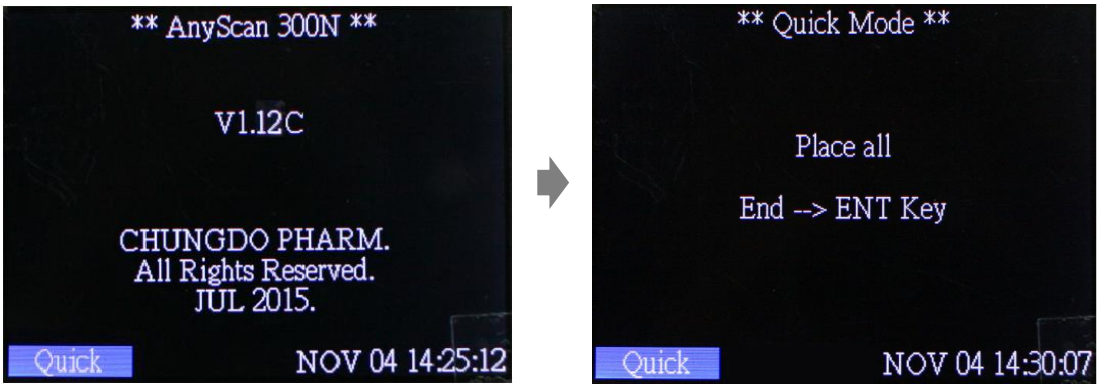
[Fig.6.2] General Mode

6.2 One by One Mode



[Fig.6.3] One by One Mode

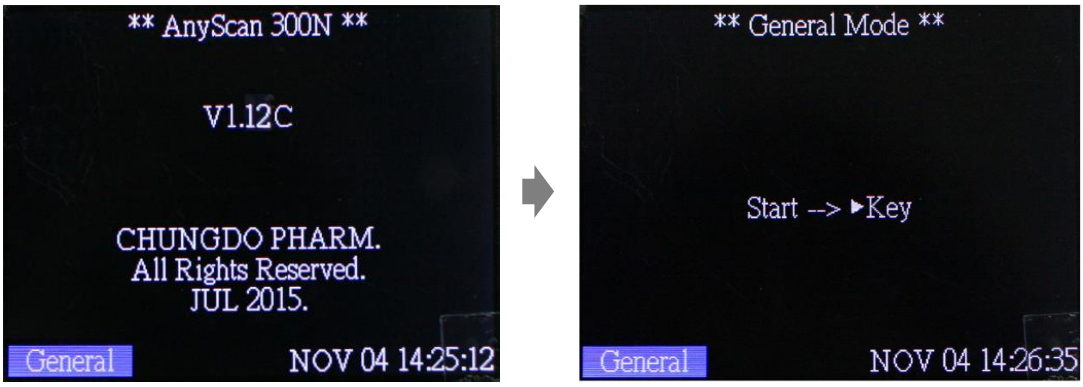
6.3 Quick Mode



[Fig.6.4] Quick Mode

6.1 General Mode (Press ◄ key at 'Standby' mode)

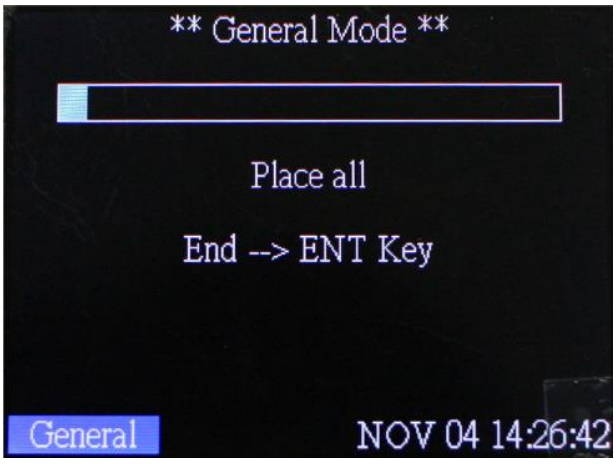
1) In the state of Stand by, following will be displayed after pressing the **ENT** key.



[Fig.6.2] General Mode

Press **ESC** key and you will return to Standby mode.

2) After the 1st strip dipped in the urine is placed on the plate, press Start key (▶).
Put the 2nd ~ 10th (max.) strips one by one from the center of instrument after dipping in each collected urine. (The Progress Bar display for100 sec incubating time)
After the last reagent strip of batch is placed, press **End (ENT)** button. On pressing **End** key, recognition of measurement time from Start to End can be calculated by the instrument.



