# ELISA PLATE ANALYSER

## MICRO READ 1000


CE

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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.

**Global Diagnostics B** 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

**Global Diagnostics B** is always accessible to the customers for any kind of information about installation, use, maintenance and others. 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 repair instruments. The user should carry out ordinary maintenance.

The technical service of **Global Diagnostics B** or an authorized service center with specialized technicians, with suitable instrumentation and original spare parts only, is 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:**

Global Diagnostics B,

**Sijsjesstraat 4, 2440 Geel,**
**Belgium.**
**Tel: +32468220039**
**info@globaldiagnosticsb.com**

CE

# 2. GENERAL SAFETY WARNINGS

## 2.1. Danger – warnings symbols:

**The following symbols are used to inform the user of the safety rules.**

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

This symbol indicates 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 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 followed.

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

This symbol indicates a Protective Earth or Ground terminal.

General Symbols

Symbol for “Manufacturer”


Symbol for “ IN VITRO DIAGNOSTIC MEDICAL DEVICE”

## 2.2. Use of the Instrument

1. The instrument has to be used for the designed purposes under specified conditions, following proper procedures and safety rules by qualified personnel.

2. This manual contains instructions for operation performed by qualified personnel.

3. 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)

4. A qualified technician is entitled to maintain and repair the instrument using the original spare parts according to the given instructions.

5. Maintain room temperature and humidity as specified in the manual.

6. If the instrument is not used as described in the manual, the protection provided by the instrument may be impaired.

7. Alterations to the instrument are prohibited. The user is liable for any improper modification to the instrument, and for the deriving consequences.

8. Contact the MANUFACTURER service or authorized service center in case the instrument need extraordinary maintenance. Specialized technicians who will be able to repair the instrument using original spare parts will carry out the maintenance.

9. This IVD equipment complies with the emission and immunity requirements as per IEC61326 series.

10. **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."

11. 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

**MICRO READ 1000** is a user friendly micro plate Analyser. It is compact & lightweight. 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 **MICRO READ 1000** can accommodate a flat bottom as well as a round 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 **MICRO READ 1000** operates on a WIDE voltage (90-270 volt). This eliminates the need for an external voltage stabilizer**.**

The **MICRO READ 1000** 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 other special features of **MICRO READ 1000** are as follows:

- Option of Lamp saving mode.
- Selection of both primary and secondary filters.
- Latest technology with battery backup for 250 tests, and 100 plate data.
- Robust built in 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.
- It takes 16 secs to read the plate.
- With help of color combination, we can distinguish the calibrator, control, high and low sample
- 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 will help to facilitate data processing of enzyme immunoassays. These are menu driven modes for simple and error free operations.

  - ✓ ABSORBANCE MODE
  - ✓ SINGLE STANDARD MODE
  - ✓ CUT-OFF MODE
  - ✓ MULTISTANDARD MODE
  - ✓ % ABSORBANCE MODE
  - ✓ UPTAKE
  - ✓ RATIO

## 3.3. Technical Specification of MICRO READ 1000*:*

| | |
|---|---|
| Human Machine Interface | TOUCH PANEL / KEYPAD |
| Linear measurement range | 0.001 to 3.000 Absorbance Units (A) |
| Photometric Accuracy | ± 2% or 0.007 whichever is higher, from 0 to 1.5 A<br>± 3% from 1.5 A to 3.0 A |
| Drift | <0.005 A/hr |
| Photometric Linearity | 2.5 A |
| Optical measurement | 2 Channel |
| Filters<br>Type of filter<br>Wave Length<br><br>Half Bandwidth<br>Selection | <br>Narrow band Interference<br>405nm, 450nm, 492nm,560 nm 630nm, with two optional filters namely – XXX and YYY (editable)<br>10nm ± 2nm<br>Automatic by Stepper Motor |
| Light Source<br>Display<br>Curve Plotting | Tungsten halogen lamp, 20 Watts<br>7” TFT<br>STN 480*800 pixels<br>Graphical Representation on Printer |
| Plate Carrier Movement | Precisely through the stepper motor |
| Printer | Built in Thermal Printer 52 columns |
| Memory | 2MB FRAM |
| Analysis Mode | Absorbance<br>Single Standard<br>Cut-off<br>Multi-Standard<br>% Absorbance<br>Uptake<br>Ratio |

| | |
|---|---|
| Connectivity / RS232 Serial Port / USB | 9600 baud, 8 data, 1 stop, no parity bits / USB |
| Power<br>Wattage<br>Voltage | 75 Watts<br>115-230 Volt ± 10%, 50/60 Hz |
| Operation Position | On horizontal flat, rigid and vibration free surface |
| Operating Conditions<br>Temperature<br>Relative Humidity | <br>From + 18°C to 35°C<br>Up to 80% |
| Storage Conditions<br>Temperature<br>Relative Humidity | From -10°C to 40°C<br>Up to 80% |
| Enclosure | ABS Fire Retardant |
| Size (cm) | 36 x 36 x 22 (lxbxh) |
| Well Type | Capable of reading U,V and Flat type wells |
| Weight (Approx.) | 10 Kg |

# 4. PACKAGING, TRANSPORT AND STORAGE

## 4.1. General Warnings

Instrument has to be decontaminated before packing for transportation.

## 4.2. Packaging

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

- To pack the instrument the following instructions has to be followed:

1. Decontaminate the instrument as explained on decontamination chapter of this manual.
2. 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)
3. Mark the packaging 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

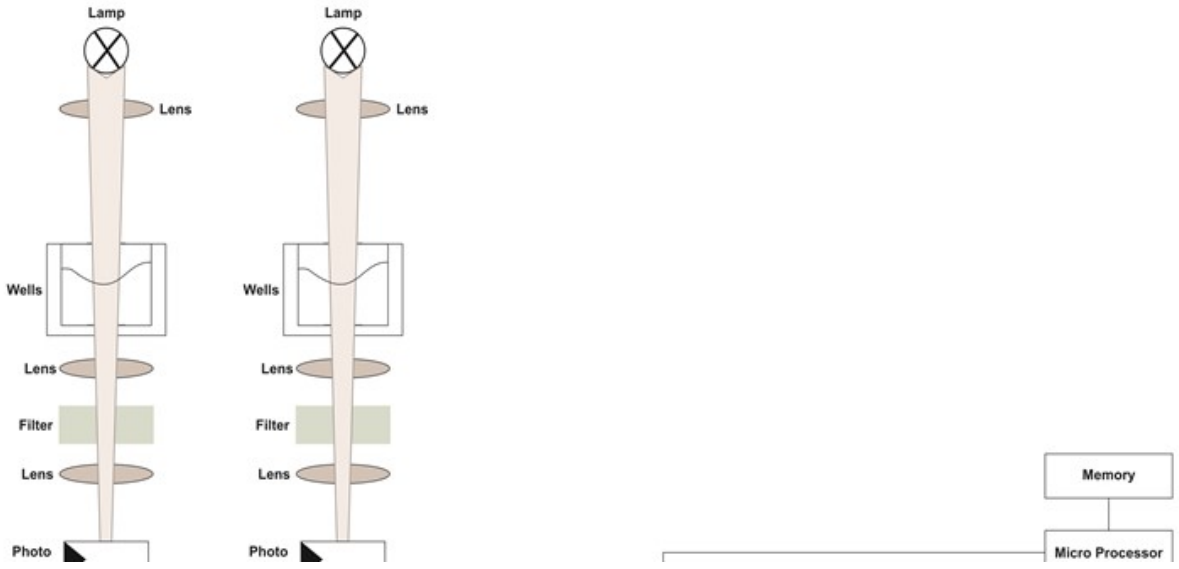
Before storing the instrument for a long period, pack it carefully as described above and store indoors.

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

# 5. INSTRUMENT DESCRIPTION

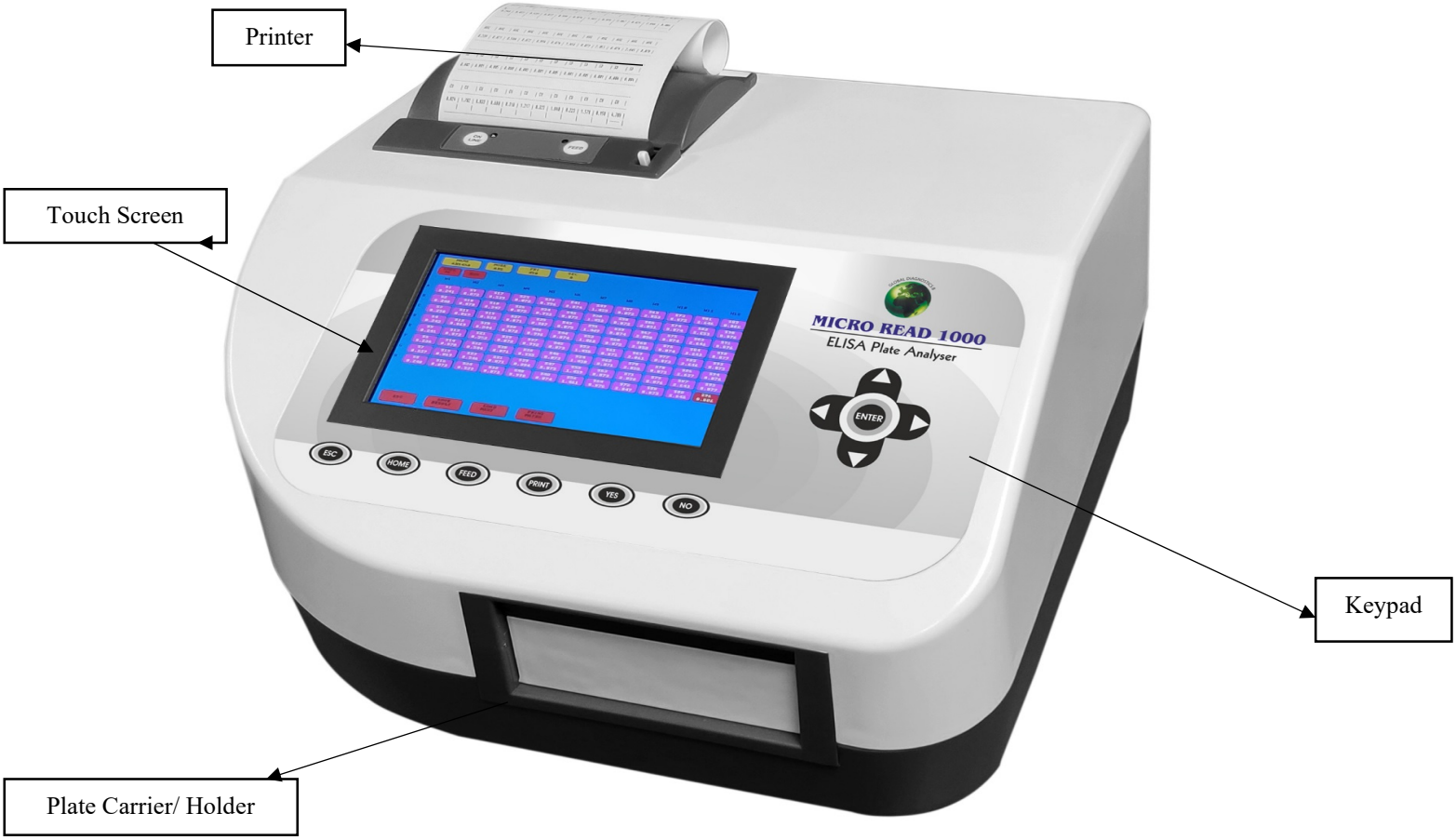
## 5.1. Instrument Working Principle:

- 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.

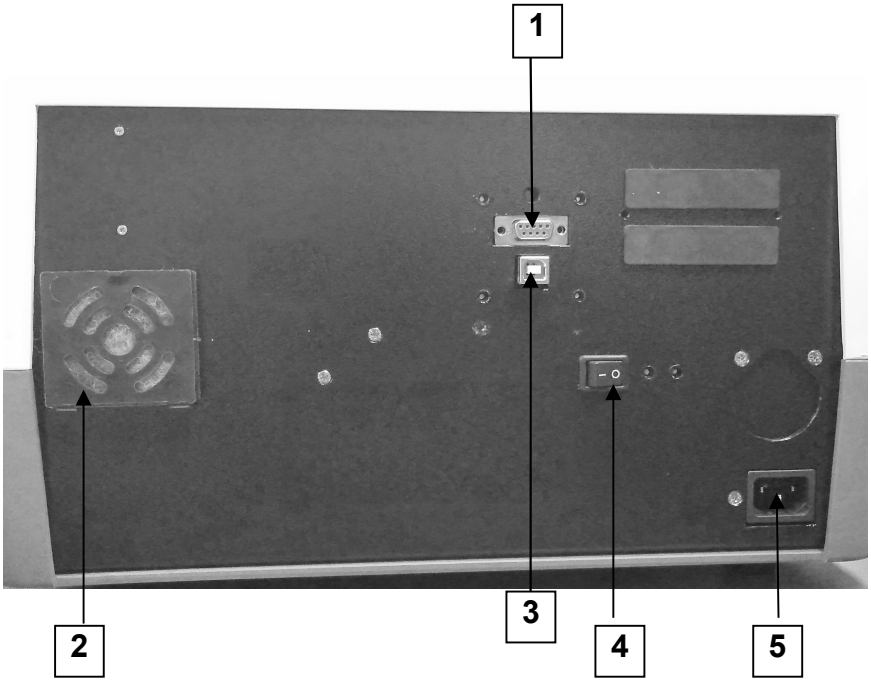


### 5.2. Perspective View

## Front View:

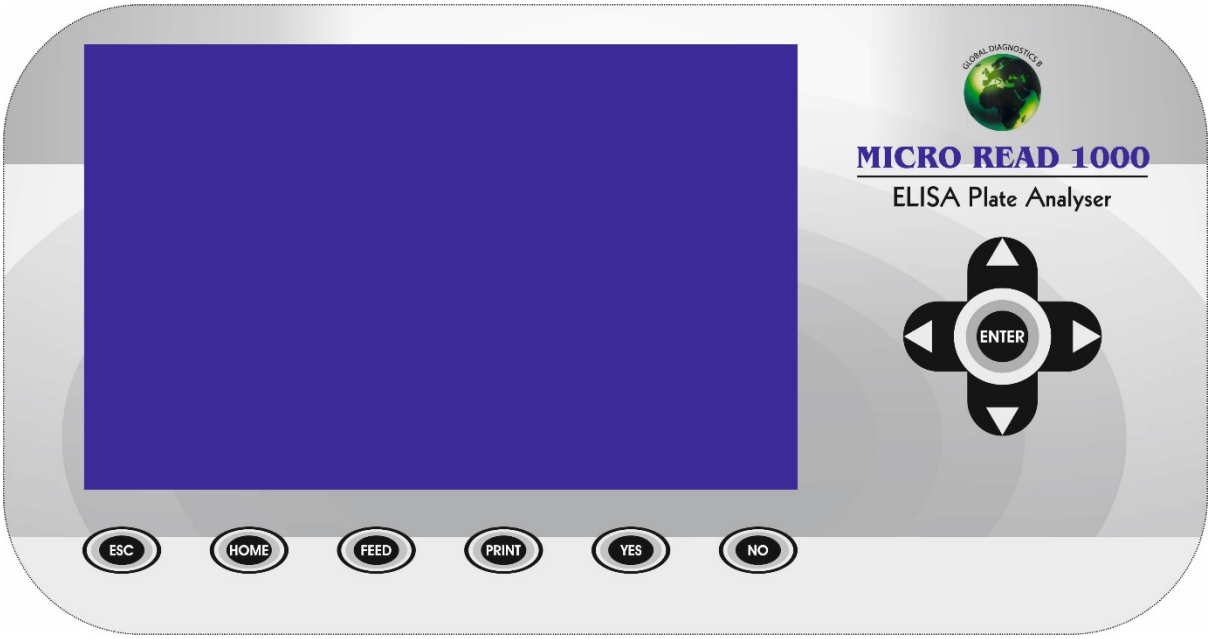


**Rear View:**




1) Serial RS232 output
2) Cooling Fan
3) USB output
4) ON/OFF switch
5) SMPS

## 5.3.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 advance the printer paper by 1 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.

# 6. INSTALLATION PROCEDURE & VERIFICATION CRITERIA

## 6.1. Unpacking Instructions

Check accessories as per packing list.
Kindly store all packaging 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 35ºC with a relative humidity below 85%.
Protect the instrument from direct sunshine.

## 6.3. Power Supply Requirements

Plug the instrument into a power source by the locally available approved plug in cable.
Power cord should be CE, CSA, and UL marked.

**115 - 230 Volt ± 10%, 50-60 Hz**

## 6.4. Protective Grounding

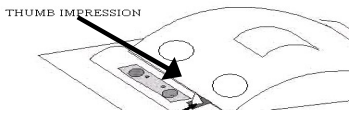
Please make sure that electrical power source is properly grounded.

## 6.5. Printer

"**micro read 1000"**, an 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:**

Slide the LEVER towards back of the printer to open lock of the Paper Cover.



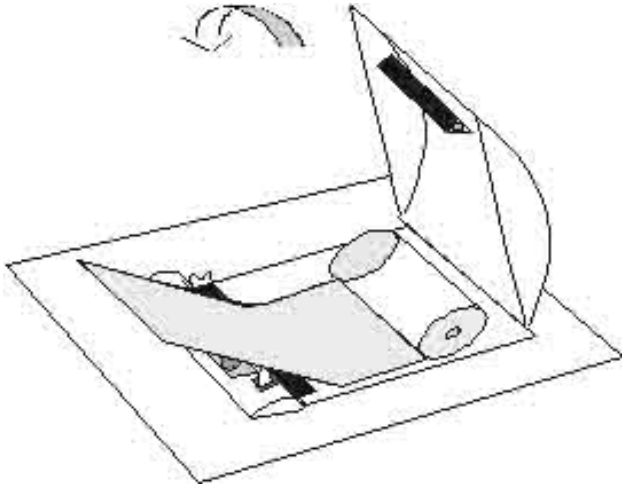
**Closing the Paper Cover + replacement of paper roller:**

Open the Paper Flap .

Remove the paper roller from the slot.

Now place the Thermal side of the paper roll at the top into the slot provided and then close the paper flap in the direction as shown in the following figure, till you get the locking sound. Use Thumb impressions to push the cover .

Press 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.

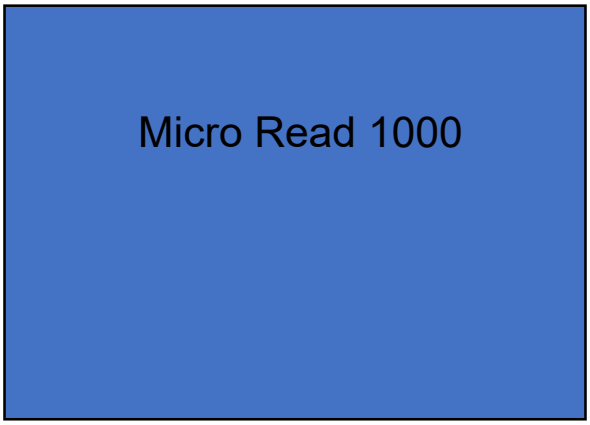
When the paper is almost finished, red lines appear on both sides of the paper.

## 6.6. Start up Instructions

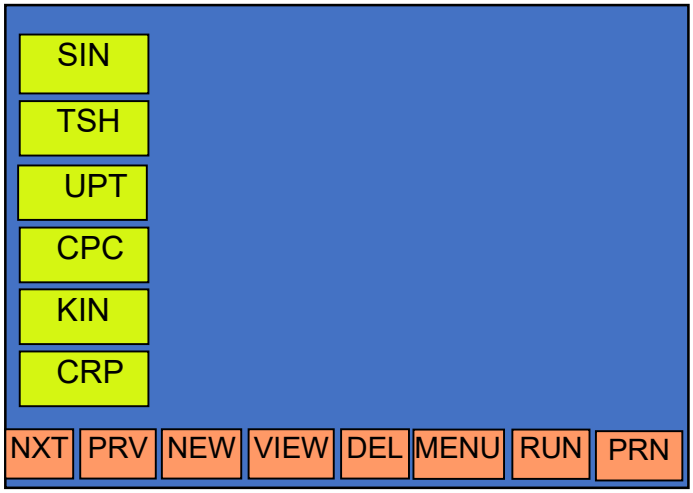
Switch on the instrument.

The instrument initializes all the parameters internally and carries out a power on self-test

During Initializing it displays the ADDRESS screen. After address screen it will display the string: “Please wait… system initialization”.




The instrument will print the model name “micro read 1000”, Version number, Clinic Name, current Date with Time.




User can select a saved test by first touching the required “Test Name” on the screen and then touch the “VIEW” option to carry out further operation on the test.

“RUN” option is used to directly run the selected test.

“DEL”: Deletes the selected test.

If the numbers of tests are more than 18, “NXT” and “PRV” options can be used for browsing through the list pages.

“PRN”: For printing the test screen.

“MENU” used to select Main menu screen.

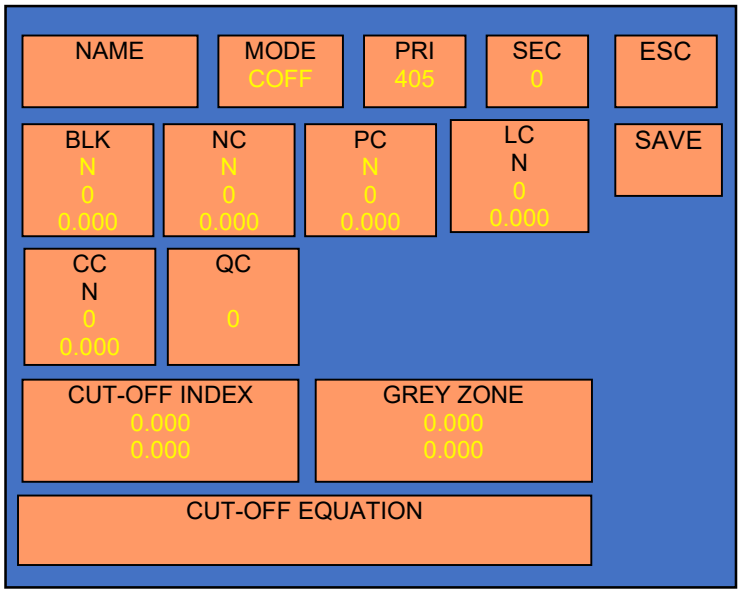
"NEW” this option helps the user to create new test

## 6.7. Touch Panel Check

**Micro read 1000** provides a ***TFT LCD panel*** **and a** ***KEYPAD*** for easy user interface**.**

The Menus are displayed and the text box of the parameter forms the TOUCH ZONE.

**Touch screen Layout**




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. The rest of the “Touch Zone” is deactivated.

***For Example:*** To activate the selection

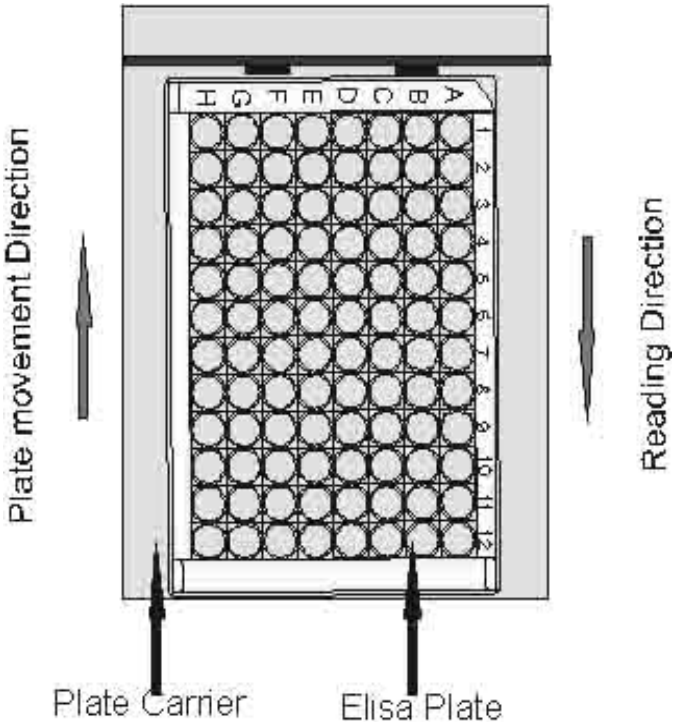
Enter the primary filter value to touch any point in the shaded area “PRI” on the screen.

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.

### 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 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

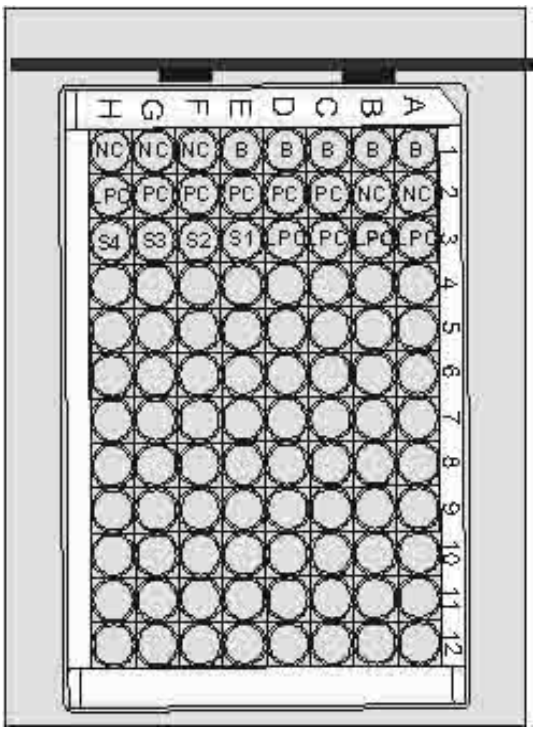
**Controls and Sample pipetting procedure in case of CUT OFF:**

Maximum number of Blanks = 5

Maximum number of Controls:

1. Negative Control = 05
2. Positive Control = 05
3. Low Positive Control = 05

Pipetting sequence should be as shown below.




## 6.10. Readings Check

Checking of readings should be done through controls reading 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

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

2.Always check for proper grounding before installation. Never operate the instrument when ground wire is removed.

3. 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.

4. Use a clean plate and follow the instructions for blanking and standardizing. Do not read any wells containing bubbles or dust particles.

5. 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.

6. Monitoring of the printed values or displayed values during operation may help detect an error. Check the linearity and calibration of the instrument regularly against some standard reference.

7. Check the micro wells before use. They should be scratch-free. The micro well track in the **micro read 1000** has been designed in such a way that the micro wells are totally protected from scratches.

8.Recheck the reading of high OD (above 2A).

9. Place Plate carefully on the tray.

10. Ensure that the main power switch is in OFF position before connecting.

11. Plug the instrument to the AC mains. Confirm proper grounding for trouble free operation.

12. Connect the printer only when the instrument is OFF.

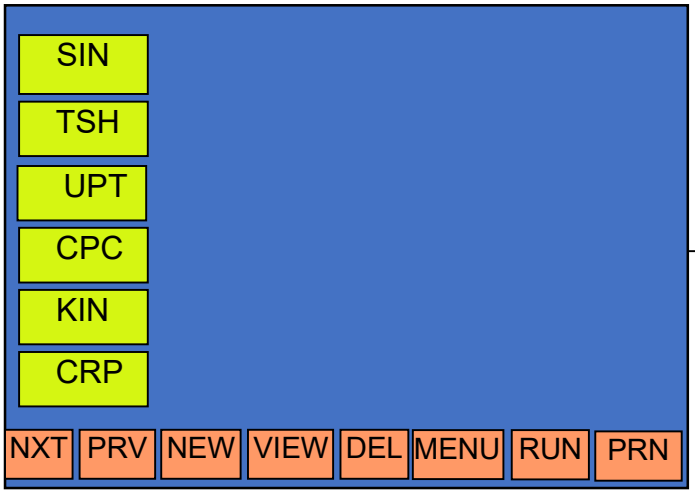
# 8. PROGRAMMING MODES

## 8.1. Absorbance Mode

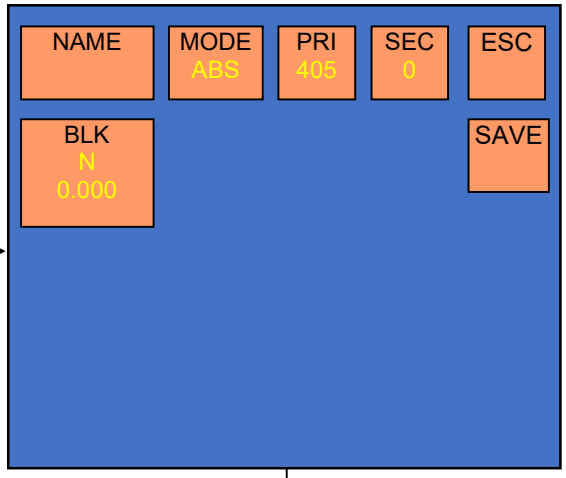
In this mode the instrument gives only absorbance values of all wells of the respective plate.

**Programming a New Test:**

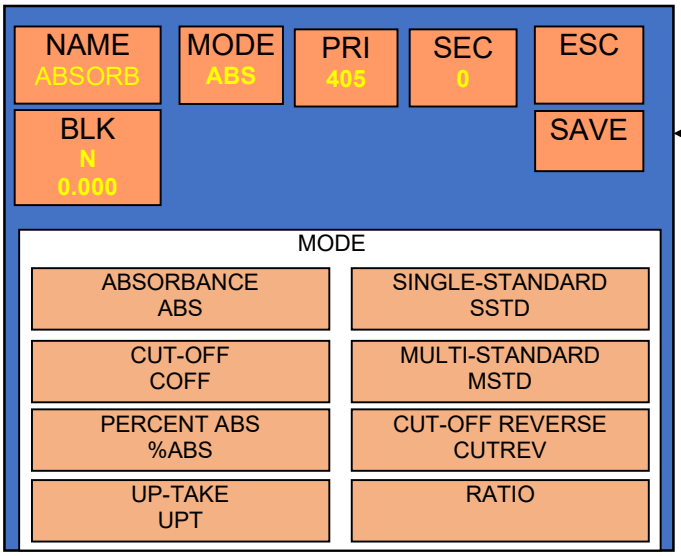
**A. Select "NEW"**



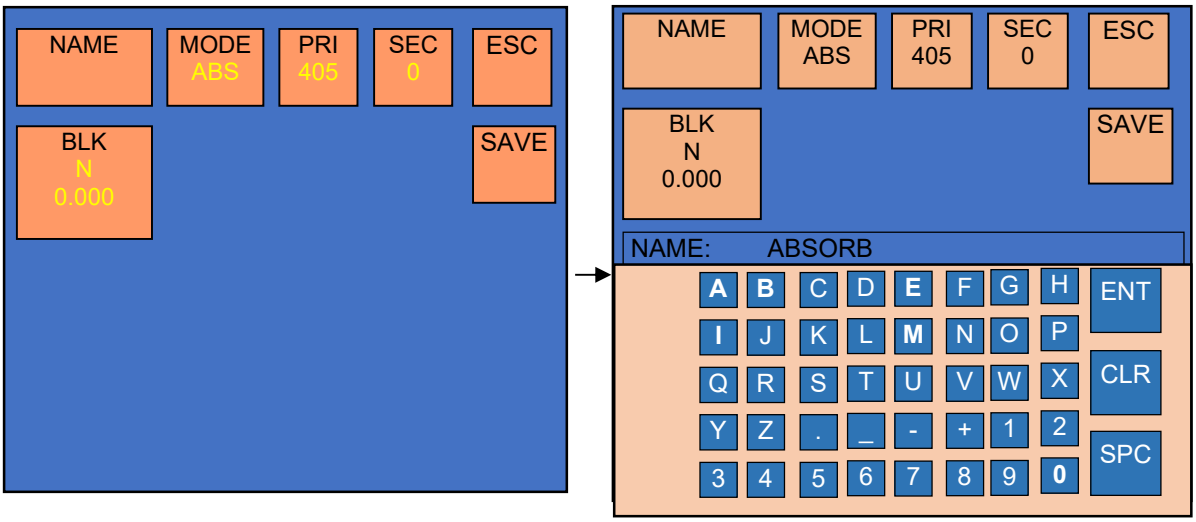

**B. Select "MODE"**



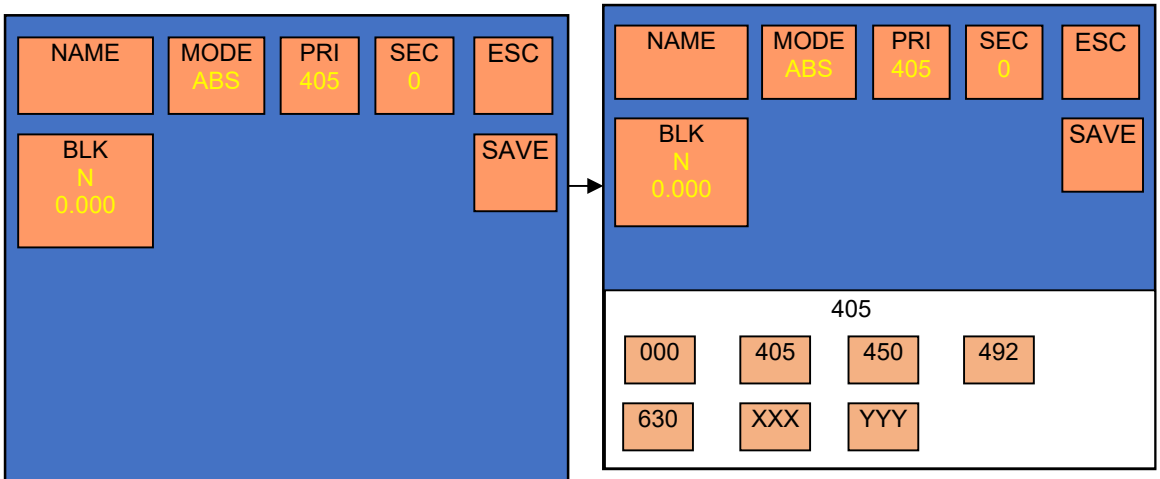

**C. Select mode of operation "Absorbance"**



**D. Enter "Test Name"**

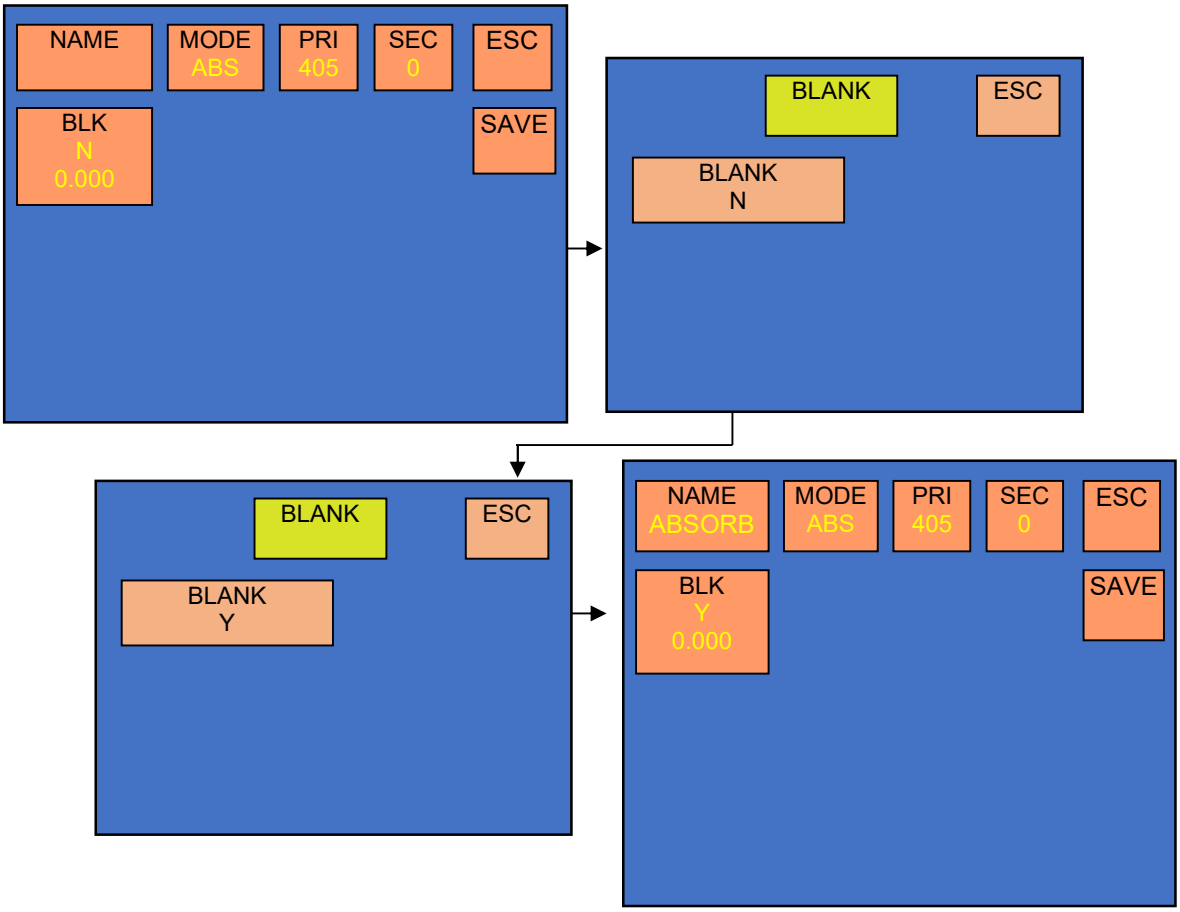



**E. Select primary and secondary filter**



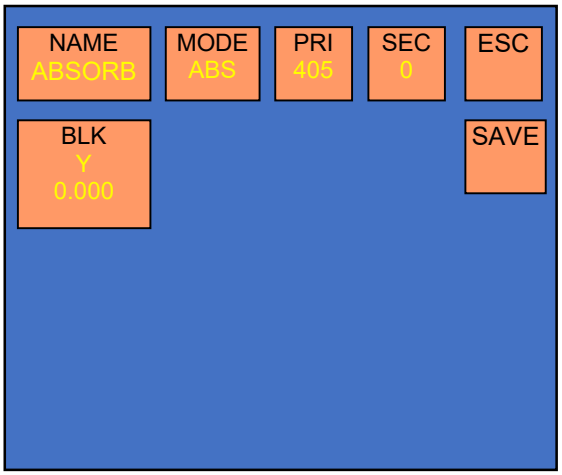

Select respective filter value which is display in above screen.

