

readwell TOUCH

ELISA Plate Analyser

User Manual

Version – 3.308



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1. GENERAL INFORMATION

1.1. Warranty Information:

Each Instrument is completely tested and guaranteed for Twelve months from delivery. The warranty applies to all the mechanical and electrical parts. It is valid only for proper installation, use, and maintenance in compliance with the instructions given in this manual.

ROBONIK will, at its discretion repair or replace parts, which may be found defective in the warranty period. The warranty does not include any responsibility for direct or indirect personal and material damages, caused by improper use or maintenance of the instrument.

Parts that are inherently subject to deterioration are excluded from the warranty. In case of defects due to misuse of the instrument, any travel and man-hour expenses will be charged extra.

In case of Tenders warranty would be as per tender terms and conditions.

1.2. Technical Service:

ROBONIK is always accessible to the customers for any kind of information about installation, use, maintenance, etc. When asking for service, please refer to this manual, and report the data reported on the identification label (serial number).

Only qualified technicians are entitled to fix the instrument; the user, as described in this manual, should carry out ordinary maintenance.

ROBONIK technical service or an authorized service center with specialized technicians, with suitable instrumentation and original spare parts only are always available for extraordinary maintenance (repair), under a yearly maintenance contract or on specific demand.

1.3. Disposal instruction:

In case of removal or disposal of instrument, following instructions need to be followed

- Do not dispose in municipal waste; follow local regulations for instrument disposal.
- Plastic parts, Electronic PCBs and components can be recycled, so return back the instrument to manufacturer.

1.4. Contacts:

Manufacturer:

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E-Mail : mail@obelis.net**



2. GENERAL SAFETY WARNINGS

2.1. Danger - warnings symbols:



This is a symbol of generic danger. It means that, serious damage can occur to the operator if described precautions are not observed



This is a symbol of HIGH ELECTRIC VOLTAGE. It is dangerous to touch any part having this label. Only qualified operators can access these components, after unplugging the instrument from the Supply.



This symbol indicates that the instrument makes use of chemical reagents and other dangerous (Corrosive, irritant, or harmful) CHEMICAL SUBSTANCES, which can cause damage to people or materials. When this label is found, pay attention to the manufacturer's recommendations.



This symbol indicates that the instrument involves the handling of samples, which can be infected (urine or human serum). In this condition, infection or contamination might occur. Pay attention to the general safety warnings when in presence of such biological substances. Use protective clothes, gloves and glasses.



This symbol in the user manual indicates that damages to the instrument or erroneous results could occur if the given warnings are not heeded



This symbol indicates a portion, which is particularly important, and should be studied carefully



This symbol indicates a Protective Earth or Ground terminal.

2.2. Use of the Instrument:

- The instrument has to be used for the designed purposes under specified conditions, following proper procedures and safety rules, by qualified personnel.
- This manual contains instructions for operation by qualified personnel.
- A qualified user has to make sure that environmental condition is suitable, the installation is correct, the use and maintenance are proper, according to the general safety rules as well as to the particular precautions described in the manual. (However, he is not entitled to repair the instrument).
- A qualified technician is entitled to maintain and fix the instrument, according to the instructions given, using the original spare parts. Maintain room temperature and Humidity as specified in the manual.
- The instrument has to be used as described in this manual. If it is not use the protection provided by the instrument may be impaired.
- Alterations to the instrument are prohibited. The user is liable for any improper modification to the instrument, and for the deriving consequences.
- Should the instrument need extraordinary maintenance, contact MANUFACTURER service or authorized service center. Specialized technicians who will be able to repair the instrument using original spare parts will carry out the maintenance.
- This IVD equipment complies with the emission and immunity requirements as per IEC61326 series.



- **Warning** : This equipment has been designed and tested to CISPER11 Class A. In a domestic environment it may cause radio interference, in which case, you may need to take measures to mitigate the interference."

- An advisory that the electromagnetic environment should be evaluated prior to operation of the device.



- **Warning** : Do not use this device in close proximity to sources of strong electromagnetic radiation (e.g. unshielded international RF sources), as these may interfere with the proper operation.

3. INTRODUCTION

3.1. Description:

readwell TOUCH is a user-friendly micro plate Analyser. It is designed to measure and interpret enzyme immunoassay results, both monochromatically and bichromatically. It is intended for in vitro diagnostic use.

3.2. Special Features:

- The **readwell TOUCH** can accommodate a flat as well as a round bottom well configuration. The carriage is designed in a way that the plate automatically moves smoothly and positions itself accurately in the optical measurement path. Readings are taken continuously, the average value is calculated and results are presented according to the option selected.
- The **readwell TOUCH** operates on a WIDE voltage (90-270 volts). This eliminates the need for an external voltage stabilizer.
- The **readwell TOUCH** has a special provision, which allows it to be used even when a printer is not available. Readings can be conveniently noted down manually. The detailed results available on screen.

Following are the other special features of **readwell TOUCH**:

- Option of Lamp saving mode.
 - Selection of both primary and secondary filters.
 - Latest technology with battery back up for 250 tests with QC, more than 2500 result.
 - Robust in built 52-column thermal printer with 384 stationary heads.
 - Unique circuitry for long lamp life.
 - Alphanumeric Patients ID entry.
 - Editing of saved tests.
 - Human machine user interface: Touch panel, Keypad
 - Multi-standard curve up to 12 standard calibrations with one blank optional.
 - Access to test by touch of key.
 - Capability to connect to 80-column printer for direct report printout.
 - Blank is optional.
 - Setting of the Date and Time.
 - Capable of storing, deleting and recalling tests.
 - Multiple calibrator modes.
 - Selection of duplicates for both calibrators and samples.
 - Extensive software for cut off mode.
 - Selection of Positive, Equivocal, Negative cut-off.
 - Several pre-programmed calculation modes help to facilitate data processing of enzyme immunoassays. These are menu driven modes for simple and error free operations.
- ✓ ABSORBANCE MODE.
 - ✓ CUT-OFF MODE.
 - ✓ MULTISTANDARD MODE.
 - ✓ SINGLE STANDARD MODE.
 - ✓ % ABSORBANCE MODE.
 - ✓ UPTAKE
 - ✓ KINETIC

3.3. Technical Specification of readwell TOUCH

Human Machine Interface	TOUCH PANEL / KEYPAD
Linear measurement range	0.000 to 3.500 Absorbance Units (A).
Photometric Accuracy	± 2% or 0.007 whichever is higher, from 0 to 1.5 A ± 3% from 1.5 A to 3.5 A
Drift	<0.005 A/hr
Photometric Linearity	2.5 A
Optical measurement	8 Channel
Filters Type of filter Wave Length Half Bandwidth Selection	Narrow band Interference 405nm, 450nm, 492nm, 630nm, & Four Optional 10nm ± 2nm Automatic by Stepper Motor.
Light Source Display Curve Plotting	Tungsten halogen lamp, 20 Watts 6" Graphics LCD, Negative Blue, STN Graphical Representation on Printer
Plate Carrier Movement	Precisely through the stepper motor
Printer	Built in Thermal Printer 52 columns
Memory	Battery back up for 250 tests and more than 2500 results.
Analysis Mode	Absorbance (Normal & Differential) Cut - off Multi - Standard % Absorbance Single Standard Uptake Kinetic
Connectivity / RS232 Serial Port/USB	9600 baud, 8 data, 1 stop, no parity bits / USB
Power	
Wattage Voltage	75 Watts 115 - 230 Volts ± 10%, 50 / 60 Hz.
Operation Position	On horizontal flat, rigid and vibration free surface
Operating Conditions Temperature Relative Humidity	From + 18° C to 35° C Up to 80%
Storage Conditions Temperature Relative Humidity	From - 10° C to 40° C Up to 80%
Enclosure	ABS Fire Retardant
Size (cm)	36 x 36 x 22 (lxbxh)
Weight (Approx)	10 Kgs.

4. PACKING, TRANSPORT AND STORAGE

4.1. General Warnings:

Instrument has to be decontaminated before packing for transportation.

4.2. Packing:

Packaging is needed whenever the instrument is to be transported or shipped by courier or other means.

To pack the instrument follows the instructions below:

- Decontaminate the instrument as explained on decontamination chapter of this manual
- Put the instrument into the original packaging box; Instrument has to be properly protected by plastic protective material. Put copy of safety clearance certificate (copy of Safety clearance certificate is attached at the end of this manual)
- Mark the package with address, instrument identification and warning labels

4.3. Instrument Transportation

The transportation of the instrument in unpacked condition must be limited within the room where it is used, to avoid damage.

4.4. Storage of Instrument

Before storing the instrument for a long period, pack it carefully as described above and store indoors.

Relative humidity has to be less than 85%, and temperature between - 10°C and 40°C.

5. INSTRUMENT DESCRIPTION

5.1. Instrument Working Principle:

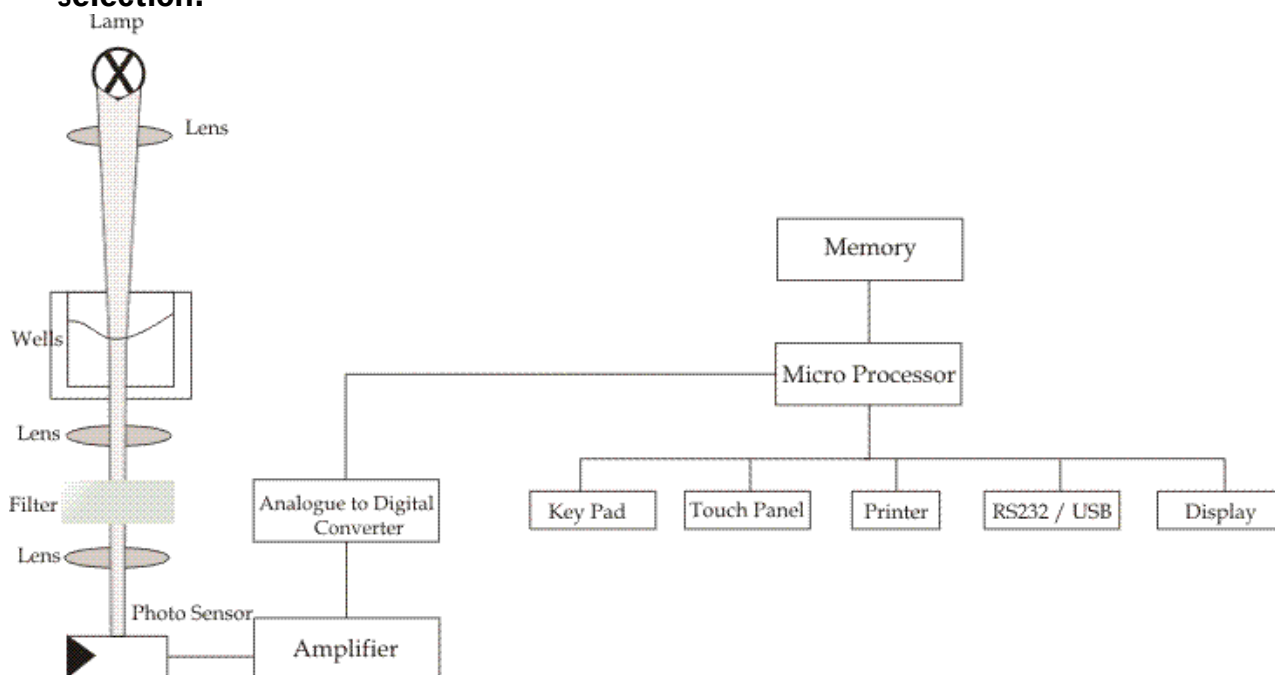
- Switch on and program the instrument.
- Place the plate firmly onto the carriage.
- Start the test, the plate will be conveyed inside and strip is placed precisely below the optical path. The measurement is carried out step by step.
- At the end of the cycle the results can be printed or user can save the plate data
- Results are also available at the RS232 Serial Port / USB Port.

On starting the test, the plate will be conveyed into the instrument.

Plate is moved in step by step by a well-controlled mechanism & each well is positioned precisely below the optical path. Optical density of each well is measured as explained below. Based on selected programming mode, sophisticated algorithms are used for analyzing the measured value & presenting the same on the printer, display & RS232 Serial Port / USB Port for computer Interface.

The following diagram represents the main functional elements of the instrument:

White light produced by the lamps is focused into a beam by the lens & passes through the sample. Part of the light is absorbed by the sample & the remaining light is transmitted. It is filtered by interference filters & focused onto the photodiodes. The photodiode converts the received light in to an electrical signal which is in-turn transformed into digital form, from which the microprocessor calculates the absorbance, taking in account of the blank & bichromatic selection.

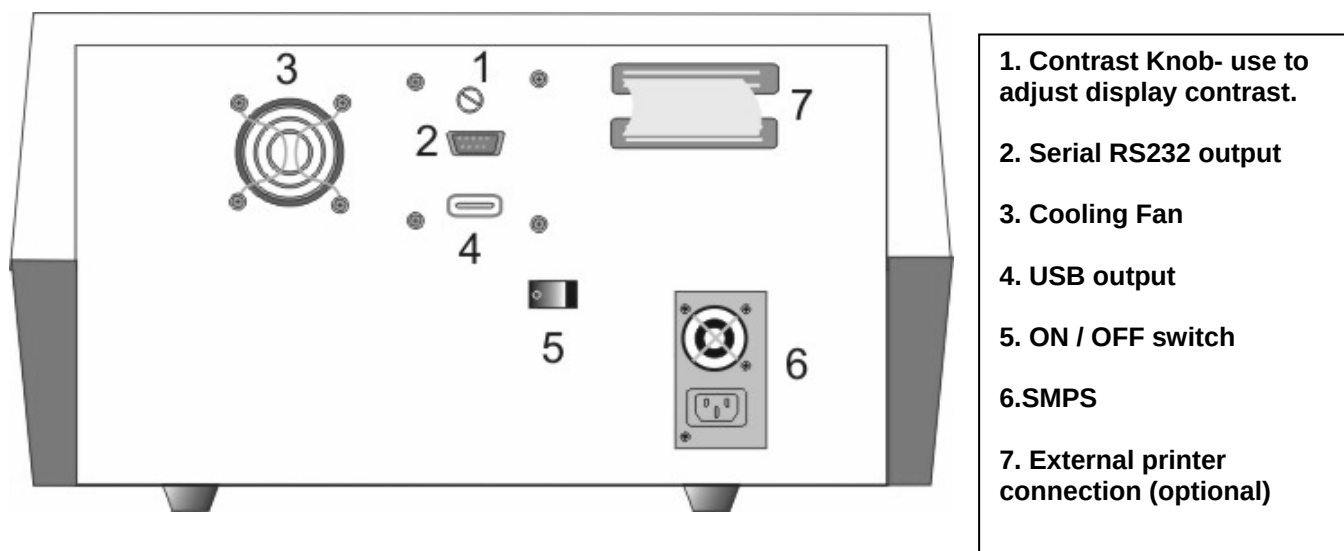


5.2. Perspective view

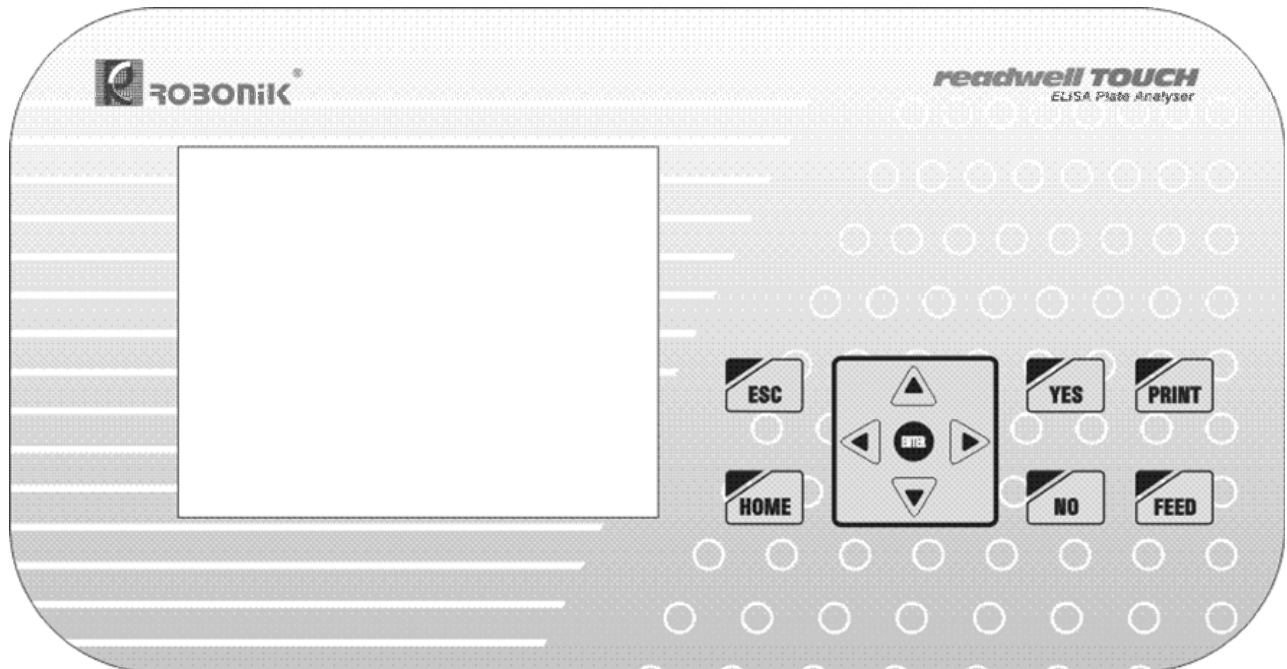
Front View:



5.3. Rear View:



5.4. Keypad



- 1) 'YES' key is used to select any 'YES' option on screen directly.
- 2) 'NO' key is used to select any 'NO' option on screen directly.
- 3) 'PRINT' key is used to get a printout of current screen displayed.
- 4) 'FEED' key is used to forward the paper in thermal printer by one print line.
- 5) Navigation keys are used to select any option available on current screen.
- 6) 'ENTER' key is used to run any option selected by navigation keys.
- 7) 'ESC' key is used for escaping from any screen.
- 8) 'HOME' key is used to bring plate carrier at home position. Home key function is disabled.