[Fig.6.5]

Press **ESC** key and you can be canceled the placing strip and evaluation.

3) Waiting for incubation of 1st strip

[Fig.6.6]

ⓐ : 1st strip incubation time

ⓑ : Placed Strip position

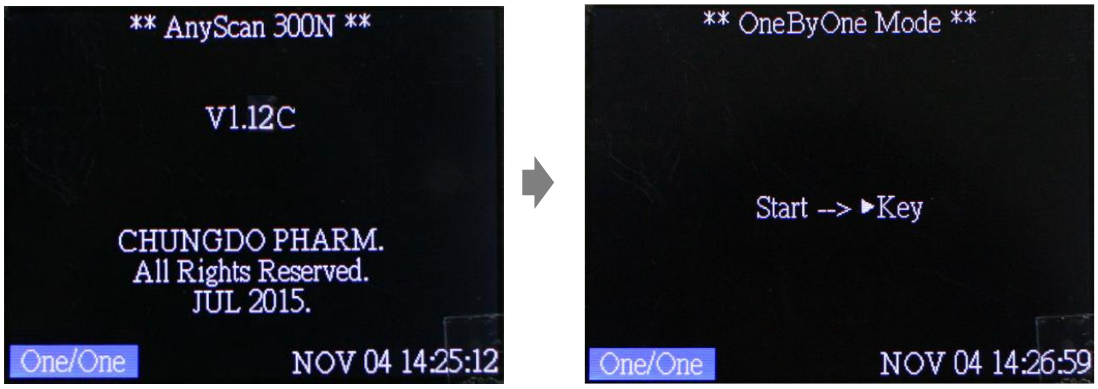
4) After incubation time of the 1st test strip, it start to read test result of the strips on the plate one by one.

5) Test result will be printed out, shown on the LCD and automatically saved in the memory.

6) Press **ESC** key and you will return to General mode.

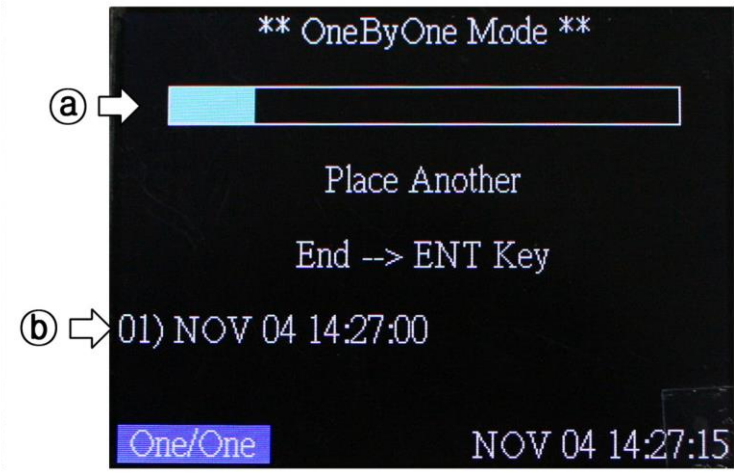
6.2 One by One Mode

1) In the state of Stand by, following will be displayed after pressing the **ENT** key.
Press **ESC** key and you will return to Standby mode.



[Fig.6.3] One by One Mode

2) After the 1st strip dipped in the urine is placed on the plate, press Start key (▶).
Button Place another key(▶) whenever each of next strip is placed on the plate one by one from the center of instrument after dipping in the collected urine and placing on the plate. (The Progress Bar display for 90 sec incubating time) By pressing another key(▶) per measurement of each strip, the exact measuring/starting time is recognized.
After the last reagent strip of batch is placed, press **End (ENT)** button.