**F. If blank is required select "BLK"**




If you select "BLANK Y", it will read first strip first well 'A1' as a blank and subtract the absorbance of blank well from all other well's absorbance.

After entering all parameter click on save button.



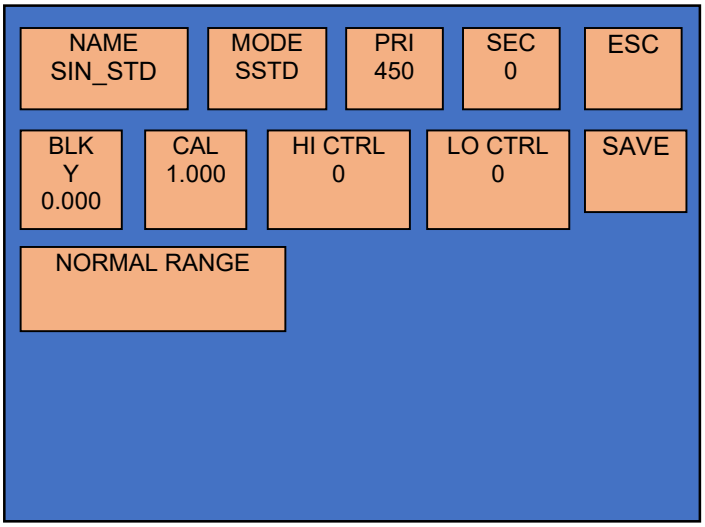
## 8.2. Single Standard

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 0.000

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 absorbance 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



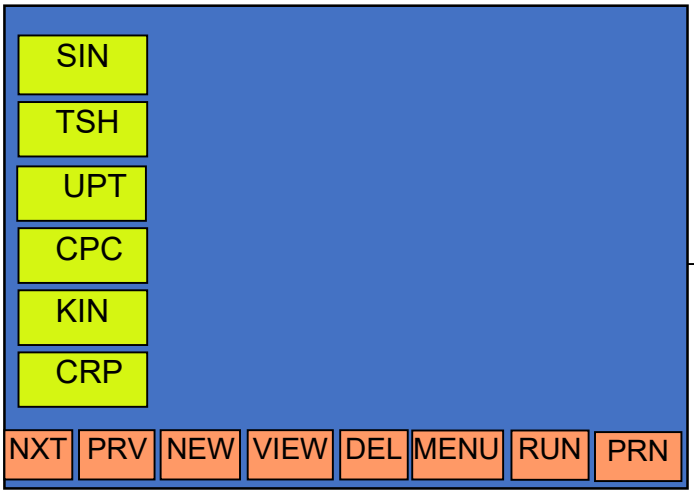

Entry of all the parameters is similar to Multi standard mode (Please refer Multi standard for entry of parameters except unit selection )

## 8.3. Cut Off Mode

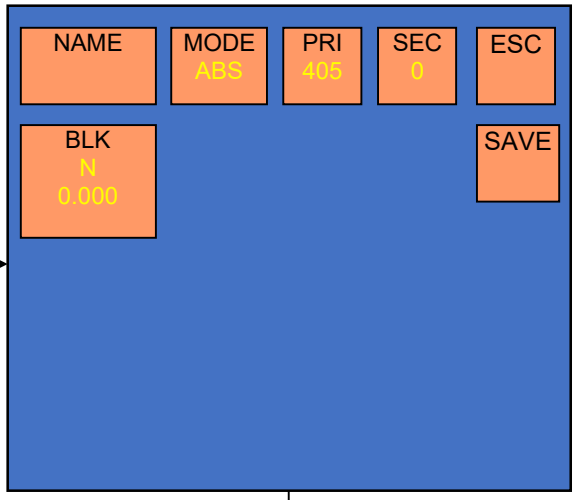
In this mode Cut-Off point is determined for interpretation of specimens as per formula given in the reagent manual. The negative controls are read followed by the positive controls, Cut-off control, low positive control. Blanking on the first well is optional. The instrument calculates the average of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

**Programming a New Test:**

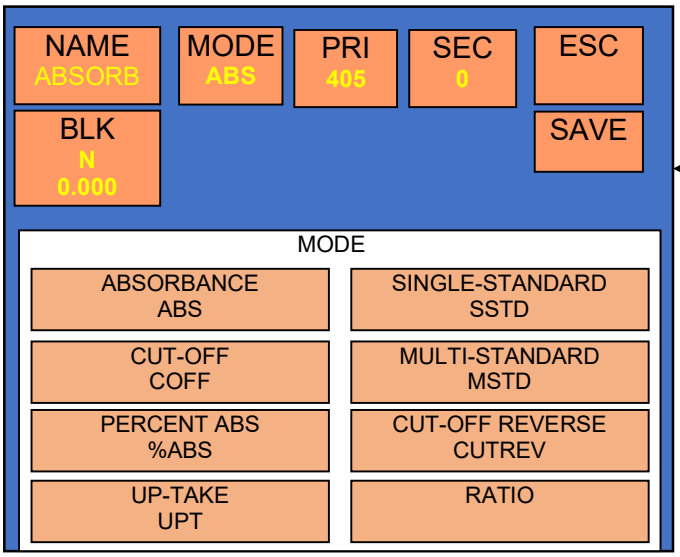
**A. Select "NEW"**




**B. Select "MODE"**

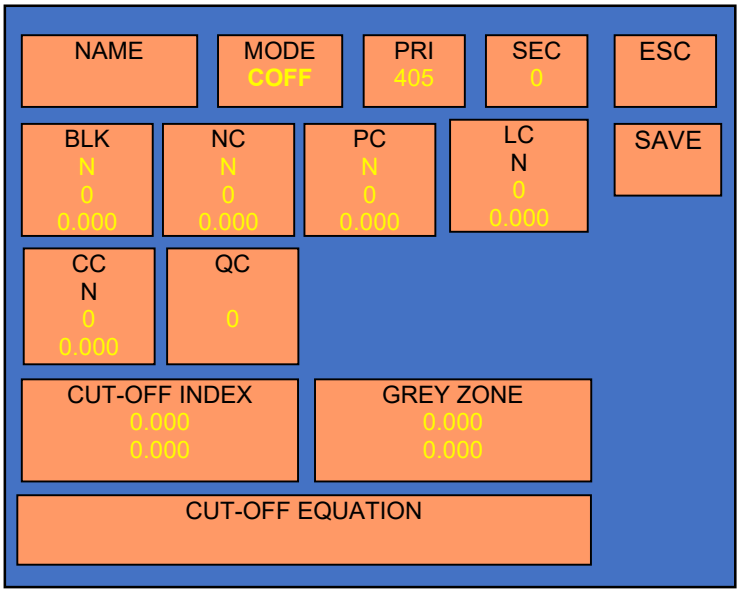



**C. Select mode of operation "CUT-OFF"**

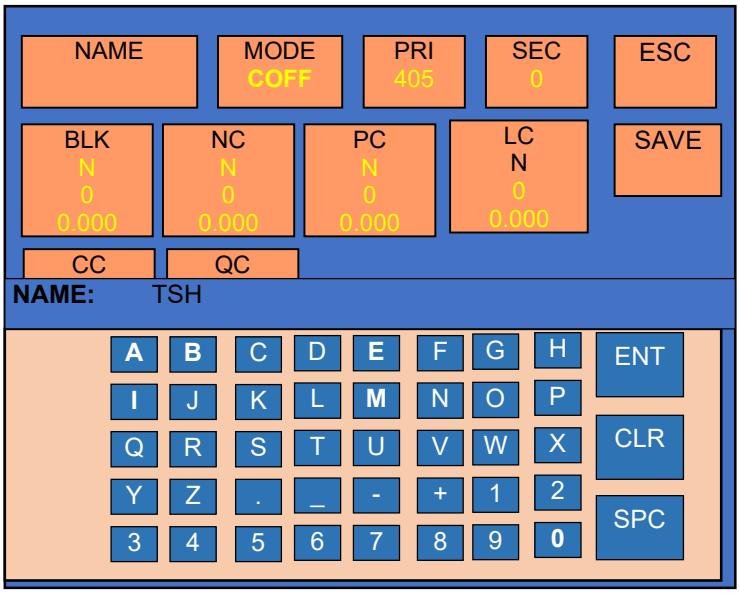


**D. Entry of test name**

**Select touch Zone "Name:"**

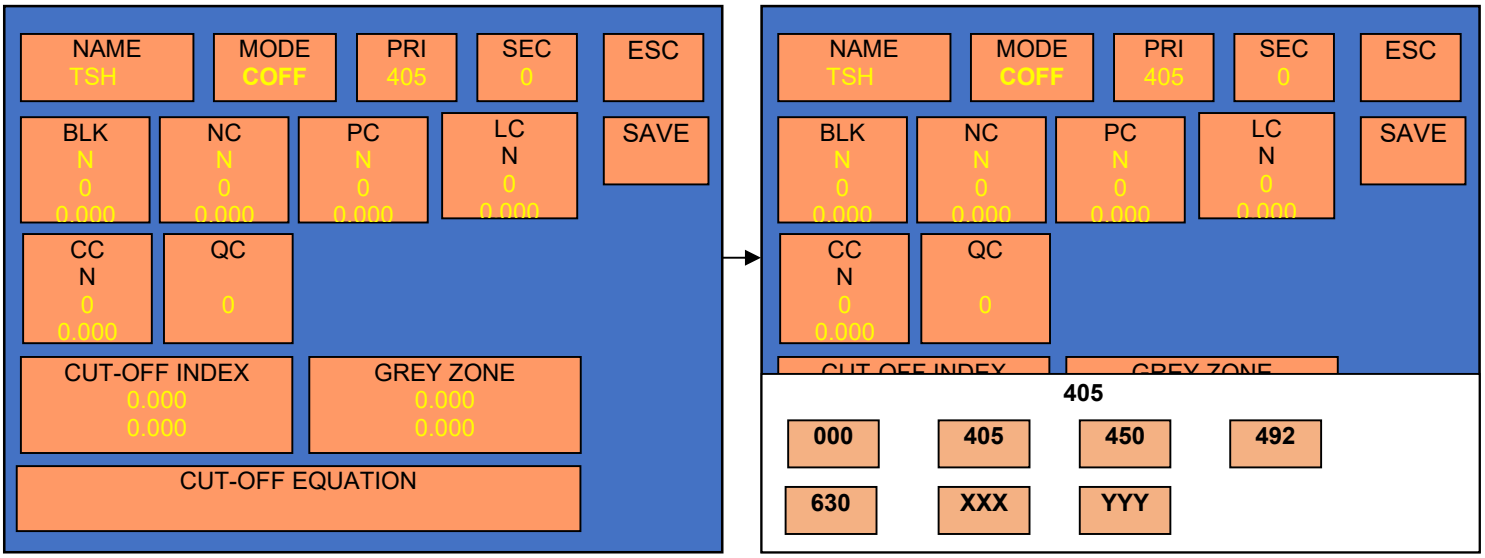



Alphanumerical characters will appear on the screen as shown below after touching "Name" on the screen. Enter the name of the test by selecting the individual characters one by one. After selecting all the characters select Enter option in touch screen for confirmation of test Name.



**E. Selection of Primary and secondary filters.**

Select zone "PRI" on the touch screen



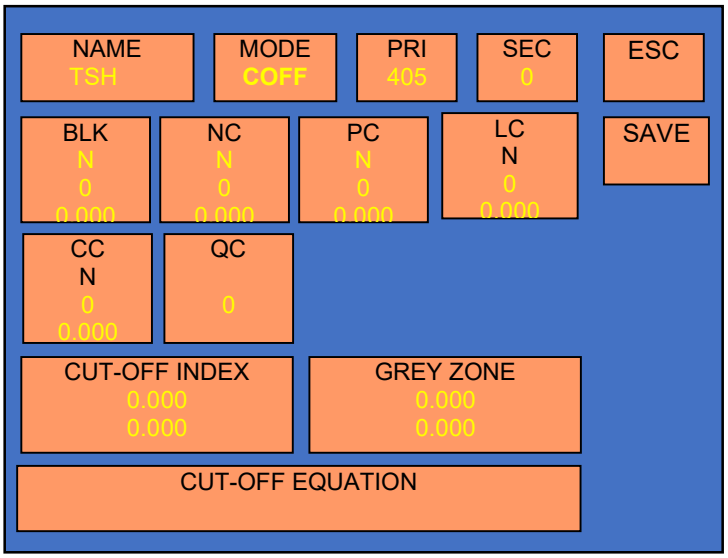

Select the filter value for primary filter as per details given in the reagent manual and after selection of "PRI" filter it will come back to the test parameters screen.

**NOTE: Same way you can select the filter Values for secondary filter.**

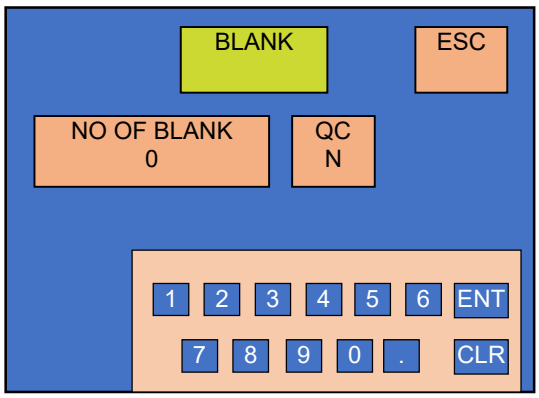
**Select the required filters either monochromatic or bichromatic by selecting the filter values for primary and secondary filter.**

**F. Entry of Blank and Blank QC values**

Select "BLK" to enter blank details.

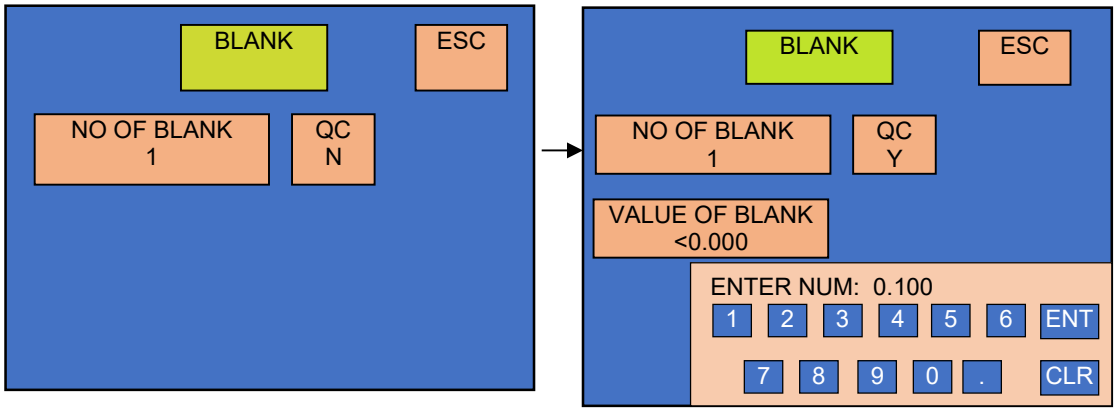


**G. After selecting "BLK", enter total number of blanks by selecting "NO OF BLANK". (Maximum 5 blank).**



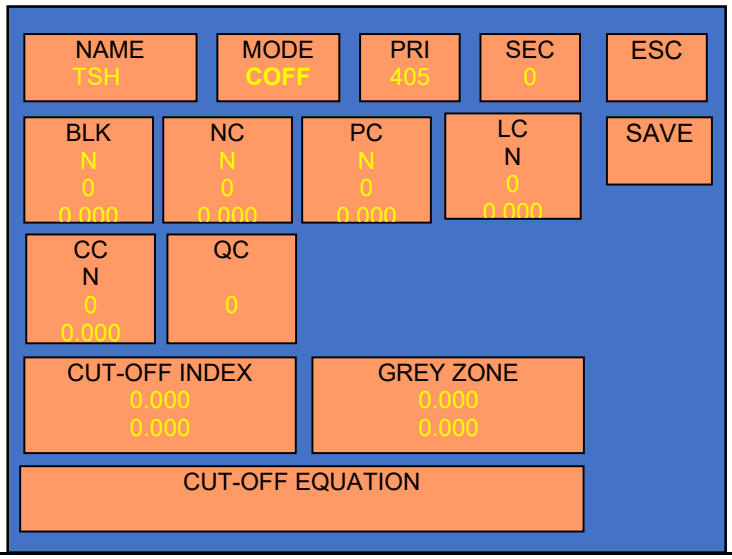

**H. Enter the QC value of the blank by selecting the touch Zone "QC"**

For entering QC value select "QC N". After selecting QC select "VALUE OF BLANK" to enter the QC value of blank.

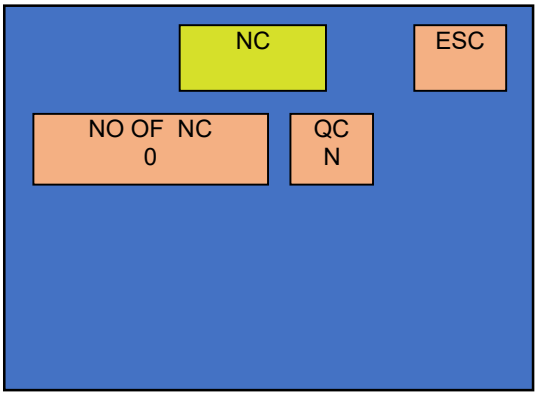



**I. Entry of Negative control and its QC values**

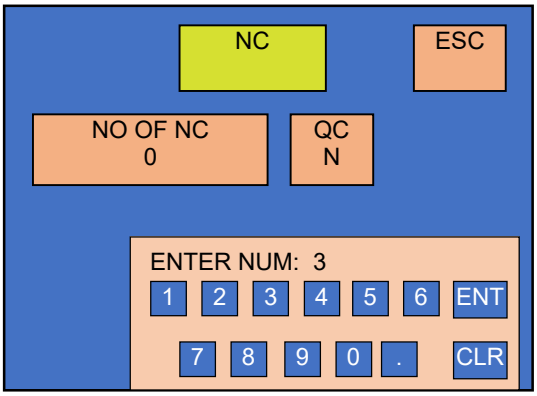
Select touch Zone "NC"



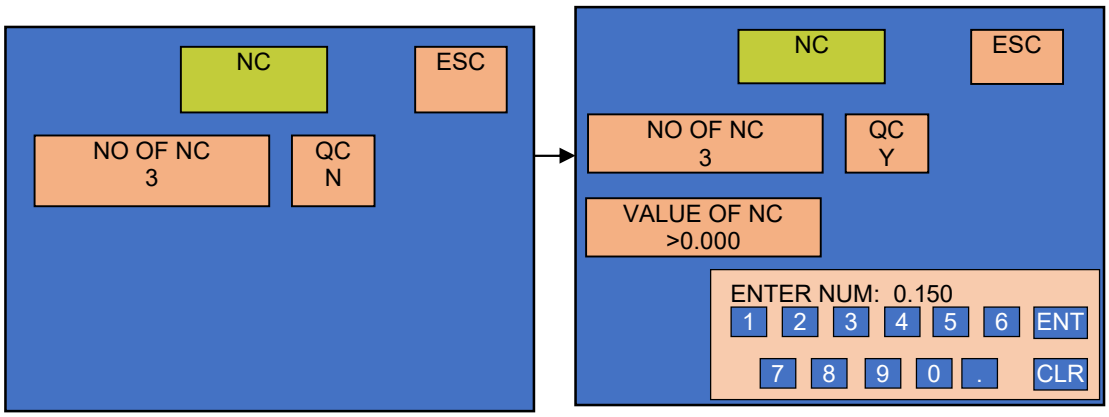
**J. After selecting "NC", below screen will appear on the display.**



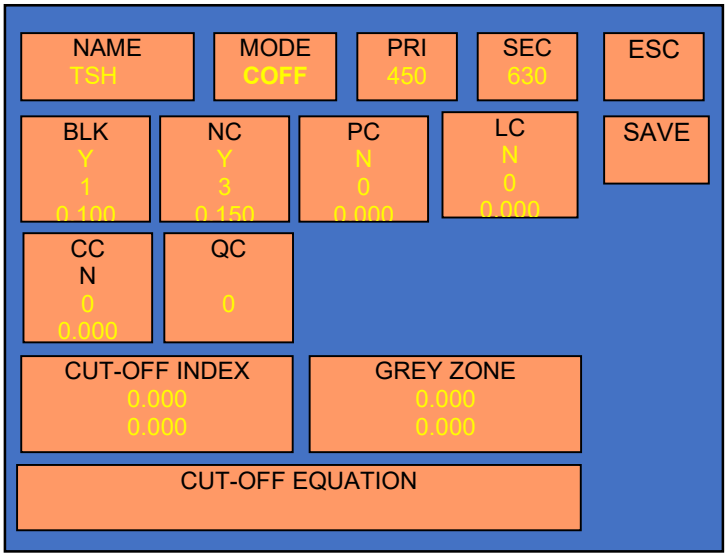

**Enter number of Negative Controls by Selecting Zone "NO OF NC" (Maximum 5).**




**Enter the QC value of the Negative Control by selecting the touch Zone "QC N" and enter the value of Y given in the reagent manual by selecting Zone "VALUES OF NC".**

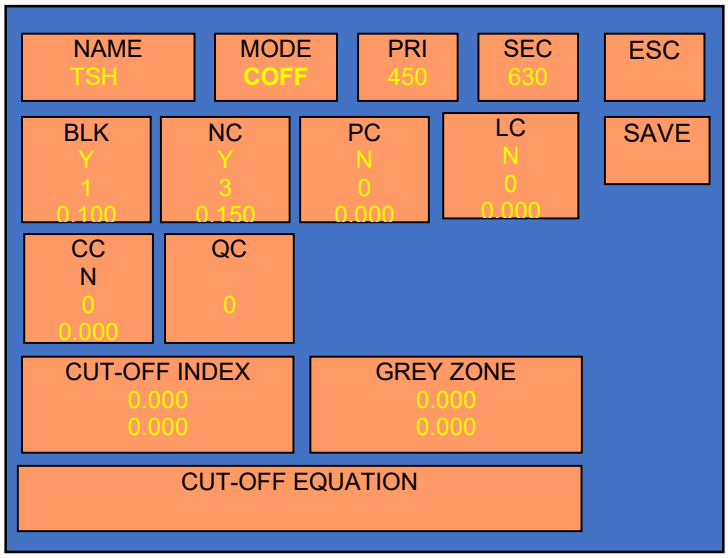


**K. After the entry of "No. of NC's", select ESC. The below screen will appear on the display.**

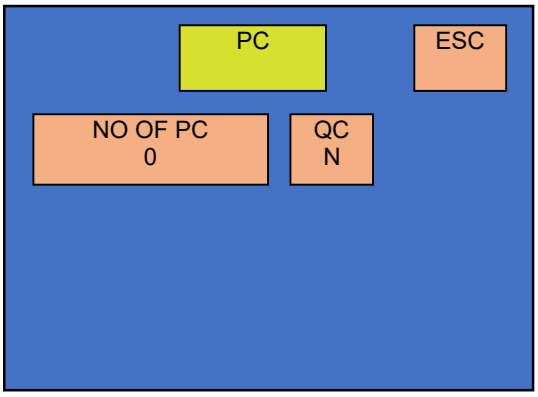



**L. Entry of Positive Controls (PC).**

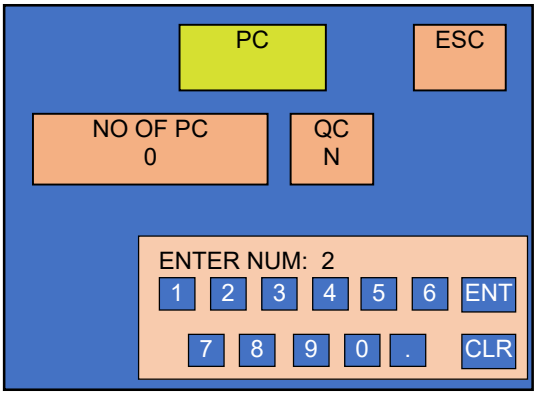
Select touch Zone "PC".



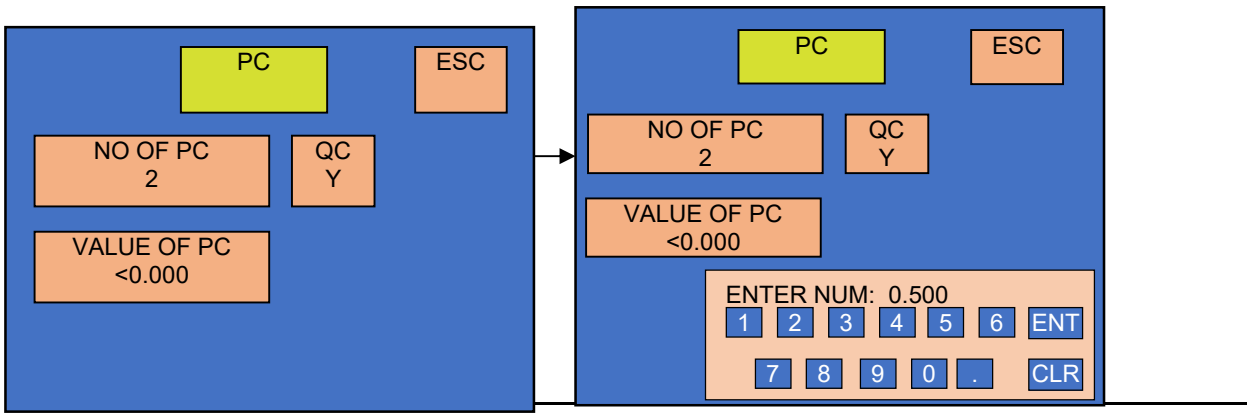
**M. After selecting "PC", below screen will appear on the display.**




**Enter number of Positive Controls by Selecting Zone "NO OF PC" (Maximum 5).**

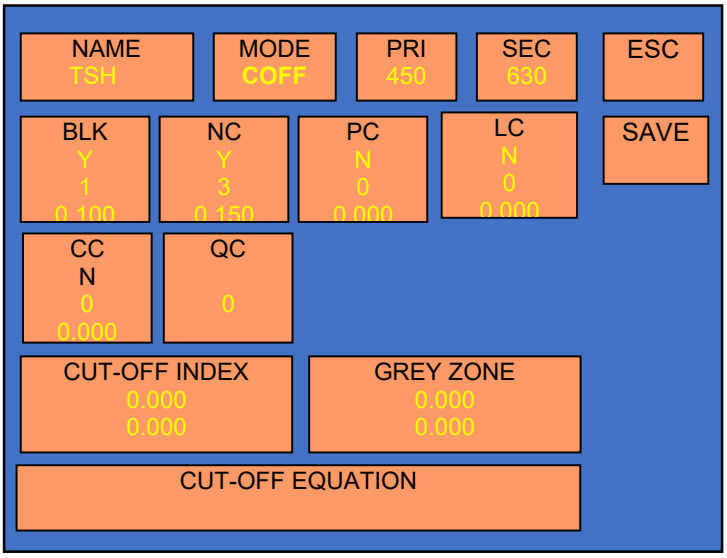



**Enter the QC value of the Positive Control by selecting the touch Zone "QC N" and enter the value of Y given in the reagent manual by selecting Zone "VALUES OF PC".**



**N. After entering the details of PCs, escape from the screen by selecting "ESC" option.**

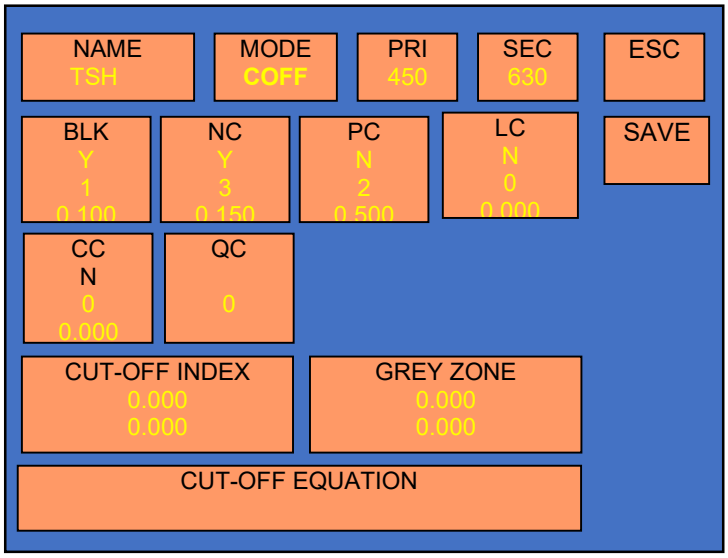
**Below screen will appear on the display:**



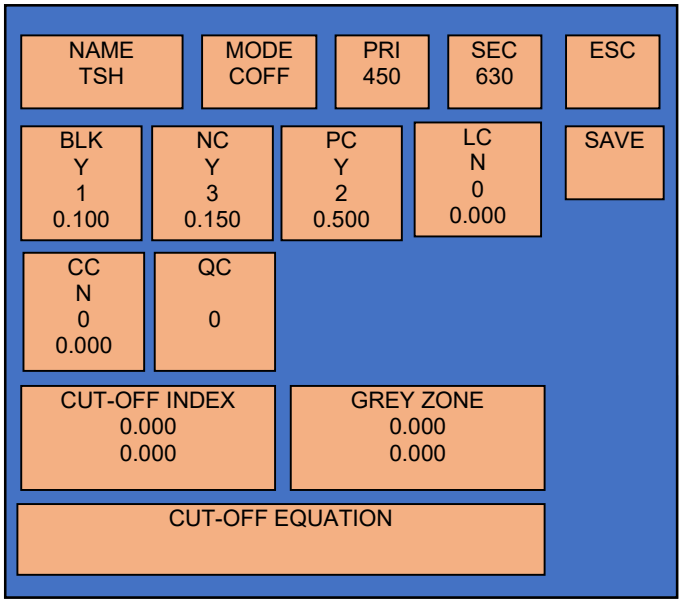

**NOTE: Same way you can enter values for LC (lower positive controls) and CC (Cut of Controls)**

**O. Entry of Cut off absorbance equation:**

Select touch Zone "CUT-OFF EQUATION"




After selecting the "CUTABS" below screen will come on the display.




Now enter the equation as given in the reagent manual or else
select ENT option in order to come out of the CUTABS screen.