6. INSTALLATION PROCEDURE AND VERIFICATION CRITERIA

6.1. Unpacking Instructions:

Check accessories as per packing list.

Kindly store all packing materials so as to use it to repack and ship for maintenance or servicing.

6.2. Placing the Instrument:

- The instrument has to be placed on a level bench.
- Room temperature has to be between 10 to 35°C with a relative humidity below 85%.
- Protect it from direct sunshine.

6.3. Power Supply Requirements:

Once the instrument has been placed, plug it into a power source by the locally available approved plug-in cable. Power cord should be CE, CSA, and UL marked.

115 - 230 Volts $\pm$ 10%, 50-60 Hz

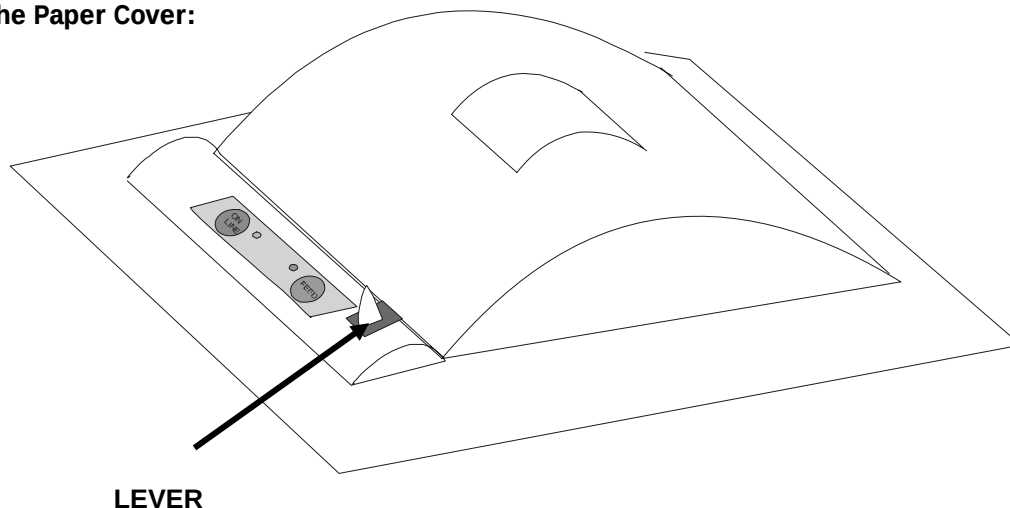
6.4. Protective Grounding:

Warning: Please make sure that electrical power source is properly grounded.

6.5. Printer:

Readwell touch, ELISA Analyser is equipped with a built in 52 columns easy load thermal printer. Procedure to load the paper is as follows:

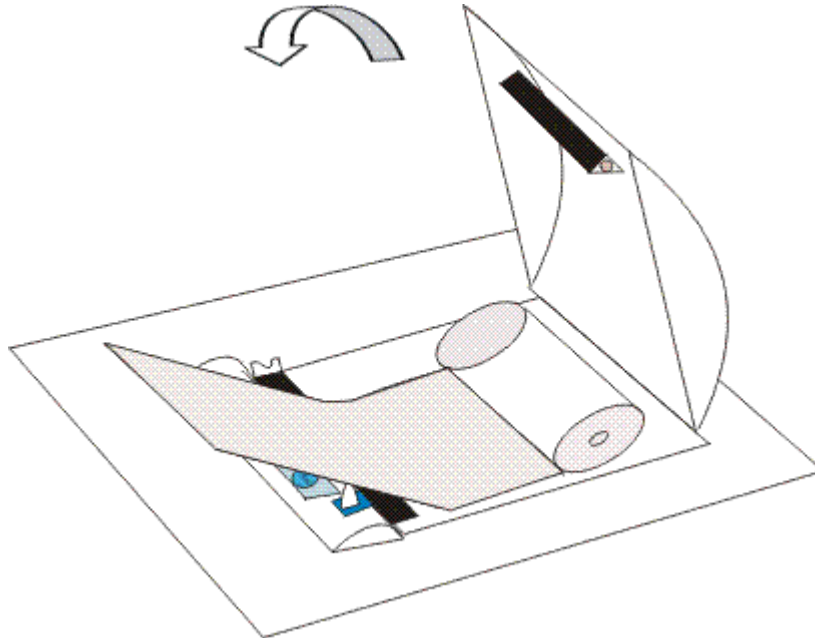
Opening the Paper Cover:



- 1) Slide the LEVER towards back of the printer to open lock of the PAPER COVER
- 2) Lightly push up on the front of the paper cover (marked) with your thumb and rotate it towards the back of the printer.

Closing the paper cover:

Close the paper cover and push down on it to lock it into place till you get locking sound.



- 1) Open the paper cover.
- 2) Remove the paper roller from the slot and place the paper roll over it as shown.
- 3) Place back the paper roller with paper into the slot provided and close the paper cover as described before.
- 4) Keep pressing the paper feed switch until the paper feeds straight and smoothly.

HINT:

- When the paper is set correctly and when the closing of the paper cover is proper the FEED LED will not glow.
- It keeps on flashing when the data is being printed.
- When the paper is about to finish, red lines appear on both sides of the paper.

6.6. Start up Instructions:

1. Switch on the instrument.
2. The instrument initializes all the parameters internally, and carries out a power on self-test and then displays the following screens, and a message will get display "Please wait system initializing."



The instrument will print the model name "READWELL TOUCH", VERSION NUMBER, CLINIC NAME CURRENT DATE WITH TIME.

READWELL TOUCH		Date
Clinic name / Serial Number		MENU
Select Test		SEL
1. HBSAG	6. HIV	
2. HCV	7. IGM	PRNT
3. T3	8. T4	NEXT
4. TSH		PREV
5. HIV		DEL

User can select a saved test by first touching the required "TEST NAME" on the screen and then touch the "SEL "option to carry out further operation on the test.

"DEL ": Deletes the selected test.

If the number of tests is more than 10, "NEXT "and "PREV can be used for browsing through the list pages

"PRINT": For printing the test screen.

"MENU" used to select Main menu screen.

6.7. Touch Panel Check.

readwell TOUCH provides a *Touch sensitive LCD panel* and a *KEYPAD* for easy user interface. The Menus are displayed; the text of the parameter forms the TOUCH ZONE.

Touch screen Layout

Name:		POS- CutOff					ESC EDIT RUN	
Pri:	405	Sec:	0					
	No	Factor	QC	QCVal	Mes.	Rem		
BL	0		N					
NC	0	1.000	N					
PC	0	1.000	N					
LC	0	1.000	N					
CC	0	1.000	N					
CUTFAC: 0.000								
CUTABS:								
QC1	N				Interpretation :			
QC2	N				Greyzone % (N)			
QC3	N				Cut off Index (Y)			
QC4	N				Range Pos : 0.000			
					Neg : 0.000			

Above is the generic representation of a Test Screen. The Highlighted zones are TOUCH ZONES, which are active. On touching the “Touch Zone” of a parameter, a sub menu/menu is displayed or the requested action is carried out, and rest of the “Touch Zone” is deactivated.

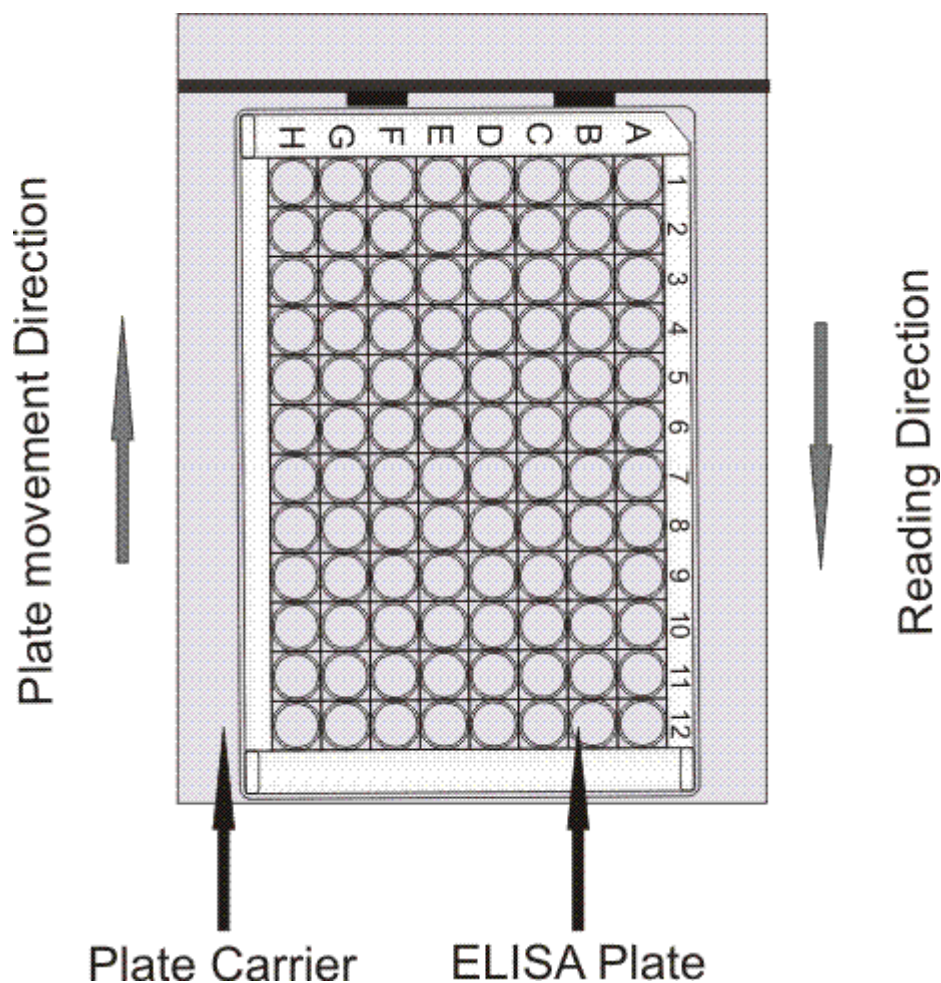
For Example: - To activate the selection.

- To enter the primary filter value, touch any point in the shaded area “Pri” on the LCD screen. On proper selection the analyser responds with blinking of the parameter text and also the TOUCH ZONE and a submenu is displayed.
- To enter Test Name: Touching the “Name” touch zone provides an alphanumeric screen. Enter the Test name by touching the Touch zone of that variable. The selected value blinks and is displayed next to the parameter.

Selection Indicator

Selected onscreen item is shown in a shaded background. When the screen first displays, the default selection is shown. Pressing a selection either highlights that item or activates it.

6.8. Micro Titer Plate Carriage



The instrument is provided with a micro titer plate carriage to move the micro titer plate inside. This carriage is driven by stepper motor with timing belt. It places the each well of plate exactly below the optical path of each channel. The plate carrier is moved by a well-controlled stepper motor drive.

6.9. Plate Loading & Pipetting Procedure:

Control and sample pipetting procedure in case of cut off:

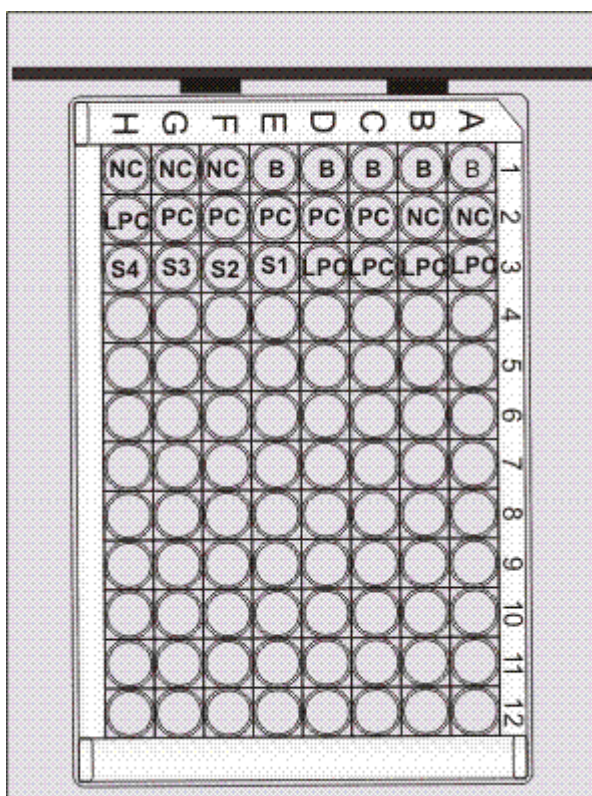
Maximum number of Blanks = 5

Maximum number of Controls:

1. Negative Control = 05
2. Positive Control = 05
3. Cut of control = 05
4. Low Positive Control = 05

Total number of 20 controls can be run in any combination.

Pipetting sequence should be as shown below,



6.10. Readings Check:

Checking of readings should be done through controls reading, that should be within range specified in data sheet of controls (care should be taken while preparing and pipetting controls and reagents, reagent and control expiry dates need to be checked.)

7. PRECAUTIONS



- λ Do not use any sharp objects on the Touch Screen. Always use the STYLUS provided to operate the touch panel.



Always check for proper grounding, before installation. Never operate the instrument with ground wire removed.

- ◆ Do not attempt to open the instrument and make repairs without proper technical training. Do not allow unauthorized persons to operate or repair the instrument.
- ◆ Use a clean plate and follow the instructions for blanking and standardizing. Do not read any wells containing bubbles or dust particles.
- ◆ The volume of sample, calibrators and blanks should be identical for correct readings. The absorbance is proportionate to the path length. Pipetting should also be proper.
- ◆ Monitoring of the printed values or displayed values during operation may help detect an error in the making.
- ◆ Check the linearity and calibration of the instrument regularly against some standard reference.
- ◆ Check the micro wells before use. They should be scratch-free. The micro well track in the READWELL TOUCH has been designed in such a way that the micro wells are totally protected from scratches.



- ◆ Recheck the reading of high OD (above 2A).
- ◆ Place Plate carefully on the tray.
- ◆ Ensure that the main power switch is in OFF position before connecting.
- ◆ Plug the instrument to the AC mains. Confirm proper grounding for trouble free operation.
- ◆ Connect the printer only when the instrument is OFF.

8. PROGRAMMING MODES

8.1. Absorbance Mode:

In this mode instrument gives you the only absorbances of all wells of plates which contains controls / calibrators and samples.

Programming a new test:

1. Select "Test Operation"

1 Test Operations	ESC
2 Technical Diagnosis	
3 Utilities	
4 View Plate	
5 Serial Communication	

2. Select "Add New Test"

TEST OPERATIONS	
1 Select Test by Name	
2 Select Test by Mode	ESC
3 Select Test by Number	
4 List Tests	
5 Add New Test	

3. Select mode of operation "Absorbance" in "Add new test"

Select Test Mode	
1> Absorbance	0
2> Single Standard	0
3> Cut off	0
4> Multi Standard	0
5> Percent Absorbance	0
6> Uptake	0
7> Kinetic	0

4. Enter Test Name

NORM – ABSORBANCE	
Name :	BL N ESC
Pri : 405	Sec : 0
MODE	NORM
	DIFF

NORM – ABSORBANCE	
Name:	ABS 450
A B C D E F G H	
I J K L M N O P	
Q R S T U V W X	
Y Z , - + _ 1 2	
3 4 5 6 7 8 9 0	
	ENTER CLEAR

5. Select primary and secondary filter

Pri:	450	ESC
Sec:	630	
Select Filter Val:		
0	405	450
492	630	000
000	XXX	YYY

6. If Blank is required select “BL”.

NORM – ABSORBANCE		
Name : ABSORBANCE		
	BL Y	ESC
Pri :	405	Sec : 0
MODE		
NORM		
DIFF		

If you select “BL Y”, it will read first well of first strip ‘A1’ as a blank and subtract the absorbance of blank well from all other well’s absorbance.

7. In absorbance mode there are two modes of operations

a) Normal Absorbance Mode: Instrument gives the absorbance of each and every well. Select touch zone “NORM”.

b) Differential Absorbance Mode: Instrument shows the difference of absorbance between odd number wells and even number wells. For Example,- Strip 1 - Strip 2, Strip 3 - Strip 4, Strip 5 - Strip 6. For this Mode select touch zone “DIFF”.

1) In Normal Mode

NORM – ABSORBANCE		
Name : ABSORBANCE		
	BL N	ESC
Pri :	405	Sec : 630
MODE		
NORM		
DIFF		

2) In Differential Mode

DIFF – ABSORBANCE		
Name : ABSORBANCE		
	BL N	ESC
Pri :	405	Sec : 630
MODE		
NORM		
DIFF		

9 Example Print-out obtained From <i>readwell TOUCH</i>
--

NORM-ABSORBANCE

Name : HCV

BL N

Pri : 450

Sec : 630

HCV, 21/07/08,

A

W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12
0.028	0.145	0.100	0.017	0.089	0.135	0.362	0.078	0.410	1.440	0.746	0.224

B

W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12
0.058	0.151	0.386	2.553	0.111	1.479	2.593	0.081	2.517	0.781	0.730	0.005

C

W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12
0.065	2.596	0.135	0.142	0.141	0.182	0.108	0.112	1.585	1.530	0.405	2.635

D

W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12
0.072	0.150	2.630	0.143	2.650	0.077	0.159	0.170	1.504	0.071	0.426	0.222

E

W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12
2.541	0.140	0.149	0.091	0.166	0.173	2.653	0.191	0.097	2.659	0.252	0.222

F

W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12
2.614	2.682	0.185	0.130	2.648	0.167	0.176	0.071	2.686	0.853	0.907	0.426

G

W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12
0.056	0.163	2.571	0.155	0.147	0.119	2.618	0.081	0.085	0.070	0.407	2.591

H

W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12
0.071	0.123	0.113	0.054	0.116	0.060	0.112	0.111	0.093	2.568	0.396	0.015.

8.2. Single Standard

In this mode the instrument accepts the calibrator singly or in duplicate and then calculates the concentration based on the single point standard curve passing through the point 0.0.

A single calibrator/standard of a known concentration is used to calibrate the instrument so that the concentration of unknown samples can be calculated according to Beer's Law. The absorbances are read at user-selected wavelengths. If Blank is selected instrument will automatically blank on the first well and subtract its absorbance from each subsequent well. The second well is treated as the calibrator/standard well. The third well is also treated as calibrator/standard well if the calibrator/standard is in duplicate.