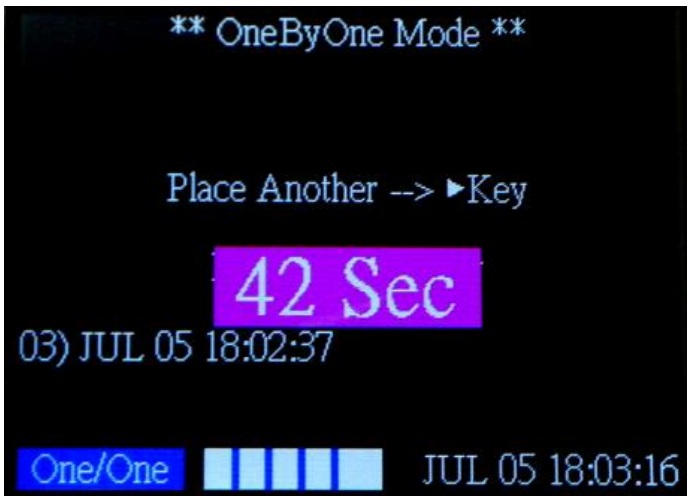
[Fig.6.7]

ⓐ : The Progress Bar display for 90 sec incubating time

ⓑ : The number of loaded strips and loading time

Press **ESC** key and you can be canceled the placing strip and evaluation.

3) Waiting for incubation of 1st strip

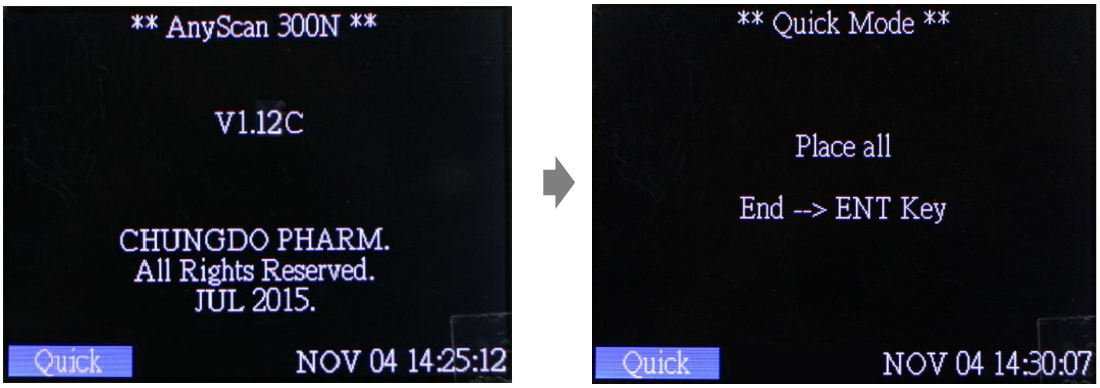


[Fig.6.8]

4) After incubation time of the 1st test strip, it start to read test result of the strips on the plate one by one.
5) Test result will be printed out, shown on the LCD and automatically saved in the memory.
6) Press **ESC** key and you will return to One by One mode.

6.3 Quick Mode

1) In the state of Stand by, following will be displayed after pressing the ENT key. Press **ESC** key and you will return to Standby mode.



[Fig.6.4] Quick Mode

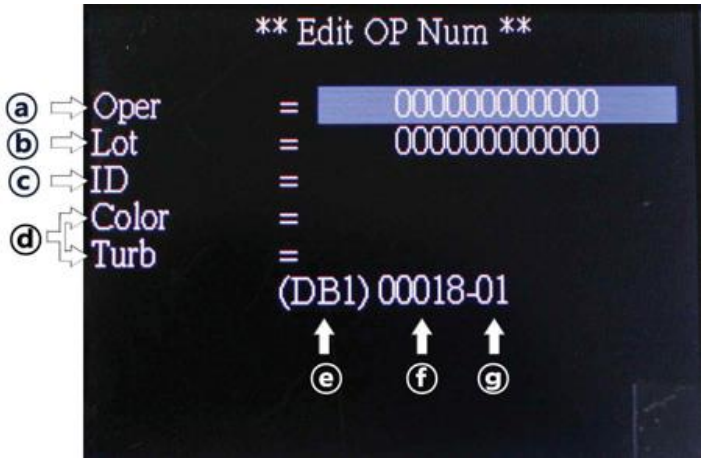
2) Test strips are temporarily incubated outside the instrument and inserted at the correct time. After the last reagent strip of batch is placed, press **End (ENT)** button.

3) Test result will be printed out, shown on the LCD and automatically saved in the memory.

4) Press **ESC** key and you will return to Quick mode.

6.4 Registration

In System Setup mode [Fig.4.2], press **3)** (registration mode) key and the screen will be shown as following Registration Mode **[Fig.6.5]**. Use ◀ ▶ key to move to each item.