Whereas, NC = Mean of NCs

PC = Mean of PCs

LC = Mean of LCs

CC = Mean of CCs

ALg = Anti LOG

Sqrt = Square root

Lg = LOG

Ln = Natural LOG

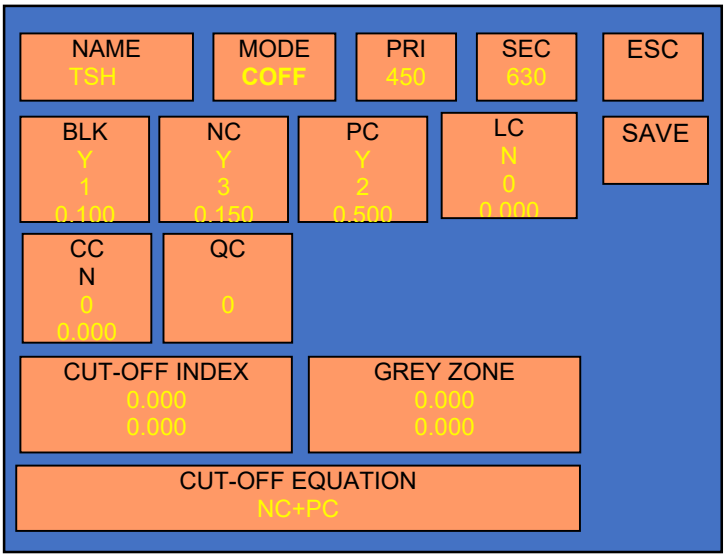
Abs. = any absolute value

ALN = Anti Natural LOG

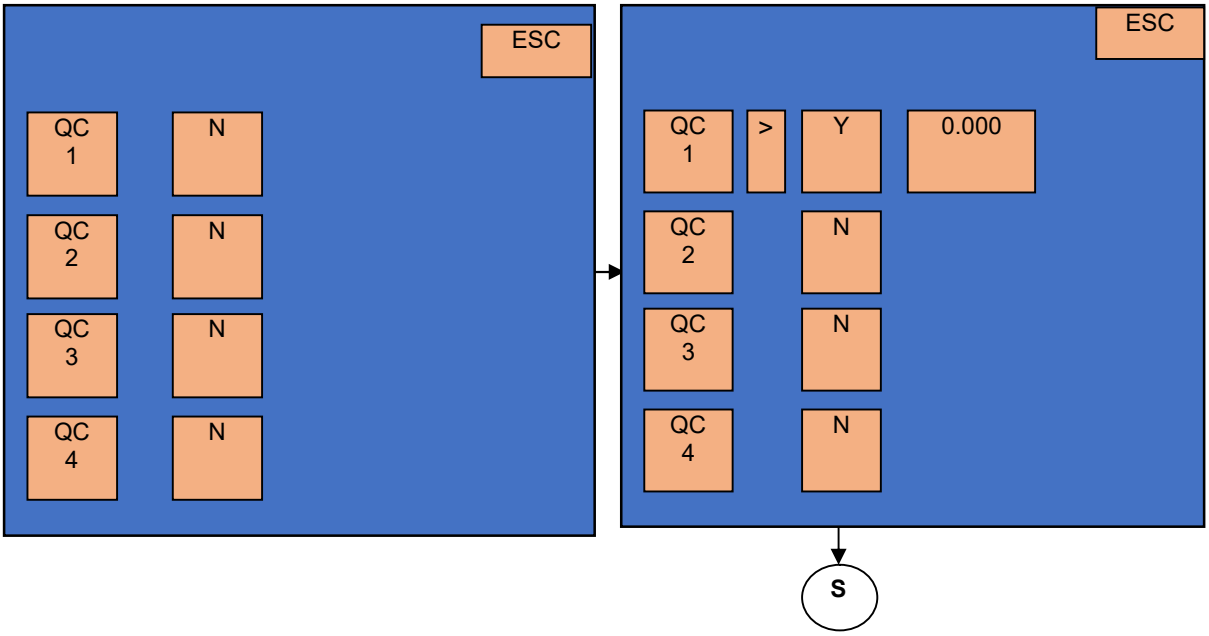
**P. QC1, QC2, QC3 & QC4. can be used for any QC Checking of the test provided in reagent manual.**

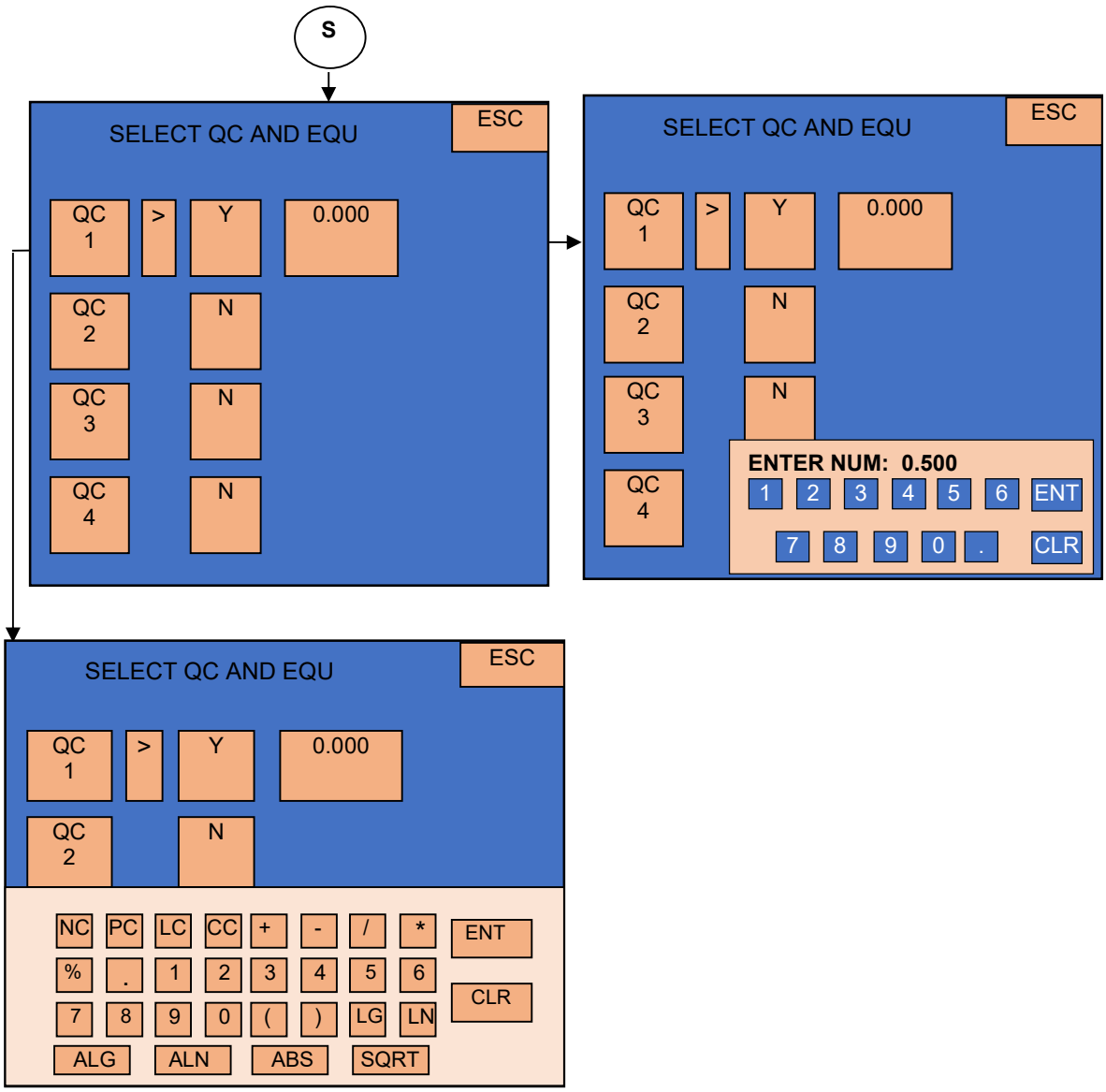
For example some kit may give QC check equation like| PCx – NCx |> 0.500,

PC / NC > 15, etc. This equation can be entered by selecting these QC options.




Select touch zone ‘N’. It will change to ‘Y’, as shown in the below screen. Now select touch zone ‘QC1’ and enter QC equation.






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

***NOTE:**

On screen it is mentioned that "QC1 > Y". In most of the reagent inserts it is mentioned that QC value should be greater than some constant value. Sometimes in the box insert it is mentioned that the value should be less than some constant value. In such case, you can change the symbol from "QC1 > Y" to "QC1 < Y", only by selecting a symbol of comparison.

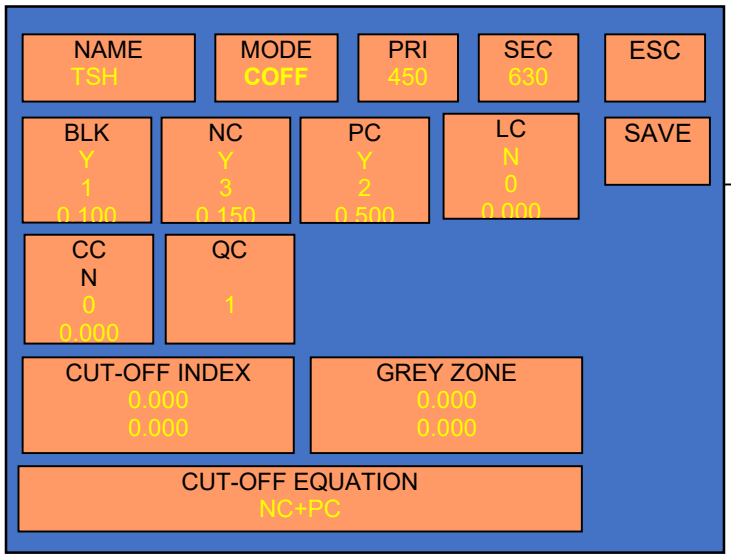
If any QC check is selected to 'YES' option, the system will not save the test without entering the QC equation and QC check value of equation.

## Q. Interpretation of samples

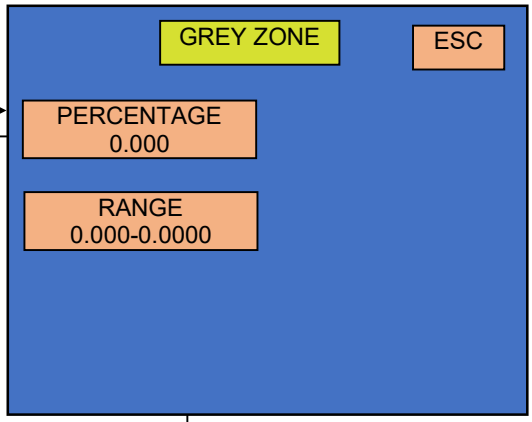
Enter RANGE for interpretation of results either in percentage (Greyzone) or positive and negative values of INDEX, as a ratio of (Sample Abs. / Cutoff Abs.). If Cutoff Index range or Greyzone is not mentioned do not enter any values. Instrument will do the interpretation with references to the Cut off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

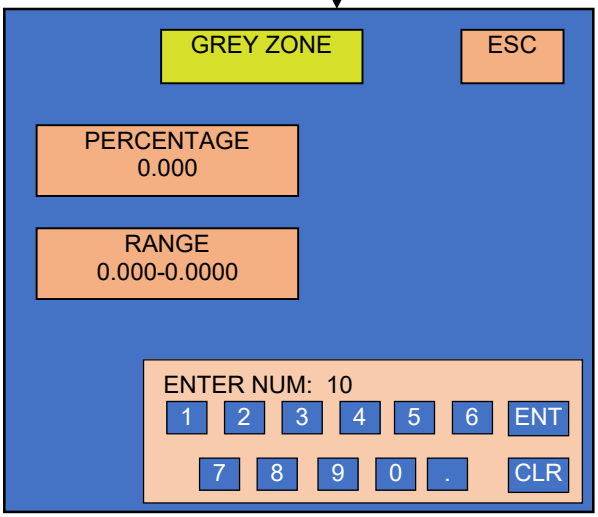
### Q.1. Interpretation by GREYZONE (percentage/range).

**Select touch zone 'GREYZONE**

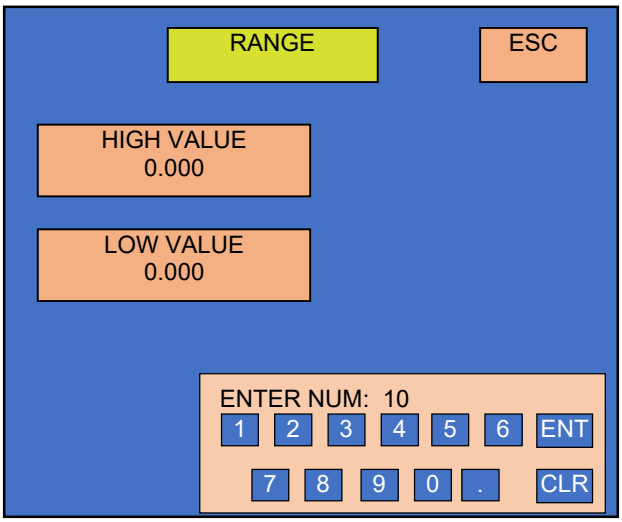



**Select touch zone 'PERCENTAGE' / 'RANGE'**




Enter Greyzone PERCENTAGE value
Select ESC option after entering Greyzone % value to come out to the parameter screen.

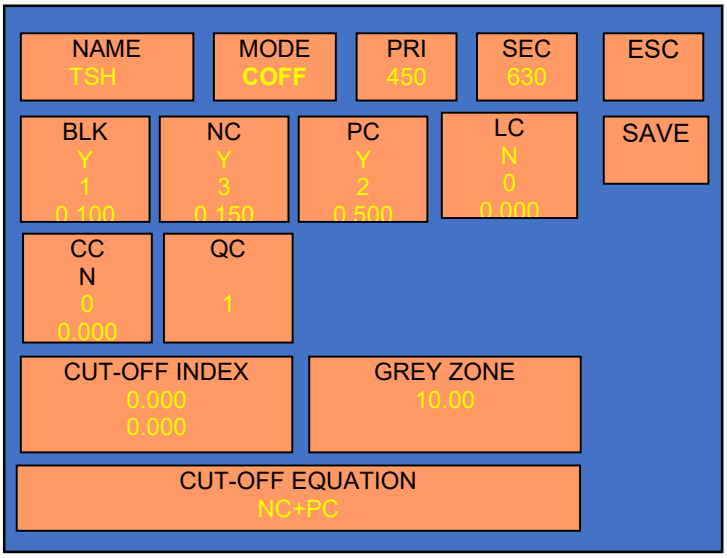



Enter Greyzone RANGE value
Select ESC option after entering Greyzone range value to come out to the parameter screen.

**NOTE: 1. If you don't select any option for interpretation of sample results, the instrument will take Cutoff Absorbance as a reference.**

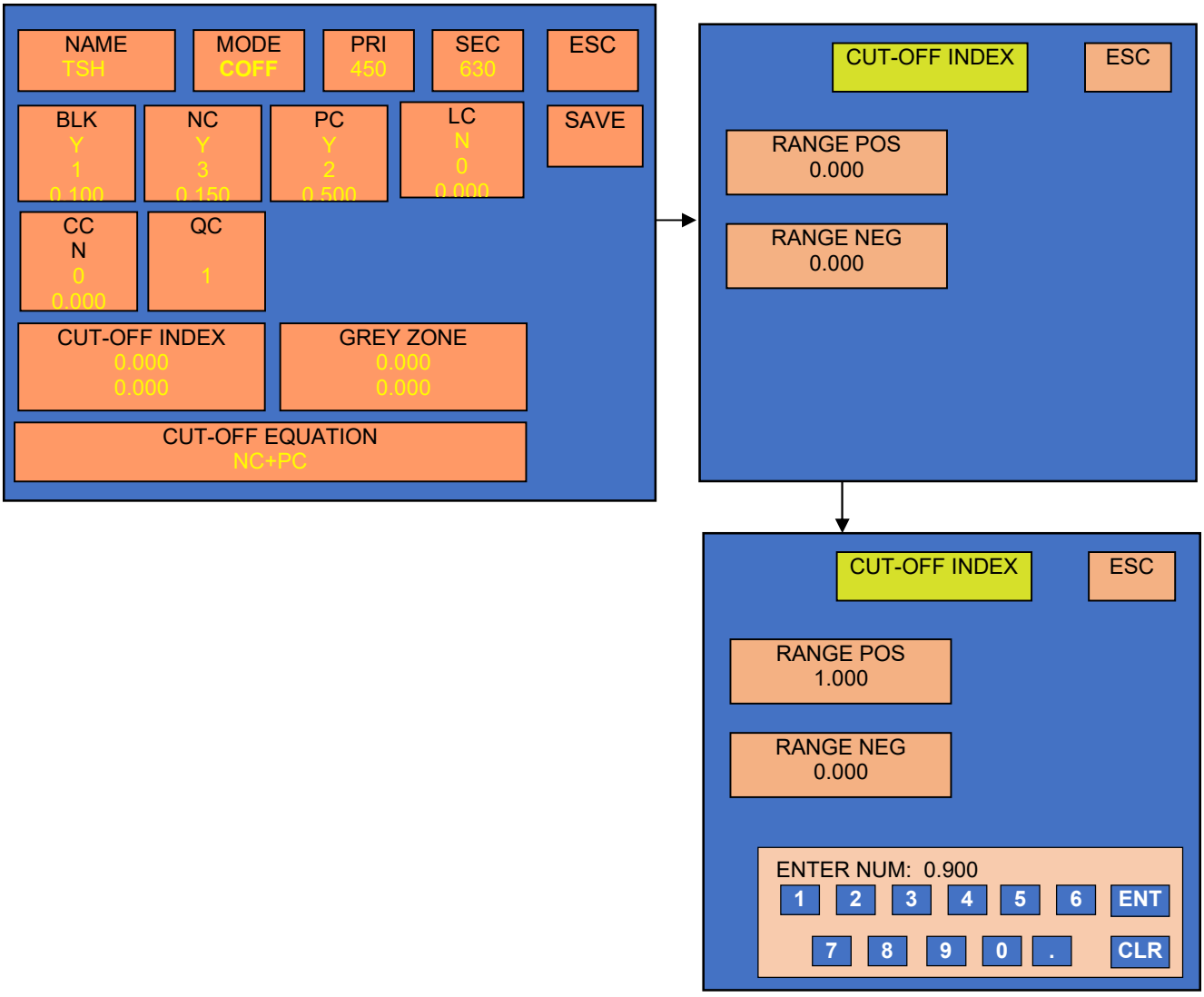
**2. when you are using a 'Greyzone' option the 'Cut off Index Range' option will not work.**

It will give "Positive' remark to sample absorbance greater than cutoff and 'Negative' to sample absorbance less than cutoff.



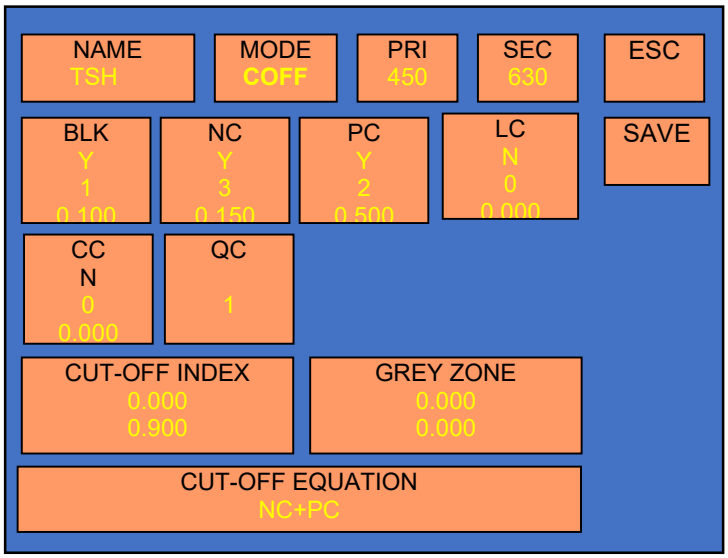
**Q.2. Interpretation by 'Cutoff Index Range"**

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




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' = 'EQU'.

After entering the Interpretation values (ie. conditions for interpretation) the screen will be displayed as follows -




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.

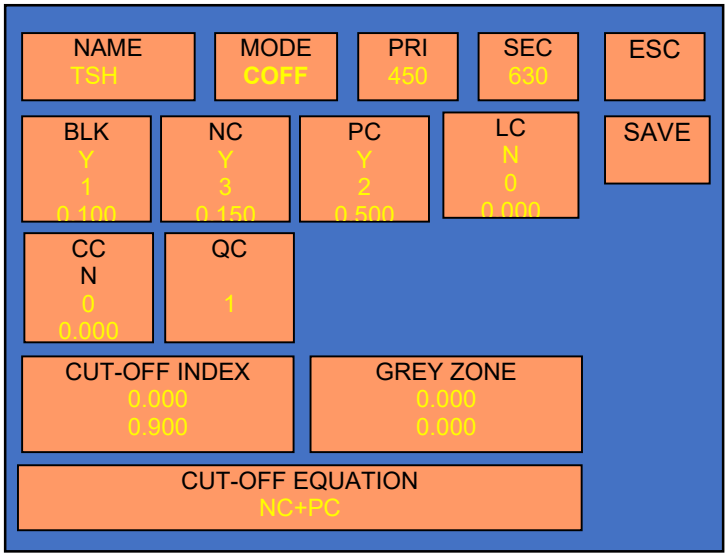
The sample will get NEGATIVE remarks having INDEX Value,

(Sam. Abs./ Cutoff Abs.) <= 0.900.

The sample will get EQUIVOCAL remarks having INDEX Value,

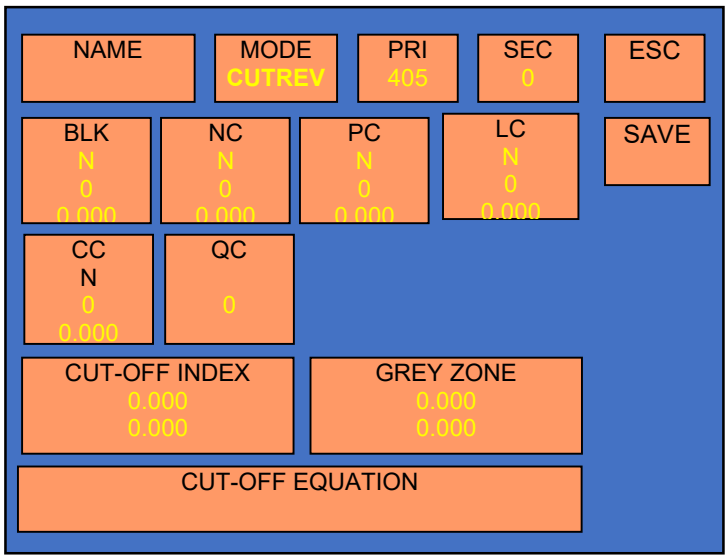
(Sam. Abs./ Cutoff Abs.) in the range from 0.900 to 1.000.

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



## 8.4. Reverse Cut Off Mode

For Reverse Cut Off mode, select touch zone ‘CUT-OFF REVERSE’ key.



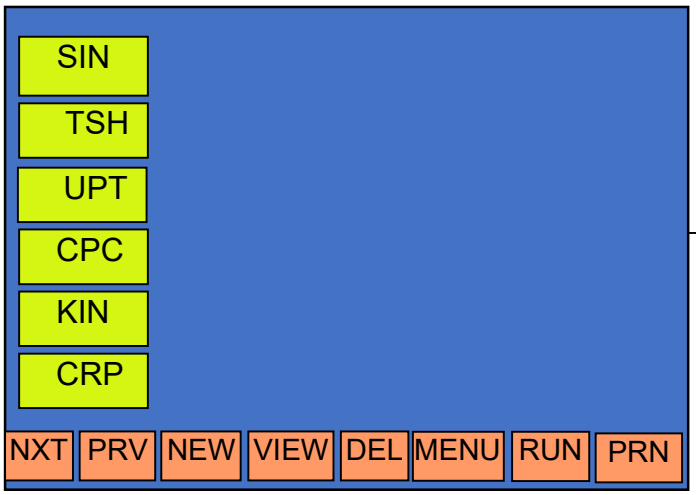

In Reverse Cut Off Mode, programming of test is the same as Positive Cut off Mode. Only QC check conditions for blanks and controls get reversed. In the ‘INTERPRETATION’, sample absorbance, which is lesser than cut off absorbance, gets remarked POSITIVE. Sample absorbance higher than cut off absorbance, gets remarked NEGATIVE. This is exactly the opposite to normal Cut Off Mode. Same way in case you select ‘Cutoff Index Range’.

### .5. Multi Standard Mode:

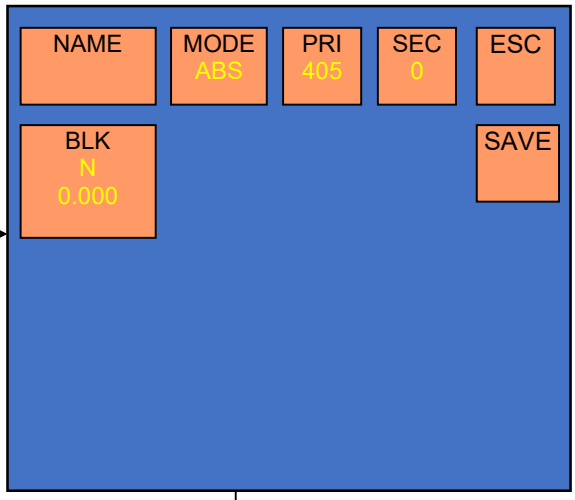
In this mode the instrument accepts a maximum of 12 calibrators and calculates concentration based on the best-fit curve. Graph is printed with Absorbance on Y-axis and concentration on X-axis.

**Programming a New Test:**

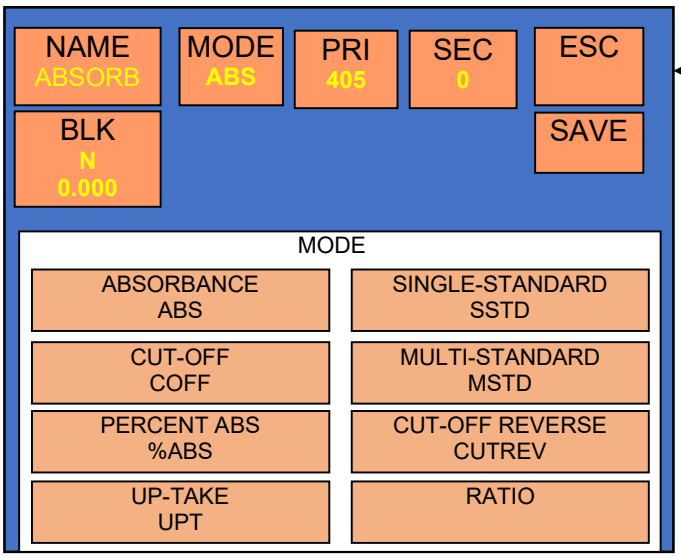
**A. Select "NEW"**



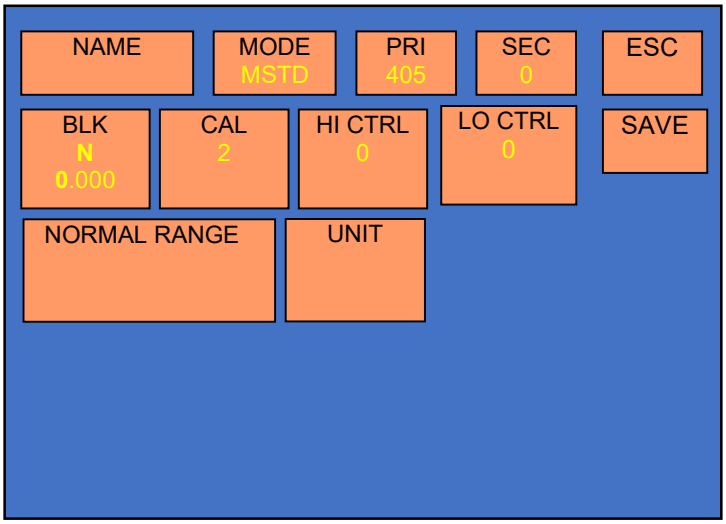

**B. Select "MODE"**




**C. Select mode of operation "MULTI-STANDARD"**



After selecting Multi standard mode it will display following screen –




**D. 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 the Cut Off mode. Refer Test Name entry in Cut off mode for further details.

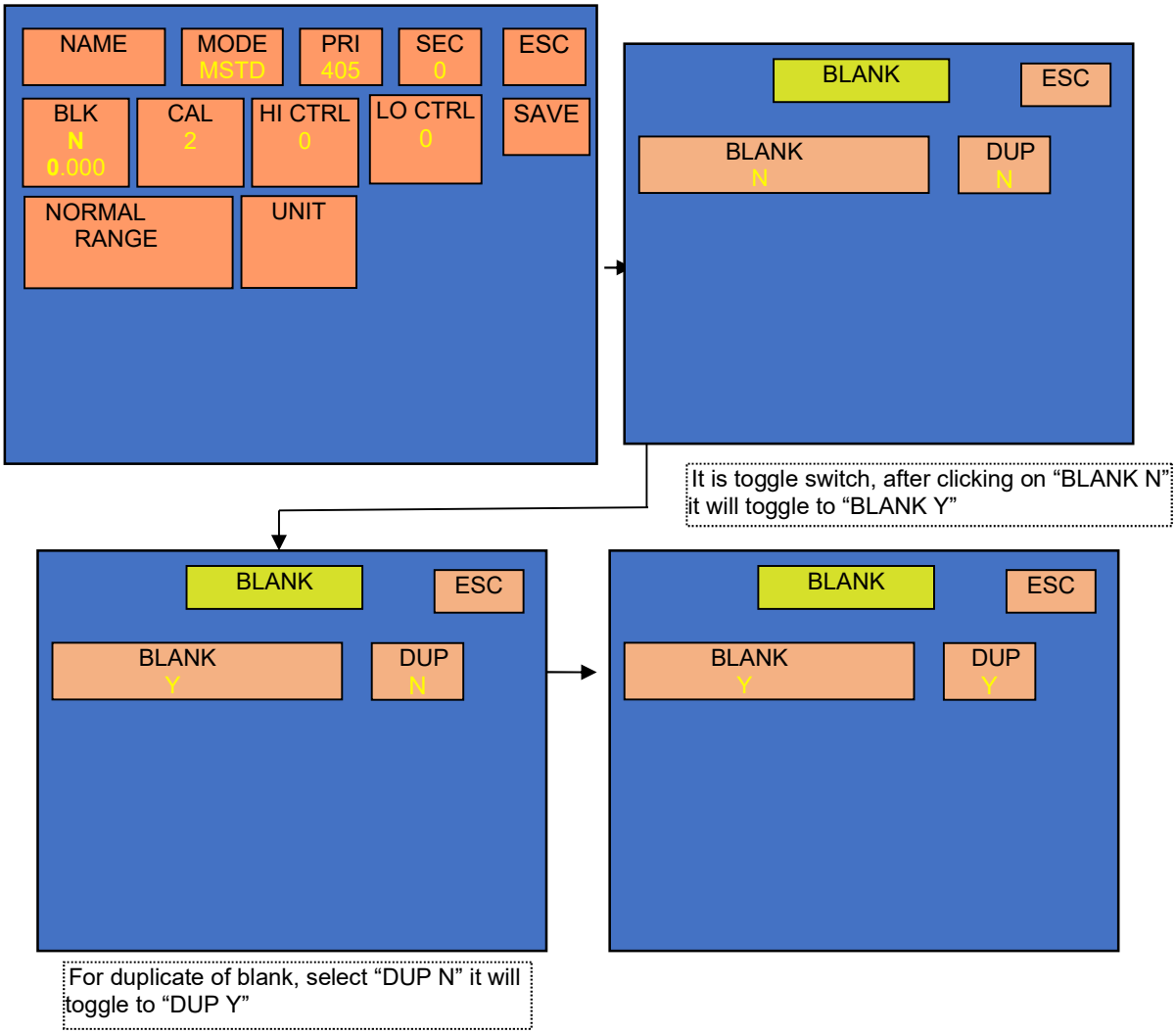
**E. Selection of Primary and secondary filters**

Primary and secondary filters can be selected by Selecting Touch Zone of “PRI” and “SEC”

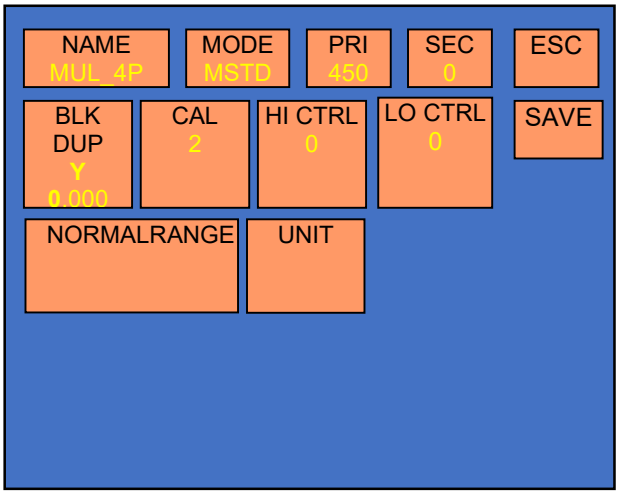
Procedure for Selecting filter is same as that of the Cut Off mode. Refer selection of primary and secondary filters in Cut off mode for further details.

**F. Selection of Blank and duplicate blank**

Select Touch Zone “BLK”. It will display below screen.

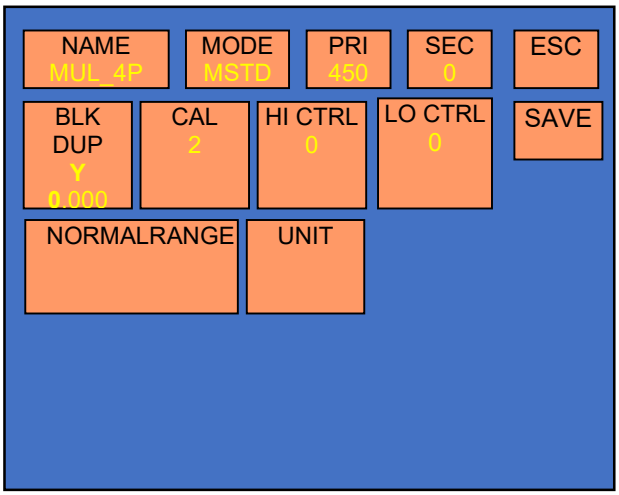



After selection of blank and duplicate blank it will display following screen.



**G. Entry of Standard Concentration**

**Select touch Zone "CAL" to enter Number of calibrators and its concentration.**

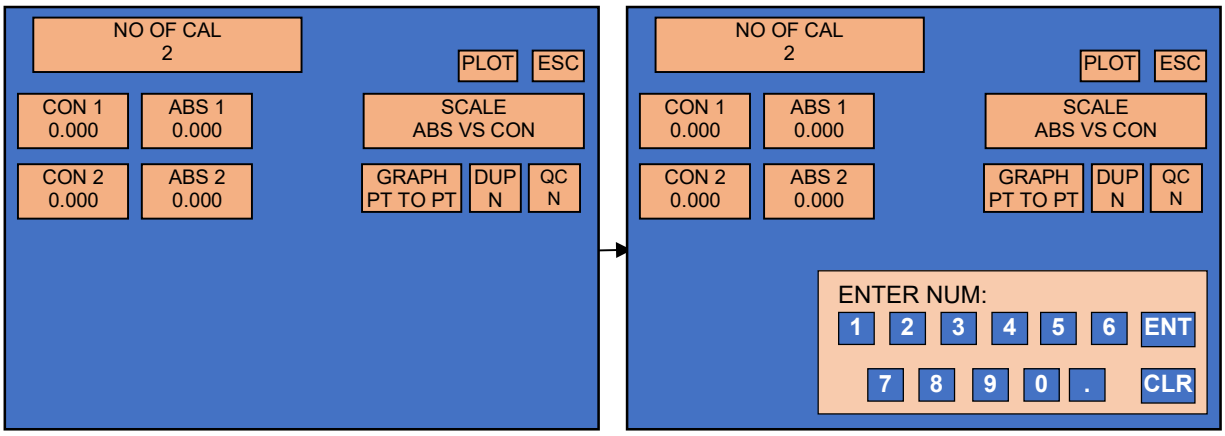



After selecting "CAL", it will display following screen:

Select Touch Zone "NO OF CAL". Numeric screen will be displayed at the bottom of the screen.

Select the number of calibrators (User can select min 2 and max. 12 standard in this mode).

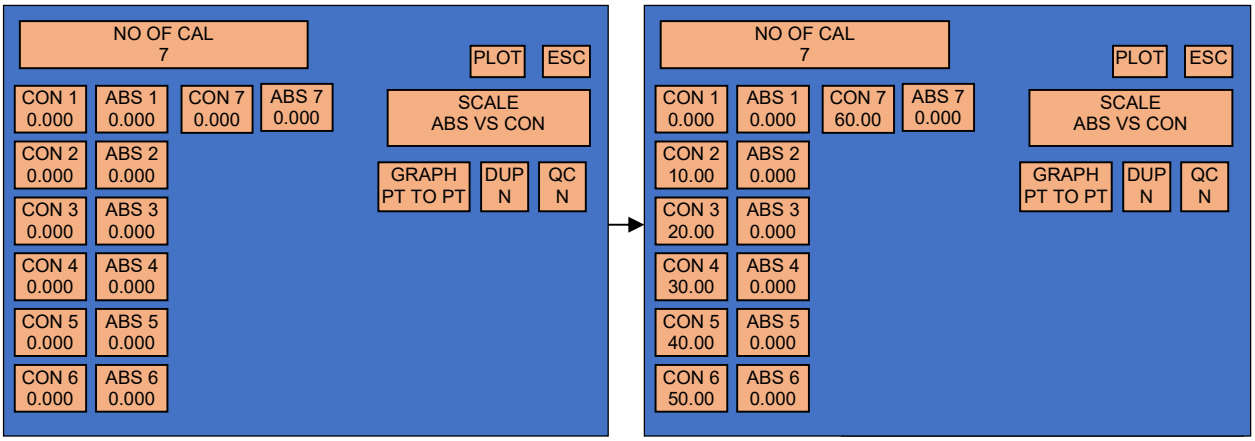
Whereas in case of 4 Parameter, user can select min. 4 and max.12 calibrators.