CALCULATION:

Sample Concentration=(Calibrator concentration /Calibrator Abs.) x Sample Abs.

Name: TSH	SINGLE STANDARD			
Pri: 450 Sec: 630	BL Y	0.000	CAL 1	ESC
	DUP N		DUP N	
				SAVE
HI CO : N	High>			
	Low<			
LO CO: N	High>			
	Low<			
Interpretation: N				
Range	High>			
	Low<			

(Entry of all the parameter is similar to Multi standard mode (Please refer Multistandard for entry of parameters))

8.3. Cut Off Mode

In this mode cut-off point is determined for interpretation of specimens as per formula given in the reagent manual. The negative controls are read followed by the positive controls, Cut-off control, low positive control. Blanking on the first well is optional. The instrument calculates the mean of the negative controls and the mean of the positive control, Cut-off controls, and Low positive is also calculated.

Programming a New Test:

1. Select "Add New Test"

TEST OPERATIONS	ESC
1 Select Test By Name	
2 Select Test by Mode	
3 Select Test by Number	
4 List Tests	
5 Add New Test	

2. Select mode of operation "Cut-Off" in "Add new test"

Select Test Mode	
1> Absorbance	0
2> Single Standard	0
3> Cut off	0
4> Multi Standard	0
5> Percent Absorbance	0
6> Uptake	0
7> Kinetic	0

3. Entry of test name
Select touch Zone "Name:"

Name:		POS- CutOff					
Pri: 450 Sec: 0		ESC					
	No	Factor	QC	QCVal	Mes.	Rem	SAVE
BL	0		N				
NC	0	1.000	N				
PC	0	1.000	N				
LC	0	1.000	N				
CC	0	1.000	N				
CUTFAC: 0.000							
CUTABS:							
QC1	N	Interpretation :					
QC2	N	Greyzone % (N)					
QC3	N	Cut off Index (Y)					
QC4	N	Range Pos : 0.000					
		Neg : 0.000					

After selecting the touching the Name Zone, Alphanumerical characters will come in the screen as shown below. Enter the name of the test by selecting the individual characters one by one. After selecting all the characters select Enter option in touch screen for confirmation of test Name.

Name:		POS- CutOff						
HBSAG								
A	B	C	D	E	F	G	H	ENTER CLEAR
I	J	K	L	M	N	O	P	
Q	R	S	T	U	V	W	X	
Y	Z	,	-	+	_	1	2	
3	4	5	6	7	8	9	0	

4. Selection of Primary and secondary filters.
Select zone "Pri:" on the touch screen

Name: HBSAG		POS- CutOff					
Pri: 450 Sec: 630		ESC					
	No	Factor	QC	QCVal	Mes.	Rem	SAVE
BL	0		N				
NC	0	1.000	N				
PC	0	1.000	N				
LC	0	1.000	N				
CC	0	1.000	N				
CUTFAC: 0.000							
CUTABS:							
QC1	N	Interpretation :					
QC2	N	Greyzone % (N)					
QC3	N	Cut off Index (Y)					
QC4	N	Range Pos : 0.000					
		Neg : 0.000					

After selecting the “Pri:” zone below screen will appear in the display. Select the filter required by selecting the filter from Select filter value region.

Pri:	450	ESC
Sec:	630	
Select Filter Val:		
0	405	450
492	630	000
000	XXX	YYY

5. According to the reagent manual change Blank, NCs, PCs to ‘YES’ for QC check.

Name: HBSAG		POS- CutOff					
Pri: 450 Sec: 630				ESC			
	No	Factor	QC	QCVal	Mes.	Rem	SAVE
BL	0		N				
NC	0	1.000	N				
PC	0	1.000	N				
LC	0	1.000	N				
CC	0	1.000	N				
CUTFAC: 0.000							
CUTABS:							
QC1	N	Interpretation :					
QC2	N	Greyzone % (N)					
QC3	N	Cut off Index (Y)					
QC4	N	Range Pos : 0.000					
		Neg : 0.000					

6. Entry of Blank and Blank QC values

Select “BL” to enter blank details. (Blank has to be always put in first wells if selected)

Name: HBSAG		POS- CutOff					
Pri: 450 Sec: 630				ESC			
	No	Factor	QC	QCVal	Mes.	Rem	SAVE
BL	0		Y	0.000	0.000		
NC	0	1.000	Y	0.000	0.000		
PC	0	1.000	Y	0.000	0.000		
LC	0	1.000	N				
CC	0	1.000	N				
CUTFAC: 0.000							
CUTABS:							
QC1	N	Interpretation :					
QC2	N	Greyzone % (N)					
QC3	N	Cut off Index (Y)					
QC4	N	Range Pos : 0.000					
		Neg : 0.000					

7. After selecting “BL”, below screen will come in the display, enter total number of blanks by selecting No. of Blanks. (Maximum 5 blank).

No. of Blanks = 1

Values Of BL <= 0.000

ESC

Numeric Value

1	2	3	4	5	6
7	8	9	0	.	

ENTER

CLEAR

8. Enter the QC value of the blank by selecting the touch Zone “Values of BL <=”

No. of Blanks = 1.000

Values Of BL <= 0.100

ESC

Numeric Value

1	2	3	4	5	6
7	8	9	0	.	

ENTER

CLEAR

9. Entry of Negative control and its QC values
Select touch Zone “NC”.

Name: HBSAG

Pri: 450 Sec: 630

POS- CutOff

ESC

	No	Factor	QC	QCVal	Mes.	Rem	SAVE
BL	1		Y	0.100			
NC	0	1.000	Y				
PC	0	1.000	Y				
LC	0	1.000	N				
CC	0	1.000	N				

CUTFAC: 0.000

CUTABS:

QC1	N	Interpretation :	
QC2	N	Greyzone % (N)	
QC3	N	Cut off Index (Y)	
QC4	N	Range	Pos : 0.000
			Neg : 0.000

10. Enter no of Negative control by selecting touch Zone “No. of NC’s” (maximum 5 Negative Controls). Enter the QC value of the negative control by selecting the touch Zone “Value of NC” and enter the value of X given in the reagent manual by selecting Zone “Values Of X”.

No. of NC's = 3		ESC	
Values of X = 1.000			
Value of NC <= 0.150			
Numeric Value			
1	2	3	4
5	6	ENTER	CLEAR
7	8	9	0
	.		

11. After the entry of no of NCs Select ESC. The below screen will come in the display.

Name: HBSAG		POS- CutOff		ESC			
Pri: 450 Sec: 630							
	No	Factor	QC	QCVal	Mes.	Rem	SAVE
BL	1		Y	0.100			
NC	3	1.000	Y	0.150			
PC	0	1.000	Y				
LC	0	1.000	N				
CC	0	1.000	N				
CUTFAC: 0.000							
CUTABS:							
QC1	N	Interpretation :					
QC2	N	Greyzone % (N)					
QC3	N	Cut off Index (Y)					
QC4	N	Range Pos : 0.000					
		Neg : 0.000					

12. Entry of positive Controls (PC).
➤ Select touch Zone “PC”.

Name: HBSAG		POS- CutOff		ESC			
Pri: 450 Sec: 630							
	No	Factor	QC	QCVal	Mes.	Rem	SAVE
BL	1		Y	0.100			
NC	3	1.000	Y	0.150			
PC	0	1.000	Y				
LC	0	1.000	N				
CC	0	1.000	N				
CUTFAC: 0.000							
CUTABS:							
QC1	N	Interpretation :					
QC2	N	Greyzone % (N)					
QC3	N	Cut off Index (Y)					
QC4	N	Range Pos : 0.000					
		Neg : 0.000					

13. After selecting PC below screen will come in the display. Enter number of Positive controls by Selecting Zone "No. of PC's" (Maximum 5). Enter the QC value of the Positive control by selecting the touch Zone "Value of PC >=" and enter the value of Y given in the reagent manual by selecting Zone "Values of Y".

No. of PC's = 2		ESC	
Values Of Y= 1.000			
Value of PC >= 0.500			
Numeric Value			
1	2	3	4
5	6	ENTER	
7	8	9	0
.		CLEAR	

14. After entering the details of PCs escape from the screen by selecting "ESC". Below screen will come on the display.

Name: HBSAG		POS- CutOff		ESC	
Pri: 450 Sec: 630					
	No	Factor	QC	QCVal	Mes.
BL	1		Y	0.100	
NC	3	1.000	Y	0.150	
PC	2	1.000	Y	0.500	
LC	0	1.000	N		
CC	0	1.000	N		
CUTFAC: 0.000					
CUTABS:					
QC1	N	Interpretation :			
QC2	N	Greyzone % (N)			
QC3	N	Cut off Index (Y)			
QC4	N	Range Pos : 0.000			
		Neg : 0.000			

{NOTE: Same way you can enter values for LC (lower positive controls) and CC (Cot of controls).}

15. **Entry of Cut off Factor:**
➤ Select touch Zone "CUT FAC"

Name: HBSAG		POS- CutOff		ESC	
Pri: 450 Sec: 630					
	No	Factor	QC	QCVal	Mes.
BL	1		Y	0.100	
NC	3	1.000	Y	0.150	
PC	2	1.000	Y	0.500	
LC	0	1.000	N		
CC	0	1.000	N		
CUTFAC: 0.000					
CUTABS:					
QC1	N	Interpretation :			
QC2	N	Greyzone % (N)			
QC3	N	Cut off Index (Y)			
QC4	N	Range Pos : 0.000			
		Neg : 0.000			

- After selecting the “CUTFAC” below screen will come in the display.

Value of Cut Factor = 0.200 ESC

Numeric Value

1	2	3	4	5	6	ENTER CLEAR
7	8	9	0	.		

16. Entry of Cut off absorbance equation:

- Select touch Zone “CUTABS”

Name: HBSAG POS- CutOff ESC

Pri: 450 Sec: 630

	No	Factor	QC	QCVal	Mes.	Rem	SAVE
BL	1		Y	0.100			
NC	3	1.000	Y	0.150			
PC	2	1.000	Y	0.500			
LC	0	1.000	N				
CC	0	1.000	N				

CUTFAC: 0.200

CUTABS:

QC1	N	Interpretation : Greyzone % (N) Cut off Index (Y) Range Pos : 0.000 Neg : 0.000
QC2	N	
QC3	N	
QC4	N	

After selecting the “CUTABS” below screen will come in the display.
Enter the equation as given in the reagent manual.

CUTABS:

CUT ABS =(0.45 * NC) + (0.35 * PC) + 0.10 ESC

NC	PC	LC	CC	CF		ENTER CLEAR
+	-	,	*	%		
1	2	3	4	5	6	
7	8	9	0	.		
(					)	
Sqrt	Lg	ALg	Ln	ALn	Abs	

Here, NC = Mean of NCs * Factor X,
 PC = Mean of PCs * Factor Y,
 LC = Mean of LCs * Factor W,
 CC = Mean of CCs * Factor Z,
 CF = Cut off factor,
 Sqrt = square root,
 Lg = LOG, ALg = Anti LOG,
 Ln = Natural LOG, ALn = Anti Natural LOG,
 Abs. = any absolute value.

For Example,

A) For equation CUT OFF ABS = (0.45 * NC) + (0.35 * PC) + 0.10, the formulae can be enter in two ways.

1. Enter the values as it is i.e. CUTABS = (0.45*NC) + (0.35*PC) + 0.010. Keep the multiplication factors X, Y, W, Z of controls NC, PC, CC and LC a constant number '01'. (Numbers, mathematical functions and symbols for NC, PC, CC, LPC can be select from the screen).

OR

2. In second method the formulae can be enter as CUT ABS = NC + PC + CF. (Since the Value of X, Y, Z, W is entered in the QC option of NC, PC, CC, LPC and Cut off factor in the CUT FAC option, there is no need to enter the same data again). Means here Multiplication Factor for NC = X = 0.45, Multiplication factor for PC = Y = 0.35 and the value of cut of factor = CUT FAC = 0.100.

This is because here NC = Mean of NCs * Factor X, PC = Mean of PCs * Factor Y as mention above.

B) If 'CUTOFF ABS' = (NC + PC) / 6. This can be entered as it is CUTABS = (NC + PC) / 6 by keeping the multiplication factors X, Y, W, Z of controls NC, PC, CC and LC a constant number '01'.

OR

As you know in mathematics $(NC + PC) / 6 = (NC / 6) + (PC / 6) = (1/6) * NC + (1/6) * PC = (0.166 * NC) + (0.166 * PC)$,

So, you can enter same equation as CUT ABS = NC + PC, by entering

Multiplication Factor for NC = X = 0.166, multiplication factor for PC = Y = 0.166.

This is because here NC = Mean of NCs * Factor X, PC = Mean of PCs * Factor Y as mention above.

17. QC1, QC2, QC3 & QC4. can be used for any QC Checking of the test provided in reagent manual. For example some kit manufacture may give QC check equation like $|PCx - NCx| > 0.500$, $PC / NC > 15$, etc. This equation can be entered by selecting these QC options. Select touch zone 'N', It will become 'Y', as shown in screen below. By selecting touch zone 'QC1' you enter QC equation.

Name: HBSAG		POS- CutOff				ESC	
Pri: 450 Sec: 630							
	No	Factor	QC	QCVal	Mes.	Rem	SAVE
BL	1		Y	0.100			
NC	3	1.000	Y	0.150			
PC	2	1.000	Y	0.500			
LC	0	1.000	N				
CC	0	1.000	N				
CUTFAC: 0.200							
CUTABS: (0.45 * NC) + (0.35 * PC) + 0.10							
QC1	>	Y	Interpretation :				
QC2	N		Greyzone % (N)				
QC3	N		Cut off Index (Y)				
QC4	N		Range Pos : 0.000				
			Neg : 0.000				

Enter equation of QC and value of QC check, Select touch zone 'QC1 Value' and 'QC1 equat'.

Enter QC Value and Equation:

QC1 Value: 0.500

QC1 Equat :

ESC

Numeric Value

1	2	3	4	5	6	ENTER
7	8	9	0	.		CLEAR

Enter QC Value and Equation:

QC1 Value: 0.000

QC1 Equat

ESC

QC Equat: PC - NC

NC	PC	LC	CC	SA	ENTER
+	-	,	*	%	CLEAR
1	2	3	4	5	6
7	8	9	0	.	
(					)
Sqrt	Log	ALog	Ln	ALn	Abs

Same way you can enter QC equations for QC2, QC3 and QC4.

***NOTE:**

- 1) On screen it is mention that "QC1 > Y", it is not necessary in any reagent manual they always mention QC value should be greater than some constant value. There may be chance that they will mention QC value should be less than some constant value. In such a case you can change the symbol from "QC1 > Y" to "QC1 < Y", only by selecting a symbol of comparison.
- 2) If any QC check is selected to 'YES' option, the system will not save the test without entering the QC equation and QC check value of equation.)

18. Interpretation of samples:

Now enter RANGE for interpretation of results either in percentage (Greyzone) or positive and negative values of INDEX, a ratio of (Sample Abs. / Cutoff Abs.). If Cutoff Index range or Greyzone not mention do not enter any values. Instrument will do the interpretation with references to the Cut off absorbance.

18.1. Interpretation by GREYZONE percentage:

Select touch zone 'Greyzone % (N)',

Name: HBSAG		POS- CutOff		ESC			
Pri: 450 Sec: 630							
	No	Factor	QC	QCVal	Mes.	Rem	SAVE
BL	1		Y	0.100			
NC	3	1.000	Y	0.150			
PC	2	1.000	Y	0.500			
LC	0	1.000	N				
CC	0	1.000	N				
CUTFAC: 0.200							
CUTABS: NC + PC + CF							
QC1	> Y	0.500	Interpretation :				
QC2	N		Greyzone % (N)				
QC3	N		Cut off Index (Y)				
QC4	N		Range Pos : 0.000				
			Neg : 0.000				

Enter Greyzone percentage value.

Enter % Value :		ESC					
% Value = 10.00							
Numeric Value							
1	2	3	4	5	6	ENTER	
7	8	9	0	.		CLEAR	

If you enter 'Greyzone' percentage '10.00', instrument will show you the same as shown in screen. It makes the 'Cutoff Index Range' option 'NO'. This means when you are using a 'Greyzone' option the 'Cut off Index Range' option will not work.

Name: CPC		POS- CutOff		ESC			
Pri: 450 Sec: 630							
	No	Factor	QC	QCVal	Mes.	Rem	SAVE
BL	1		Y	0.100			
NC	3	1.000	Y	0.150			
PC	2	1.000	Y	0.500			
LC	0	1.000	N				
CC	0	1.000	N				
CUTFAC: 0.200							
CUTABS: NC + PC + CF							
QC1	> Y	0.500	Interpretation :				
QC2	N		Greyzone % (Y) 10.00				
QC3	N		Cut off Index (N)				
QC4	N		Range				

In case of 'Greyzone', it gives the 'Positive' remarks to sample absorbance greater than greyzone area of cutoff absorbance and a 'Negative' remarks to sample absorbances less than greyzone area of cutoff absorbance. The sample absorbances lying in greyzone area get remarks 'Equivocal' = 'EQ'.

(*NOTE: If you do not select any option for interpretation of sample results, the instrument will take 'Cutoff Absorbance' as a reference. It will give 'Positive' remark to sample absorbance greater than cutoff and 'Negative' to sample absorbance less than cutoff.)

18.2. Interpretation by 'Cutoff Index Range':

It is also provided to do the interpretation using 'Cutoff Index' by entering normal range for 'Positive' and 'Negative'.

Name: CPC				POS- CutOff				ESC
Pri: 450 Sec: 630								
	No	Factor	QC	QCVal	Mes.	Rem	SAVE	
BL	1		Y	0.100				
NC	3	1.000	Y	0.150				
PC	2	1.000	Y	0.500				
LC	0	1.000	N					
CC	0	1.000	N					
CUTFAC: 0.200								
CUTABS: NC + PC + CF								
QC1	>	Y	0.500	Interpretation :				
QC2	N			Greyzone % (N)				
QC3	N			Cut off Index (Y)				
QC4	N			Range Pos : 0.000				
				Neg : 0.000				

Cut off Index is the ratio of Sample Absorbance / Cut off Absorbance.