[Fig.6.5] Registration Mode

ⓐ Operator's ID

ⓑ Lot number of strip

ⓒ You can enter patient's/sample's ID in part _ using numeric keys or a barcode reader. (Maximum 13 digits)

ⓓ Entering the color and turbidity of urine

ⓔ Block of data that will be stored in data base after measurement

ⓕ Number of data that will be stored in data base after measurement

ⓖ A serial number of sample you are going to test

- If you don't need any record about test operator's ID and the lot number of strip, you may skip and leave it blank.

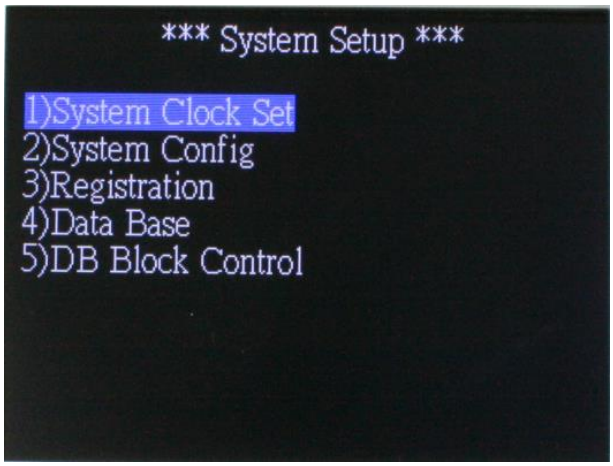
- If ID are serial numbers, you may register only the first sample's ID. Then the others will be numbered in order automatically. In that case next ID will be

increasing one by one from the first number. This number will increase even newly start the system after turn off power.

- In case that you don’t register patient/sample’s ID before test, it will be blank in ID.
- If you want to stop printing patient/sample’s ID, before test, make it blank in ID (just input only ‘0’ key then will erase ID area).

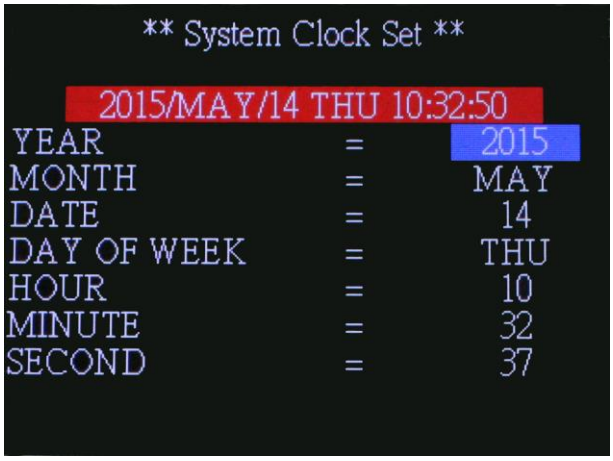
7. System Setup

In Standby Mode of **[Fig.6]** press ESC key twice to display "System Setup" **[Fig.7]**.



[Fig.7] System Setup Mode

7.1 System Clock Set: Set Date and Time.



[Fig.7.1] System Clock Set Mode

1) Move to each item by using ▲▼ (up, down) keys and adjust time by using ◄► (left, right) keys or NUM keys.
2) After adjusting local time, press ENT key to set.
3) To escape System Clock Set mode, press ESC key and you will return to System Control mode.

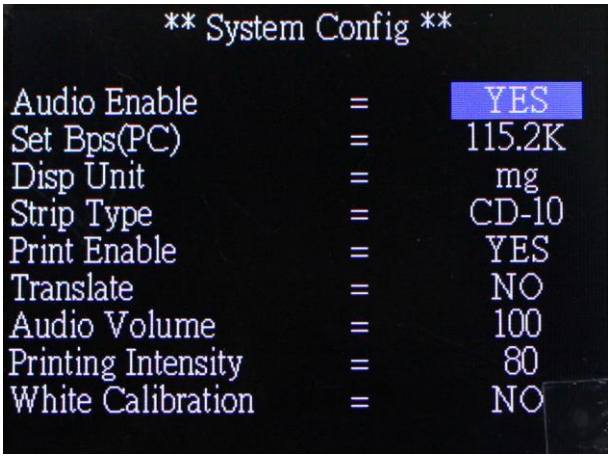
⚠ **Do not forget to press ENT key after finishing time adjustment.**

7.2 System Configuration

In case of changing the System Configuration saved in the analyzer, in System Setup press 2) key and the display **[Fig.7.2]** will be shown as below.

Move to each item the System Configuration by using ▲▼ (up, down) keys and adjust the details of each System Configuration item by using ◄► (left, right) keys.