**Concentration Entry:**

After entering the number of calibrators, concentration and absorbance column will come on the display as shown below.

To enter concentration values select touch zone of CON 1 in Conc. column corresponding to the standard and enter the concentration value. (Note: 1. The concentration values should be either in ascending or descending order).




**Graph type along with its scales:**

There are five types of graphs in Multistandard. They are mentioned as follows -

1. Linear (LINEAR)
2. Point to Point (PT TO PT)
3. 4 Parameter (4 PARAM)
4. polynom
5. CSPLINE

There are five types of scales for X and Y axis

LOGABS vs CONC (X-axis = Concentration v/s Y-axis = LOG of ABS.)

ABS vs LOGCONC (X-axis = LOG of concentration v/s Y-axis = Absorbance)

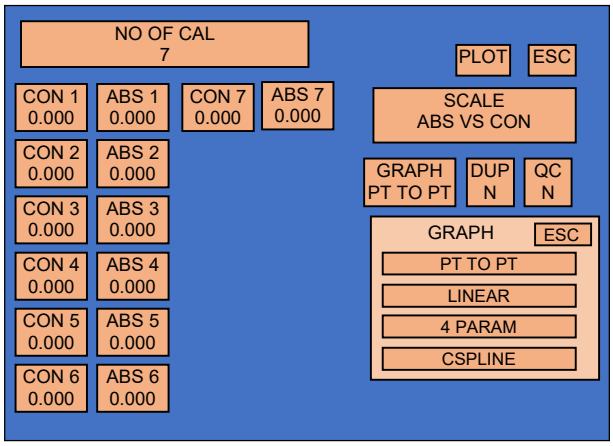
LOGITABS VS LOGCONC (X-axis = LOG of concentration v/s Y-axis = LOGIT of Absorbance)

ABS vs CONC (X-axis = Concentration v/s Y-axis = Absorbance)

LOGABS vs LOGCONC (X-axis = LOG of concentration v/s Y-axis = LOG of absorbance)

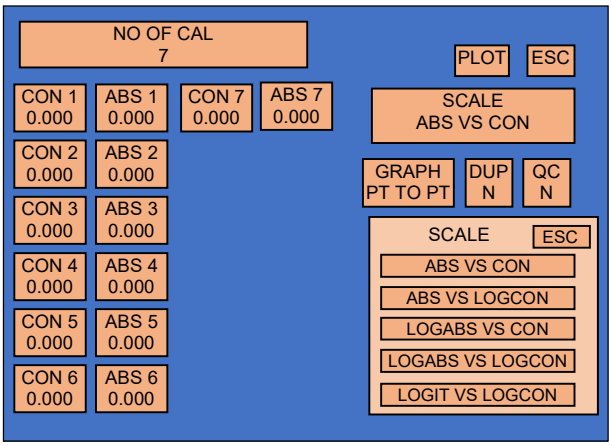
**Selection of graph:**

Select graph type as per the details given in the reagent manual by selecting Touch Zone “GRAPH”. After Selecting the “Graph” option present in the calibrator parameter screen, it will display following screen.



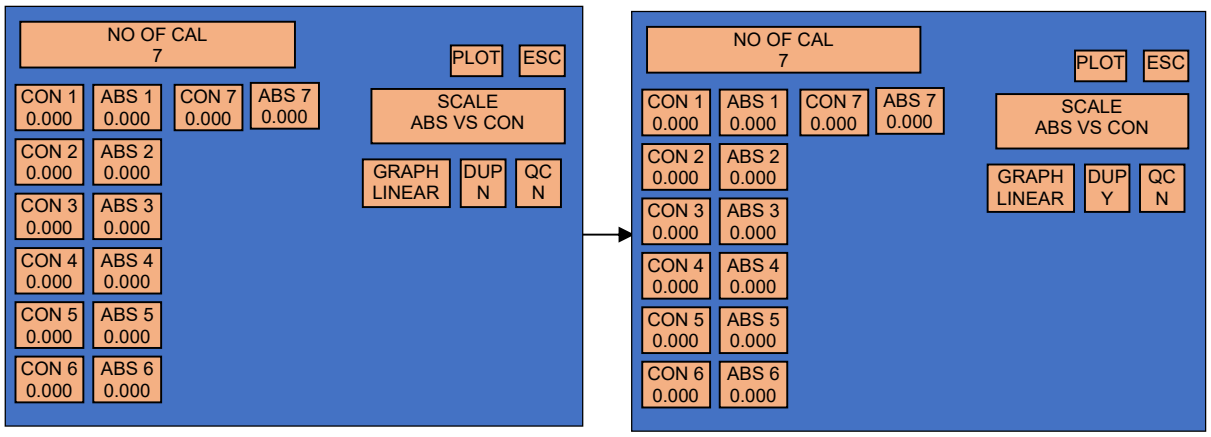

**Selection of scale:**

Select scale type as per the details given in the reagent manual by selecting Touch Zone “SCALE



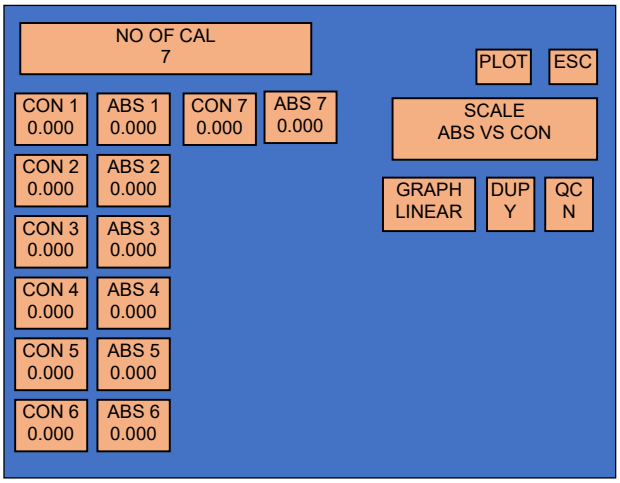
**Selection of Duplicate Calibrators:**

To select Duplicate Calibrator, select Touch Zone “DUP” present in calibrators (“CAL”) parameter screen. After selecting “DUP” it will toggle to yes “Y” for Duplication of calibrators.

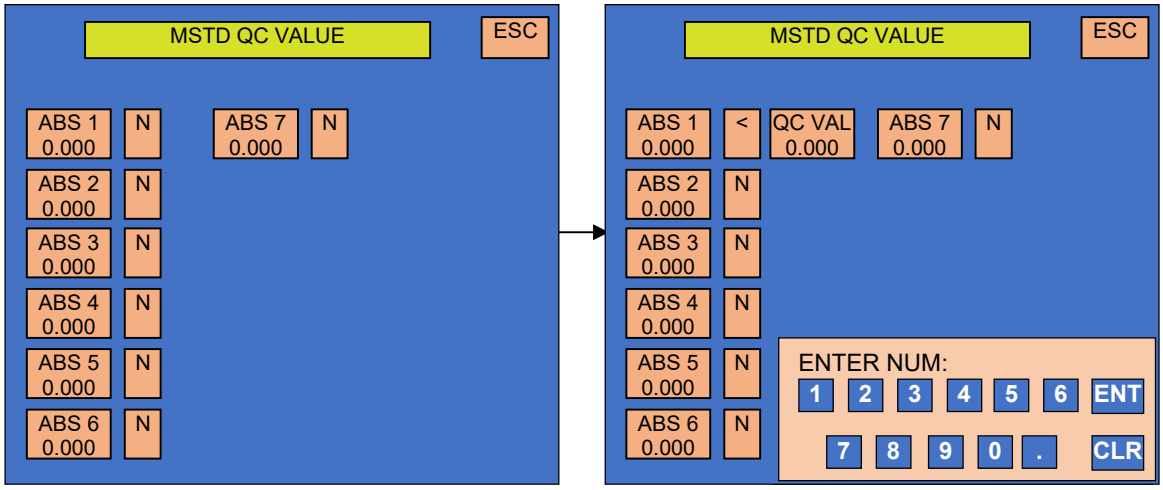



**Entry of QC:**

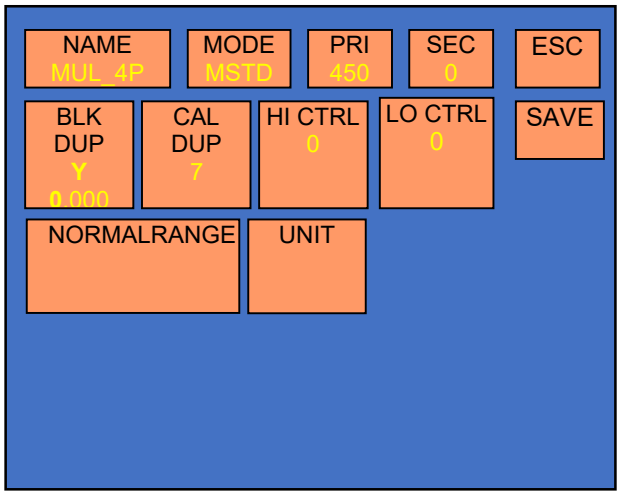
Select QC to enter the qc value.




Select touch zone ‘N’. It will display below screen. Now select touch zone ‘QC VAL’ and enter QC value.

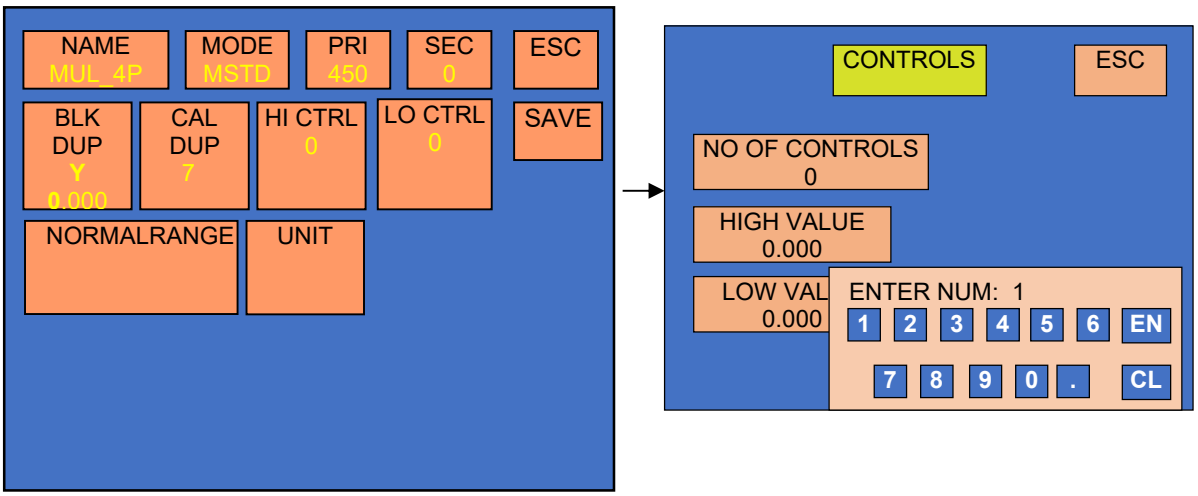



Screen after entry of calibration and selection of duplicate calibration, graph and scale will be displayed as follows -

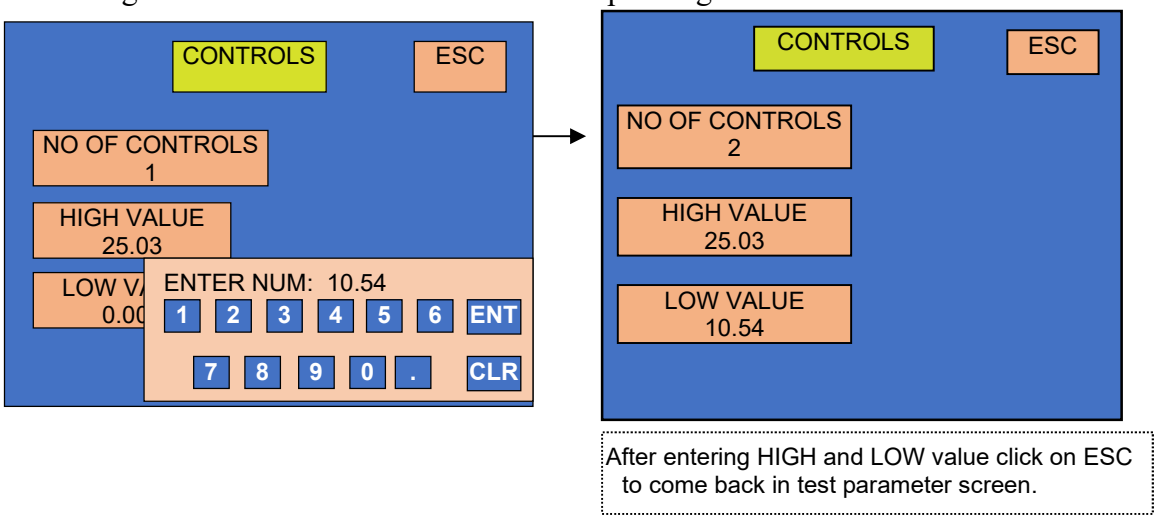



**H. Selection of Controls**

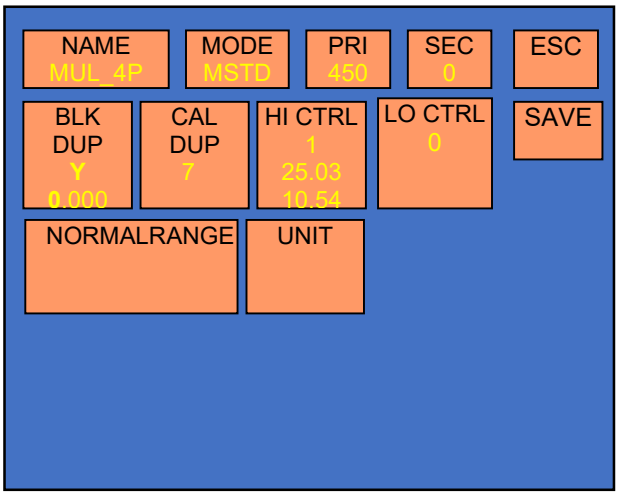
For High control select touch zone 'HI CTRL'. And enter the number of controls by selecting touch zone "NO OF CONTROLS"



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



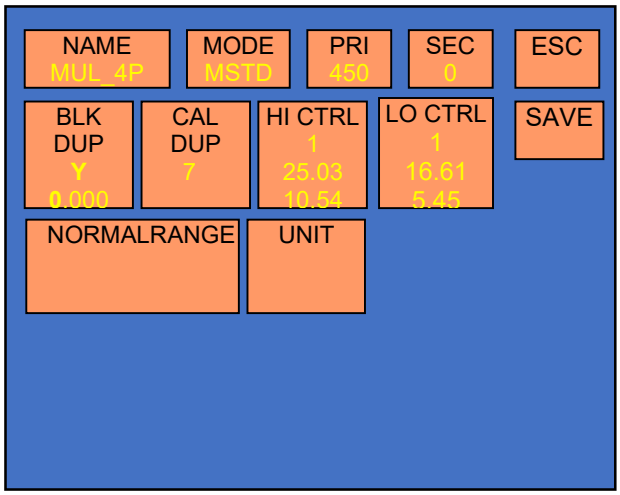

Similarly, for Low Control select touch zone ‘LO CTRL’.




(Note: Entry of LO CTRL is similar to that of HI CTRL)

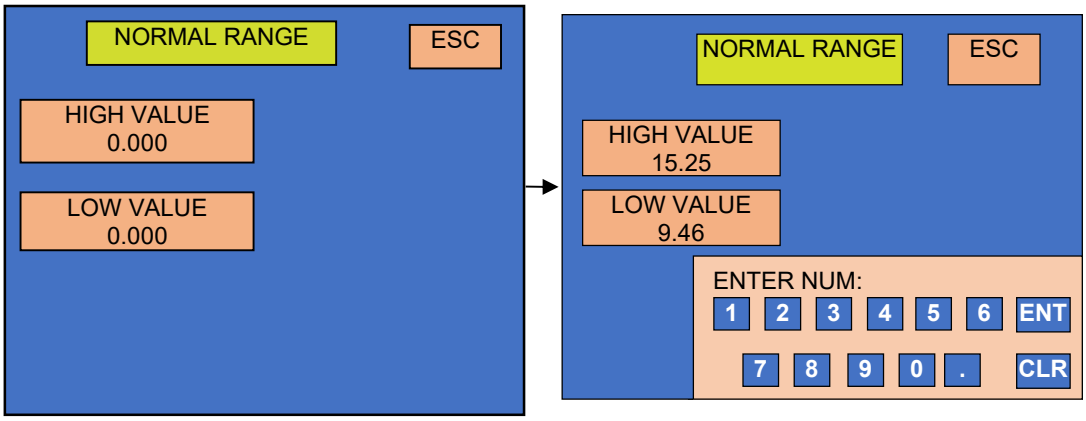
**I. Normal Range selection for interpretation of samples:**

For interpretation of specimen result (HI or LO), enter normal range given in REAGENT MANUAL. Select "NORMAL RANGE". It will display "NORMAL RANGE" SCREEN. Then select "HIGH>" and "LOW<" to enter normal range.



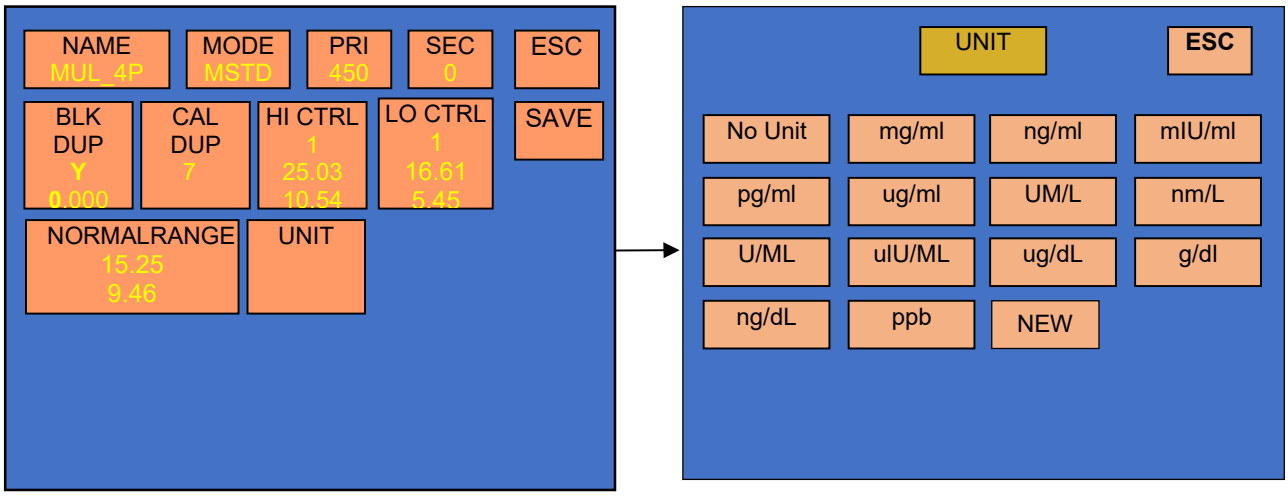

All the results whose concentration is coming above the High Range will be considered as HI and coming below the Low Range will be consider as LO. The results having concentration in between High and Low range will get remarks **'Equivocal' = 'EQU'.**

Enter Normal Range for positive and negative samples.

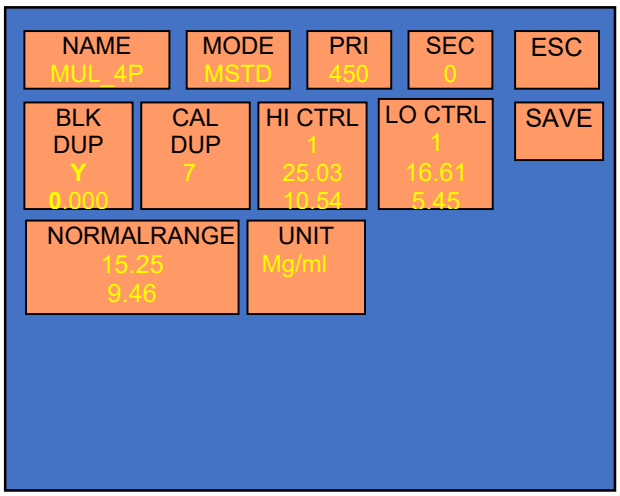


**J. Selection of unit**

This option is used to select the unit for the result.



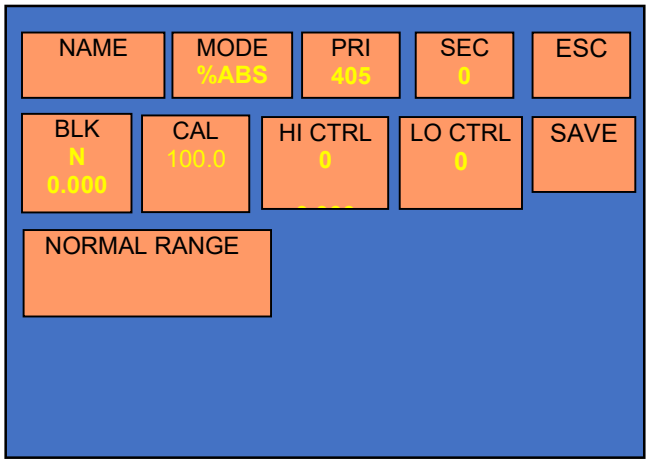

**K. After entering all the parameters save the test by selecting "SAVE" option.**




**(*Same way you can make a test for Single standard, % Absorbance and uptake. EXCEPT selection of UNIT)**

## 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. Refer 8.5 for parameter entry.



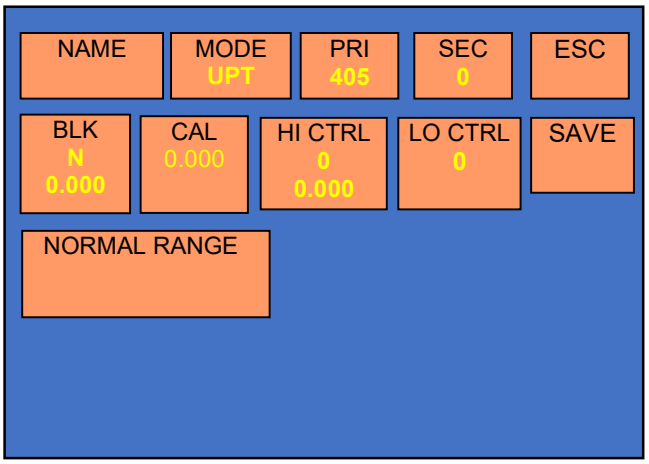

## 8.7. Uptake

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 0.000

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

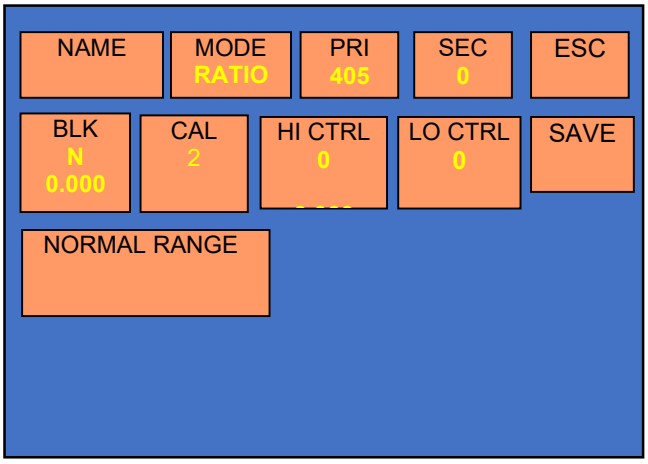



**Please refer 8.5 for parameter entry.**

## 8.8. RATIO

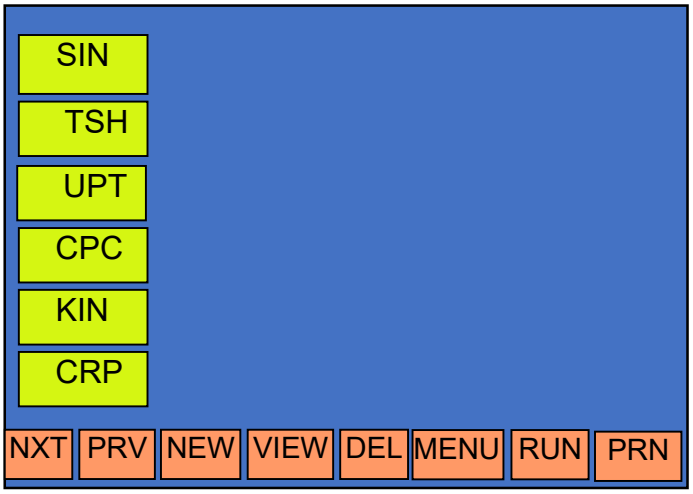
The Ratio Mode is similar to multi standard mode and one more parameteris present test parameter screen i.e. Ratio option present in test parameter screen. There are 2 types of Ratio

1. NORMAL: Instrument gives the absorbance of each and every well (A/A0).
2. %: Instrument gives the percentage of absorbance of each and every well(A/A0*100).

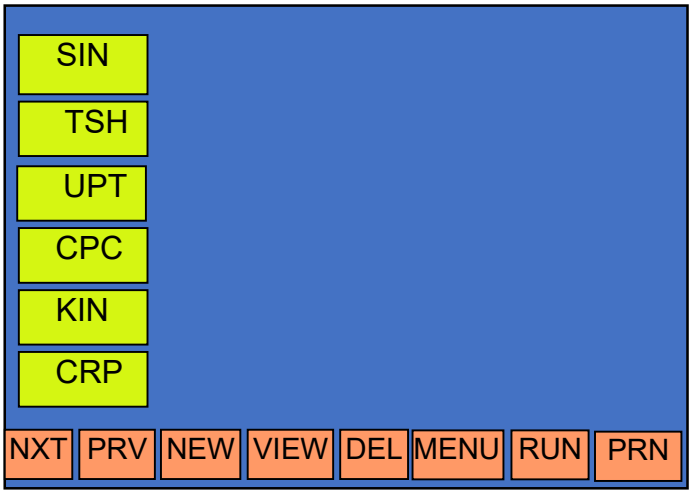


# 9. RECALLING AND RUNNING OF STORED TEST/PROGRAMS

The entire saved tests are available on the List Test or on the first screen after initialization. User can directly RUN the test by selecting TEST present on the screen.

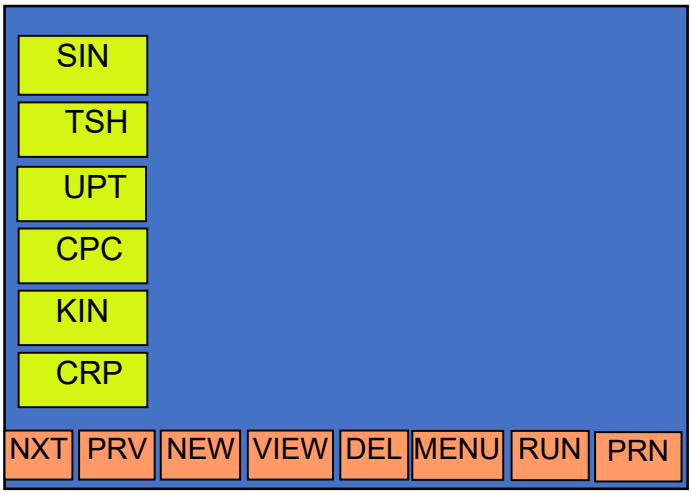



After selection of Tests VIEW, DEL & RUN buttons are enable



## 9.1. Absorbance Mode:

Select the test and point to RUN option




On selecting RUN option, it will display following screen.

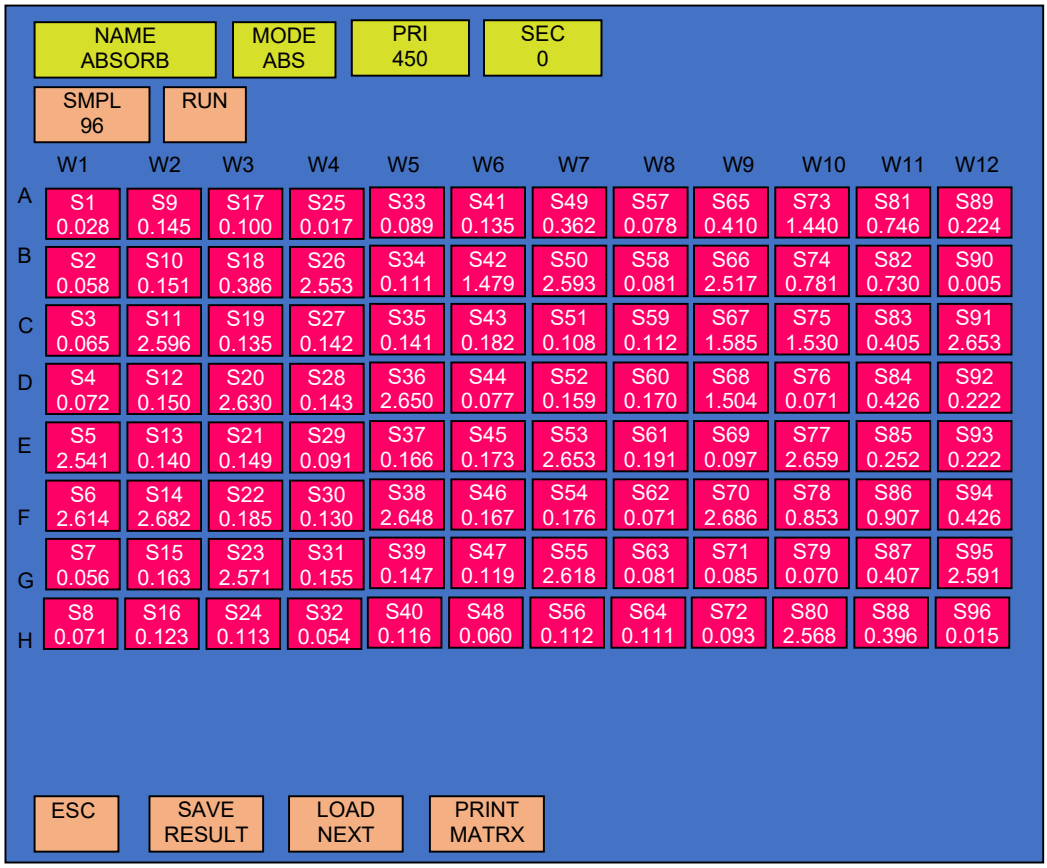
Again select run option present in run screen.

The instrument will ask “Plate Insert ? YES / NO”, select ‘Yes’. Instrument will read the absorbance using mechanical plate movement.

while reading the absorbance it will display the message “Wait for processing optical data….”.

After completion of reading it will ask: **"**Plate Remove? YES / NO". Remove the plate and Select 'YES'**.**

Details of absorbance of all wells for each strip will be displayed on the screen as shown in below




In this operation if you keep BLANK YES.

The first well of first strip will be considered as blank and instrument will give the absorbance 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..

“SAVE RESULT” is used to save the result.