When you select 'Cutoff Index' -'Y', the 'Greyzone %' will become 'NO', means inactive.

In 'Cutoff Index', provide the range for interpretation, the positive and negative value of ratio (Sample Abs. / Cutoff Abs.)

RESULT RANGE:							ESC
POSITIVE >= 1.000							
NEGATIVE <= 0.900							
Numeric Value							
1	2	3	4	5	6	ENTER	
7	8	9	0	.		CLEAR	

In case of 'Cutoff Index Range', It gives the 'Positive' remarks to sample having index value, a ratio of (Sample abs. / Cutoff Abs.) greater than or equal to entered 'POSITIVE' value and

It gives 'Negative' remarks to sample having index value, a ratio of (Sample abs. / Cutoff Abs.) less than entered 'NEGATIVE' value.

The sample having index value in between 'POSITIVE' and 'NEGATIVE' range get remarks 'Equivocal' = 'EQ'.

Name: CPC				POS- CutOff				ESC
Pri: 450 Sec: 630								
	No	Factor	QC	QCVal	Mes.	Rem	SAVE	
BL	1		Y	0.100				
NC	3	1.000	Y	0.150				
PC	2	1.000	Y	0.500				
LC	0	1.000	N					
CC	0	1.000	N					
CUTFAC: 0.200								
CUTABS: NC + PC + CF								
QC1	>	Y	0.500	Interpretation :				
QC2	N			Greyzone % (N)				
QC3	N			Cut off Index (Y)				
QC4	N			Range Pos : 1.000				
				Neg : 0.900				

For example:

If you enter POS >= 1.0 and NEG <=0.9.

Then, the sample will get POSITIVE remarks having INDEX Value, (Sam. Abs./ Cutoff Abs.) >= 1.000.

The sample will get NEGATIVE remarks having INDEX Value, (Sam. Abs./ Cutoff Abs.) <= 0.900.

The sample will get EQUIVOCAL remarks having INDEX Value, (Sam. Abs./ Cutoff Abs.) in the range from 0.900 to 1.000.

19. To save the test after entering all the parameters, select option 'SAVE'.

Name: HBSAG		POS Cut Off					
Pri: 450 Sec: 630						ESC	
	No	Factor	QC	QCVal	Mes.	Rem	SAVE
BL	1		Y	0.100			
NC	3	1.000	Y	0.150			
PC	2	1.000	Y	0.500			
LC	0	1.000	N				
CC	0	1.000	N				
CUTFAC: 0.200							
CUTABS: NC + PC + CF							
QC1 > Y 0.500				Interpretation :			
QC2	N			Greyzone % (Y) 10.00			
QC3	N			Cut off Index (N)			
QC4	N			Range			

10 Example Print-out obtained From *readwell TOUCH*

POS-CutOff

Name : HCV

Pri : 450

Sec : 630

	NO Factor	QC	QCVal	Meas.
BL	1	Y	0.100	
NC	2	0.000 Y	0.150	0.000
PC	2	0.100 Y	0.500	0.000
LC	0	1.000 N		
CC	0	1.000 N		
CUTFAC :	0.100			
CUTABS :	.1*PC+CF			
QC1	N	Interpretation :		
QC2	N	Greyzone%(Y)	10.0	
QC3	N	Cutoff Index (N)		
		Range		

QC4 N

HCV, 21/07/08

A

W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12
B	S4	S12	S20	S28	S36	S44	S52	S60	S68	S76	S84
	OPD13	OPD21	OPD29	OPD37	OPD45	OPD53	OPD61	OPD69	OPD77	OPD85	OPD93
0.002	0.147	0.091	0.011	0.083	0.127	0.362	0.072	0.400	1.454	0.743	0.222
0.000	1.302	0.803	0.099	0.737	1.122	3.201	0.636	3.533	12.84	6.564	1.959
	POS	NEG	NEG	NEG	POS	POS	NEG	POS	POS	POS	POS

B

W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12
NC	S5	S13	S21	S29	S37	S45	S53	S61	S69	S77	S85
	OPD14	OPD22	OPD30	OPD38	OPD46	OPD54	OPD62	OPD70	OPD78	OPD86	OPD94
0.062	0.145	0.382	2.535	0.116	1.470	2.573	0.115	2.515	0.747	0.748	0.003
0.000	1.278	3.372	22.39	1.024	12.99	22.73	1.011	22.22	6.597	6.608	0.025
	POS	POS	POS	EQ	POS	POS	EQ	POS	POS	POS	NEG

C

W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12
NC	S6	S14	S22	S30	S38	S46	S54	S62	S70	S78	S86
	OPD15	OPD23	OPD31	OPD39	OPD47	OPD55	OPD63	OPD71	OPD79	OPD87	OPD95
0.040	2.573	0.129	0.159	0.133	0.217	0.077	0.091	1.584	1.557	0.502	2.638
0.000	22.72	1.136	1.405	1.177	1.917	0.677	0.804	13.99	13.75	4.434	23.30
	POS	POS	POS	POS	POS	NEG	NEG	POS	POS	POS	POS

D

W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12
PC	S7	S15	S23	S31	S39	S47	S55	S63	S71	S79	S87
	OPD16	OPD24	OPD32	OPD40	OPD48	OPD56	OPD64	OPD72	OPD80	OPD88	OPD96
0.080	0.157	2.630	0.141	2.642	0.058	0.155	0.159	1.515	0.071	0.423	0.209
0.000	1.389	23.23	1.246	23.33	0.516	1.370	1.403	13.38	0.628	3.732	1.850
	POS	POS	POS	POS	NEG	POS	POS	POS	NEG	POS	POS

E

W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12
PC	S8	S16	S24	S32	S40	S48	S56	S64	S72	S80	S88
	OPD17	OPD25	OPD33	OPD41	OPD49	OPD57	OPD65	OPD73	OPD81	OPD89	OPD97
2.562	0.172	0.198	0.061	0.182	0.165	2.656	0.156	0.080	2.616	0.259	0.224
0.000	1.517	1.751	0.536	1.612	1.457	23.46	1.377	0.705	23.11	2.291	1.978
	POS	POS	NEG	POS	POS	POS	POS	NEG	POS	POS	POS

F

W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12
S1	S9	S17	S25	S33	S41	S49	S57	S65	S73	S81	S89
OPD10	OPD18	OPD26	OPD34	OPD42	OPD50	OPD58	OPD66	OPD74	OPD82	OPD90	OPD98
2.626	2.612	0.055	0.116	2.649	0.188	0.176	0.052	2.638	0.855	0.899	0.419
23.19	23.07	0.483	1.023	23.40	1.660	1.553	0.460	23.30	7.548	7.942	3.699
POS	POS	NEG	EQ	POS	POS	POS	NEG	POS	POS	POS	POS

G

W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12
S2	S10	S18	S26	S34	S42	S50	S58	S66	S74	S82	S90
OPD11	OPD19	OPD27	OPD35	OPD43	OPD51	OPD59	OPD67	OPD75	OPD83	OPD91	OPD99
0.049	0.140	2.595	0.138	0.142	0.117	2.611	0.076	0.081	0.050	0.403	2.579
0.429	1.234	22.92	1.215	1.252	1.035	23.06	0.672	0.717	0.441	3.564	22.78
NEG	POS	POS	POS	POS	EQ	POS	NEG	NEG	NEG	POS	POS

H

W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12
S3	S11	S19	S27	S35	S43	S51	S59	S67	S75	S83	S91
OPD12	OPD20	OPD28	OPD36	OPD44	OPD52	OPD60	OPD68	OPD76	OPD84	OPD92	OPD100
0.061	0.109	0.002	0.071	0.076	0.131	0.109	0.101	0.082	2.560	0.399	0.015
0.538	0.964	0.018	0.631	0.670	1.157	0.960	1.896	0.721	22.61	3.527	0.132
NEG	EQ	NEG	NEG	NEG	POS	EQ	NEG	NEG	POS	POS	NEG

8.4. Reverse Cut Off Mode

For Reverse Cut Off mode, select touch zone 'POS'- Cut off key, It will changed to REV- Cut Off.

Name:		REV- CutOff					
Pri: 450	Sec: 0	ESC					
	No	Factor	QC	QCVal	Mes.	Rem	SAVE
BL	0		N				
NC	0	1.000	N				
PC	0	1.000	N				
LC	0	1.000	N				
CC	0	1.000	N				
CUTFAC: 0.000							
CUTABS:							
QC1	N	Interpretation :					
QC2	N	Greyzone % (Y) 10.00					
QC3	N	Cut off Index (N)					
QC4	N	Range					

In reverse Cut Off mode, programming of test is same as Positive Cut off mode; only QC check conditions for blanks and controls get reversed. And in 'INTERPRETATION' sample absorbance which are lesser than cut off absorbance gets remarked POSITIVE and sample absorbance higher than cut off absorbance gets remarked NEGATIVE, this exactly opposite to normal POSITIVE Cut Off mode. Same way it does the interpretation in case you select 'Cutoff Index Range'.

8.5. Multi Standards Mode:

In this mode the instrument accepts a maximum of 12 calibrators and calculates concentration based on the best-fit curve. Graph is printed with Absorbance on Y-axis and concentration on X-axis.

Programming a new test:

1. Select Main Menu/Test Operation/Add new test

TEST OPERATIONS		ESC
1	Select Test By Name	
2	Select Test by Mode	
3	Select Test by Number	
4	List Tests	
5	Add New Test	

2. Select Touch Zone “Multi Standard”.

Select Test Mode	
1> Absorbance	0
2> Single Standard	0
3> Cut off	0
4> Multi Standard	0
5> Percent Absorbance	0
6> Uptake	0
7> Kinetic	0

- After selecting the Multistandard mode below screen will come in the display

Name:	MULTISTANDARD		
Pri: 405 Sec: 0	BL N	CAL 2	ESC
	DUP N	DUP N	
			SAVE
Graph : LINEAR			
Y vs X : ABS vs CONC			
HI CO : N	High>		
	Low<		
LO CO: N	High>		
	Low<		
Interpretation: N			
Range	High>		
	Low<		

3. Entry of Test Name:

- Test Name can be entered by Selecting Touch Zone “Name:”.
- Procedure for entering the test name is same as that of cut off mode. Refer Test Name entry in Cut off mode for further details.

4. Selection of Primary and secondary filters

➤ Select Touch Zone “Pri:”

Name: TSH	MULTISTANDARD		
Pri: 405	Sec: 0	BL N	CAL 2
		DUP N	DUP N
			ESC
			SAVE
Graph : LINEAR			
Y vs X : ABS vs CONC			
HI CO : N	High>		
	Low<		
LO CO: N	High>		
	Low<		
Interpretation: N	High>		
Range	Low<		

After selecting the Zone “Pri:” below screen will come in the display

➤ Select the filters as per details given in the reagent manual by selecting the filter number given in the “Select Filter value:” option.

Pri:	450	ESC
Sec:	630	
Select Filter Val:		
0	405	450
492	630	000
000	XXX	YYY

5. Selection of Blank

➤ Select Touch Zone “BL”.

Name:	MULTISTANDARD		
Pri: 405	Sec: 0	BL N	CAL 2
		DUP N	DUP N
			ESC
			SAVE
Graph : LINEAR			
Y vs X : ABS vs CONC			
HI CO : N	High>		
	Low<		
LO CO: N	High>		
	Low<		
Interpretation: N	High>		
Range	Low<		

- Instrument will display the message “Blank required Yes/No”. At the bottom of the Screen as shown below, select yes if blank is required

Name:	MULTISTANDARD		
Pri: 405 Sec: 0	BL N	CAL 2	ESC
	DUP N	DUP N	
			SAVE
Graph : LINEAR			
Y vs X : ABS vs CONC			
HI CO : N	High>		
	Low<		
LO CO: N	High>		
	Low<		
Interpretation: N			
Range	High>		
	Low<		
		YES	
Blank Required ?			
		NO	

6. Entry of Standard Concentration:

- Select touch Zone “CAL” to enter Number of calibrators and its concentration.

Name:	MULTISTANDARD		
Pri: 405 Sec: 0	BL N	0.000 CAL 2	ESC
	DUP N	DUP N	
			SAVE
Graph : LINEAR			
Y vs X : ABS vs CONC			
HI CO : N	High>		
	Low<		
LO CO: N	High>		
	Low<		
Interpretation: N			
Range	High>		
	Low<		

- After selecting “CAL” below screen will come in the display.
- Select Touch Zone “No. Of Calibrators”. Numerals will display on the bottom of the screen
- Select the number of calibrators (User can select min 2 and Maxim 12 standard in this mode)

No Of Calibrator	2	ESC
No	Conc	Abs
1	0.000	0.000
2	0.000	0.000
Numeric Value		
1	2	3
7	8	9
4	0	.
5	6	ENTER
		CLEAR

Concentration Entry:

- After entering the number of calibrators. Concentration and absorbance column will come in the display as shown below.
- To enter concentration values select 0.000 in Conc. column corresponding to the standard and enter the concentration value. e.g. For entering Concentration of standard 4 Select 0.000 in fourth row of Conc. Column and enter the concentration by selecting the numerals. (Note: The concentration value should be either ascending or descending order.)

No of Calibrator		ESC
No	Conc	Abs
1	0.000	0.000
2	0.500	0.000
3	1.000	0.000
4	2.500	0.000
5	5.000	0.000
6	7.500	0.000
7	15.00	0.000

Numeric Value

1 2 3 4 5 6 ENTER
7 8 9 0 . CLEAR

- **Programming Screen after Entry of standards.**

Name: TSH	MULTISTANDARD		
Pri: 450 Sec: 630	BL Y 0.000	CAL 7	ESC
	DUP N	DUP N	
Graph : LINEAR			SAVE
Y vs X : ABS vs CONC			
HI CO : N	High>		
	Low<		
LO CO: N	High>		
	Low<		
Interpretation: N			
Range	High>		
	Low<		

7. Selection of Duplicate Blank and calibrators

A) For Duplicate Blank:

- To select the duplicate blank select touch zone “DUP” below the “BLN”

Name:	MULTISTANDARD			
Pri: 405 Sec: 0	BL Y	0.000	CAL 7	ESC
	DUP N		DUP N	
				SAVE
Graph : LINEAR				
Y vs X : ABS vs CONC				
HI CO : N	High>			
	Low<			
LO CO: N	High>			
	Low<			
Interpretation: N				
Range	High>			
	Low<			

- After selecting “DUP” instrument will display message “Duplicate Blank Yes/No” as shown below. Select “Yes” for Duplication of Blank.

Name:	MULTISTANDARD			
Pri: 405 Sec: 0	BL Y	0.000	CAL 7	ESC
	DUP N		DUP N	
				SAVE
Graph : LINEAR				
Y vs X : ABS vs CONC				
HI CO : N	High>			
	Low<			
LO CO: N	High>			
	Low<			
Interpretation: N				
Range	High>			
	Low<			
Duplicate Blank?	YES			
	NO			

B) For Duplicate Calibrators:

- To select Duplicate Calibrator select Touch Zone “DUP” below the “CAL 7”

Name:	MULTISTANDARD			
Pri: 405 Sec: 0	BL Y	0.000	CAL 7	ESC
	DUP Y		DUP N	
				SAVE
Graph : LINEAR				
Y vs X : ABS vs CONC				
HI CO : N	High>			
	Low<			
LO CO: N	High>			
	Low<			
Interpretation: N				
Range	High>			
	Low<			

- After selecting “DUP” instrument will display message “Duplicate Calibrator Yes/No” as shown below. Select “Yes” for Duplication of calibrator.

Name:	MULTISTANDARD			
Pri: 405 Sec: 0	BL Y	0.000	CAL 7	ESC
	DUP Y		DUP N	
				SAVE
Graph : LINEAR				
Y vs X : ABS vs CONC				
HI CO : N	High>			
	Low<			
LO CO: N	High>			
	Low<			
Interpretation: N				
Range	High>			
	Low<			
Duplicate Calibrator?	YES			
	NO			

- Screen after standard entry & selection of duplicate - Blank & Calibrators.

Name:	MULTISTANDARD			
Pri: 405 Sec: 0	BL Y	0.000	CAL 7	ESC
	DUP Y		DUP Y	
				SAVE
Graph : LINEAR				
Y vs X : ABS vs CONC				
HI CO : N	High>			
	Low<			
LO CO: N	High>			
	Low<			
Interpretation: N				
Range	High>			
	Low<			

8) Linear mode and Point to Point mode

There are two types of graphs in Multistandard

- 1) Linear (LINEAR)
- 2) Point to Point (PT TO PT)

There are five types of scales for X and Y axis

- 1) LOGABS vs CONC (X-axis = Concentration v/s Y-axis = LOG of ABS.)
- 2) ABS vs LOGCONC (X-axis = LOG of concentration v/s Y-axis = Absorbance)
- 3) LOGITABS VS LOGCONC (X-axis = LOG of concentration v/s Y-axis = LOGIT of Absorbance)
- 4) ABS vs CONC (X-axis = Concentration v/s Y-axis = Absorbance)
- 5) LOGABS vs LOGCONC (X-axis = LOG of concentration v/s Y-axis = LOG of absorbance)

A) Selection of Graph

- Select Graph type as per the details given in the reagent manual by selecting Touch Zone “Graph”.

Name:	MULTISTANDARD		
Pri: 405 Sec: 0	BL N	CAL 2	ESC
	DUP N	DUP N	
			SAVE
Graph : LINEAR			
Y vs X : ABS vs CONC			
HI CO : N	High>		
	Low<		
LO CO: N	High>		
	Low<		
Interpretation: N			
Range	High>		
	Low<		

A) Linear mode graph type:

- After Selecting the “Graph” below screen will come in the display
- Select Graph type as Linear
- Select scale as per the details given in the reagent manual.

Graph : LINEAR		ESC
Y vs X : ABS vs CONC		
TYPE	SCALE	
LINEAR	LOGABS vs CONC	
	ABS vs LOGCONC	
PT TO PT	LOGITABS vs LOGCONC	
	ABS vs CONC	
	LOGABS vs LOGCONC	

B) Point to Point Graph Type

Select touch zone “PT to PT” abs scale of graph ‘ABS vs. CONC’

Graph Type :	PT TO PT	ESC
Y vs X :	ABS vs CONC	
TYPE	SCALE	
LINEAR	LOGABS vs CONC	
	ABS vs LOGCONC	
PT TO PT	LOGITABS vs LOGCONC	
	ABS vs CONC	
	LOGABS vs LOGCONC	

Select the scale type touching the required zone.