If you press the ESC button in the selecting screen of the details, you can return to the previous screen.



[Fig.7.2] System Configuration Mode

1) Audio Enable

If you select YES, beep will sound while operating ANYSCAN 720. With NO, it will be silent. Use ◄► keys to select YES or NO.

2) Set Bps (PC)

You can select speed rate while transferring data with each other between the instrument and PC115.2 are used.

3) Disp Unit

You can select the unit of test results between mg and mol.

4) Strip Type

You can select the strip type that you want to test among CD-02, 04, 4SG, 05, 06, 06SG, 07, 08, 8SG, 09, 10, 11.

5) Print Enable

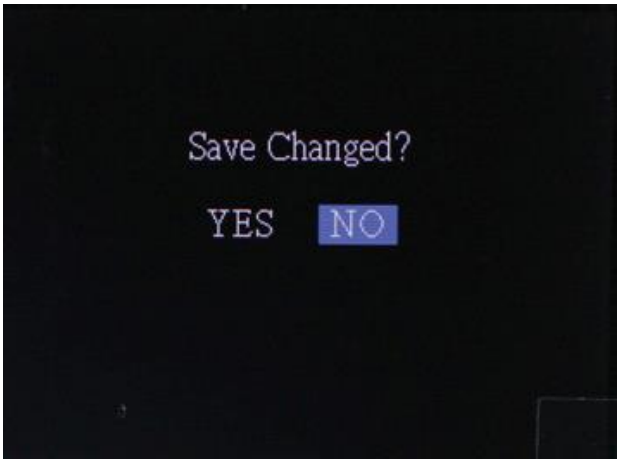
You can have printer on or off by selecting YES or NO. If you select YES, test results will be shown both on LCD and printing paper. With NO you get test results only on LCD.

6) Translate: It is connected to a PC and translated into the set language.

7) Audio Volume: Audio control

8) Printing Intensity: Print density control

9) White Calibration: Select whether to calibration or not

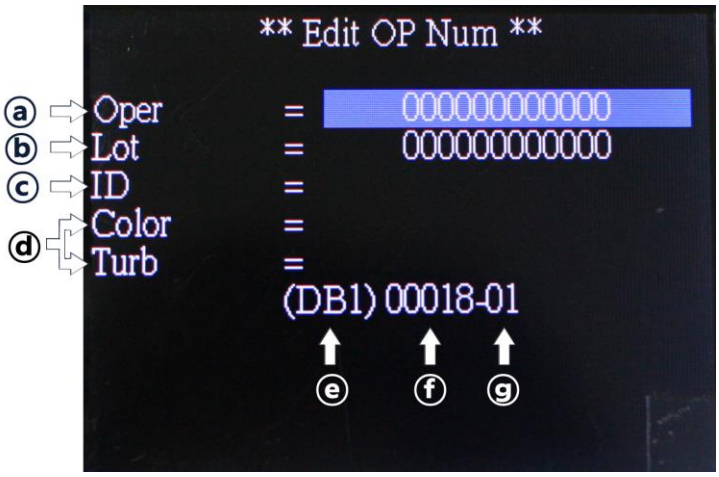


[Fig. 7.3] System Configuration Confirm Mode

If you still want to change, press **ENT** key and you will go back to System Setup Mode.

7.3 Registration

In System Setup mode press 3) key and the display **[Fig.7.3]** will be shown as below. Input data on each item and use ▲▼ key to move to next item. Press **ESC** key and you will return to System Setup mode.



[Fig.7.3] Registration Mode

Part ⓐ: Operator's ID

Part ⓑ: Lot number of strip

Part ⓒ: You can enter patient's/sample's ID in part _ using numeric keys or a barcode reader. (Maximum 13 digits)

Part ⓓ: Entering the color and turbidity of urine

Part ⓔ: Block of data that will be stored in data base after measurement

Part ⓕ: Number of data that will be stored in data base after measurement

Part ⓖ: A serial number of sample you are going to test

- If you don't need any record about test operator's ID and the lot number of strip, you may skip and leave it blank.
- If IDs are serial numbers, you may register only the first sample's ID. Then the others will be numbered in order automatically. In that case next ID will be

increasing one by one from the first number. This number will increase even newly start the system after turn off power.

- In case that you don't register patient/sample's ID before test, it will be blank in ID.
- If you want to stop printing patient/sample's ID, before test, make it blank in ID (just input only '0' key then will erase ID area).