“LOAD NEXT” is used to load the Next Plate in order to get the absorbance of next plate

**Example Print-out of ABSORBANCE test obtained from micro read 1000**

After running the plate in Absorbance mode, user can take the print of the result in the form of print matrix which will be printed as follows –

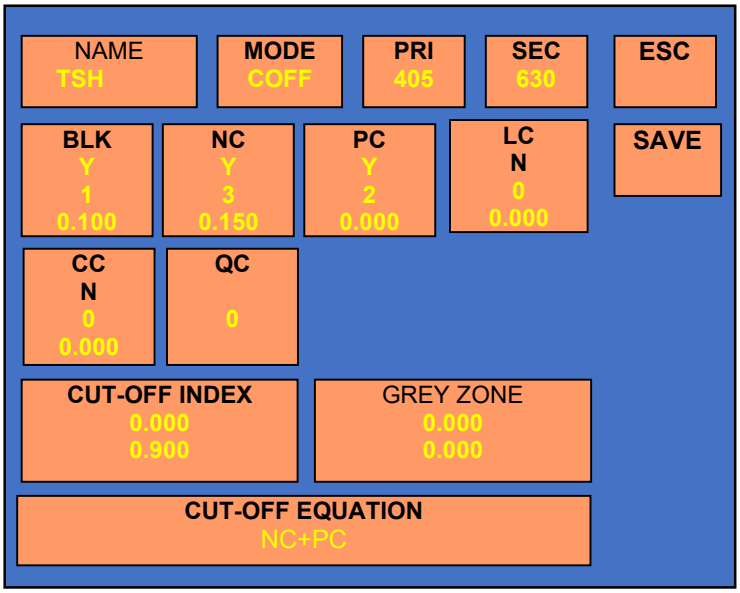
ABS, 21/07/08 11:47:34

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| A | | | | | | | | | |
| W1 | W2 | W3 | W4 | W5 | W6 | W7 | W8 | W9 | W10 |
| 0.028 | 0.145 | 0.100 | 0.017 | 0.089 | 0.135 | 0.362 | 0.078 | 0.410 | 1.44 |
| B | | | | | | | | | |
| W1 | W2 | W3 | W4 | W5 | W6 | W7 | W8 | W9 | W10 |
| 0.058 | 0.151 | 0.386 | 2.553 | 0.111 | 1.479 | 2.593 | 0.081 | 2.517 | 0.78 |
| C | | | | | | | | | |
| W1 | W2 | W3 | W4 | W5 | W6 | W7 | W8 | W9 | W10 |
| 0.065 | 2.596 | 0.135 | 0.142 | 0.141 | 0.182 | 0.108 | 0.112 | 1.585 | 1.53 |
| D | | | | | | | | | |
| W1 | W2 | W3 | W4 | W5 | W6 | W7 | W8 | W9 | W10 |
| 0.072 | 0.150 | 2.630 | 0.143 | 2.650 | 0.077 | 0.159 | 0.170 | 1.504 | 0.07 |
| E | | | | | | | | | |
| W1 | W2 | W3 | W4 | W5 | W6 | W7 | W8 | W9 | W10 |
| 2.541 | 0.140 | 0.149 | 0.091 | 0.166 | 0.173 | 2.653 | 0.191 | 0.097 | 2.65 |
| F | | | | | | | | | |
| W1 | W2 | W3 | W4 | W5 | W6 | W7 | W8 | W9 | W10 |
| 2.614 | 2.682 | 0.185 | 0.130 | 2.648 | 0.167 | 0.176 | 0.071 | 2.686 | 0.85 |
| G | | | | | | | | | |
| W1 | W2 | W3 | W4 | W5 | W6 | W7 | W8 | W9 | W10 |

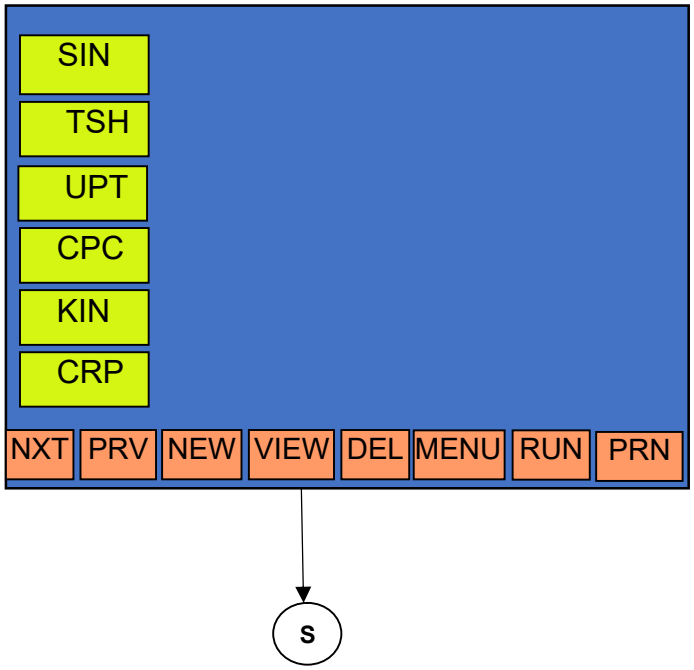
## 9.2. Cut off Mode

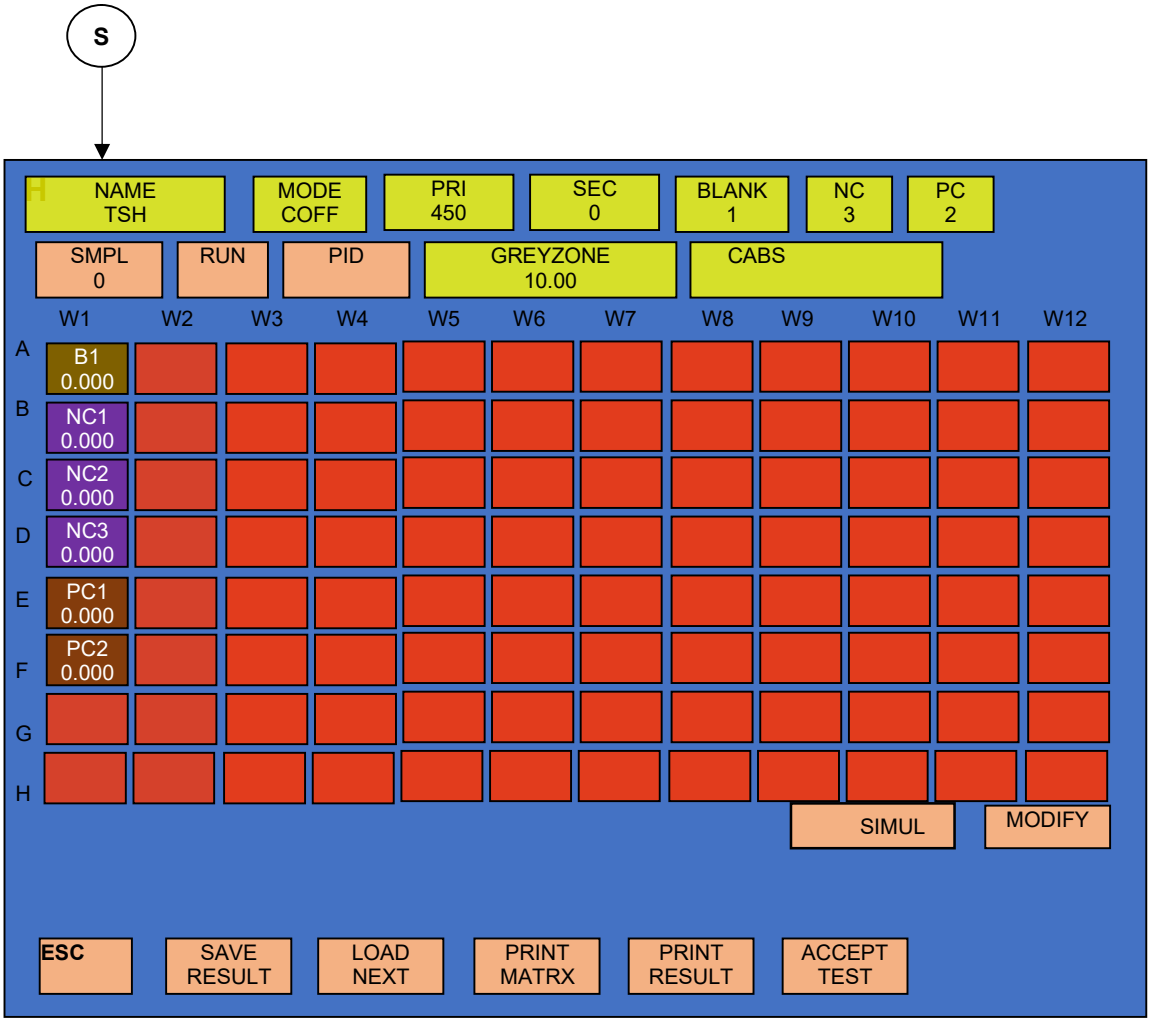
User can be recalling the saved test in Cut-Off mode by selecting view, it will display following screen.

User can take the print of the test parameters by selecting “PRN” option present on the screen. It will print all the details of the test parameters along with QC equations.

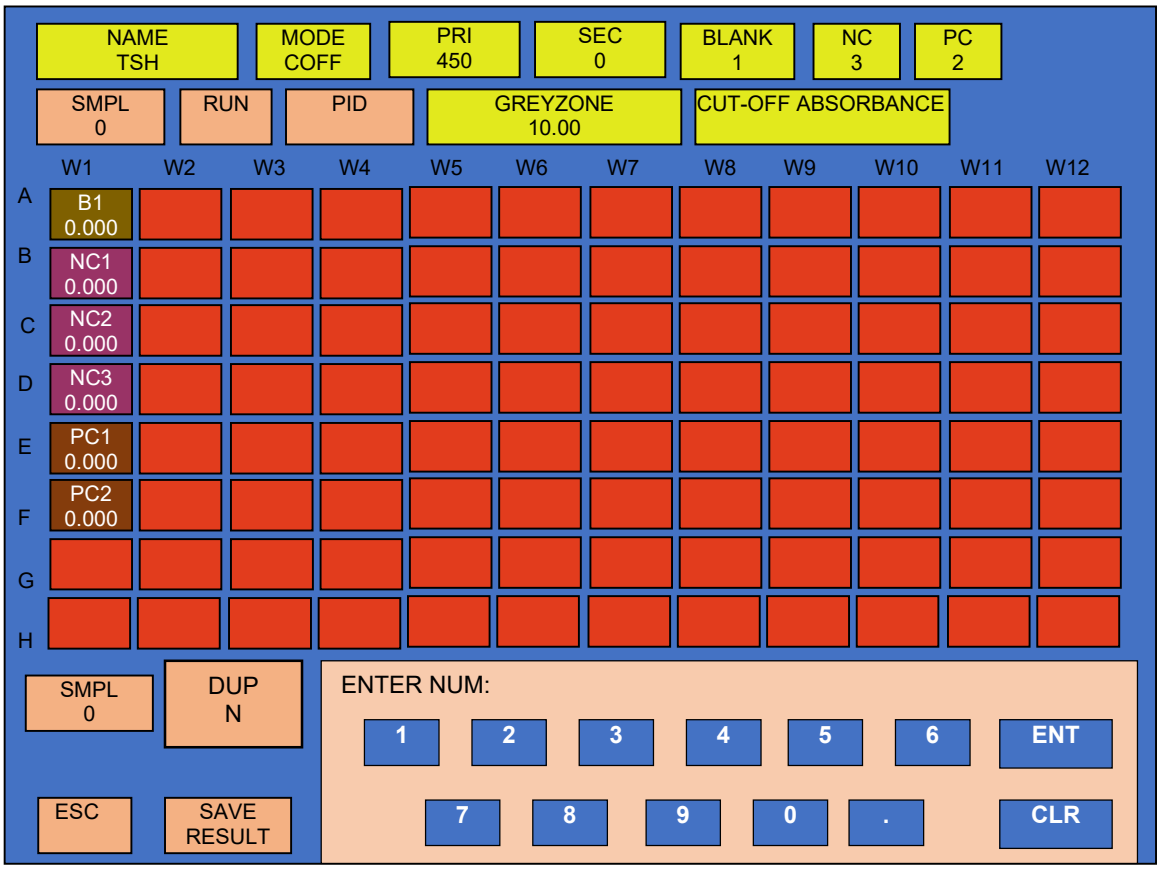



**A) For running the test in CUTOFF mode select the particular test and point to RUN option present on the “List Test” screen.**

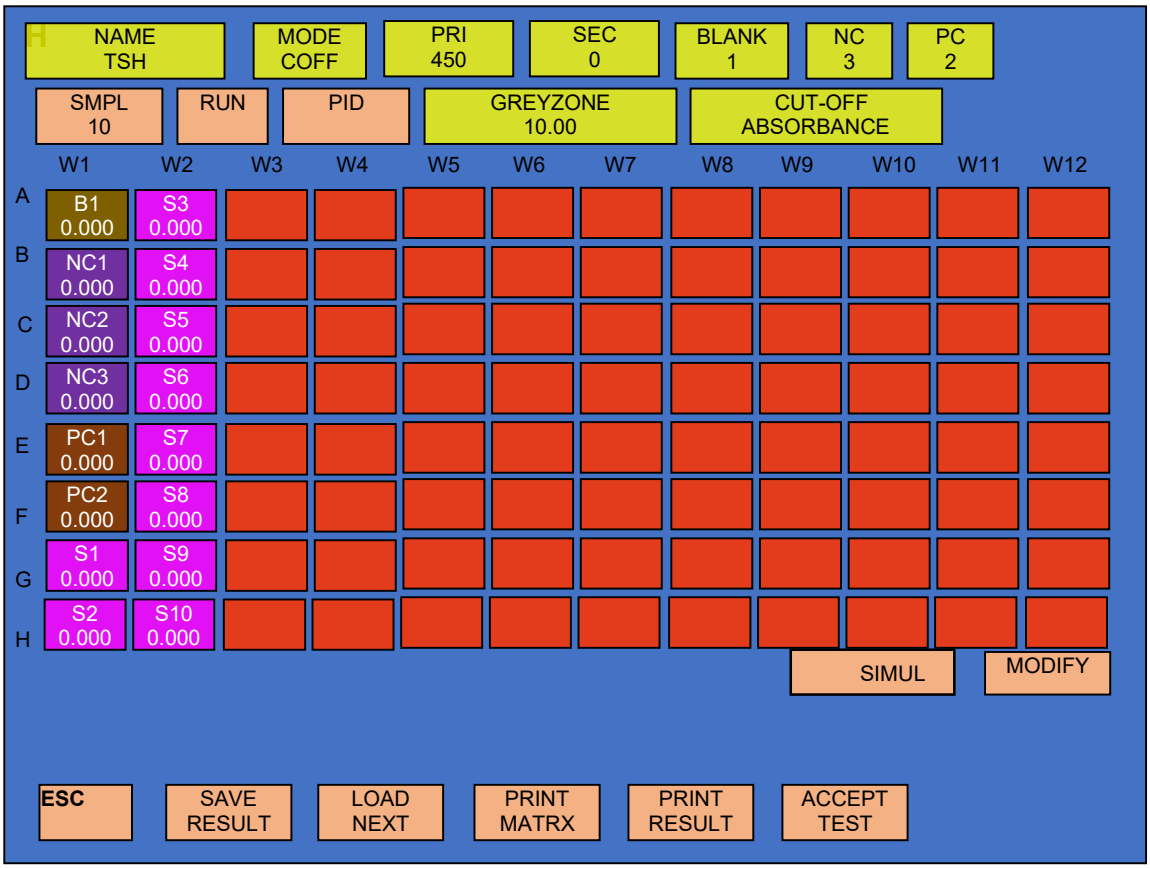



S
NAME
TSH
MODE
COFF
PRI
450
SEC
0
BLANK
1
NC
3
PC
2
SMPL
0
RUN
PID
GREYZONE
10.00
CABS
W1
W2
W3
W4
W5
W6
W7
W8
W9
W10
W11
W12
A
B
C
D
E
F
G
H
B1
0.000
NC1
0.000
NC2
0.000
NC3
0.000
PC1
0.000
PC2
0.000
SIMUL
MODIFY
ESC
SAVE
RESULT
LOAD
NEXT
PRINT
MATRX
PRINT
RESULT
ACCEPT
TEST

**B) It shows the 8 strips vertical with 12 wells Horizontal with blanks and controls loaded in first strip. Select the 'SMPL and enter the total Number of samples you want to load with the help of numeric screen displayed at the bottom of the screen.**

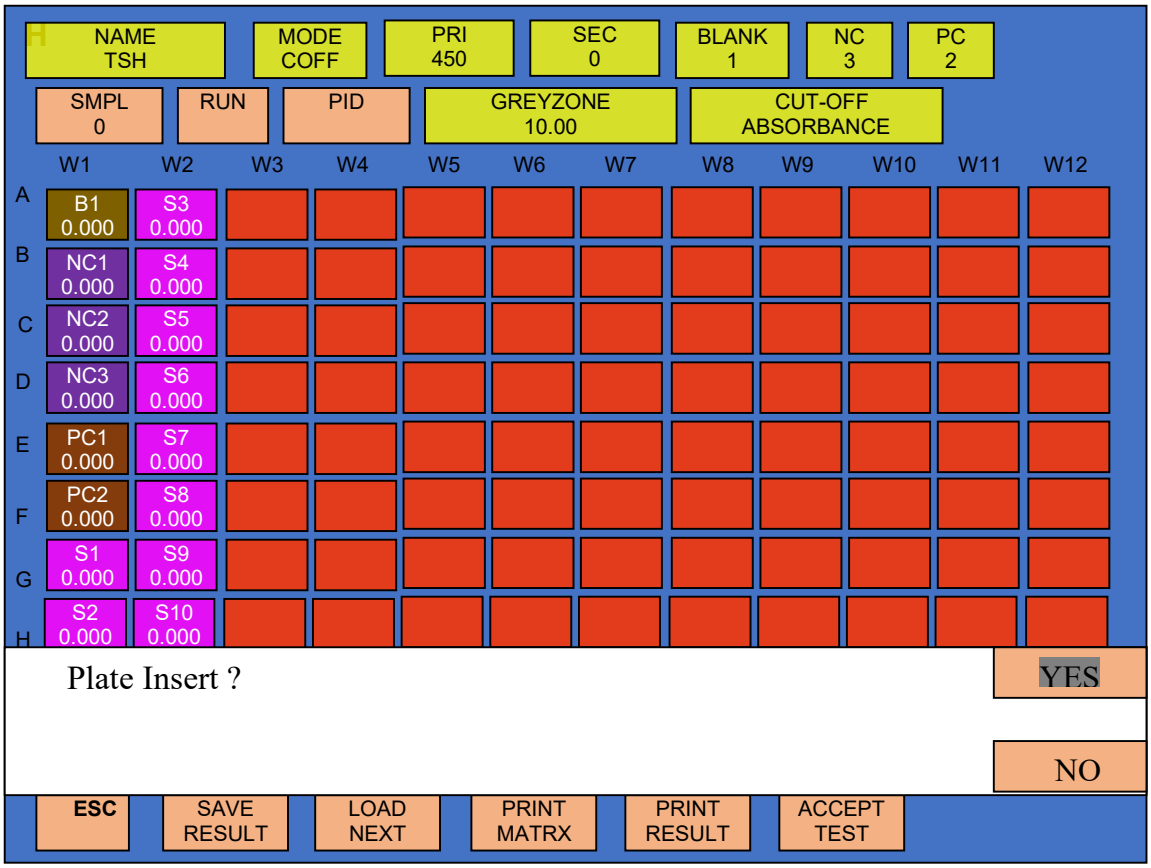


After entering number of sample the run screen will be display in the below

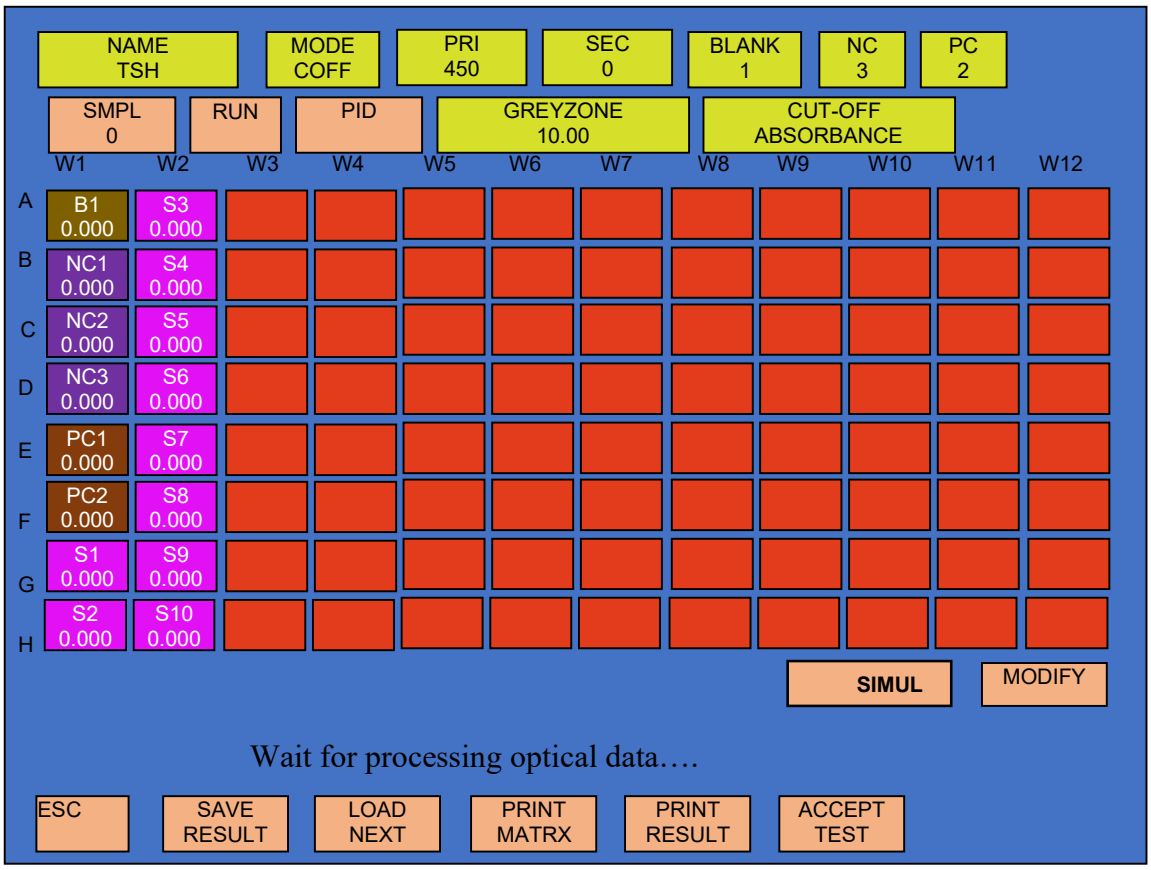


**C) After entering No. of samples, select RUN. The plate-loading tray will come out and the following message will appear: "Plate Insert? YES / NO"**

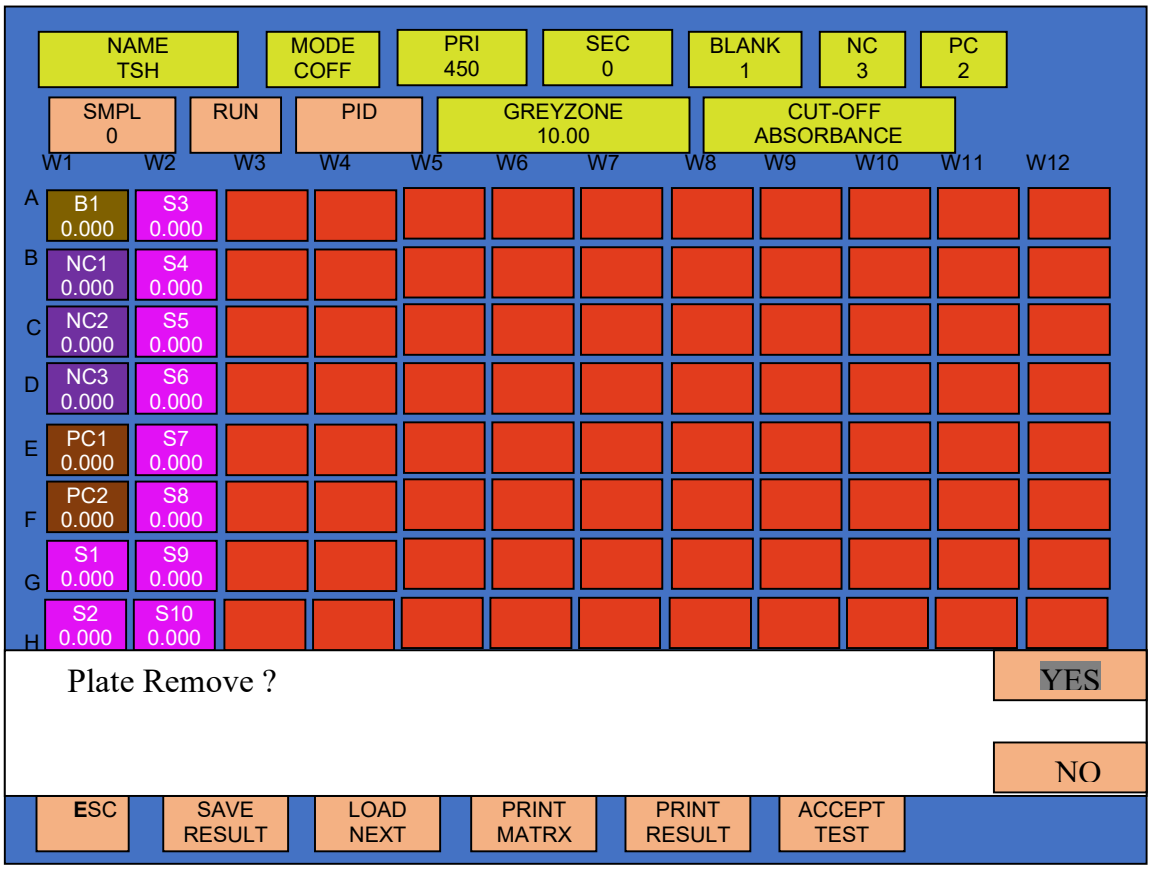
**D) Here the plate is loaded in the direction that controls should go in first. Select "YES".**



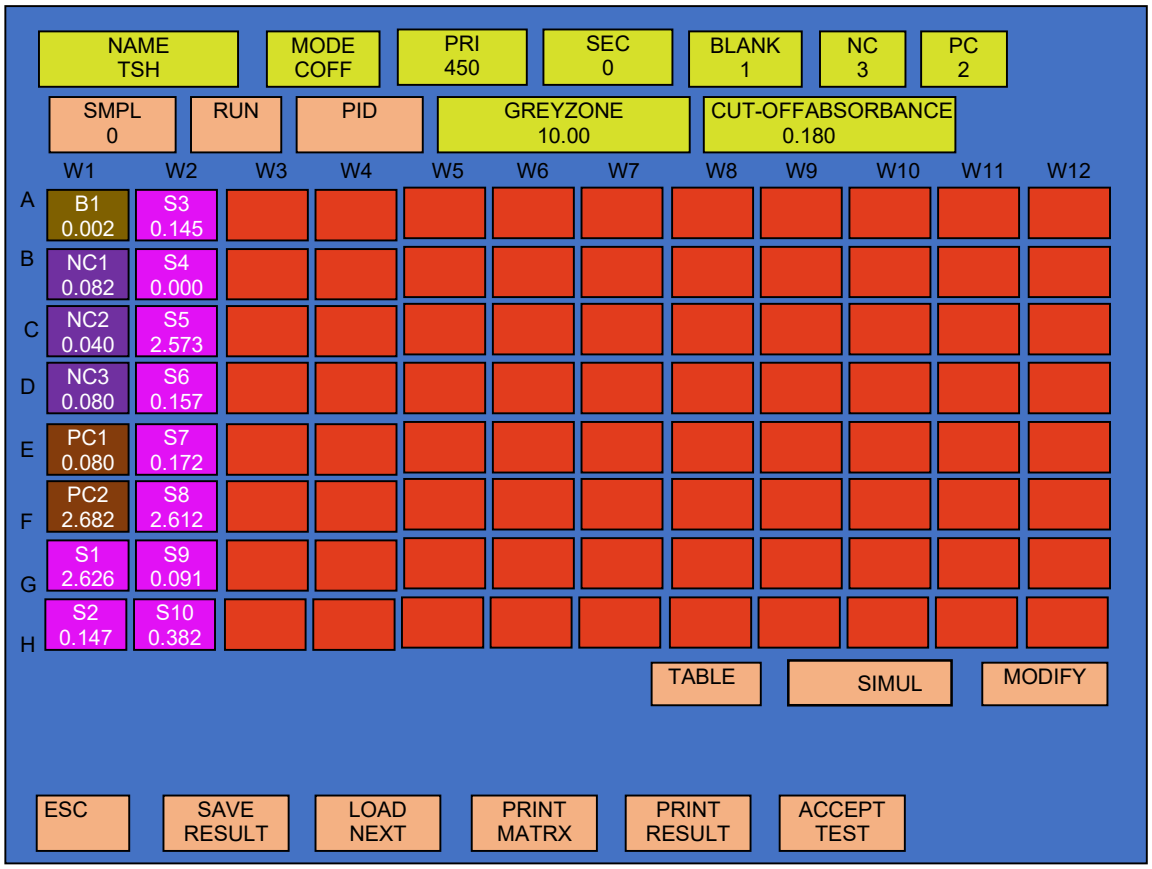
**The instrument will read the controls and samples while displaying the message "Wait for processing optical data…".**



**Following message appears: “Plate Remove? YES / NO” after optical data processing completed. Remove the plate and select YES.**



**E) After selecting YES, result screen will appear with the measured values of blank, Controls and the cut off absorbance.**



**G)** By selecting 'ACCEPT TEST' option you can save this test with the details of controls absorbance. Next time it is possible to run the same test without loading controls. This means that the previous stored values of controls can be used.

All the details are in table format, as per row and column shown on the screen. You can obtain the print of the same format by selecting option 'PRINT RESULT'.

You can obtain the print in matrix format, by selecting option 'PRINT MATRX'.

In matrix form you will get the print as per your tray/plate for all the wells. Instrument prints seven different parameters 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 |

## Example Print-out of POS-CUTOFF test obtained from micro read 1000

TSH, 21/07/08,16:03:08 Cutabs=0.0793

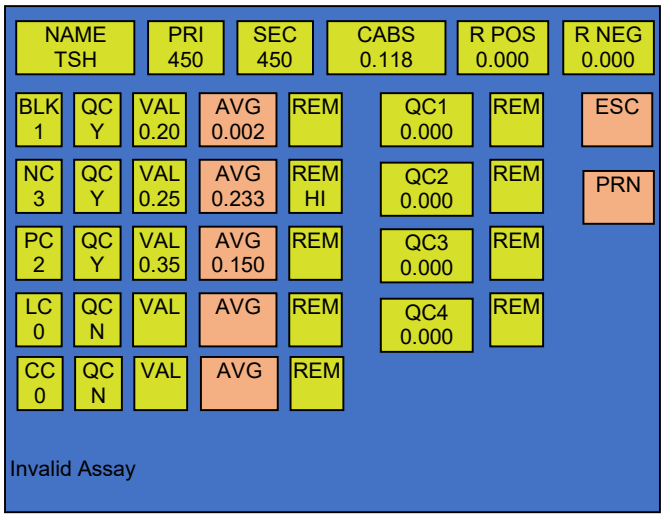
Range:- POS>0.087, NEG<0.071

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 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 |

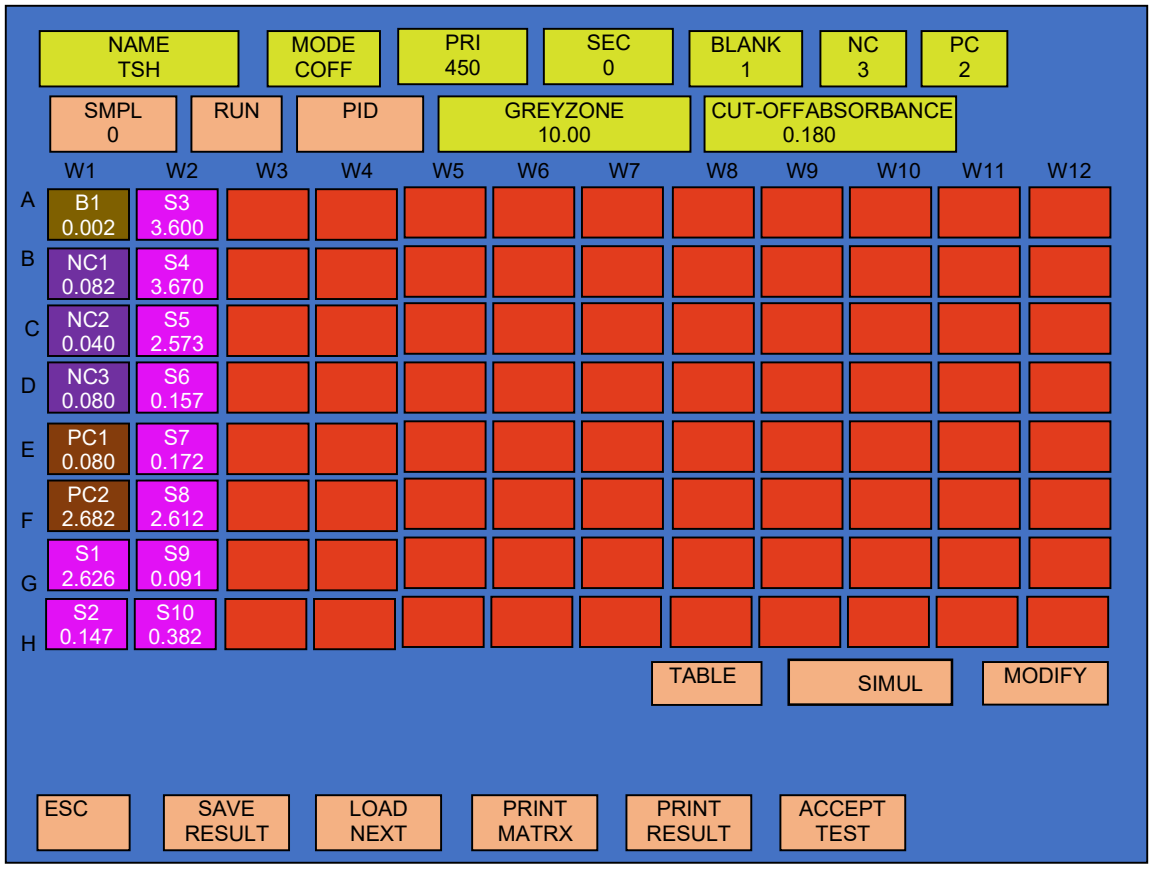
## 9.2. A. Invalid Assay in Cut Off Mode:

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

If "QC" is selected, then first screen is display after running the test is shown in below



If “QC” is not selected



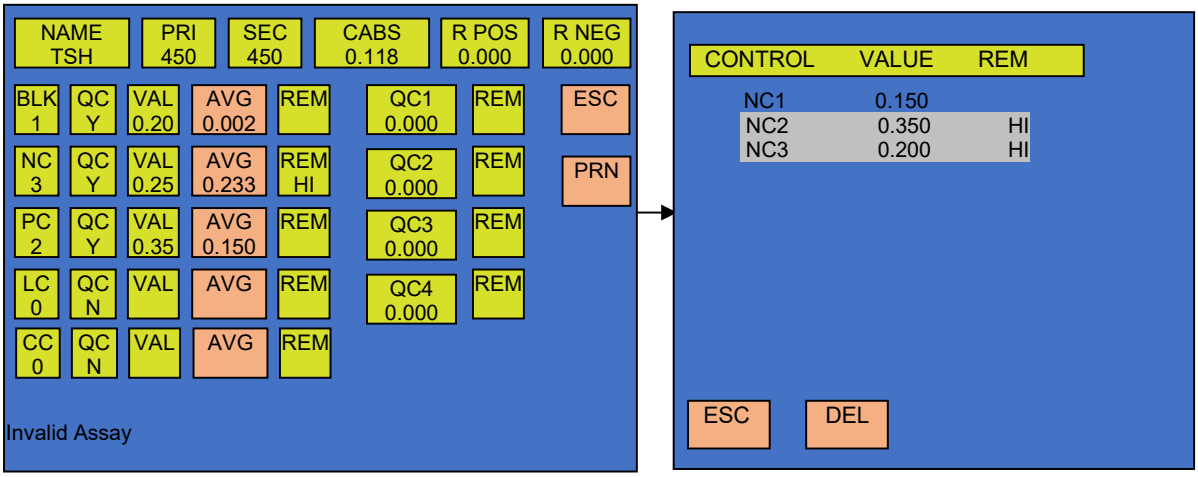

(NOTE: The absorbance of controls should not go above 3.50. If it is > than 3.50, it will show the remark ‘HI’ for that control. In such a case edit the control absorbance.)

**In such case, delete an individual control, so that the average of remaining controls will satisfy the QC condition of that control as per reagent manual.**

**To select any control for deleting, you must select the touch zone as shown in the below screen.**

**When you select any particular control for deleting (suppose you have selected Negative Control (NC), 'AVG' appear on the screen.**

**"Select DEL key to proceed". To delete the control, select 'DEL'. After deleting that control, the absorbance of that control will become zero and the average of controls will also get changed. Select 'ESC' option to come back to the QC Result screen.**




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

***NOTE**:

Make the blank absorbance valid in case the absorbance doesn't meet the QC conditions.

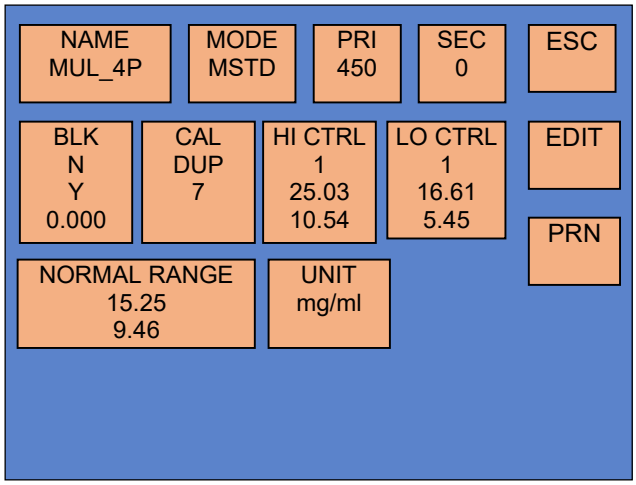
If necessary valid the control absorbance because the absorbance of the blank affect the absorbance of all controls and samples.

It is recommended that, for a test with single blank and single control, if absorbance doesn't satisfy QC conditions or if all controls of any single type (means all NC controls or all PC controls) doesn't meet the QC, the test will become totally invalid. It is not possible to make the VALID TEST and new controls have to be loaded.