Name:	MULTISTANDARD		
Pri: 405 Sec: 0	BL N	CAL 2	ESC
	DUP N	DUP N	
			SAVE
Graph :	PT TO PT		
Y vs X :	ABS vs CONC		
HI CO : N	High>		
	Low<		
LO CO: N	High>		
	Low<		
Interpretation: N			
Range	High>		
	Low<		

9. Selection of Controls

A) For High control select zone 'HI CO: N' It will ask "High Control Required? Yes / No". Select 'YES' and then enter range of control "HIGH" and "LOW".

Name:	MULTISTANDARD		
Pri: 405 Sec: 0	BL N	CAL 2	ESC
	DUP N	DUP N	
			SAVE
Graph :	LINEAR		
Y vs X :	ABS vs CONC		
HI CO : N	High>		
	Low<		
LO CO: N	High>		
	Low<		
Interpretation: N			
Range	High>		
	Low<		
	YES		
High Control Required?	NO		

Enter range of control "HIGH" and "LOW" as per reagent manual.

Enter High Range Value:	ESC
High 25.03	
Low 10.54	
Numeric Value	
1 2 3 4 5 6	ENTER
7 8 9 0 .	CLEAR

Name:	MULTISTANDARD		
Pri: 405 Sec: 0	BL N	CAL 2	ESC
	DUP N	DUP N	SAVE
Graph : LINEAR			
Y vs X : ABS vs CONC			
HI CO : N	High>25.03 Low<10.54		
LO CO: N	High> Low<		
Interpretation: N			
Range	High> Low<		

B) For Low control select zone 'LO CO: N' It will ask "Low Control Required? Yes / No". Select 'YES'

Name:	MULTISTANDARD		
Pri: 405 Sec: 0	BL N	CAL 2	ESC
	DUP N	DUP N	SAVE
Graph : LINEAR			
Y vs X : ABS vs CONC			
HI CO : N	High>25.03 Low<10.54		
LO CO: N	High> Low<		
Interpretation: N			
Range	High> Low<		
Low Control Required?	YES		
	NO		

➤ **Enter the range 'High' and 'Low' as per the reagent manual.**

High> 16.61	ESC
Low< 5.45	
Numeric Value	
1 2 3 4 5 6	ENTER
7 8 9 0 .	CLEAR

10. Normal Range selection for interpretation of samples:

For interpretation of specimen result (POSITIVE or NEGATIVE), enter normal range given in REAGENT MANUAL. Select key "Interpretation: N". It will become "Interpretation: Y". Then select key "HIGH>" and "LOW<" to enter normal range.

Name:	MULTISTANDARD		
Pri: 0 Sec: 0	BL N	CAL 2	ESC
	DUP N	DUP N	SAVE
Graph :	LINEAR		
Y vs X :	ABS vs CONC		
HI CO : N	High>25.03 Low<10.54		
LO CO: N	High>16.61 Low<5.45		
Interpretation: N			
Range	High>		
	Low<		

- Enter Normal Range for positive and negative samples.

Enter HIGH Range value:									
High>	15.25								ESC
Low<	9.46								
Numeric Value									
1	2	3	4	5	6	ENTER			
7	8	9	0	.		CLEAR			

All the results whose concentration is coming above the High Range will be considered as positive and coming below the Low Range will be consider as negative. The results having concentration in between High and Low range will get remarks 'Equivocal' = 'EQ'.

- After entering all the parameter save the test by selecting "SAVE" option.

Name: TSH	MULTISTANDARD		
Pri: 450 Sec: 630	BL Y	0.000	CAL 7
	DUP N	DUP N	ESC
	SAVE		
Graph :	LINEAR		
Y vs. X :	ABS vs CONC		
HI CO : N	High>25.03 Low<10.54		
LO CO: N	High>16.61 Low<5.45		
Interpretation: Y			
Range	High> 15.25		
	Low< 9.46		

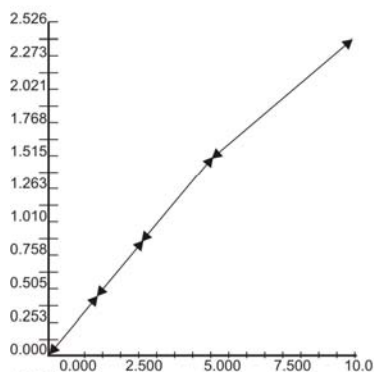
(*Same way you can make a test for Single standard, % Absorbance and uptake)

11 Example Print-out obtained From *readwell TOUCH*

MULTI STDS

Name : T4
 Pri : 450 Sec : 630
 BL N DUP N
 CAL 5 DUP Y
 Graph : PT TO PT
 Y vs X : ABS vs CONC
 HI CO : N High >
 LO CO : N Low <
 Range Y High > 6.000
 Low < 4.000
 No Con Abs
 1 0.000 0.000
 2 1.500 0.000
 3 2.500 0.000
 4 4.500 0.000
 5 10.00 0.000

Origin at : x = 0.000, y = 0.000
 x / div = 0.625, y / div = 0.126



T4, 21/07/08,

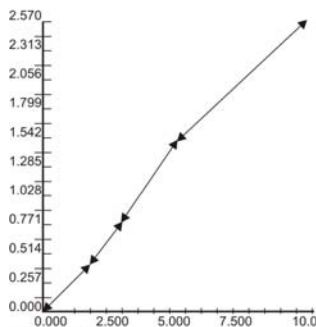
A	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12
	C1	C5	S4	S8	S12	S16	S20	S24	S28	S32	S36	S40
			OP33	OP37	OP41	OP45	OP49	OP53	OP57	OP61	OP65	OP69
	0.004	2.566	0.711	0.728	0.796	0.423	0.744	0.728	0.768	0.141	0.700	0.151
	0.000	10.00	3.175	3.226	3.275	1.880	2.203	2.240	2.255	0.527	2.141	0.475
			NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG
B	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12
	C	C	S	S	S	S	S	S	S	S	S	S
	0.017	2.485	1.432	1.448	1.412	0.755	0.709	0.756	0.729	0.173	0.700	0.134
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
C	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12
	C2	S1	S5	S9	S13	S17	S21	S25	S29	S33	S37	S41
		OP30	OP34	OP38	OP42	OP46	OP50	OP54	OP58	OP62	OP66	OP70
	0.413	2.603	0.081	0.801	0.154	0.448	0.155	0.161	2.547	0.766	0.854	2.625
	1.500	10.43	0.273	2.382	0.516	1.963	0.523	0.533	10.30	2.340	2.444	10.43
		POS	NEG	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	POS
D	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12
	C	S	S	S	S	S	S	S	S	S	S	S
	0.442	2.609	0.092	0.804	0.153	0.800	0.156	0.157	2.615	0.803	0.803	2.589
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
E	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12
	C3	S2	S6	S10	S14	S18	S22	S26	S30	S34	S38	S42
		OP31	OP35	OP39	OP43	OP47	OP51	OP55	OP59	OP63	OP67	OP71
	0.823	1.520	0.155	0.846	0.154	2.616	0.531	0.454	0.448	2.386	1.542	1.431
	2.500	4.772	0.532	2.600	0.532	7.579	1.547	1.487	1.539	11.15	4.738	4.386
		EQ	NEG	NEG	NEG	POS	NEG	NEG	NEG	POS	EQ	EQ
F	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12
	C	S	S	S	S	S	S	S	S	S	S	S
	0.882	1.584	0.161	0.924	0.162	1.533	0.363	0.393	0.440	3.096	1.549	1.497
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
G	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12
	C4	S3	S7	S11	S15	S19	S23	S27	S31	S35	S39	S43
		OP32	OP36	OP40	OP44	OP48	OP52	OP56	OP60	OP64	OP68	OP72
	1.463	1.490	1.419	1.410	0.149	1.456	0.159	2.447	2.637	1.415	1.454	1.453
	4.500	4.478	4.337	4.393	0.520	7.114	0.510	9.689	10.24	4.293	4.376	4.442
		EQ	EQ	EQ	NEG	POS	NEG	POS	POS	EQ	EQ	EQ
H	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12
	C	S	S	S	S	S	S	S	S	S	S	S
	1.539	1.498	1.478	1.524	0.161	2.520	0.146	2.489	2.503	1.453	1.468	1.511
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

12 Example Print-out obtained From **readwell TOUCH**

MULTI STDS

Name : T4
 Pri : 450 Sec : 630
 BL N DUP N
 CAL 5 DUP N
 Graph : PT TO PT
 Y vs X : ABS vs CONC
 HI CO : N High >
 Low <
 LO CO : N High>
 Low <
 Range Y High > 6.000
 Low < 4.000
 No Con Abs
 1 0.500 0.083
 2 1.500 0.425
 3 3.000 0.834
 4 5.500 1.497
 5 10.00 2.569

Origin at : x = 0.000, y = 0.000
 x/div = 0.625, y/div = 0.128



T4, 21/07/08,

A	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12
C1	S4	S12	S20	S28	S36	S44	S52	S60	S68	S76	S84	S92
	OP213	OP221	OP229	OP237	OP245	OP253	OP261	OP269	OP277	OP285	OP293	OP301
	0.055	0.139	0.091	2.571	0.085	0.125	0.362	0.095	0.402	1.392	0.724	0.229
	0.500	0.734	0.601	10.00	0.582	0.694	1.352	0.610	1.462	5.119	2.636	0.984
	NEG	NEG	POS	NEG	NEG	NEG	NEG	NEG	EQ	NEG	NEG	NEG
B	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12
C2	S5	S13	S21	S29	S37	S45	S53	S61	S69	S77	S85	S93
	OP214	OP222	OP230	OP238	OP246	OP254	OP262	OP270	OP278	OP286	OP294	OP302
	0.415	0.152	0.358	2.498	0.064	1.408	2.524	0.125	2.461	0.760	0.718	0.391
	1.500	0.770	1.340	9.699	0.526	5.177	9.810	0.695	9.545	2.769	2.613	1.433
	NEG	NEG	POS	NEG	EQ	POS	NEG	POS	NEG	NEG	NEG	NEG
C	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12
C3	S6	S14	S22	S30	S38	S46	S54	S62	S70	S78	S86	S94
	OP215	OP223	OP231	OP239	OP247	OP255	OP263	OP271	OP279	OP287	OP295	OP303
	0.823	2.605	0.115	0.153	0.418	0.177	1.926	0.214	1.530	1.490	0.412	2.594
	3.000	10.15	0.665	0.771	1.511	0.839	7.308	0.941	5.651	5.483	1.491	10.10
	POS	NEG	NEG	NEG	NEG	NEG	POS	NEG	EQ	NEG	NEG	POS
D	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12
C4	S7	S15	S23	S31	S39	S47	S55	S63	S71	S79	S87	S95
	OP216	OP224	OP232	OP240	OP248	OP256	OP264	OP272	OP280	OP288	OP296	OP304
	1.494	0.167	2.615	0.152	2.632	0.492	0.192	0.336	1.468	0.506	0.428	0.214
	5.500	0.811	10.19	0.768	10.26	1.783	0.880	1.281	5.403	1.834	1.547	0.941
	NEG	POS	NEG	POS	NEG	NEG	NEG	EQ	NEG	NEG	NEG	NEG
E	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12
C5	S8	S16	S24	S32	S40	S48	S56	S64	S72	S80	S88	S96
	OP217	OP225	OP233	OP241	OP249	OP257	OP265	OP273	OP281	OP289	OP297	OP305
	2.570	0.164	0.173	0.125	0.166	0.168	2.643	0.523	1.631	2.642	0.258	0.250
	10.00	0.803	0.826	0.695	0.807	0.812	10.31	1.898	6.071	10.30	1.064	1.041
	NEG	NEG	NEG	NEG	NEG	NEG	POS	NEG	POS	POS	NEG	NEG
F	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12
S1	S9	S17	S25	S33	S41	S49	S57	S65	S73	S81	S89	S97
	OP210	OP218	OP226	OP234	OP242	OP250	OP258	OP266	OP274	OP282	OP290	OP298
	1.656	2.641	0.451	0.295	2.618	0.153	0.177	0.882	2.632	0.858	0.845	0.445
	6.176	10.30	1.633	1.166	10.20	0.773	0.838	3.222	10.26	3.132	3.083	1.610
	POS	POS	NEG	NEG	POS	NEG	NEG	NEG	POS	NEG	NEG	NEG
G	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12
S2	S10	S18	S26	S34	S42	S50	S58	S66	S74	S82	S90	S98
	OP211	OP219	OP227	OP235	OP243	OP251	OP259	OP267	OP275	OP283	OP291	OP299
	0.114	0.157	2.520	0.149	0.148	0.118	2.567	1.478	0.475	0.262	0.395	2.542
	0.864	0.783	9.794	0.761	0.758	0.676	9.988	5.439	1.719	1.075	1.443	9.885
	NEG	NEG	POS	NEG	NEG	NEG	POS	EQ	NEG	NEG	NEG	POS
H	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12
S3	S11	S19	S27	S35	S43	S51	S59	S67	S75	S83	S91	S99
	OP212	OP220	OP228	OP236	OP244	OP252	OP260	OP268	OP276	OP284	OP292	OP300
	0.867	0.450	0.275	0.344	1.476	0.737	0.106	0.359	0.798	2.544	0.382	0.280
	3.165	1.629	1.111	1.303	5.431	2.684	0.642	1.343	2.910	9.895	1.408	1.124
	NEG	NEG	NEG	NEG	EQ	NEG	NEG	NEG	NEG	POS	NEG	NEG

8.6. Percentage Absorbance

The Percentage Absorbance Mode requires one calibrator (read singly or duplicate). In this mode, calibrator is considered to have a concentration of 100%. The absorbance's of unknown samples are read and compared to the calibrator absorbance, and reported as % concentration of calibrator.

Name: TSH	% ABSORBANCE			
Pri: 450 Sec: 630	BL Y	0.000	CAL 1	ESC
	DUP N		DUP N	
				SAVE
HI CO: N	High>			
	Low<			
LO CO: N	High>			
	Low<			
Interpretation: N				
Range	High>			
	Low<			

8.7. Uptake

In this mode the instrument accepts the calibrator singly or in duplicate and then calculates the concentration based on the single point standard curve passing through the point 0.0.

A single calibrator/standard of a known concentration is used to calibrate the instrument so that the concentration of unknown samples can be calculated according to Beer's Law

Sample Concentration == Calibrator Absorbance * Calibrator Concentration

Sample Absorbance

Name: TSH	UPTAKE			
Pri: 450 Sec: 630	BL Y	0.000	CAL 1	ESC
	DUP N		DUP N	
				SAVE
HI CO: N	High>			
	Low<			
LO CO: N	High>			
	Low<			
Interpretation: N				
Range	High>			
	Low<			

- Please refer single standard for parameter entry.

8.8. Kinetic mode of Operation:

To create a new test in “KINETIC” mode.

Name : KINETIC		KINETIC	ESC
Pri : 405	Sec : 0		SAVE
Read Time :	1	min.	
Read Period :	15	sec.	

“Read Time” is total read period of whole test. You need to enter it only in minutes.

“Read Period” is time interval between two readings. You must enter it in seconds. The instrument will automatically calculate the number of readings.

Select primary and secondary filters, give a name to test and save it.

To run the kinetic test.

Name : KINETIC		KINETIC	ESC
Pri : 405	Sec : 0		EDIT
Read Time :	1	min.	RUN
Read Period :	15	sec.	PRINT

Select “RUN” to start. The following screen will appear.

The “D/M” means delta per minute of reaction. When test will over, instrument will show you the “D/M” values of reaction done in each well.

Name: KINETIC		KINETIC			
Pri : 405		Sec : 630			
D/M	D/M	D/M	D/M	D/M	D/M
1	2	3	4	5	6
D/M	D/M	D/M	D/M	D/M	D/M
7	8	9	10	11	12
Is Plate Loaded			YES		
			NO		
ESC	PRINTMATRIX	SEND PLATE	LOAD NEXT		

Name: KINETIC		KINETIC			
Pri : 405		Sec : 630			
D/M	D/M	D/M	D/M	D/M	D/M
1	2	3	4	5	6
D/M	D/M	D/M	D/M	D/M	D/M
7	8	9	10	11	12
Is Plate Removed			YES		
			NO		
ESC	PRINTMATRIX	SEND PLATE	LOAD NEXT		

It is showing the “D/M” values for each and every well in table format.

Name: ABSORBANCE Pri : 405 Sec : 630			NORM – ABSORBANCE BL N		
D/M	D/M	D/M	D/M	D/M	D/M
1	2	3	4	5	6
0.020	0.002	0.010	0.035	0.056	0.001
--					
--					
--					
--					
0.030	0.056	0.075	0.100	0.068	0.090
D/M	D/M	D/M	D/M	D/M	D/M
7	8	9	10	11	12
0.020	0.002	0.010	0.0.35	0.056	0.001
--					
--					
--					
--					
0.030	0.056	0.075	0.100	0.068	0.090
ESC	PRINTMATRIX	SEND PLATE	LOAD NEXT		

In “PRINT MATRIX”, you will get the print of entire plate data with initial absorbance of each sample, average delta values of each sample and “D/M” values of each well, like...

A

W1	W2	W3	W4	W5	W6
0.200	0.100	1.200	0.300	2.600	0.900.. these are initial absorbances.
0.010	0.001	0.005	0.017	0.028	0.001.. these are average delta values.
0.020	0.002	0.010	0.035	0.056	0.001.. these are “D/M” values of each sample.

B

W1	W2	W3	W4	W5	W6
0.300	0.100	1.200	0.200	2.600	0.800..
0.015	0.028	0.037	0.050	0.034	0.045..
0.030	0.056	0.075	0.100	0.068	0.090..

Using “SEND PLATE” you can send plate data to computer using either USB or SERIAL RS232.

“LOAD NEXT” uses to get the absorbance of next plate.

13 Example Print-out obtained From *readwell TOUCH***KINETIC**

Name : KINETIC 1

Pri : 405 Sec : 630

Read Timer 5 min

Read Period 60 sec

KINETIC 1, 12/9/09, 16:28:27.