7.4 Data Base

1) In system Setup mode press 4) key and the Searching by will be shown as **[Fig.7.4]**. The data saved in the memory of instrument can be searched by using ▲▼ keys.

[Fig.7.4] Data Base Mode

- **Go End:** Go to the latest saved sample.
- **Go Mem :** Go to the inputted sample number.
- **Go ID:** Go to the inputted sample number.

2) A total of 100,000 test results can be stored in the database. Data sets of 20,000 results are stored in the memory under a DB* file name. (DB1-DB5 will be sequentially generated.)
3) If data exist in the DB file, DB* will be displayed in blue. If not, it will be displayed in red.
4) When selecting a desired DB file with the Left and Right keys, DB* will be displayed in green.

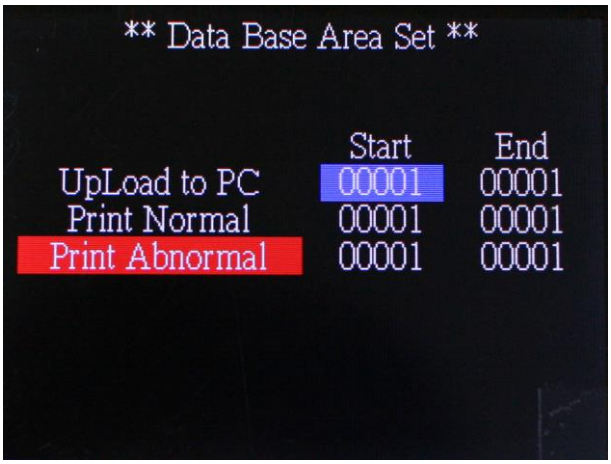
At this point, after selecting the search method with the Up and Down keys, entering the Data number or character and pressing the **ENT** key, the saved data will be loaded.

If the ENT key is pressed again, the printer will print.

5) If you can't locate with the data number or ID number, the error message "Not Found Matched..." will appear.

7.5 DB Block Control

In system Setup mode press 5) key and the display will be shown as **[Fig.7.5].**



[Fig.7.5] Data Base Block control

- **UpLoad to PC**

  You can send the finished test results to PC by RS232C connected between instrument and PC. If you want to select certain data, use numeric keys or ◀▶ key and Enter**.**

- **Print Normal**

  "Print" has function that prints all test results of selected area.

  "Print" mode is for printing data of positive test results of selected area.

  To select the test results, use numeric keys or ◀▶ key and Enter. The results were printed out 50 tests at one time.

Note: Printing Area is limited to max. 50 test results at one time.

- **Print Abnormal (=Abnormal result Print)**

  To print out **the abnormal results.**

1) Select Upload to PC, Print Normal or **Print Abnormal** by using ▲▼ key and select the Start Num and End Num by using Keyboard.
2) If DB is empty, an error message of "**No Data in Data Base**" will appear at the center of display and go back to its previous mode.
3) After all data completely finished, "**OK Finish**" message will appear.

8. How to Clean the Strip Loader Plate after Use

⚠ Caution: **It is better for the strip loader plate to be cleaned everyday because it can be stained by the tested strip and remaining urine smeared into the loader.**

Step1. Turn the instrument **power off in advance and then separate the plate** from the body of the instrument.

Step2. Completely clean all the grooves of the detached strip loader Plate clean the contaminated area using a neutral detergent or under running water use tooth brush. Do not use volatile material like thinner, gasoline, and benzene for cleaning the body.