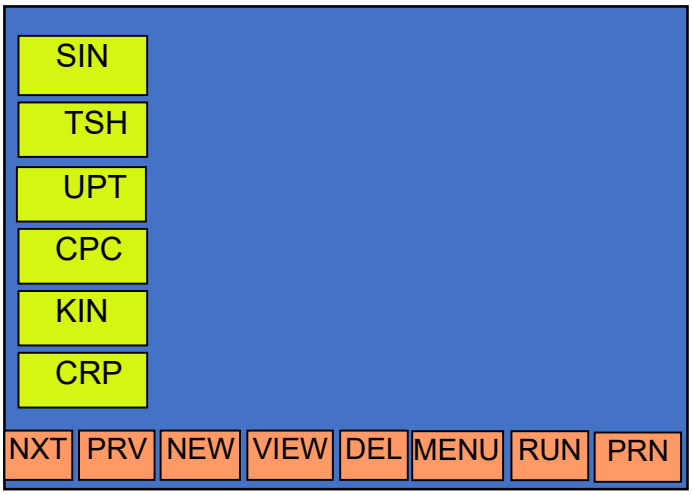
### 9.3. Multistandard:

Select the multistandard mode test from the Test List screen.

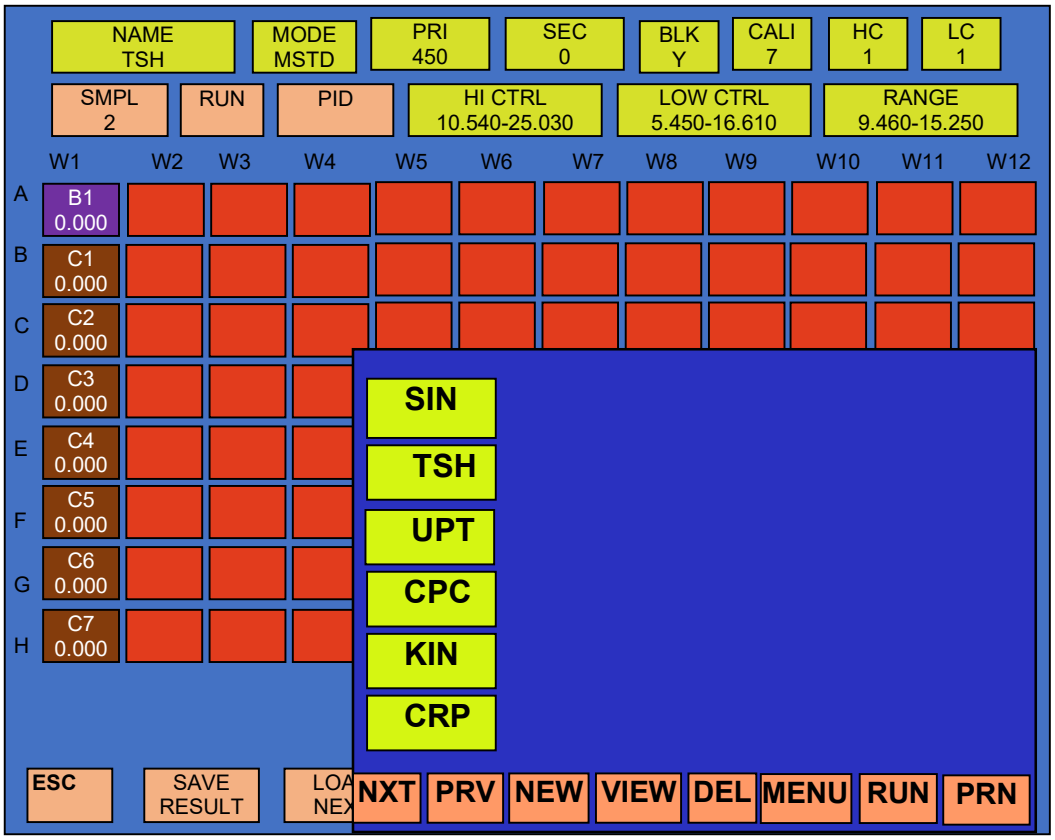
**Multi Standard Mode**



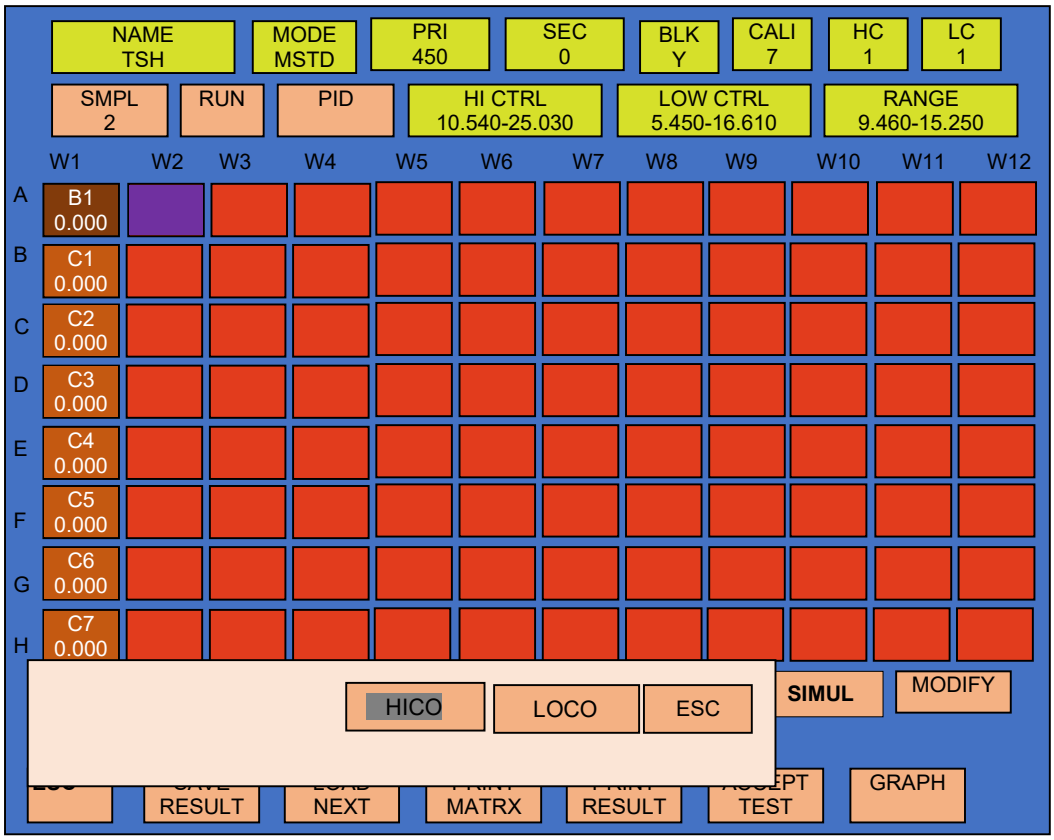

**A) For running the test in MSTD mode select the particular test and point to RUN option present on the Test list screen.**



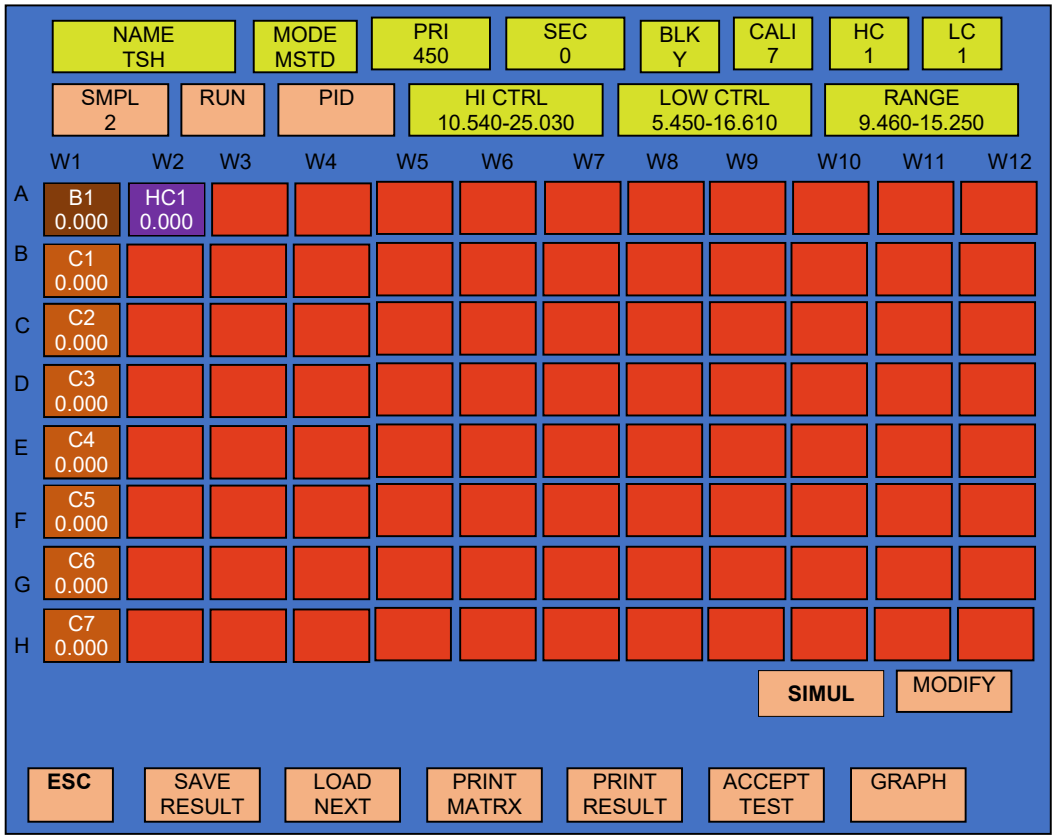
**On selecting RUN option it will display following screen.**



Select the empty well where you have to locate high control (HC1) and then select “HICO” which shown in following screen.

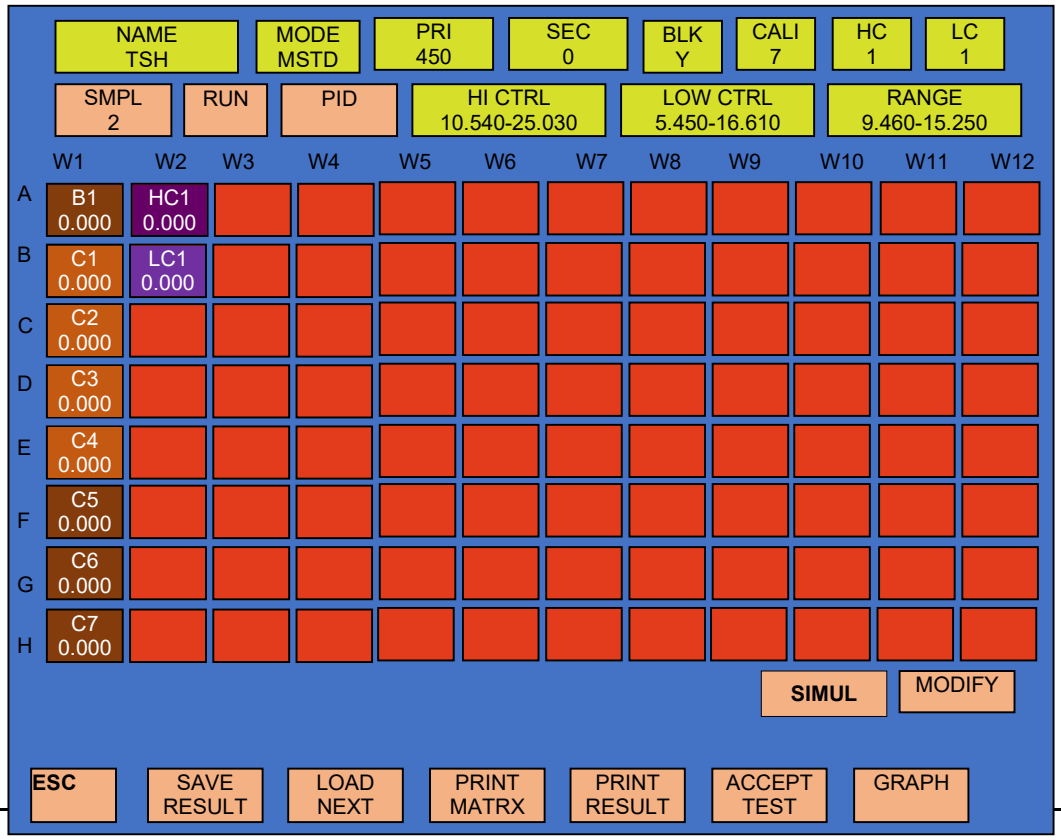


After loading high control, screen is display below.

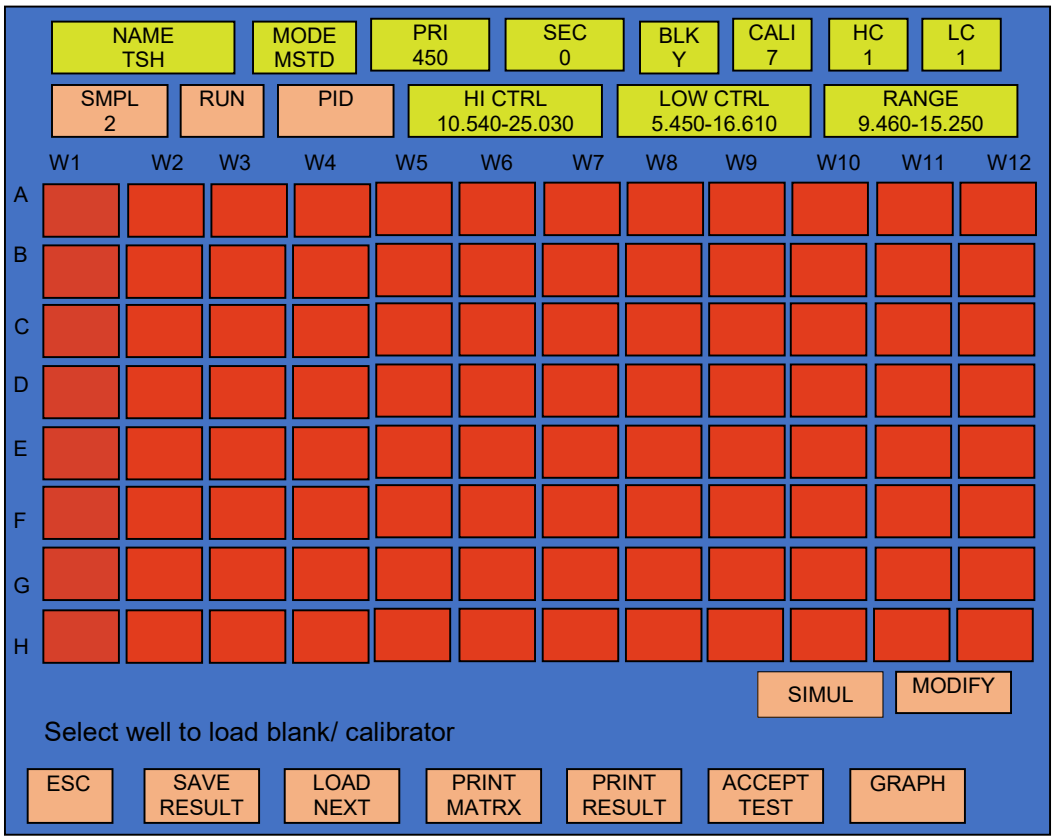



**Similarly, you can enter No. of LO Controls and locate its positions.**

User can change the position of blank, calibrator & controls(High/low) with help of "MODIFY" Which shown in following fig

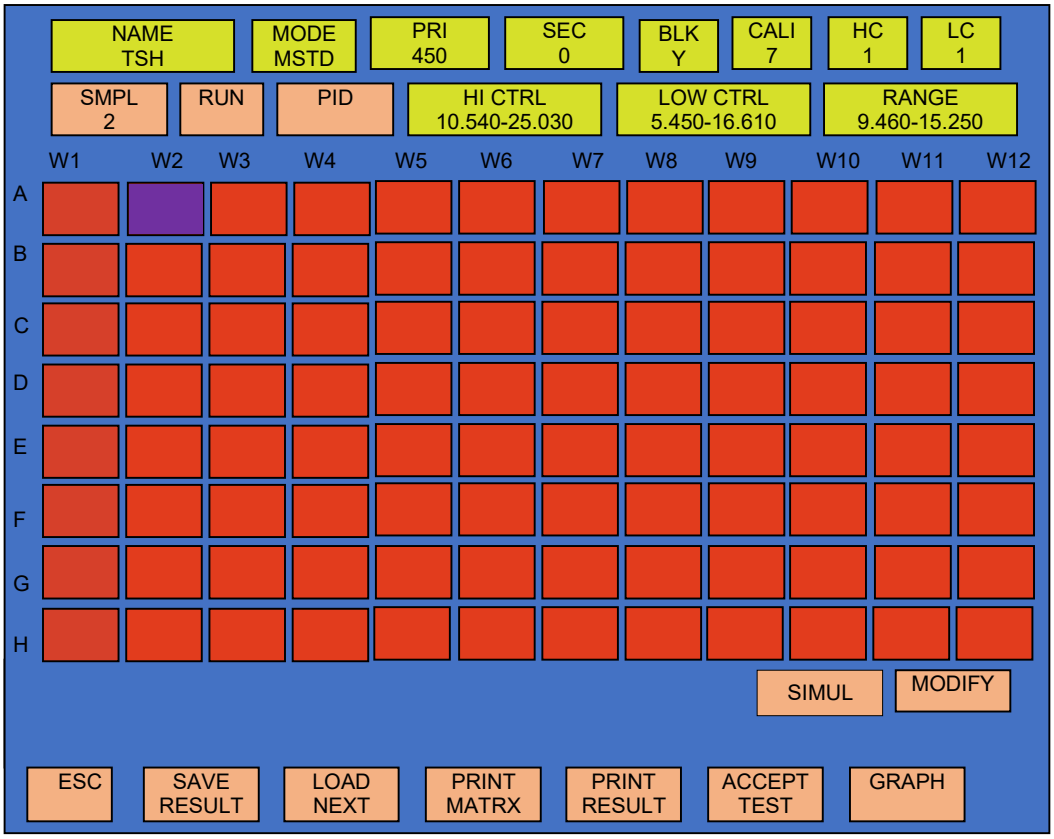


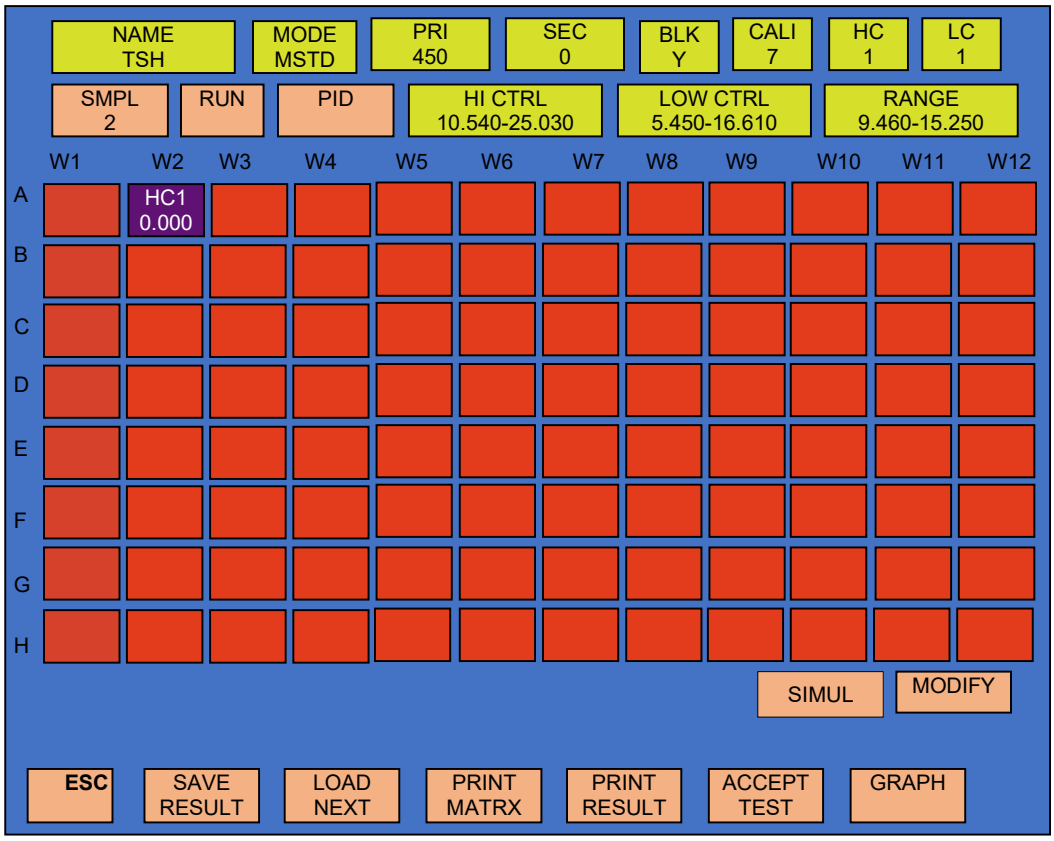
After selecting “MODIFY”, pop up message is display i.e. “Select Well to load blank/ Calibrator” Which shown in following fig



After pop up message, select the well where you want to load the blank or calibrator or controls

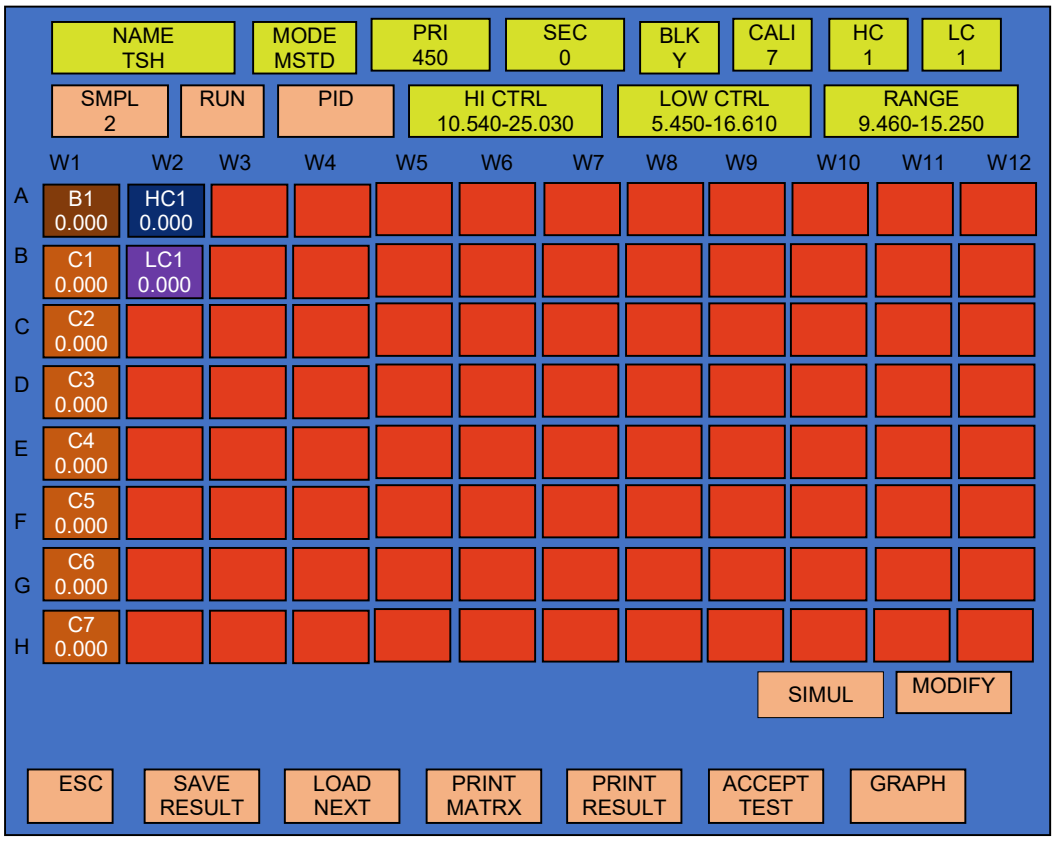
**For e.g. Suppose you select column 2 & row A for HI control will be display on screen as shown below.**



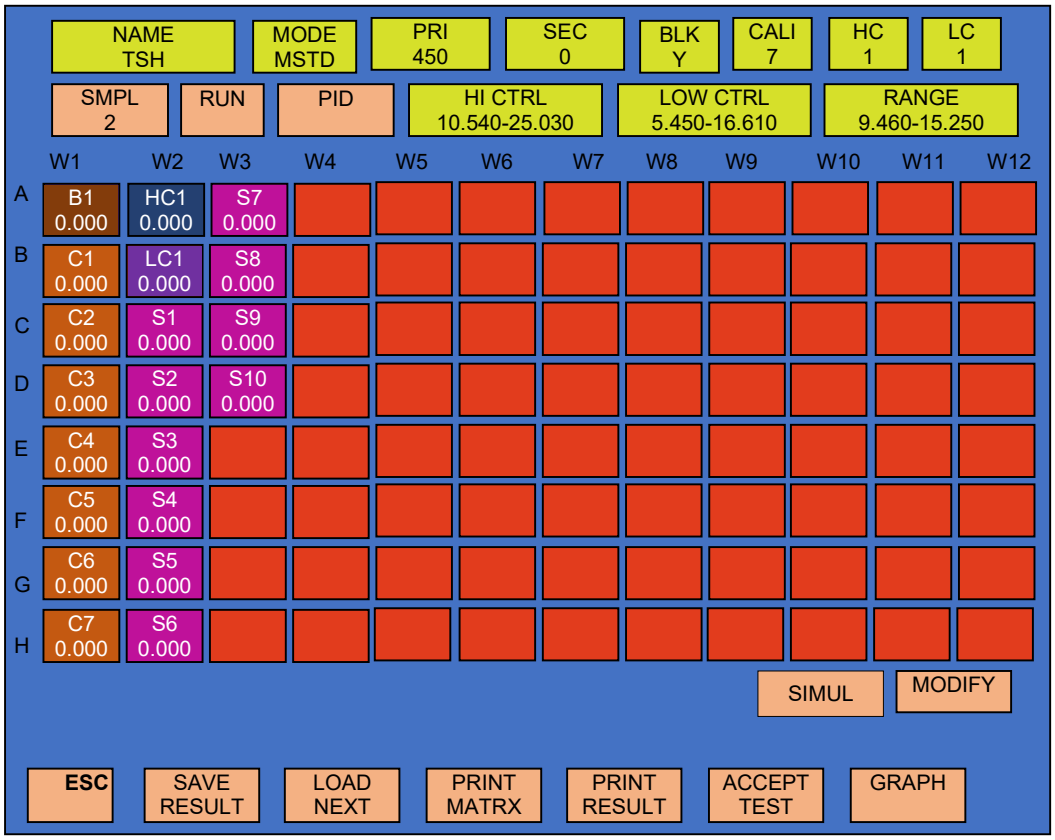



Repeat the above step to load remaining calibrators, control and blank.

After loading blank, calibrators & low controls screen will be display shown in below.



**E) Select "SMPL" you want to run. In case of 10 samples, it will load 10 samples as follows -**

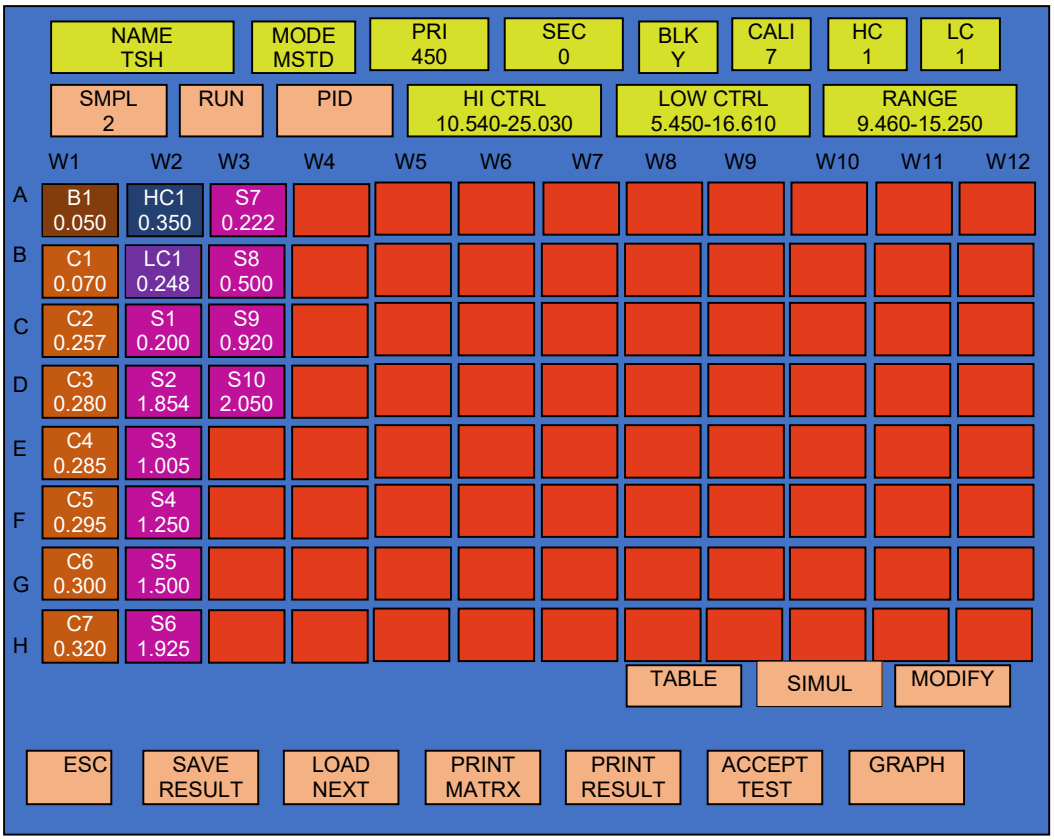


**F) Now Select RUN option so that readings can be taken in MULTI STANDARD mode.**

The plate holder will come out and will display the message string- “Plate Insert? YES / NO”. The plate has to be loaded in such a way that the direction of the calibrators should go in first and then select ‘YES’.

The instrument will read the absorbance of calibrators and samples by displaying the message string “wait for processing optical data…”. And finally display the string-

“Plate Remove? YES / NO”. Remove the plate and select ‘YES'. The plate holder will go inside and following screen will be flashed on the display.



All the details as per row and column are shown on the screen. The printout of the same format can be obtained by selecting 'PRINT RESULTS'.

You can get the print in matrix format, by selecting 'PRINT MATRX'.

In matrix form you will get the print as per your plate for all the wells. Instrument will print seven different parameters 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, |

**Remember that Negative sign result is interpreted as 0.001 both in printout as well as on screen.**

**Example Print-out of MultiStandard test obtaine**

**d from micro read 1000**

MULTI-S

Test Name :- MUL

Pri:450 Sec:000

BL N DUP N

CAL 05 DUP N

UNIT:ug/ml

HI CO:High >N Low

LO CO:High >N Low

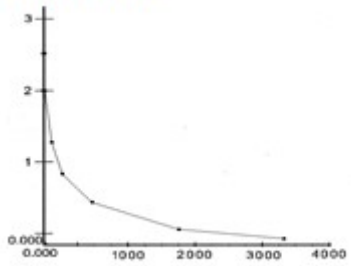
Range:High >6.000 Low

Graph: PT TO PT

Y vs X: ABS VS CON

| No | Con | Abs |
|---|---|---|
| 01 | 10.000 | 0.079 |
| 02 | 17.000 | 0.084 |

X=0.625, Y=0.126




MUL. 29/12/19, 12:59:52,

Range :- HI > 6.000, LO < 4.000

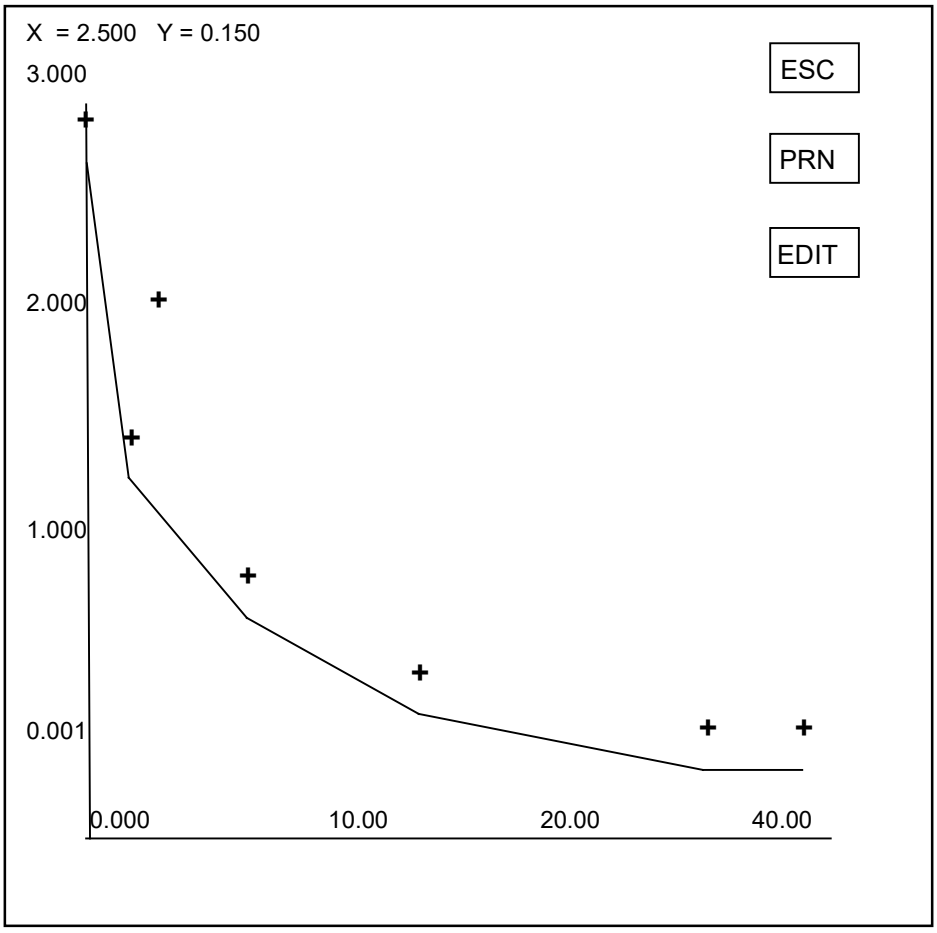
A

| W1 | W2 | W3 | W4 | W5 | W6 | W7 | W8 | W9 | W10 | W11 | W12 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C1 | S4 | S12 | S20 | S28 | S36 | S44 | S52 | S60 | S68 | S76 | S84 |
| | 4 | 12 | 20 | 28 | 36 | 44 | 52 | 60 | 68 | 76 | 84 |
| 1.259 | 1.218 | 0.748 | 1.499 | 1.324 | 1.885 | 1.629 | 1.284 | 2.331 | 1.566 | 4.199 | 2.536 |
| 00010 | 00013 | 00399 | -7.32 | 05.29 | -35.3 | -16.7 | 008.2 | -67.5 | -12.2 | -0283 | -82.3 |
| | ug/ml | ug/ml | ug/ml | ug/ml | ug/ml | ug/ml | ug/ml | ug/ml | ug/ml | ug/ml | ug/ml |
| | HI | HI | LO | EQU | LO | LO | HI | LO | LO | LO | LO |

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 |
| | 5 | 13 | 21 | 29 | 37 | 45 | 53 | 61 | 69 | 77 | 85 |
| 1.163 | 1.229 | 0.731 | 1.549 | 1.318 | 1.839 | 1.560 | 1.298 | 2.293 | 1.560 | 3.113 | 2.377 |
| 00017 | 012.2 | 00418 | -18.9 | 05.72 | -31.9 | -11.8 | 07.78 | -64.7 | -11.8 | -0124 | -78.8 |
| | ug/ml | ug/ml | ug/ml | ug/ml | ug/ml | ug/ml | ug/ml | ug/ml | ug/ml | ug/ml | ug/ml |
| | HI | HI | LO | EQU | LO | LO | HI | LO | LO | LO | LO |

**G) On selecting 'Graph:', it displays the Graph screen with all the details of X-axis and Y-axis. Select 'PRINT' option to obtain the print out.**

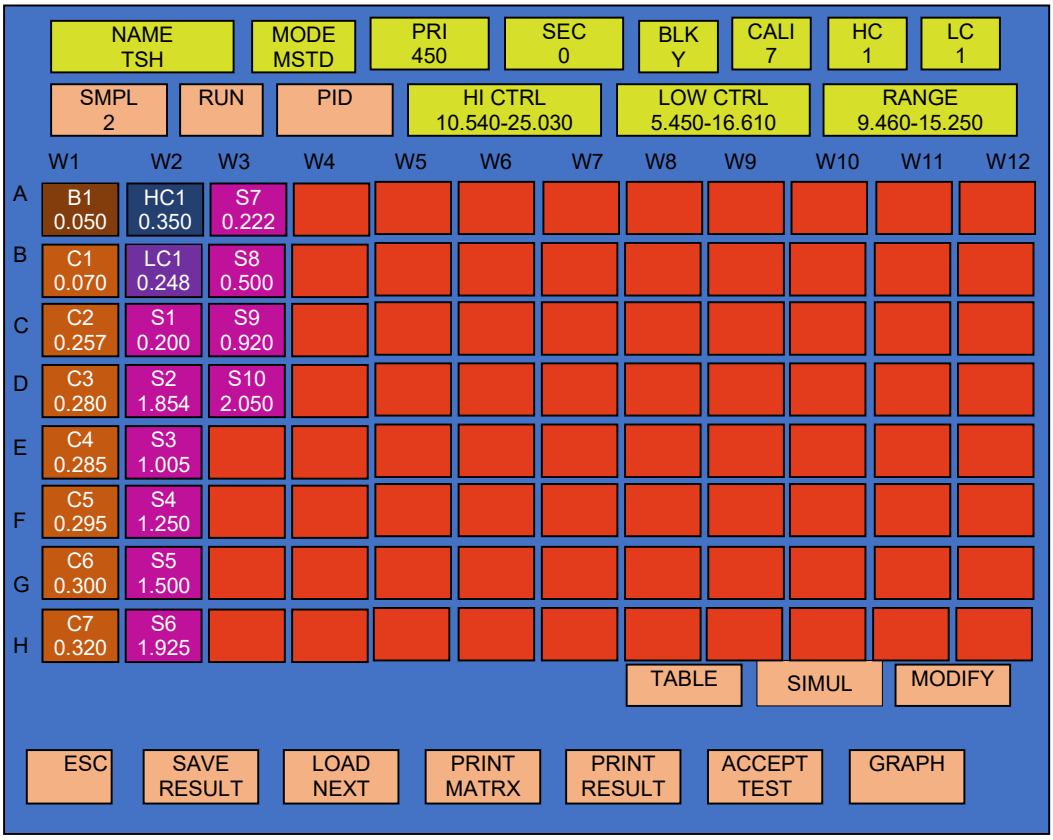



Select 'ACCEPT TEST' option to save this test with the details of calibrator absorbance. It is possible to run the same test without loading calibrators. The previous graph can be used for new samples.