A

W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12
0.303	0.373	0.249	0.270	0.306	0.294	0.251	0.242	0.234	0.258	0.251	0.242
0.000	-0.002	-0.004	-0.006	0.002	-0.012	-0.005	-0.009	0.000	-0.008	0.002	0.000
0.000	-0.002	-0.004	-0.006	0.002	-0.012	-0.005	-0.009	0.000	-0.008	0.002	0.000

B

W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12
0.250	0.225	0.272	0.378	0.233	0.287	0.278	0.260	0.253	0.220	0.270	0.275
-0.002	0.002	0.005	0.000	0.001	-0.003	0.000	-0.014	-0.001	0.000	-0.001	0.000
-0.002	0.002	0.005	0.000	0.001	-0.003	0.000	-0.014	-0.001	0.000	-0.001	0.000

C

W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12
0.243	0.217	0.195	0.203	0.254	0.209	0.244	0.206	0.338	0.280	0.295	0.251
0.002	-0.004	-0.000	0.002	-0.000	-0.001	0.000	-0.004	-0.004	-0.011	-0.001	0.004
0.002	-0.004	-0.000	0.002	-0.000	-0.001	0.000	-0.004	-0.004	-0.011	-0.001	0.004

D

W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12
0.232	0.248	0.235	0.197	0.168	0.235	0.331	0.242	0.187	0.273	0.292	0.213
0.001	0.005	-0.003	-0.007	0.001	0.005	-0.001	-0.005	0.006	-0.002	-0.003	0.000

E

W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12
0.258	0.215	0.224	0.221	0.233	0.240	0.173	0.203	0.195	0.199	0.210	0.172
0.001	0.000	0.001	-0.001	-0.005	0.004	-0.001	-0.002	0.002	0.002	0.002	0.002
0.001	0.000	0.001	-0.001	-0.005	0.004	-0.001	-0.002	0.002	0.002	0.002	0.002

F

W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12
0.258	0.189	0.249	0.241	0.236	0.266	0.289	0.312	0.226	0.357	0.273	0.190
0.000	-0.002	-0.002	0.001	0.001	0.000	0.007	0.004	0.005	-0.000	0.006	-0.003
0.000	-0.002	-0.002	0.001	0.001	0.000	0.007	0.004	0.005	-0.000	0.006	-0.003

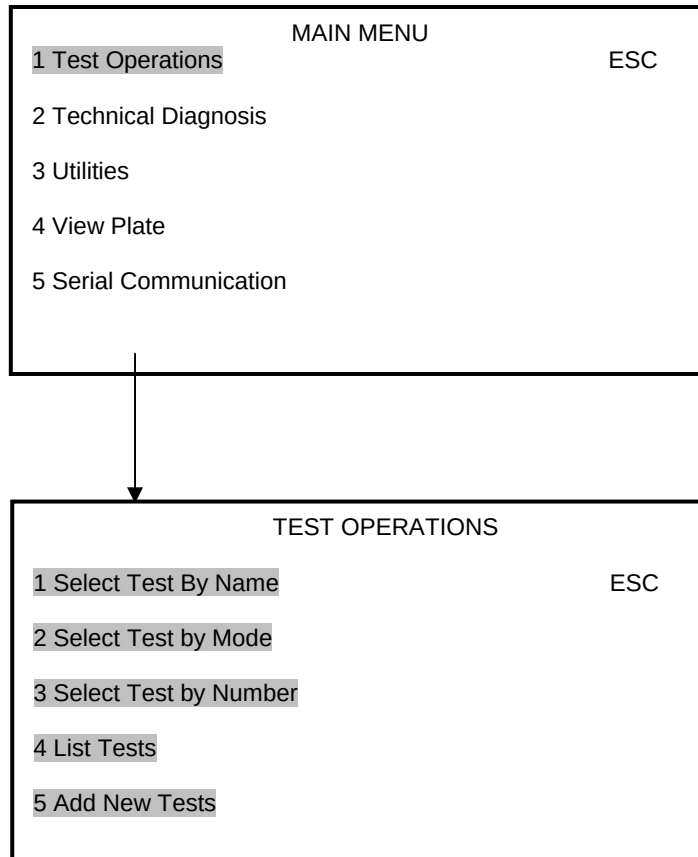
G

W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12
0.251	0.239	0.257	0.235	0.306	0.240	0.288	0.195	0.202	0.244	0.241	0.204
0.001	0.001	0.001	0.001	0.012	0.000	0.016	-0.001	0.000	0.002	-0.000	0.000
0.001	0.001	0.001	0.001	0.012	0.000	0.016	-0.001	0.000	0.002	-0.000	0.000

H

W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12
0.259	0.241	0.213	0.253	0.258	0.221	0.235	0.218	0.258	0.251	0.242	0.221
0.003	-0.003	-0.000	-0.003	-0.001	0.001	-0.002	-0.000	-0.000	-0.001	0.002	-0.001
0.003	-0.003	-0.000	-0.003	-0.001	0.001	-0.002	-0.000	-0.000	-0.001	0.002	-0.001

9. RECALLING AND RUNNING OF STORED TEST/PROGRAMS



Test can be recall by Name, Mode, Number or by List test.

* The entire saved test are available on first screen, tests can be selected from this screen also.

READWELL TOUCH	01/01/08
ABCDEFGHIJKLM	
Select Test	MENU
1 HBSAG	SEL
	PRNT
2 TSH	NXT
	PREV
3.ABSORBANCE	DEL

9.1. Absorbance Mode:

- Select the test by “SEL” option.

Name : ABSORBANCE		NORM – ABSORBANCE	
		BL N	ESC
Pri : 405	Sec : 630		EDIT
		NORM	RUN
MODE		DIFF	PRINT

- Below screen will appear on the display after selecting the Run display

The instrument will ask “Is Plate Loaded? YES / NO” Press Yes. Instrument will read the absorbances using mechanical plate movement. After completion of reading it will ask

“Is Plate Removed? YES / NO”. Remove the plate and Select YES.

Name: ABSORBANCE		NORM – ABSORBANCE	
Pri : 405	Sec : 630	BL	N
ABS 1	ABS 2	ABS 3	ABS 4
ABS 5	ABS 6		
ABS 7	ABS 8	ABS 9	ABS 10
ABS 11	ABS 12		
Is Plate Loaded		YES	
		NO	
ESC	PRINTMATRIX	SEND PLATE	LOAD NEXT

Name: ABSORBANCE		NORM – ABSORBANCE	
Pri : 405	Sec : 630	BL	N
ABS 1	ABS 2	ABS 3	ABS 4
ABS 5	ABS 6		
ABS 7	ABS 8	ABS 9	ABS 10
ABS 11	ABS 12		
Is Plate Removed		YES	
		NO	
ESC	PRINTMATRIX	SEND PLATE	LOAD NEXT

Details of absorbances of all well in table format for each strip will display in the screen as shown below.

Name: ABSORBANCE			NORM – ABSORBANCE		
Pri : 405 Sec : 630			BL N		
ABS	ABS	ABS	ABS	ABS	ABS
1	2	3	4	5	6
0.125	0.250	0.350	0.450	0.550	0.650
--					
--					
--					
0.125	0.250	0.350	0.450	0.550	0.650
ABS	ABS	ABS	ABS	ABS	ABS
7	8	9	10	11	12
0.125	0.250	0.350	0.450	0.550	0.650
--	--				
--					
--					
0.125	0.250	0.350	0.450	0.550	0.650
ESC	PRINTMATRIX		SEND PLATE		LOAD NEXT

In this operation if you keep BLANK YES The first well of first strip will be consider as blank and instrument will gives the absorbances of remaining all well with blank subtraction from original absorbance.

The “PRINT MATRIX” will print the details of entire plate with well identification and absorbance of that well, like....

A
W1 W2 W3 W4 W5 W6
0.125 0.250 0.350 0.450 0.550 0.650..

Using “SEND PLATE” plate data can be send to computer using either USB or SERIAL RS232.

“LOAD NEXT” uses to get the absorbance of next plate.

Differential Absorbance Mode: In differential absorbance mode the instrument will gives the absorbance difference each set of “ODD” number strip and EVEN number strip.

Name: ABSORBANCE			NORM – ABSORBANCE		
Pri : 405 Sec : 630			BL N		
ABS	ABS	ABS	ABS	ABS	ABS
1	2	3	4	5	6
	0.100		0.900		1.700
	0.200		1.000		1.800
	0.300		1.100		1.900
	0.400		1.200		2.000
	0.500		1.300		2.100
	0.600		1.400		2.200
	0.700		1.500		2.300
	0.800		1.600		2.400
ABS	ABS	ABS	ABS	ABS	ABS
7	8	9	10	11	12
	0.100		0.900		1.700
	0.200		1.000		1.800
	0.300		1.100		1.900
	0.400		1.200		2.000
	0.500		1.300		2.100
	0.600		1.400		2.200
	0.700		1.500		2.300
	0.800		1.600		2.400
ESC	PRINTMATRIX		SEND PLATE		LOAD NEXT

It is showing the absorbances only for even number strips. This absorbance values are actually differences between each well of strip 1 and well of strip 2. You can get the difference between set of 1-2, 3-4, 5-6, 7-8, 9-10 and 11-12. It is not possible to change this combination.

In “PRINT MATRIX”, you will get the print of entire plate data with actual absorbance of each well and difference of absorbance between ODD well and EVEN well, like...

A
W1 W2 W3 W4 W5 W6
0.200 0.100 1.200 0.300 2.600
0.900..
0.000 0.100 0.000 0.900 0.000
1.700..
B
W1 W2 W3 W4 W5 W6
0.300 0.100 1.200 0.200 2.600
0.800..
0.000 0.200 0.000 1.000 0.000
1.800..

9.2. Cut off Mode:

Name: HBSAG		POS- Cut Off					
Pri: 450 Sec: 630						ESC	
	No	Factor	QC	QCVal	Mes.	Rem	SAVE
BL	1		Y	0.100			
NC	3	1.000	Y	0.150			
PC	2	1.000	Y	0.500			
LC	0	1.000	N				
CC	0	1.000	N				
CUTFAC: 0.200							
CUTABS: (0.45 * NC) + (0.35 * PC) + 0.10							
QC1 > Y			Interpretation :				
QC2 N			Greyzone % (N)				
QC3 N			Cut off Index (Y)				
QC4 N			Range Pos : 0.000				
			Neg : 0.000				

1) You can run this test by selecting RUN option. "PRINT" is used to print the details of test parameters.

A screen will come as follows,

Name: HBSAG		POS- Cut Off									
Pri: 450 Sec: 630						ESC					
No. of Samples : 0						RUN					
DUP N		SIMUL				PID					
1	2	3	4	5	6	7	8	9	10	11	12
B											
NC											
NC											
NC											
PC											
PC											

2) It shows the 12 strips horizontal with 8 wells vertical with blanks and controls loaded in first strip. You enter no. of samples by selecting that option and enter no. of samples, you want to load. In case of 10 samples.

Name: HBSAG		POS- Cut Off									
Pri: 450 Sec: 630						ESC					
No. of Samples : 10						RUN					
DUP N		SIMUL				PID					
1	2	3	4	5	6	7	8	9	10	11	12
B	S3										
NC	S4										
NC	S5										
NC	S6										
PC	S7										
PC	S8										
S1	S9										
S2	S10										

3) After entering No. of samples, press RUN. The plate-loading tray will come out and a message will appear "Is plate loaded? YES / NO".

Name: HBSAG		POS- Cut Off									
Pri: 450 Sec: 630				ESC							
No. of Samples : 10				RUN							
DUP N		SIMUL		PID							
1	2	3	4	5	6	7	8	9	10	11	12
B	S3										
NC	S4										
NC	S5										
NC	S6										
PC	S7										
PC	S8										
S1	S9										
S2	S10										
				YES							
Is Plate Loaded				NO							

4) Here you load the plate in the direction that controls should go in first. And press "YES". The instrument will read the controls and samples, and then it will bring the tray out. This time a message will come "Is plate removed? YES / NO". You remove the tray and press YES.

Name: HBSAG		POS- Cut Off									
Pri: 450 Sec: 630				ESC							
No. of Samples : 10				RUN							
DUP N		SIMUL		PID							
1	2	3	4	5	6	7	8	9	10	11	12
B	S3										
NC	S4										
NC	S5										
NC	S6										
PC	S7										
PC	S8										
S1	S9										
S2	S10										
				YES							
Is Plate Removed				NO							

5) After pressing YES, result screen will come, where you will get the measured values of mean blank, mean of all controls, cut off absorbance.

Name: HBSAG		POS- Cut Off					
Pri: 450 Sec: 630				ESC			
	No	Factor	QC	QCVal	Mes.	Rem	ACCEPT
BL	1		Y	0.100	0.050		TEST
NC	3	1.000	Y	0.150	0.098		
PC	2	0.100	Y	0.500	2.658		PRINT
LC	0	1.000	N				
CC	0	1.000	N				
CUTFAC: 0.200		CUTABS: 0.563				Display	
						VALUE:	
QC1	2.560	QC2					LOAD
QC3		QC4					NEXT
Range % 10.00							

6) To check the results of samples, select option 'Display value:', you will get the details as shown below,

Name: HBSAG		POS- Cut Off		ESC	
Pri: 450 Sec: 630		BL 1			
Range PERCENTAGE % 10.00		Pos:0.330		NXT	
CUT ABS= 0.300		Neg:0.270		PREV	
NO	SAMP	ABS	AVG	CONC	REM PID
A1	B	0.050	0.050		
B1	NC				
--					
--					
F1	S1	0.200	0.200	0.254	NEG HIV-1
G1	S2	1.854	1.854	7.245	POS HIV-2
--					
PRINT RESULTS		SAVE RESULTS		PRINT MATRIX	
				PLATE OPT.	

7) By selecting 'ACCEPT TEST' option you can save this test with the details of controls absorbance. So next time it is possible to you to run the same test without loading controls. Means using previous stored values of controls, you can find the results of new samples.

Here you can get all the details in table format, as per row and column shows in the screen. You can get the print of same format by selecting option 'PRINT RESULTS'. To check the results of next samples, you choose option 'NXT', and then print it in format shown on screen by option 'Print Results'

Or you can get the print in matrix format, by selecting option 'PRINT MATRIX'.

In matrix form you will get the print as per your tray/plate for all the wells. Instrument prints seven different parameter in print matrix for a single well.

ROW IDENTIFICATION	A,B, C,D,.....
WELL NUMBER	W1, W2, W3, W4.....
WELL ID OR SAMPLE NUMBER	BL, NC, PC, OR S1, S2, S3,
PATIENT IDENTIFICATION	RAMESH, VIKAS, etc.
WELL ABSORBANCE	0.050, 0.098, 0.085, ...
SAMPLE CONCENTRATION	0.738, 0.689, 2.578,...
INTERPRETATION / REMARKS	POS or NEG or EQ

9.2. A. Invalid Assay in Cut Off Mode:

If any individual control, behaves incorrectly and it's absorbance not satisfying the QC check value of that controls, you will get a message "Invalid Assay" and a remarks "HI" or "LO" for that control. OR if the QC1, QC2, QC3 and QC4, which has a other QC condition of controls (like some reagent manual gives condition PC-NC > 0.2 or NC/PC > 0.5). If such conditions not satisfy, a message will get display "Invalid Assay" and a remark either 'HI' or 'LO' for that QC condition.

Name: HBSAG		POS- Cut Off		ESC	
Pri: 450 Sec: 630					
No	Factor	QC	QCVal	Meas.	Rem
BL 1		Y	0.100	0.105	HI
NC 3	1.000	Y	0.150	0.200	HI
PC 2	0.100	Y	0.500	0.456	LO
LC 0	1.000	N			
CC 0	1.000	N			
CUTFAC: 0.200		CUTABS: 0.563		Display VALUE:	
QC1 2.560	HI	QC2			
QC3		QC4			
<u>Invalid Assay</u>				LOAD NEXT	

(NOTE: The absorbance of controls should not go above 3.500. If it goes more than 3.50, it will show you the remark 'HI' for that control. In such a case edit the control absorbance.)

In such a case, you can easily delete an individual control, so that the mean of remaining controls will satisfy the QC condition of that control as per reagent manual.

To select any control for deleting, you select touch zone shown in above screen.

When you select any particular control for deleting (suppose you have selected Negative Control (NC)),

Here you will get a following screen, which will show you, which control is not satisfying the QC condition with 'HI' or 'LO' remark. You can delete that particular control. When you select that control, a message will get display "Select EDIT / DEL key to proceed", here select 'DEL' key. After deleting that control, the absorbance of that control will become zero and the average of controls will also get changed. Then select 'ESC' key to come back.

NC VALUE :	0.200	ESC
NC1	0.150	DEL
NC2	0.350	HI
NC3	0.200	HI

NC VALUE :	0.200	ESC
NC1	0.150	DEL
NC2	0.350	HI
NC3	0.200	HI
NC3	0.200	HI
Select EDIT / DEL key to proceed		

When you will come back, you will get the edited value for average of control with no remark for any control and no "Invalid Assay" message.

***NOTE: 1)** In test with blank, if blank do not satisfies the QC condition first make the blank absorbance valid, and then if necessary valid the control absorbances. This is because, the absorbance of blank affect the absorbance of all controls and samples.

***NOTE: 2)** It is recommended that, for a test with single Blank and single control, if absorbance not satisfies QC condition or if located all controls of any single type (means all NC controls or all PC controls) not satisfy the QC condition, the test will become totally invalid. It is not possible to make it VALID TEST and you must load the new controls.)

9.3. Multi Standard Mode:

Name: TSH	MULTISTANDARD	
Pri: 450 Sec: 630	BL Y 0.000	CAL 7
	DUP N	DUP N
		ESC
Graph : LINEAR		EDIT
Y vs X : ABS vs CONC		RUN
HI CO : N	High>25.03	PRINT
	Low<10.54	
LO CO: N	High>16.61	
	Low<5.45	
Interpretation: Y		
Range	High> 15.25	
	Low< 9.46	
To change values press EDIT		

1) You can run this test by selecting RUN option. A screen will come

Name: TSH		MULTISTANDARD										ESC	
Pri: 450 Sec: 630													
No. of samples : 0												RUN	
DUP N SIMUL												PID	
1	2	3	4	5	6	7	8	9	10	11	12		
B													
C1													
C2													
C3													
C4													
C5													
C6													
C7													
HI CO: 0													
COL													
ROW													

2) To enter total no. of HI controls you want to load in plate select “HI CO :” option and enter numeric value

Numeric Value											
1	2	3	4	5	6	ENTER					
7	8	9	0	.		CLEAR					

3) If you select no. of HI controls TWO.