Step 3. Polish the plate with a soft cloth and make sure to dry it completely

9. Troubleshooting & Maintenance

Symptoms of Error	Possible Cause or Related Symptoms	Cause/Symptom No.& Remedy
A-1 The instrument will not work even though power is on.	1. The connection part for power source may be loose. 2. Defective system electronics	1. Turn the instrument power off. Check that the power cord is firmly plugged into the instrument and into a live AC electrical outlet then turn the power black ON (AC adapter : 100-240V/12VDC 3A) 2. Contact your Customer Service Office
B-1 Always shows 'false positive (+) test result' B-2 Result by visual test with color chart shows negative results. B-3 Other reference tests shows Negative results.	1. Examine state of used strip and check out if any belong to a case described below; a) Order (sequence) of test parameter on printed results is differ from it of the label on strip's bottle. (Tested strip model is not fit for this mode analyzer) b) Reacted color(s) of reagent pad on the strip is (are) much different from those of the color chart label on the strip bottle. c) Detection was done with dry strip(before dipping in the urine) or any other test strip instead of the reagent strip for this model analyzer d) Tested without placing the dipped strip on the plate e) Strip position was turned upside-down or wrongly positioned f) Reagent pad(s) were not fully wetted by the urine g) Reagent strip was not placed on the tray 'immediately' after dipping in the urine and removal of excessive urine f) Shape of used strip was bent(curved) strip 2. Strip type is wrongly set up (Location for strip set-up: System setup /2.System Config / strip type) 3.There is a lot of dirty urine(contamination) on the calibration strip 4. The Calibration Value not included 333(+/-10) (How to see RGB calibration value can be referred to page 9 on Operator Manual)	1.2 : Careful handling of the strips by referring to instruction of use for strip and operating manual for the analyzer 3.4: The Calibration should be calibrated with new calibration strip.

Symptoms of Error	Possible Cause or Related Symptoms	Cause/Symptom No.& Remedy
C-1 Does not print	1. Printer mode is set as "NO" (Location for changing printer mode: System Setup /2.System Config /Print enable) 2. Test results can be displayed through LCD monitor	1. Reset “Yes” 2. Replace ‘Printer Module’ with a new one.
C-2 Printer can't push out paper normally C-3 Very small characters are printed on the paper and there is strange sound	Can hear a sound that the motor inside of the printer makes	Take out printer paper and re-install it into the analyzer. If you have the same error even after re-install of the paper correctly, Contact your Customer Service Office
C-4 Printed characters are not clear or not readable C-5 Characters are printed partially	The printer paper is not properly installed. (Results should be printed on shinny side of the paper.)	If you have the same error even after re-install of the paper correctly, Contact your Customer Service Office
C-6 The strange characters are printed on the paper	The strange characters are also found on result through LCD monitor	Push ‘Power button & ESC & ◀ key" together at a time (reset of the machine) and restart. If you have the same error, Contact your Customer Service Office.
D-1 Display a message "Misplaced strip"	The strip for test is wrongly positioned on the strip plate	Misuse by the user

Symptoms of Error	**Possible Cause or Related Symptoms**	**Cause/Symptom No.& Remedy**
E-1 Strip Plate does not move into(out from) the machine E-2 Strip Plate always pull out E-3 A strip Plate stops unexpectedly during operation	1. Not used power supply of adapter (12V, 3A) 2. Plate malfunction problem 3. Plate Sensor Problem 4. Motor Problem	1. Misuse by the user 2. Replace 'Plate' with a new one. 3,4 Contact your Customer Service Office
F-1 Key does not work	1. Some function of key is out of order and Other functions (strip detection, printing etc.) works normally 2. Other functions (strip detection, printing etc.) works incorrectly	1. Replace LCD Module 2. Contact your Customer Service Office
G-1 LCD is black (shows nothing) or wrong	1. The error(s) is(are) found as soon as Power-On and Other functions (strip detection, printing etc.) works normally 2.Other functions (strip detection, printing etc.) works incorrectly	1. Replace LCD Module with a new one 2. Contact your Customer Service Office
H-1 Can not make "HexTrans" program update H-2 Can not connect to LIS H-3 LIS results include strange letters H-4 When connect to PC, the items can not be shown correctly to the results	1. Check out settings are as followings; Baud rate : 115200, Com Port: COM1 2. Serial cable between analyzer and PC is incorrectly connected 3. Serial port in the computer is USB Port	1. It the set up condition is different from the left conditions, make it as same like left side 2. Correctly connected. But if it is not working, replacement RS232C Cable. 3. Use "USB To RS232 Converter Cable"

Registration sheet

Please complete the following Registration Sheet, and fax back within two weeks to your local distributor.

These data are recorded in the Service Registration File, providing assistance for our Support Service.

Serial Number of the Instrument: _____

Date of delivery:

Date of Installation:

The Institution / Laboratory

address:

telephone:

The person, who is responsible for the operation:

Number of the samples in daily routine:

The previously used method for urine analysis:

Manufacturer:

Your distributor:

CHUNGDO PHARM. CO., LTD.

202 High-Tech Venture Town, 198-53 Hupyeong-dong,

Chuncheon, Gangwon-do 200-160, Korea

T : +82-10-2840 4002 F : +82-33-258 6115

E-mail : ichungdo@gmail.com

Website : www.ichungdo.com