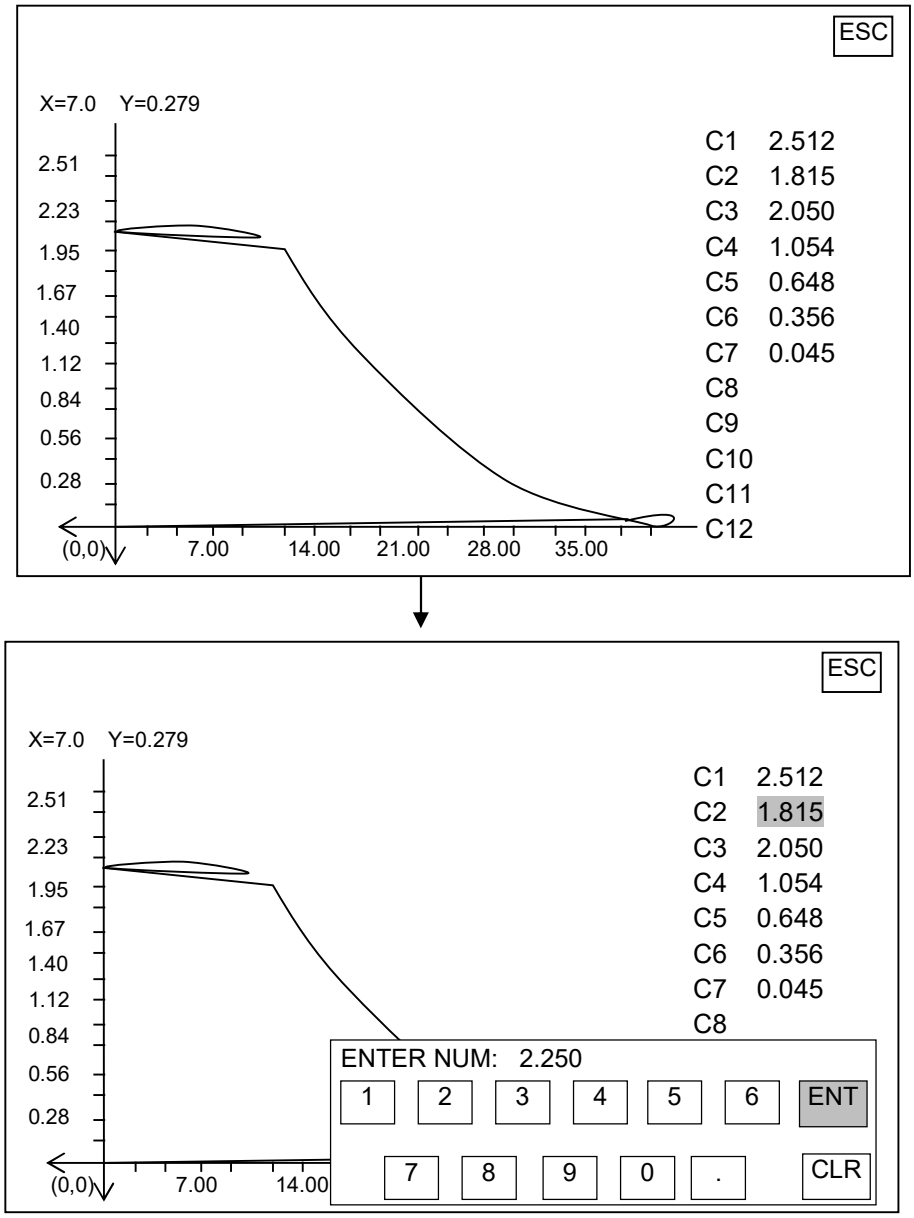
(*** NOTE:** If you do not want to run the calibrators each time, please select "ACCEPT TEST" option to save graph, whenever you run the test with calibrators.)

## 9.3.A. Invalid assay in Multi standard Mode

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




If Assay is Invalid then "ACCEPT TEST", "SAVE RESULTS", "PRINT MATRX", "SAVE RESULT" options are blocked. In such a case, select GRAPH option and change the ASSAY to VALID with the help of EDIT option present on the Graph screen.




You can easily select any particular calibrator by touching the particular touch zone and edit the absorbance of that. After editing the calibrator's absorbance select "ESC". Screen will be blink and then the modified graph will appear on the screen.

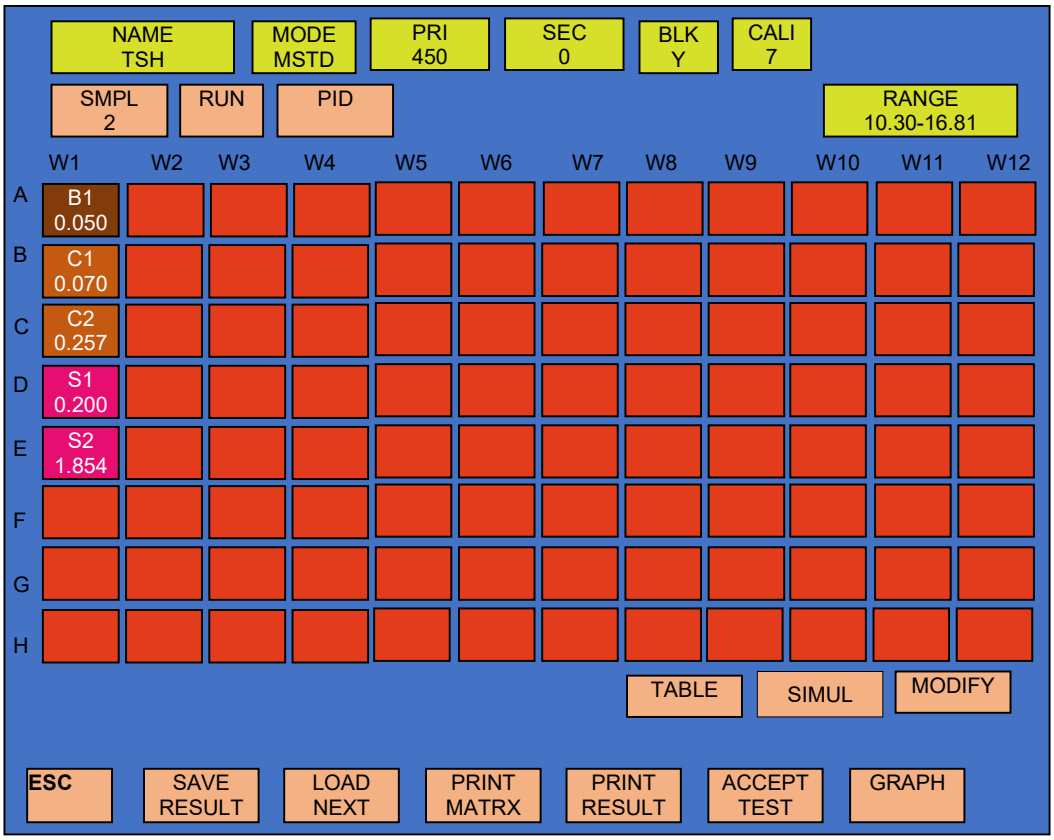
If calibrator's value being edited in Multistandard mode then "*Modified…" string is displayed in the print and in the run screen.

# 10. RERUNNING ACCEPTED TESTS / PROGRAMS

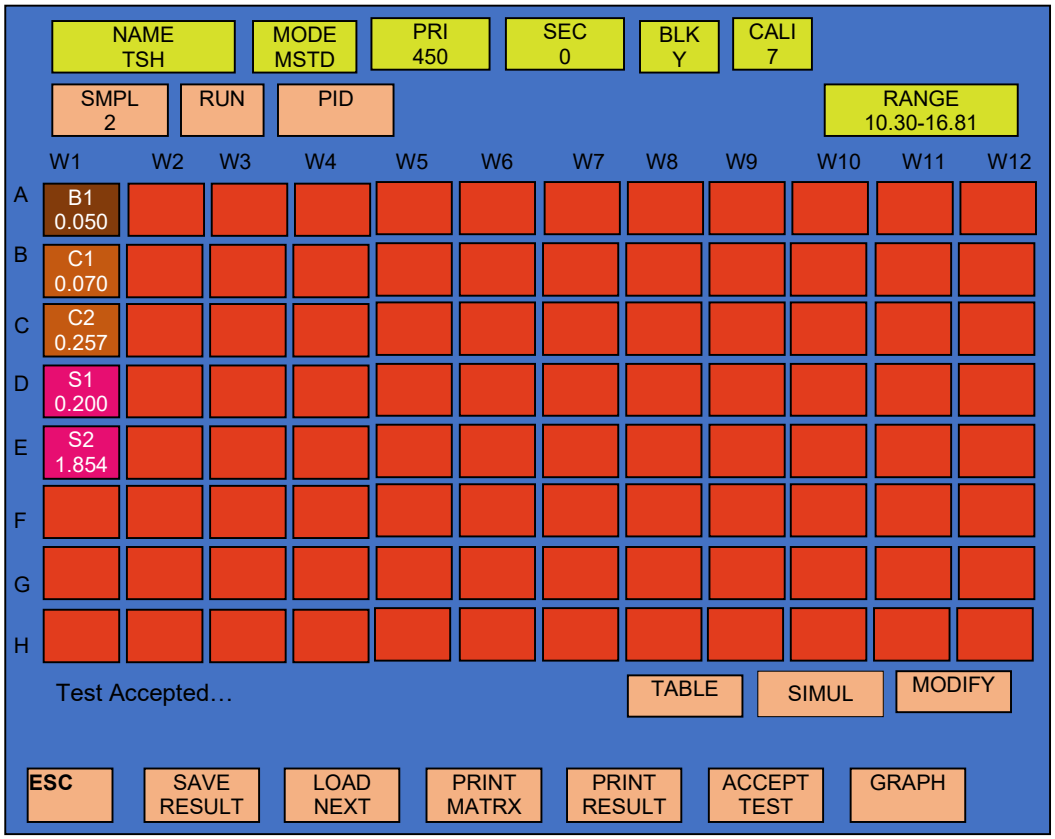
"ACCEPT TEST" option is used to store the data of controls or calibrators. After running any test first time with controls or calibrators, user can select the option "Accept Test" to save the data of controls or calibrators, so that next time when you want to load the same test, there is no need to load controls or calibrators in ELISA plate. You can use previously stored data. If user recall the test with saved parameters then "Using stored values" strings should appeared in the printout.

**A) In "Multi standard" Mode:**

After Run the test select Accept test option present on run screen.



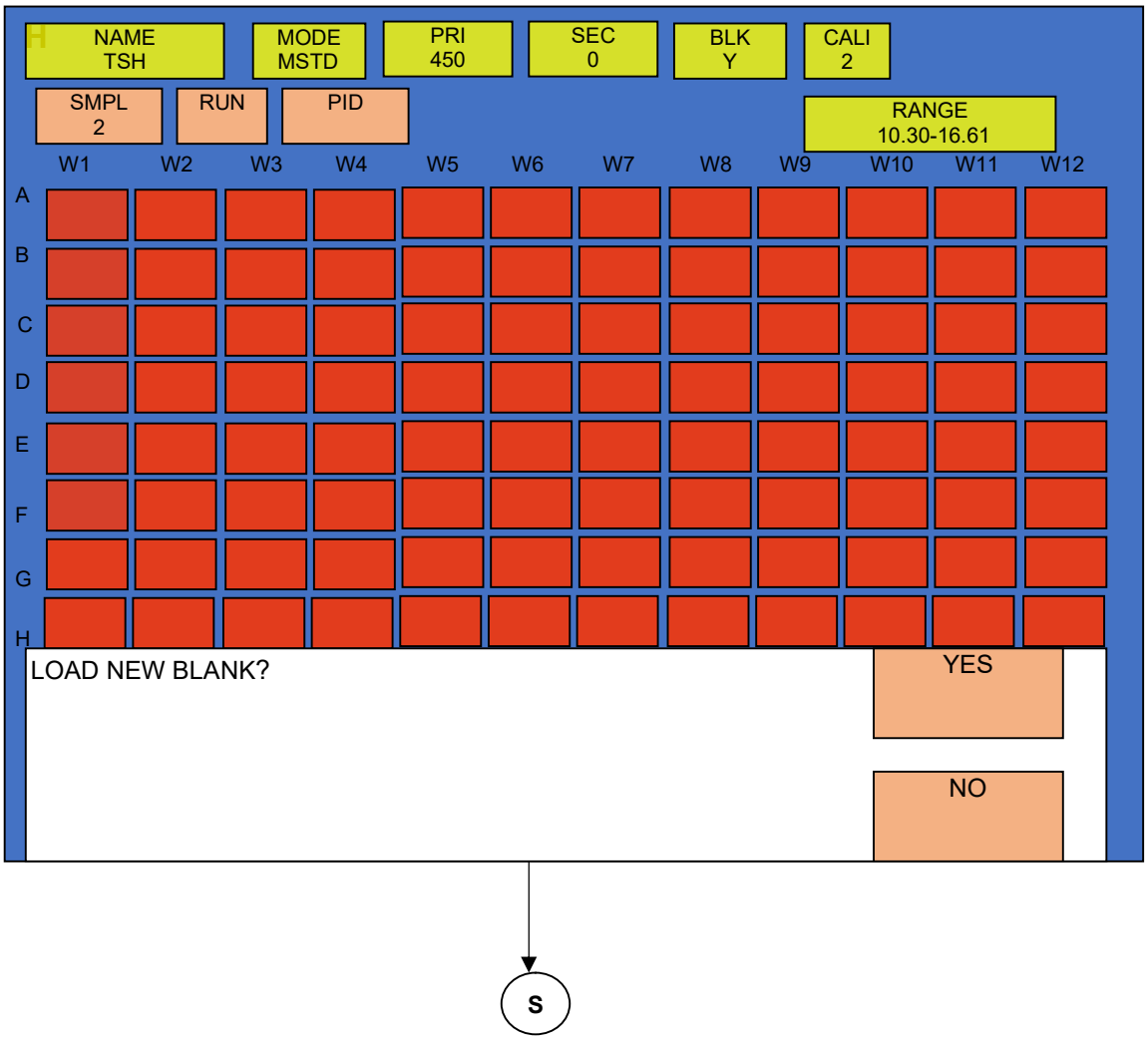
After selecting Accept test option, it will display message i.e. “Test Accepted” .

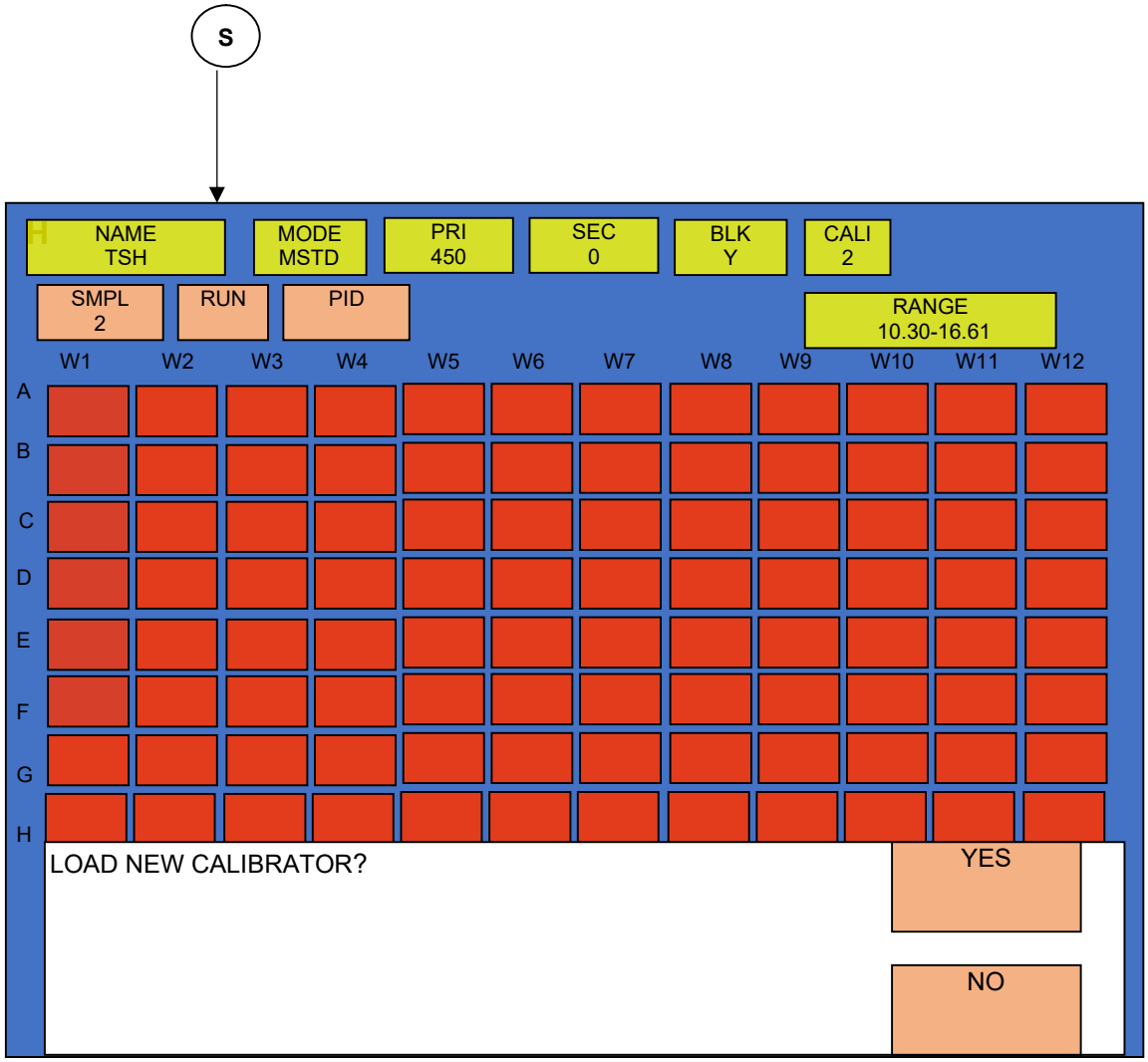


**B) In Multi Standard / Single Standard / % Absorbance / Uptake/Ratio Mode:**

When you want to run such an accepted test, select that particular test for instant 'MULTISTANDARD' mode and point to 'RUN' option present on the Test screen.

following screen display.

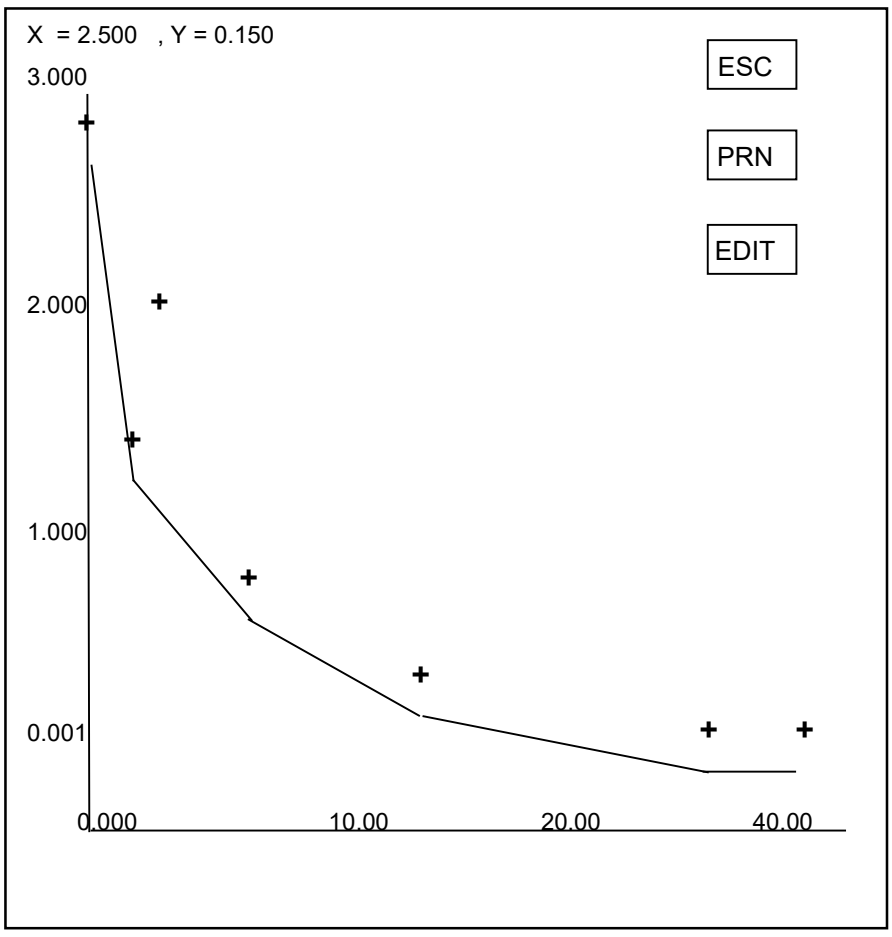




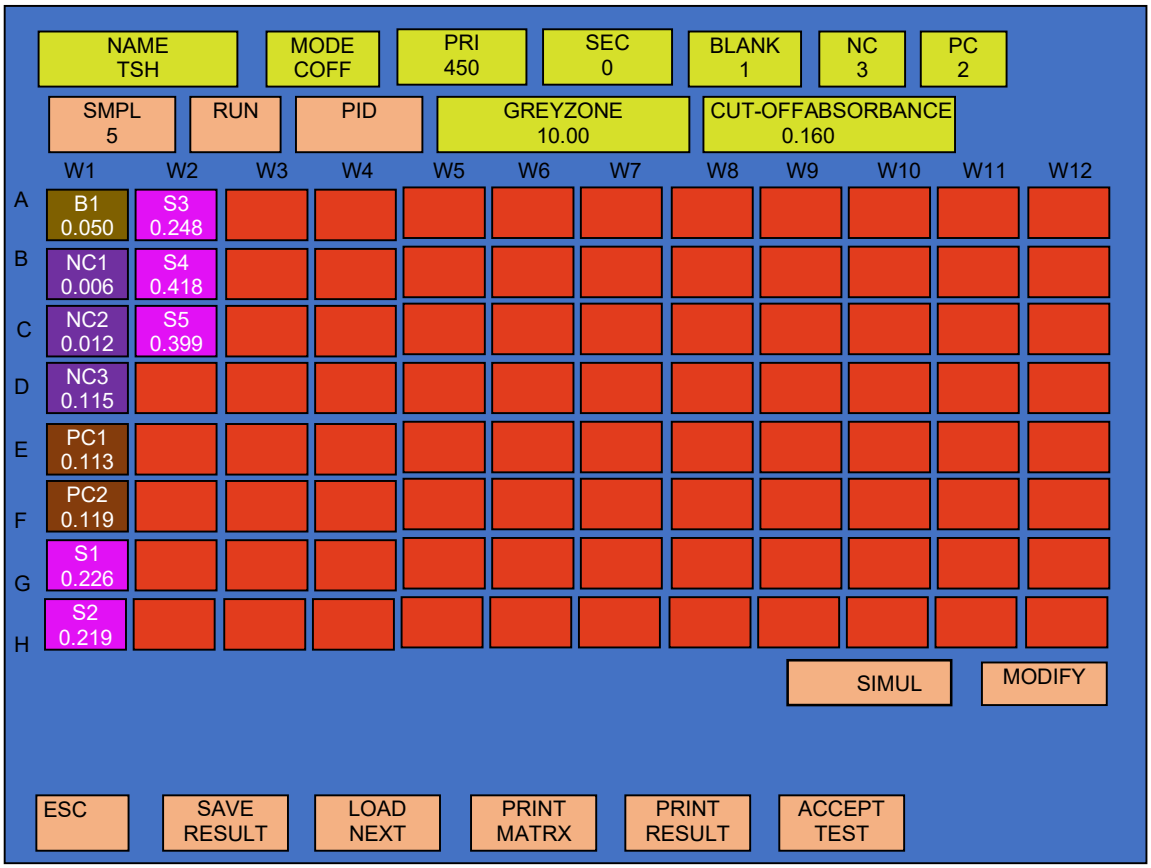

**NOTE: User can view the Saved Graph from the Test parameter screen before re-running the same test.**

On selecting GRAPH option, it will display following screen.

In Calibrator Mode, after asking “LOAD NEW BLANK? YES / NO” you will get the following question “LOAD NEW CALIBRATORS? YES / NO”. If you are loading new calibrators and want the results of samples as per new graph, select “LOAD NEW CALIBRATORS? YES”.
Or else, if you are not loading new calibrators and want to use previously stored graph select “LOAD NEW CALIBRATORS? NO”.
If you want to load only ‘Blank’, select “LOAD NEW BLANK? YES” and “LOAD NEW CALIBRATORS? NO”.
In case if you are using previously Stored “Blank” and “Calibrators” then it will print following strings in



### B) In “CUT OFF” Mode:



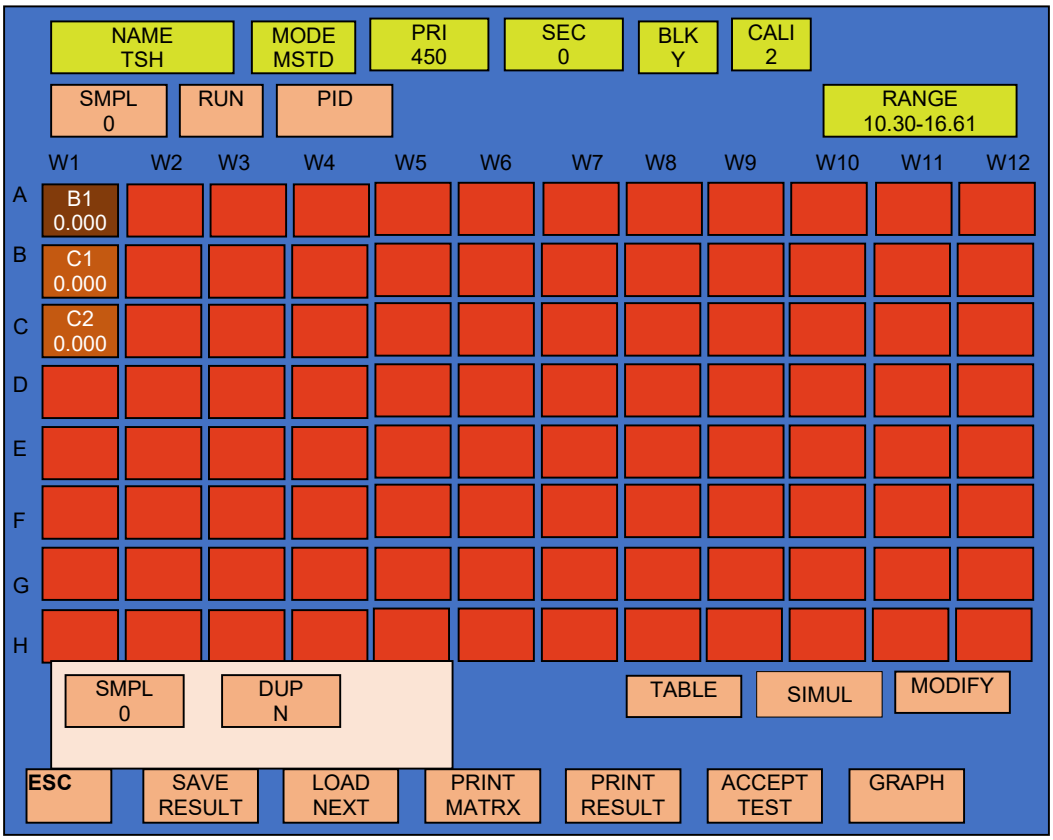

**When you want to run such an accepted test, select that particular test for instant ‘CUTOFF’ mode and point to ‘RUN’ option present on the run screen.**

This time, the blank and controls will not be loaded directly and you will get the following questions: “LOAD NEW BLANK? YES / NO” and “LOAD NEW CONTROLS? YES / NO”.
If you are running both, select ‘YES’, and if you want to use earlier stored data of controls select ‘NO’, so that you can run only samples to get their results without loading Blank and Controls.
If you want to load only ‘Blank’, select “LOAD NEW BLANK? YES” and
“LOAD NEW CONTROLS? NO”.
In case if you are using previously Stored “Blank” and “Controls” then it will print following strings in the printout-
“Using Blank Stored value” and “Using Controls Stored value”

## 11. SAMPLE AND SAMPLE DUPLICATE

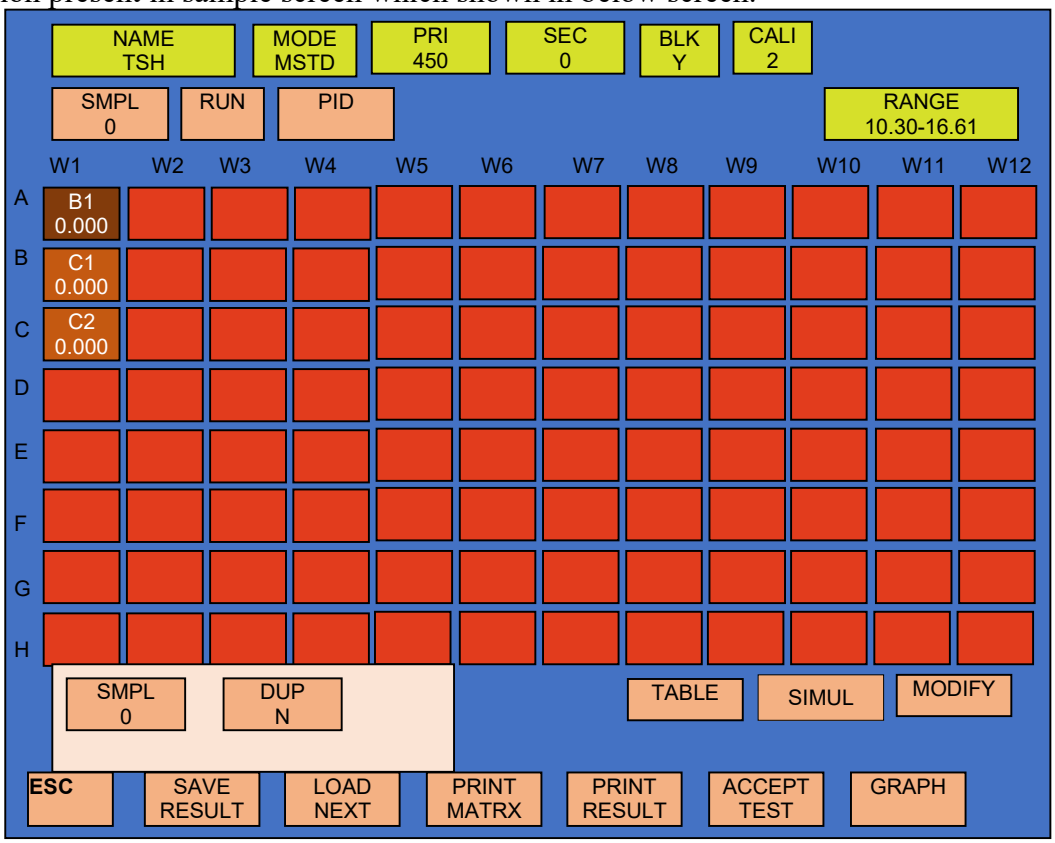
While loading the samples you can load a single sample in single well or a single sample in adjacent two well and finally the instrument will take the average of it known as Sample Duplicate. The instrument will load the controls / calibrators automatically in any new test or not accepted test. You have to provide the number of samples. If you are loading single samples keep "DUP"-No. Select "No. of Samples:" to enter total samples.