Then you have to locate the position of HI controls by selecting column number and row number. For column number entry select “COL” key and enter columns number,

HI CO : 2											
ROW		COL									
		2									
		3									
Please Enter Col Entry: 1											
Numeric Value:											
1	2	3	4	5	6	ENTER					
7	8	9	0	.		CLEAR					

For row entry select "ROW" key and enter row position,

HI CO : 2

ROW

A

B

COL

2

3

Please Enter Row Entry: 1

Row Entry:

A B C D E F G H

ENTER

CLEAR

4) You locate controls from first well of after last calibrator to last well of strip 12 in any test)
Suppose you select column 2 & row A for first HI control and column 3, row B for second HI control then the location of HI control will be display on screen. As shown in screen below.

Name: TSH

MULTISTANDARD

Pri: 450 Sec: 630

ESC

No. of samples : 0

RUN

DUP N

SIMUL

PID

1 2 3 4 5 6 7 8 9 10 11 12

B HC

C1 HC

C2

C3

C4

C5

C6

C7

HI CO: 2

COL

ROW

5) Now you select no. of samples you want to run. If you have 12 samples. Then the screen will appear

Name: TSH

MULTISTANDARD

Pri: 450 Sec: 630

ESC

No. of samples : 12

RUN

DUP N

SIMUL

PID

1 2 3 4 5 6 7 8 9 10 11 12

B HC S8

C1 S1 HC

C2 S2 S9

C3 S3 S10

C4 S4 S11

C5 S5 S12

C6 S6

C7 S7

HI CO: 2

COL

ROW

6) THEN YOU PRESS 'RUN' TO START THE READING OPERATION.

The tray will come out. A message will come "Is Plate loaded YES / NO".

Here you load the tray in a direction that calibrators should go in first, and press YES.

The instrument will read the absorbance of calibrators and samples.

After reading a message will come "Is plate removed? YES / NO". You remove the tray and press YES.

The Tray holder will go inside and a screen will come which gives details of all calibrators, samples and controls.

Name: TSH		MULTI STANDARD					ESC
Pri: 450 Sec: 630		BL Y CAL 7					
Range High > 16.61		Low < 10.30					NXT
HI CO : High >		Low < 0.000					
LO CO : High >		Low <					PREV
NO	SAMP	ABS	AVG	CONC	REM	PID	
A1	B	0.050	0.050				SAVE
B1	C1	0.070	0.070	0.000			RESULT
C1	C2	0.257	0.257	2.500			
--							
--							
--							
F1	S1	0.200	0.200	2.100	NEG	TSH-1	
G1	S2	1.854	1.854	9.845	POS	TSH-2	
LOAD	PRINT	PLATE	VIEW		ACCEPT		PRINT
NXT	MATRIX	OPT.	GRAPH:		TEST		RESULTS

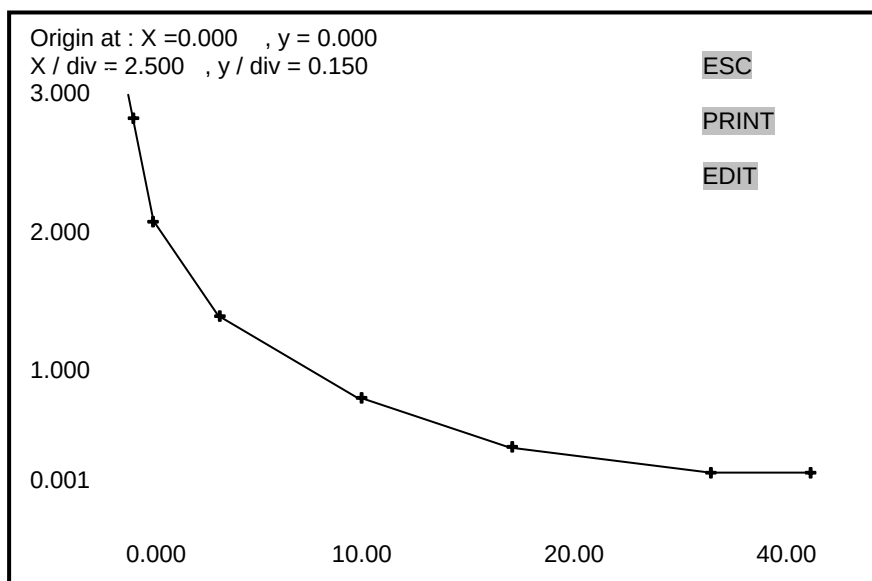
Here you can get all the details in table format, as per row and column shows in the screen. You can get the print of same format by selecting option 'PRINT RESULTS'. To check the results of next samples, you choose option 'NXT', and then print it in format shown on screen by option 'Print Results'.

Or you can get the print in matrix format, by selecting option 'PRINT MATRIX'.

In matrix form you will get the print as per your tray/plate for all the wells. Instrument prints seven different parameter in print matrix for a single well, as follows,

ROW IDENTIFICATION	A, B, C, D,.....
WELL NUMBER	W1, W2, W3, W4...
WELL ID OR SAMPLE NUMBER	B, C1, C2, C3, OR S1, S2, S3,..
PATIENT IDENTIFICATION	RAMESH, VIKAS, etc.
WELL ABSORBANCE	0.050, 0.098, 0.085, ...
SAMPLE CONCENTRATION	0.738, 0.689, 2.578...
INTERPRETATION / REMARKS	POS, NEG, EQ,

7) By selecting option 'View Graph:' key, you can get graph on screen, with all the details of X-axis and Y-axis. You can get the graph print by selecting 'PRINT' option.



By selecting 'ACCEPT TEST' option you can save this test with the details of calibrator absorbance. So next time it is possible to you to run the same test without loading calibrators. Means using previous stored graph, you can find the results of new samples.

(* NOTE: If you do not want to run the calibrators every time, please select "ACCEPT TEST" option to save graph, whenever you run the test with calibrators. So that it is possible for you to run the test without calibrators, using previously stored graph.)

9.3. A. Invalid assay in Multi standard Mode:

In Multi standard, the absorbance of calibrators should be in increasing or decreasing order from one calibrator to next calibrator. If any calibrator/s behaves incorrectly you will get a message "Invalid Assay" at bottom side of screen.

Name: TSH		MULTI STANDARD		ESC	
Pri: 450 Sec: 630		BL Y CAL 7			
Range High > 16.61		Low < 10.30		NXT	
HI CO : High >		Low < 0.000			
LO CO : High >		Low <		PREV	
NO	SAMP	ABS	AVG	CONC	PID
A1	B	0.050	0.050		
B1	C1	0.070	0.070	0.000	
C1	C2	0.257	0.257	2.500	
--					
--					
--					
--					
Invalid Assay					
LOAD	PRINT	PLATE	VIEW	ACCEPT	PRINT
NXT	MATRIX	OPT.	GRAPH:	TEST	RESULTS

In such a case “EDIT” option available in GRAPH screen. If you select EDIT, the following screen will appear

CAL 1	2.562	ESC
CAL 2	1.865	
CAL 3	2.050	
CAL 4	1.054	
CAL 5	0.648	
CAL 6	0.356	
CAL 7	0.045	

CAL 1	2.562	ESC
CAL 2	1.865	
CAL 3	2.050	
CAL 4	1.054	
CAL 5	0.648	
CAL 6	0.356	
CAL 7	0.045	

Numeric Value:

1	2	3	4	5	6	ENTER
7	8	9	0	.		CLEAR

You can easily select any particular calibrator by touching that touch zone and edit the absorbance of that. After editing the calibrator’s absorbance select “ESC”. A message will come “PLEASE WAIT...” and you will get the modified graph.

(*NOTE: SAME PROCEDURE YOU CAN USE TO CREATE AND RUN THE TEST IN ALL OTHER MODES, LIKE SINGLE STANDARD, % ABSORBANCE AND UPTAKE.)

10. RERUNNING ACCEPTED TESTS / PROGRAMS

We know "ACCEPT TEST" option is used to store the data of controls or calibrators (refer chapter 9.2 (7), page-59 and 9.3 (7), page-64). After running any test first time with controls or calibrators, you select option "Accept Test" to save the data of controls or calibrators, so that next time when you want to load the same test, there is no need to load controls or calibrators in ELISA plate. You can use previously stored data.

1) In "CUT OFF" Mode:

Name: HBSAG		POS- Cut Off						ESC
Pri: 450 Sec: 630								
	No	Factor	QC	QCVal	Mes.	Rem	ACCEPT TEST	
BL	1		Y	0.100	0.050			
NC	3	1.000	Y	0.150	0.098			
PC	2	0.100	Y	0.500	2.658		PRINT	
LC	0	1.000	N					
CC	0	1.000	N					
CUTFAC: 0.200		CUTABS: 0.563						Display VALUE:
QC1	2.560	QC2						
QC3		QC4					LOAD NEXT	
Range % 10.00								

2) In "Multi standard" Mode:

Name: TSH		MULTI STANDARD						ESC
Pri: 450 Sec: 630		BL Y CAL 7						
Range High > 16.61		Low < 10.30						NXT
HI CO : High >		Low < 0.000						
LO CO : High >		Low <						
NO	SAMP	ABS	AVG	CONC	REM	PID	PREV	
A1	B	0.050	0.050				SAVE RESULT	
B1	C1	0.070	0.070	0.000				
C1	C2	0.257	0.257	2.500				
--								
--								
F1	S1	0.200	0.200	2.100	NEG	TSH-1		
G1	S2	1.854	1.854	9.845	POS	TSH-2		
LOAD	PRINT	PLATE	VIEW			ACCEPT TEST		PRINT RESULTS
NXT	MATRIX	OPT.	GRAPH:					

When you want to run such a accepted test, after selecting 'RUN' option in test detail screen,
In "CUT OFF" mode:

Name: HBSAG		POS- Cut Off										ESC	
Pri: 450		Sec: 630											
No. of Samples : 0												RUN	
DUP N		SIMUL										PID	
1	2	3	4	5	6	7	8	9	10	11	12		
Load Blank?												YES	
												NO	

This time, it will not load the blank and controls directly. It will ask "Load Blank? YES / NO" and "Load Controls? YES / NO". If you are running both, select 'YES', and if you want to use earlier stored data / graph of controls select 'NO', so that you can run only samples to get their results without loading control and calibrators. If you want to load only 'Blank', select "Load Blank? YES" and "Load Controls? NO".

Name: HBSAG		POS- Cut Off										ESC	
Pri: 450		Sec: 630											
No. of Samples : 0												RUN	
DUP N		SIMUL										PID	
1	2	3	4	5	6	7	8	9	10	11	12		
Load Controls?												YES	
												NO	

2) In Multi Standard / Single Standard / % Absorbance / Uptake Mode:

Name: HBSAG		POS- Cut Off										ESC	
Pri: 450		Sec: 630											
No. of Samples : 0												RUN	
DUP N		SIMUL										PID	
1	2	3	4	5	6	7	8	9	10	11	12		
Load Calibrators?												YES	
												NO	

In Calibrator Mode, after asking "Load Blank? Yes / No" it will ask "Load Calibrators? Yes / No". If you are loading new calibrators and want the results of samples as per new graph select "Load Calibrators? YES".

If you are not loading new calibrators and want to use previously stored graph select "Load Calibrators? No".

If you want to load only 'Blank', select "Load Blank? YES" and "Load Calibrators? NO".

11. SAMPLE AND SAMPLE DUPLICATE

While loading the samples you can load a single sample in single well or a single sample in adjacent two well and finally instrument takes the average of it this is known as Sample Duplicate.

The instrument will load the controls / calibrators automatically in any new test or not accepted test. You have to provide the number of samples. If you are loading single samples keep "DUP"- No. Select "No. of Samples:" to enter total samples.

Name: HBSAG		POS- Cut Off										ESC
Pri: 450		Sec: 630										
No. of Smples : 0												RUN
DUP N		SIMUL										PID
1	2	3	4	5	6	7	8	9	10	11	12	
B												
NC												
NC												
PC												
PC												

Name: HBSAG		POS- Cut Off										ESC
Pri: 450		Sec: 630										
No. of Smples : 0												RUN
DUP N		SIMUL										PID
1	2	3	4	5	6	7	8	9	10	11	12	
B												
NC												
NC												
PC												
PC												
Numeric Value:												
1	2	3	4	5	6							ENTER
	7	8	9	0	.							CLEAR

Name: HBSAG		POS- Cut Off										ESC
Pri: 450		Sec: 630										
No. of Smples : 10												RUN
DUP N		SIMUL										PID
1	2	3	4	5	6	7	8	9	10	11	12	
B	S3											
NC	S4											
NC	S5											
NC	S6											
PC	S7											
PC	S8											
S1	S9											
S2	S10											

If you want to load duplicate samples select “DUP” key, it will changed from ‘N’ to ‘Y’.
After this, enter number of samples by selecting “No. of Samples”.

Name: HBSAG		POS- Cut Off			
Pri: 450 Sec: 630				ESC	
No. of Smples : 0				RUN	
DUP Y		SIMUL		PID	
1	2	3	4	5	6
7	8	9	10	11	12
B					
NC					
NC					
NC					
PC					
PC					

Name: HBSAG		POS- Cut Off			
Pri: 450 Sec: 630				ESC	
No. of Smples : 10				RUN	
DUP Y		SIMUL		PID	
1	2	3	4	5	6
7	8	9	10	11	12
B					
NC					
NC					
NC					
PC					
PC					
Numeric Value:					
1	2	3	4	5	6
7	8	9	0	.	ENTER
					CLEAR

Name: HBSAG		POS- Cut Off			
Pri: 450 Sec: 630				ESC	
No. of Smples : 10				RUN	
DUP Y		SIMUL		PID	
1	2	3	4	5	6
7	8	9	10	11	12
B S2 S6 S10					
NC S2 S6 S10					
NC S3 S7					
NC S3 S7					
PC S4 S8					
PC S4 S8					
S1 S5 S9					
S1 S5 S9					

(* Same way you load the samples and Sample Duplicates in all other modes)

12. PATIENT IDENTITY / SAMPLE IDENTITY ENTRY

12.1. To enter a patient ID for all samples there is option provided in loading screen shown as “PID”. After entering number of samples either single or duplicate, you select “PID”.

Name: HBSAG		POS- Cut Off				ESC	
Pri: 450		Sec: 630					
No. of Smples : 10						RUN	
DUP N		SIMUL				PID	
1	2	3	4	5	6	7	8
9	10	11	12				
B	S3						
NC	S4						
NC	S5						
NC	S6						
PC	S7						
PC	S8						
S1	S9						
S2	S10						

Sample	PID	ESC
1	KIRAN	
2	ABDUL	
3	MR. JAME	
4	KRISHNA	
5		
6		
7		NEXT
8		
9		PREV
10		SEQL

One by one you can enter name of each patient. The character length of PID is only 7 characters. “NEXT” and “PREV”-previous use to go to next screen in many numbers of samples.

12.2. Sequential Patient ID Entry: -

This one by one entry will take more time, so we have provided one more option to enter patient Ids. This option is “SEQL”-sequential entry. Suppose you are loading around 80 numbers of samples for HIV test. You marked all this samples as a one batch of 80 starting from HIV-1 to HIV-80.

If you select “PID” option for patient ID entry, the instrument will ask the following, “Delete Previous PIDs, Yes / No”. If you select NO, it will directly load the previously entered PIDs for sample and if you say YES, it will delete the previous PIDs. Here you have to enter new PIDs.

After selecting ‘NO’, select “SEQL” option to enter different sequential PIDs. Follow the steps as follows,

A) Enter Initial Alphabets. Maximum 4 characters

Enter Alphabets

HIV-

A	B	C	D	E	F	G	H		
I	J	K	L	M	N	O	P	ENTER	
Q	R	S	T	U	V	W	X	CLEAR	
Y	Z	,	-	+	_	1	2		
3	4	5	6	7	8	9	0		

B) Enter Initial well Number. This is starting well location of that particular batch.

Enter Initial Sample number

Numeric Value: 01

1	2	3	4	5	6			ENTER
7	8	9	0	.				CLEAR

C) Enter last well Number. This is last well location of that particular batch.

Enter last sample number

Numeric Value: 01

1	2	3	4	5	6			ENTER
7	8	9	0	.				CLEAR

D) Enter initial PID Number. This is starting number of that particular batch, maximum 3 digits.

Enter initial PID number

Numeric Value: 01

1	2	3	4	5	6			ENTER
7	8	9	0	.				CLEAR

The final screen will appear which will display the sequential IDs of patient samples, for the well location that you have selected.

Sample	PID	ESC
1	HIV-01	
2	HIV-02	
3	HIV-03	
4	HIV-04	
5	HIV-05	
6	HIV-06	
7	HIV-07	NEXT
8	HIV-08	
9	HIV-09	PREV
10	HIV-10	SEQL

Suppose you have totally 70 nos. of samples from three different batch which you are loading in single plate. For first batch the PID are from HIV 1 to HIV 30, for second batch PIDs are from HIV 51 to HIV 75 and the third batch has PIDs from HIV 91 to HIV 105.

To enter these PIDs, you have to enter sequential entries three times, use following steps

- 12.3. Select 'SEQL', Enter alphabet 'HIV'. Enter initial well number '1' and the last well number '30', after this enter initial PID number '1'. It will load PIDs for first 30 samples from HIV 1 to HIV 30.
- 12.4. To enter next sequence again select 'SEQL', enter alphabet 'HIV'. Enter initial well number '31' and last well number '55'. After this enter initial PID number '51'. It will load PIDs for next 25 samples from HIV 51 to HIV 75.
- 12.5. To enter next sequence again select 'SEQL', enter alphabet 'HIV'. Enter initial well number '56' and last well number '70'. After this enter initial PID number '91'. It will load PIDs for next 15 samples from HIV 91 to HIV 105.

In this way you can select any sequence for any well locations.

(*NOTE: The entered PID get stored in instrument memory, until you delete it by using option, "Delete previous PIDs? Yes / NO.")

13. SAVE PLATE AND SAVE RESULTS

In all modes of operation, there are two options provided to stored results.

A) In cut Off mode:

Name: HBSAG		POS- Cut Off		ESC			
Pri: 450 Sec: 630		BL 1					
Range PERCENTAGE % 10.00				NXT			
NO	SAMP	ABS	AVG	CONC	REM	PID	PREV
A1	B	0.050	0.050				
B1	NC						
--							
--							
--							
--							
--							
--							
PRINT	SAVE	PRINT	PLATE				
RESULTS	RESULTS	MATRIX	OPT.				

B) In Multi standard or any calibrator mode:

Name: TSH		MULTI STANDARD		BL Y		CAL 7	ESC
Pri: 450 Sec: 630							
Range High > 16.61		Low < 10.30					NXT
HI CO : High >		Low < 0.000					
LO CO : High >		Low <					PREV
NO	SAMP	ABS	AVG	CONC	REM	PID	
A1	B	0.050	0.050				SAVE
B1	C1	0.070	0.070	0.000			RESULT
C1	C2	0.257	0.257	2.500			
--							
--							
--							
--							
LOAD	PRINT	PLATE	VIEW	ACCEPT	PRINT		
NXT	MATRIX	OPT.	GRAPH:	TEST	RESULTS		

If you select "PLATE OPT.", you will get two options. Select "SAVE PLATE DATA", which will save the entire plate information along with the control/calibrator information. You can save maximum TEN plates data.

"SEND PLATE DATA" is used to send the data from instrument to computer through USB or serial RS232 connection.

If you select "SAVE RESULT" option it will directly saves information of samples only except controls/ calibrators, with test name, patient ID and date.

- | | |
|--------------------|-----|
| 1. SAVE PLATE DATA | ESC |
| 2. SEND PLATE DATA | |

14. VIEW STORED DATA

You can view the stored plate or stored results, by option “View Plate” available in “MAIN MENU”.

MAIN MENU	
1 Test Operations	ESC
2 Technical Diagnosis	
3 Utilities	
4 View Plate	
5 Serial Communication	

When you will select the “View Plate” option, it will show you the two options,

1. PLATE RESULTS	ESC
2. PATIENT RESULTS	

1. “PLATE RESULTS” will show you the details of stored plate (last 10 plate) with date, Test name and mode of operation in descending order from last to first. You can select any test; the instrument will show you the full plate information along with controls/ calibrators in table format.

NO	DATE	TEST	MODE	ESC	HBSAG 02/01/08						
4	02/01/08	HBSAG	C		CUT ABS= 0.300						
3	01/01/08	TSH	M	SEL	NO	SAMP	ABS	AVG	RES	REM	PID
2	30/12/07	HIV	C								
1	28/12/07	HIV	C								
					ESC NEXT PREV PRINTMATRIX SENDDATA PRINT						

Print Matrix will print the details of entire plate in matrix format as explain earlier. “Print” will print only the data displayed on screen.

“Send data” is used to send the data from instrument to computer through USB or serial RS232 connection.

2. **“PATIENT RESULTS”** will show the details of all samples, saved in memory using option **“SAVE RESULTS”** in all different modes, as explain earlier. This option will display the data in table format as shown below. You will get the Test name, Mode of test operation, result of sample, PID and Remark. The instrument has a memory to stored 2500 sample results.

This option not shows the information of controls or calibrators.

01 / 01 / 08				
Test	Mode	Result	PID	Remarks
ESC NEXT PREV PRINT				

“PRINT” is used to print the details as available on display screen.

“NEXT” and “PREV” option is used to go to next page of sample details and come back to previous page.

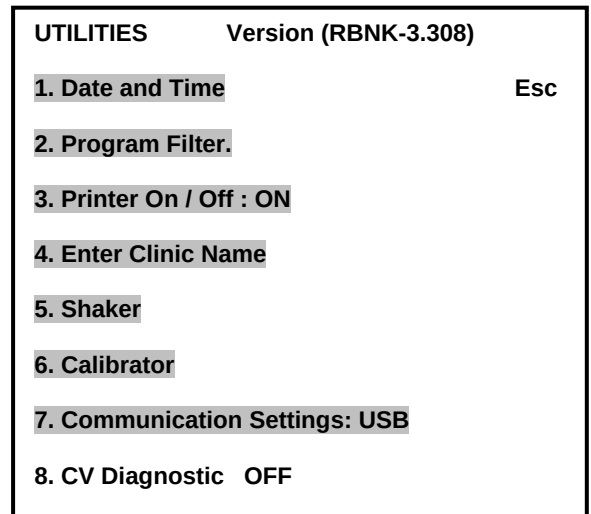
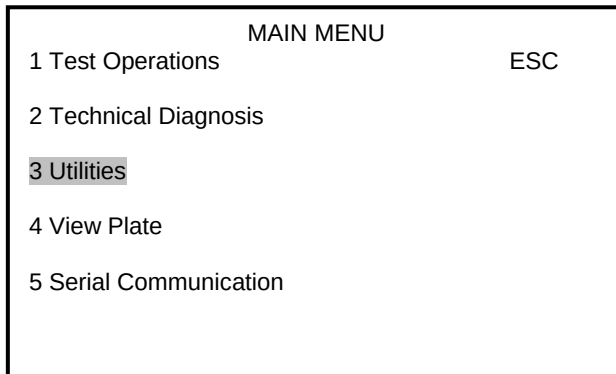
(*NOTE: When memory gets full or remains very less memory it will display a message,

**“Memory Left for ____ samples
First Samples Deleted”)**

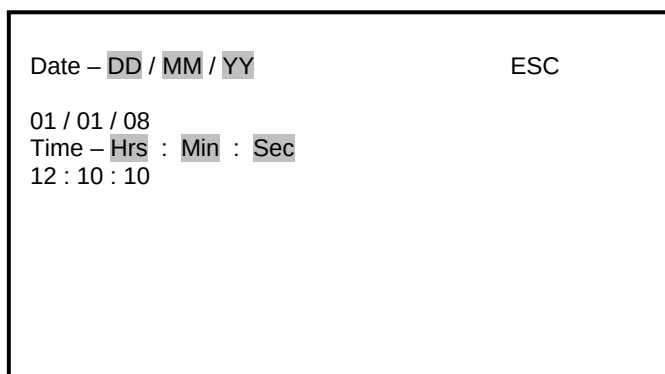
The instrument automatically deletes required number of samples stored very first and saved the new samples at that location.

15. UTILITIES

In utilities we have seven different functions.

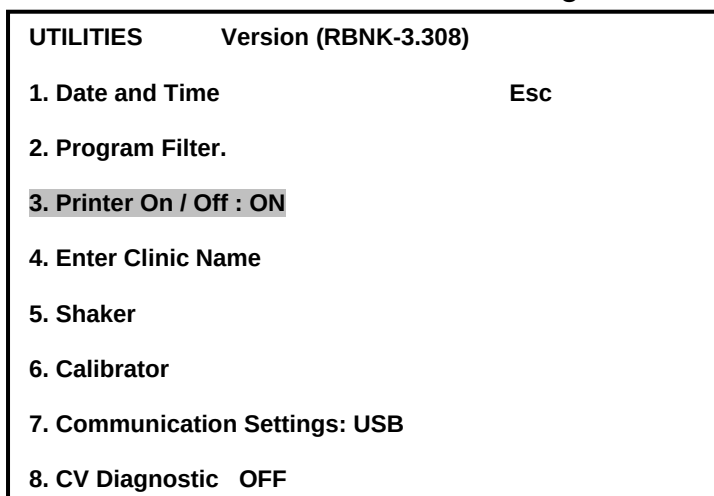


15.1. Date and Time Setting



Set current Date and Time by
Selecting DD, MM, YY and
Hrs, Min, Sec.

15.2. Printer On / Off setting



It is used to turn PRINTER On and OFF.
If you do not want to use printer, you
can keep it OFF by selecting this key.

15.3. Clinic Name Entry.

READWELL TOUCH															
A	B	C	D	E	F	G	H								
I	J	K	L	M	N	O	P								
Q	R	S	T	U	V	W	X								
Y	Z	,	-	+	_	1	2								
3	4	5	6	7	8	9	0								

ENTER
CLR

Type your Clinic Name here and select "ENTER". The character length is M\maximum 19 characters.

15.4. Plate Shaking Mode (Shaker)

Shake Time in	0	sec					ESC
Shake Speed	0						
Start							
Stop							
Numeric Value: 01							
1	2	3	4	5	6	ENTR	
7	8	9	0	.		CLR	

Here a total shake time can be put in seconds.

Regarding "Shake Speed", there are 10 types of speeds. You can choose any speed by entering number from 1 to 10. The shaking speed increases as the number increases.

After entering shake time and shake speed, select Start option. When you will select Start, the tray will come out and on screen you will get a message "Is plate loaded? -- Yes / No". This time you load the ELISA plate and select option YES.

After selecting YES the tray will go inside and instrument will do the shaking of plate for the given time period with selected speed.

When shaking gets over, the system will bring the tray out and display a message "Is plate removed? Yes / No". You remove the tray and press Yes, to end the process.

15.5. Communication Settings:

UTILITIES	Version (RBNK-3.308)
1. Date and Time	Esc
2. Program Filter.	
3. Printer On / Off : ON	
4. Enter Clinic Name	
5. Shaker	
6. Calibrator	
7. Communication Settings: USB	
8. CV Diagnostic OFF	

UTILITIES	Version (RBNK-3.308)
1. Date and Time	Esc
2. Program Filter.	
3. Printer On / Off : ON	
4. Enter Clinic Name	
5. Shaker	
6. Calibrator	
7. Communication Settings: Serial	
8. CV Diagnostic OFF	

This setting is very important, whenever you want to transfer data from instrument to computer. You can transfer data either using USB or by Serial RS232.

We provide one application which support to this communication between instrument and computer. This application receives data either by USB setting or by Serial setting.

(* The options 6. Calibrator is not for user. Do not select this utility and change settings in that.

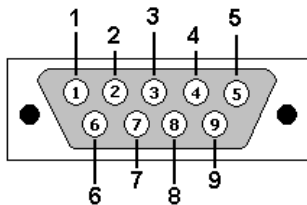
If you change any numerical values in this utility, your instrument calibration will get changed and it will not work satisfactory. This calibrator is used for the mechanical alignment of instrument. If you changed it, the mechanical alignment of instrument will get disturbed. So, Please do not go to this utility and change any setting.)

(* The option 8. CV Diagnostic OFF is not for user. This is for factory use only.)

16. SERIAL COMMUNICATION

The instrument is equipped with an RS232 serial port.

RS232 DB9 (EIA/TIA 574)



READWELL TOUCH Clinic Name or Serial Number MAIN MENU 1. Test Operations 2. Technical Diagnosis 3. Utilities 4. View Plate 5. Serial communications	Date
---	------

SERIAL COMM. 1. Send Results	ESC
--	-----

SERIAL COMM. 1. Send Results Results YES NO	ESC
---	-----

17. TECHNICAL DIAGNOSIS

Technical Diagnosis is present in “Main Menu”.

MAIN MENU 1 Test Operations 2 Technical Diagnosis 3 Utilities 4 View Plate 5 Serial Communication ESC	TECHNICAL DIAGNOSIS 1. Clear Memory 2. Lamp Amplitude 3. Printer Self test ESC
---	--

17.1. Clear Memory:

This option is used to clear entire saved test records and entire saved patient results along with saved plates. The “Test Records” are the different kind of programmed test that you have made in different modes of operation and saved in instrument program memory.

TECHNICAL DIAGNOSIS 1. Clear Memory 2. Lamp Amplitude 3. Printer Selftest ESC Clear Results? YES NO	When you select this option, the instrument will first ask, “Clear Results? YES / NO”. If you select “YES” it will start clearing only saved patient results and saved plates, stored in instrument memory, and shows message “Clearing Memory ...”. This option does not clear the programmed test saved in instrument memory. After clearing the memory or If you select option “NO” here, it will moves forward to ask next question.
--	---

TECHNICAL DIAGNOSIS 1. Clear Memory 2. Lamp Amplitude 3. Printer Selftest ESC Clear Test Records? YES NO	This time instrument will ask, “Clear Test Records? YES / NO”. If you select “YES” it will start clearing all programmed test saved in instrument memory, and shows message “Clearing Memory ...”
---	--

17.2. Lamp Amplitude.

This option is used to check the Lamp Amplitude of filters used in instrument. It shows the gain of each channel filter in table format. The range of amplitude is from 600.00 to 2450.00. If this amplitude goes below 600.00 for any channel, you will get a message “Amp -Low” for that particular channel and if it goes more than 2490.00, it will show you the over range voltage figure 2500.00 which is also not good because that is saturation level.

We have perfectly set these gains of filters within a required range. When you select this option, the lamps will turn ON, tray holder plate will come out and instrument will start showing amplitudes (gains) of all filters one by one.

Filter: 405			ESC
CH1	CH2	CH3	CH4
1800.0	2200.0	1900.0	2300.0
1800.0	2200.0	1900.0	2300.0
CH1	CH2	CH3	CH4
1950.0	2100.0	2240.0	1860.0
1950.0	2100.0	2240.0	1860.0

17.3. Printer Self test:

It is used to check the printing of thermal printer. Is it printing perfectly or not? When you select this, it will print first two lines of Technical Diagnosis Screen.

18. TROUBLE SHOOTING

MESSAGES	CAUSE /CORRECTIVE ACTION
1) Printer disabled Disable Printer YES / NO?	Refer 6.5 "Thermal printer". You will get this message, if paper is not loaded properly or lever is not at correct position. Check all possibilities. Also check ON LINE and FEED LED glowing or not and when you switch 'ON' the instrument check paper is moving forward or not. If LEDs are not glowing and paper is not moving forward contact factory engineer.
2) "Check Light Path!!! CH x" Where 'x' is any channel number X = 1/2/3/4/5/6/7/8	You can get this message in any mode of operation. Before reading absorbance, instrument checks the filter reference voltages of all 8 channels. If filter voltage of any channel is less than minimum required voltage, it will display a message "Check Light Path!!! CH x". Here 'x' is channel numbers having reference voltage less than minimum required. For ex. If reference voltage of channel 3 is less the message will be displayed "Check Light Path!!! CH 3". It will indicate all channel numbers having less reference voltage, like "Check Light Path!!! CH 1 3 6 " In such a case, there is a possibility of filter gain of that channel has reduced or intensity of lamp of that channel has become poor, so contact factory engineer.
3) Invalid Assay	In Cut Off and Multi standard mode if controls and standard are not proper then this error message will appear.
4) Memory Full	If Number of saved tests exceeds the memory limit of 250 tests then delete the unwanted tests and save the test.
5) "Check USB Application on Computer Do you want to continue? YES / NO"	Using data receiving application on computer, 1) If you have not connected the data cable (USB or Serial) correctly, you will get this message. 2) If you have selected 'Communication Setting' (ref. 14.5), USB on instrument, and you have selected a 'Serial' communication on computer data receiving application, you will get this message. In such a case select 'USB' communication, on computer and select 'YES' key to transfer data. To avoid this message, connect proper data cable, select the same communication medium (USB or Serial), on computer data receiving application, which you have selected on instrument 'Communication Setting'.
6) Filter Movement Error!!!	Instrument will display this message, if there is problem with MOC sensor PCB or with filter tray stepper motor. The MOC sensors are used to detect the position of filter tray. These two sensors are mounted on bottom of the mechanism. One detects the home position and second detects the each filter position of filter tray. In such a condition we need to check the connection to these sensor and also the connection of stepper motor, which is used to move filter tray.
7) Plate Movement Error!!!	Instrument will display this message, if there is problem with MOC sensor PCB or with plate carrier stepper motor. The MOC sensors are used to detect the position of plate carrier. These two sensors are mounted on top of the mechanism. One detects the home position and second detects the each strip position of plate carrier. In such a condition we need to check the connection to these sensor and also the connection of stepper motor, which is used to move plate carrier.

19. DECONTAMINATION

19.1. Decontamination Procedure

If the instrument is to be shipped after being exposed to potentially hazardous material, it should be decontaminated. The following procedure outlines the method of decontaminating the instrument before packaging and shipment.

19.2. Purpose of Decontamination

Decontamination minimizes the risk to all who come in contact with the instrument during shipping, handling, and servicing.

19.3. General Considerations

- Any laboratory instrument that has been used for clinical analysis is considered a biohazard and should be decontaminated prior to handling. Intact skin is generally considered an effective barrier against infectious Organisms; however, small abrasions and cuts may not be always being visible. Prophylactic gloves must be worn when handling instruments that have not been decontaminated. Gloved hands should be considered contaminated at all times and must be kept away from eyes, mouth and nose at all times.
- Mucous membranes are considered prime entry routes for infectious agents. Wear eye protection and a surgical mask when there is a possibility of aerosols.
- Eating and drinking while decontaminating instruments is not advisable.

19.4. Procedure

- A solution of .5% Sodium Hypo Chlorite (NaOCL) solution (Bleach) is used. Commercial bleach is 5% NaOCL; household bleach is 3% NaOCL. When using commercial bleach, use a 10:1 mixture; if using household bleach, a 6:1 mixture is required. This is a caustic solution. It is important to wear gloves and eye protection when handling it.
- Wipe down the carrier and all exposed surfaces of the unit with the bleach solution. Remove the top shroud of the instrument and wipe down the top surface of the instrument base, as well as the inside of the top shroud.
- Reassemble the unit and discard the used gloves and towels.

20. SAFETY CLEARANCE CERTIFICATE

Please complete all information requests on this form prior to returning the instrument to the manufacturer or your local distributor for servicing, repairs or return. Thank you for your co-operation.

Customer _____ Contact _____
Address _____ Position _____
Dept _____
Tel: _____
Country _____ Fax: _____
Post Code _____

Model No. _____ Serial No. _____
Accessories
Returned _____

Date of Purchase (if known) _____

Complaint _____

Has the equipment been exposed to any of the following: (*delete as applicable)

a) Blood, body fluids, pathological specimens *YES/NO
If YES, please specify _____

b) Other Biohazard *YES/NO
If YES, Please specify _____