A. Select touch zone of "SMPL" (Sample)

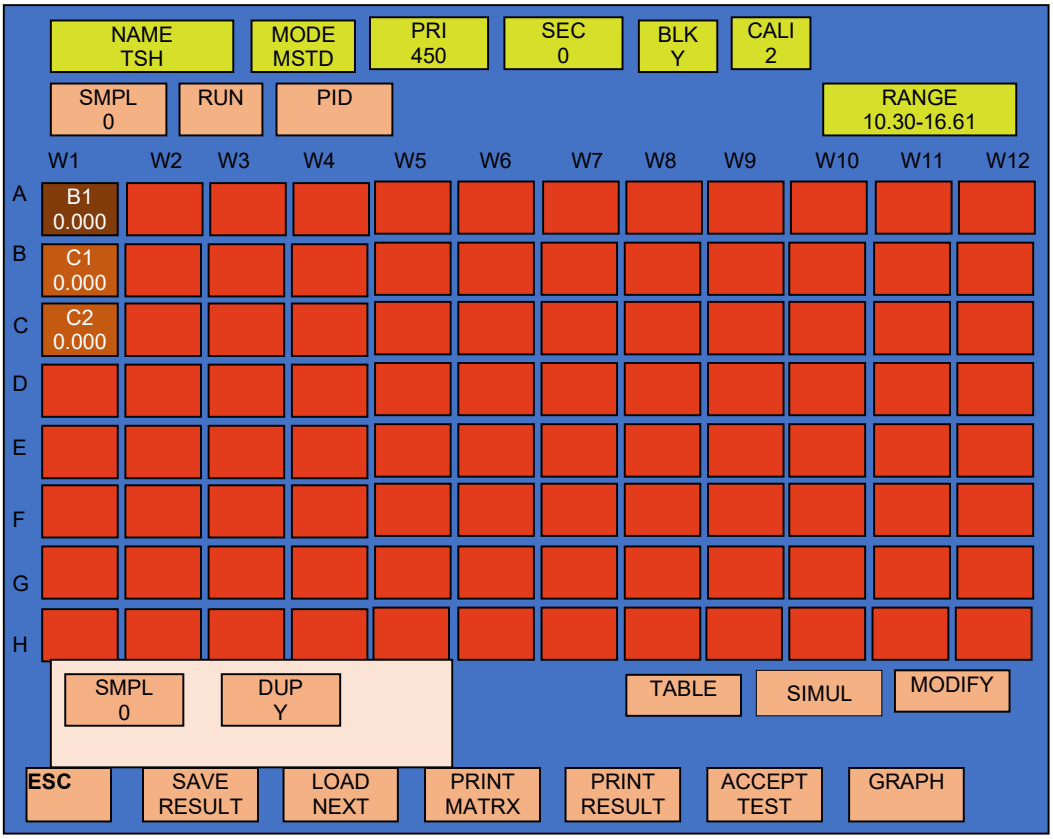


B. For Duplicate sample

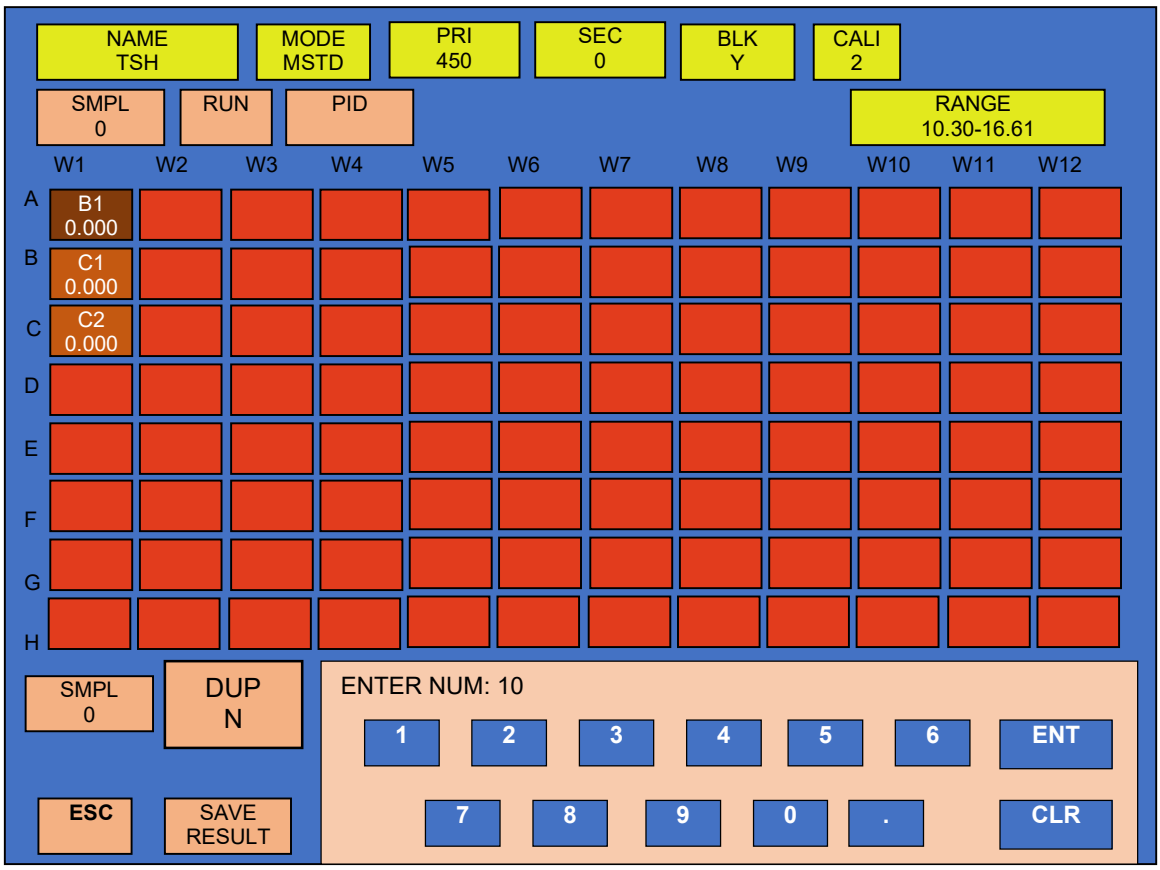
If you want to load duplicate samples, select “DUP N” option before entering number of samples option present in sample screen which shown in below screen.



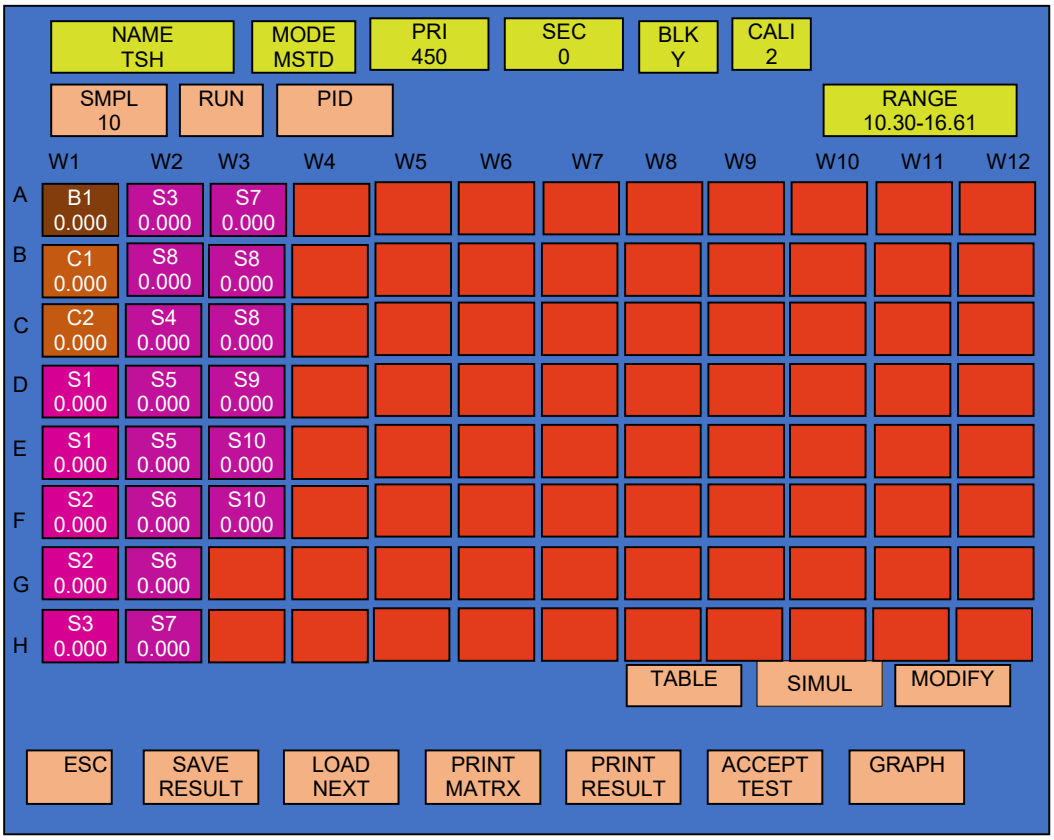

After selecting “DUP N” it toggles to “DUP Y” and then select “SMPL”.



C. Now, enter the no. of sample by Selecting touch zone of “SMPL” (Sample), it will display the numeric screen. After entering no. of sample select “ENT” and then sample will automatically load.



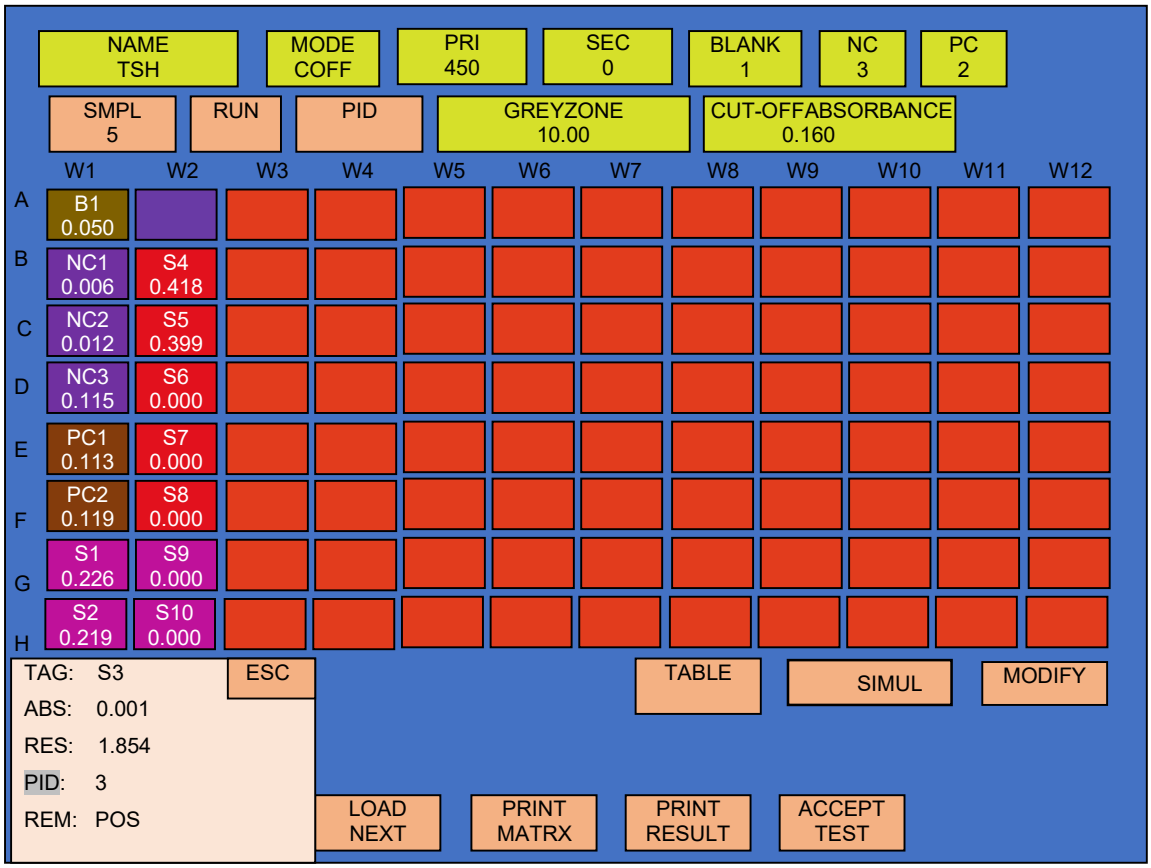
D. After selecting DUP option and entering no. of sample, it displays following screen.



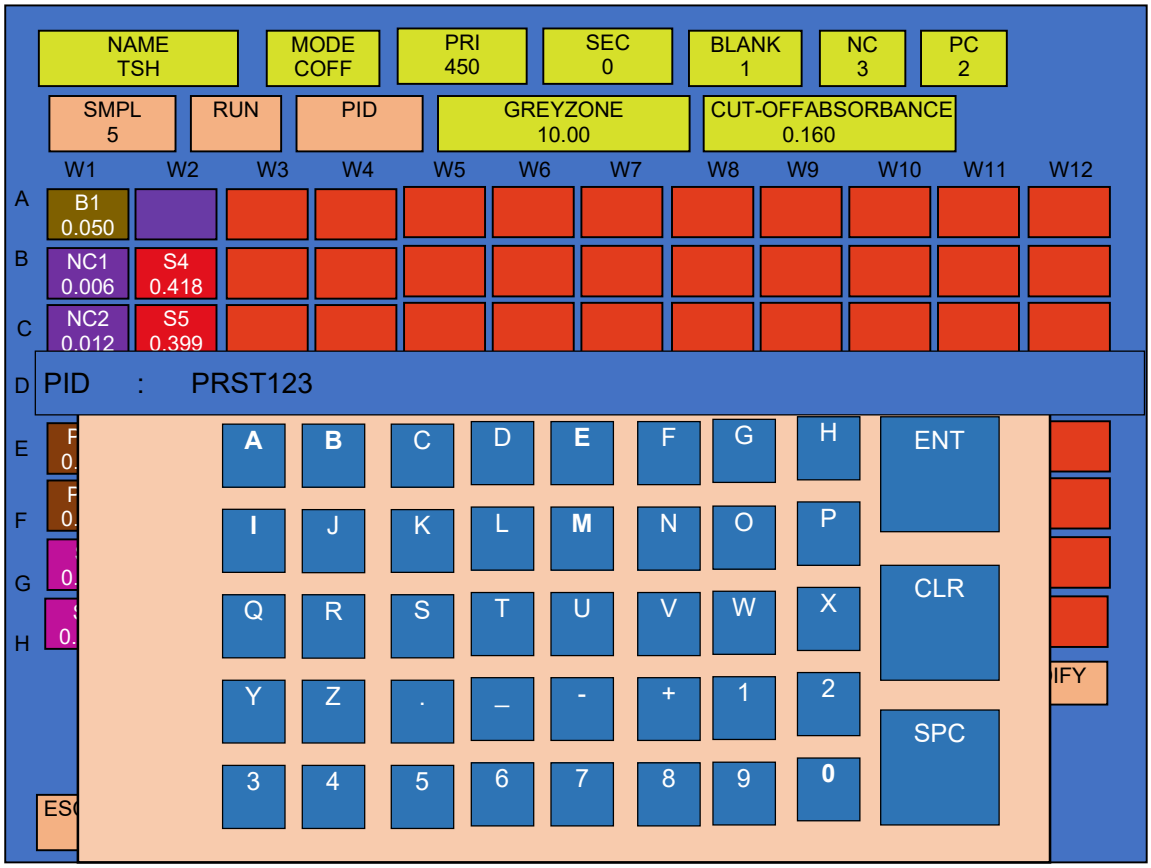

(* Similarly, user can load the samples and Sample Duplicates in all other modes)

# 12. PATIENT IDENTITY / SAMPLE IDENTITY ENTRY

To enter Patient ID for all samples, user first run the test. After running test select sample well to assign PID to the sample before “SAVE RESULT”. User can assign the PID to the sample after “ACCEPT TEST” but before “SAVE RESULT”. After entering PID of sample select “SAVE RESULT” option to save the sample result with PID.



Select PID, it will display alphanumeric screen.




One by one you can enter name of each patient. The character length of PID is only 7 characters.

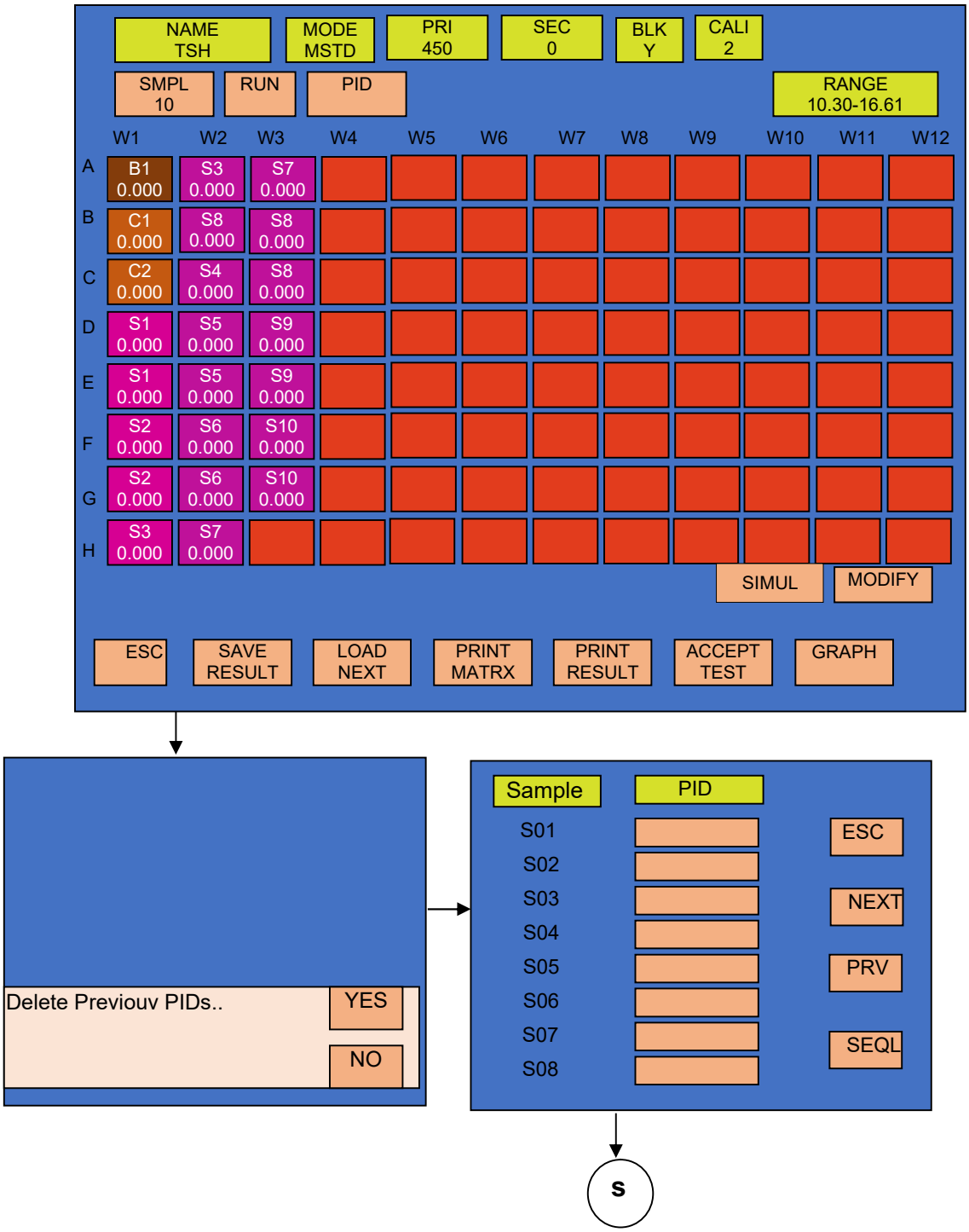
(*NOTE: After selecting “SAVE RESULT”, PID get stored in instrument memory. To change the PID of sample you have to select “LOAD NEXT” option)

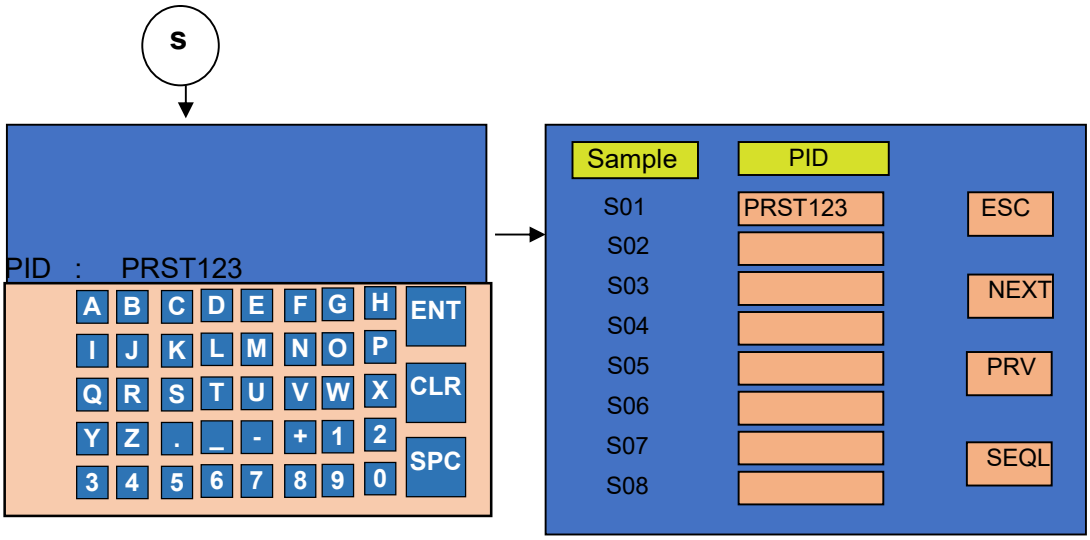
**There is another way to entered the PID which shown in below.**

**To enter Patient ID for all samples there is an option provided in loading screen shown as "PID"**

After entering number of samples either single or duplicate, select "PID". It will display confirmation message i.e. "Delete Previous PIDs.. YES or NO", Select YES

**A) Individual PID entry -**






One by one you can enter name of each patient. The character length of PID is only 7 characters in the following combinations –

Since PID of the Patient is entered with the help of Alpha-numeric characters, the combination must be as mentioned below.

| Alphabets | Numbers |
|---|---|
| 4 | 3 |
| 3 | 4 |
| 2 | 5 |

**For example -**

1. In the first combination, user can enter PID with 4 Alphabets and 3 Numbers. That means, entered PID should be PQRS123
2. Similarly, for the second combination, user can enter PID with 3 Alphabets and 4 Numbers. And therefore, entered PID will be UTV1234
3. And for the third combination, user can enter PID with 2 Alphabets and 5 Numbers ie. PID will be displayed as RB12345
4. But one can't enter the PID with 1 Alphabet and 6 Numbers since its maximum numeric count is 65500.

(Note: The same combinations should be used during SEQUENTIAL entry also.)

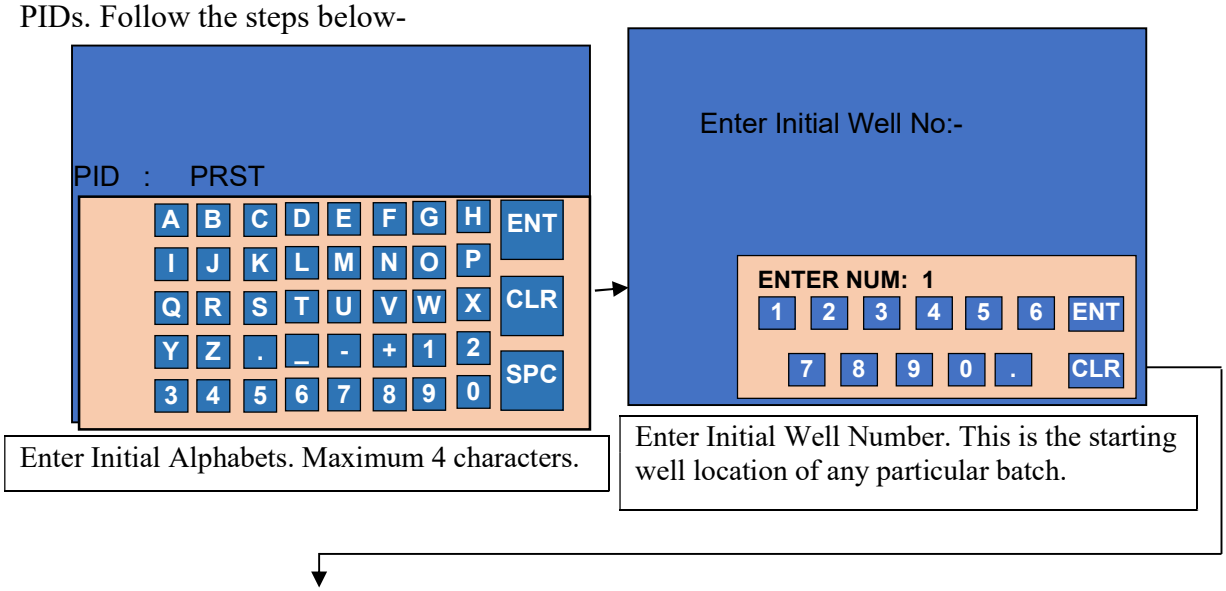
**B) Sequential Patient ID Entry**

This one by one entry will take more time, therefore one more option to enter Patient Ids is provided. This option is "SEQL" sequential entry.

If you select "PID" option for patient ID entry, the following question appears on the screen:

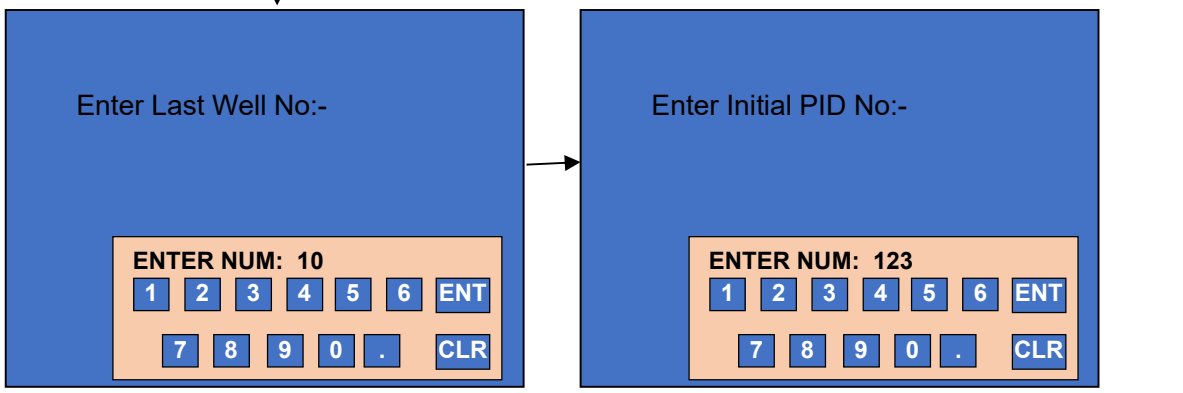
"Delete Previous PIDs? Yes / No". If you select NO, it will directly load the previously entered PIDs for sample and if you select YES, it will delete the previous PIDs.

Now select 'SEQL', it will display Alphanumeric screen where user can enter different sequential PIDs. Follow the steps below-




Enter Initial Alphabets. Maximum 4 characters.

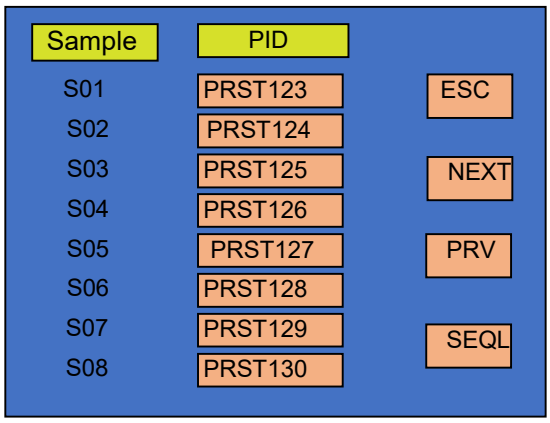
Enter Initial Well Number. This is the starting well location of any particular batch.




Enter last Well Number. This is the last well location of any particular batch.

Enter Initial PID Number. This is the starting number of any particular batch.

Final screen will appear which displays the sequential IDs of patient samples for the well location that is selected.




Go to the next and previous screen with the help of “NEXT” and “PREV” option present on the screen.

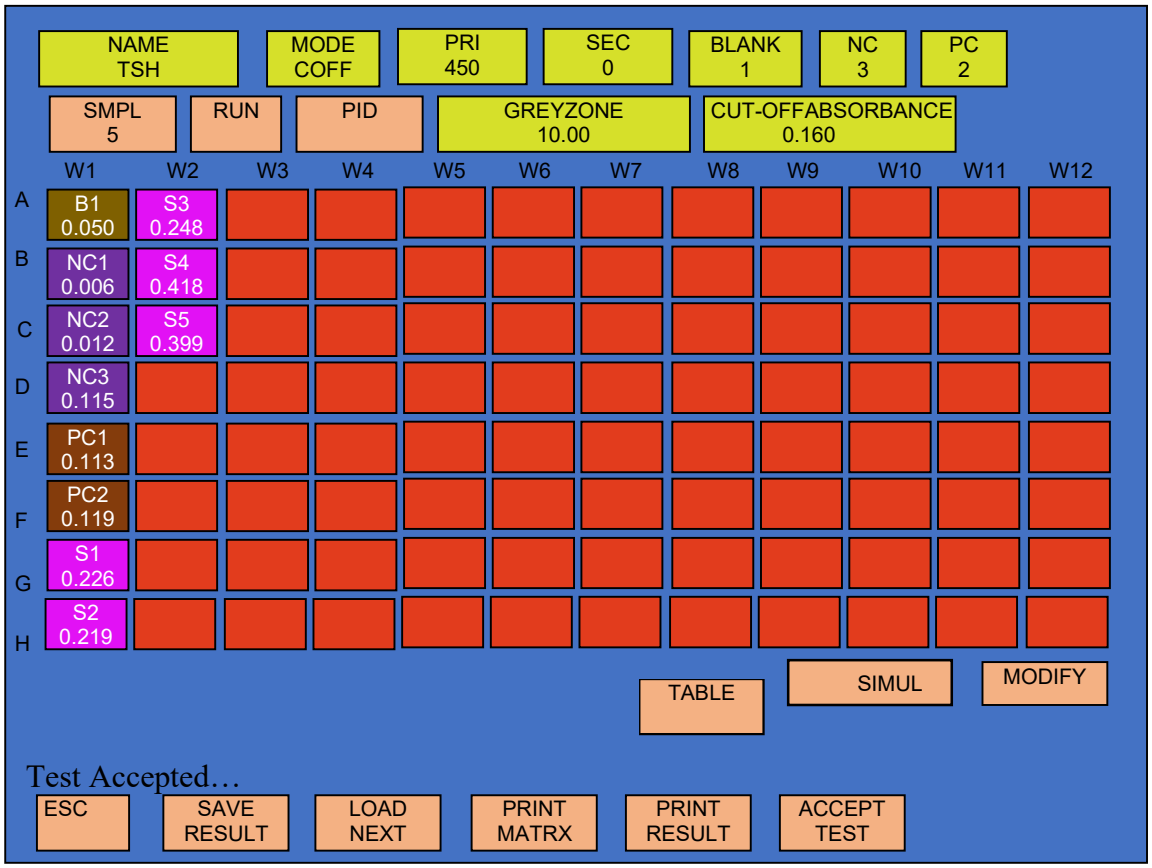
(*NOTE: The entered PID get stored in instrument memory, until you delete it by using option, “Delete previous PIDs? Yes / NO”)

# 13. SAVE PLATE AND SAVE RESULTS

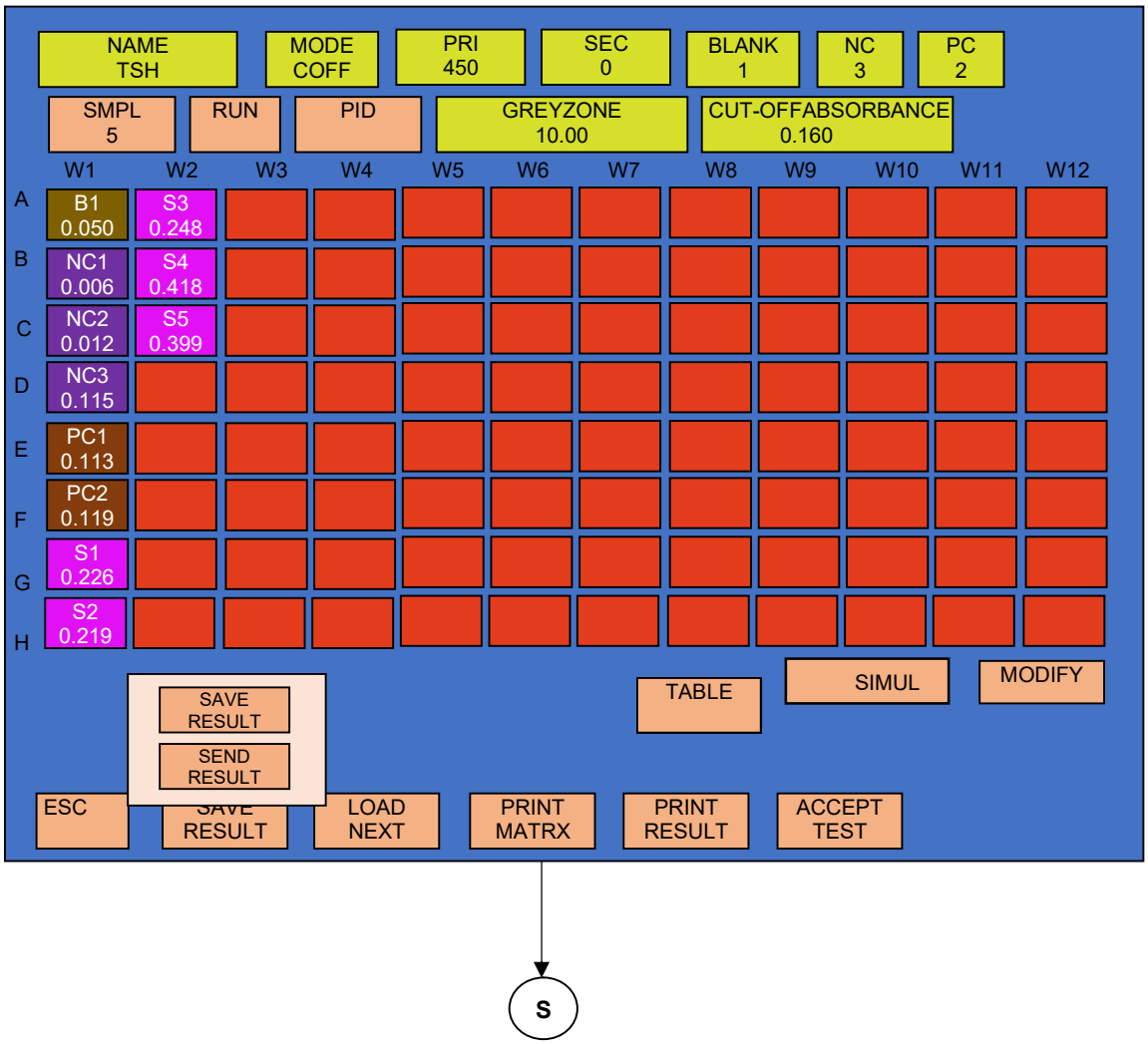
In all modes of operation, after completing RUN to save the result first select “ACCEPT TEST” and then select “SAVE RESULT” option. “Save result” provide two option i.e. “SAVE RESULT” & “SEND RESULT”.

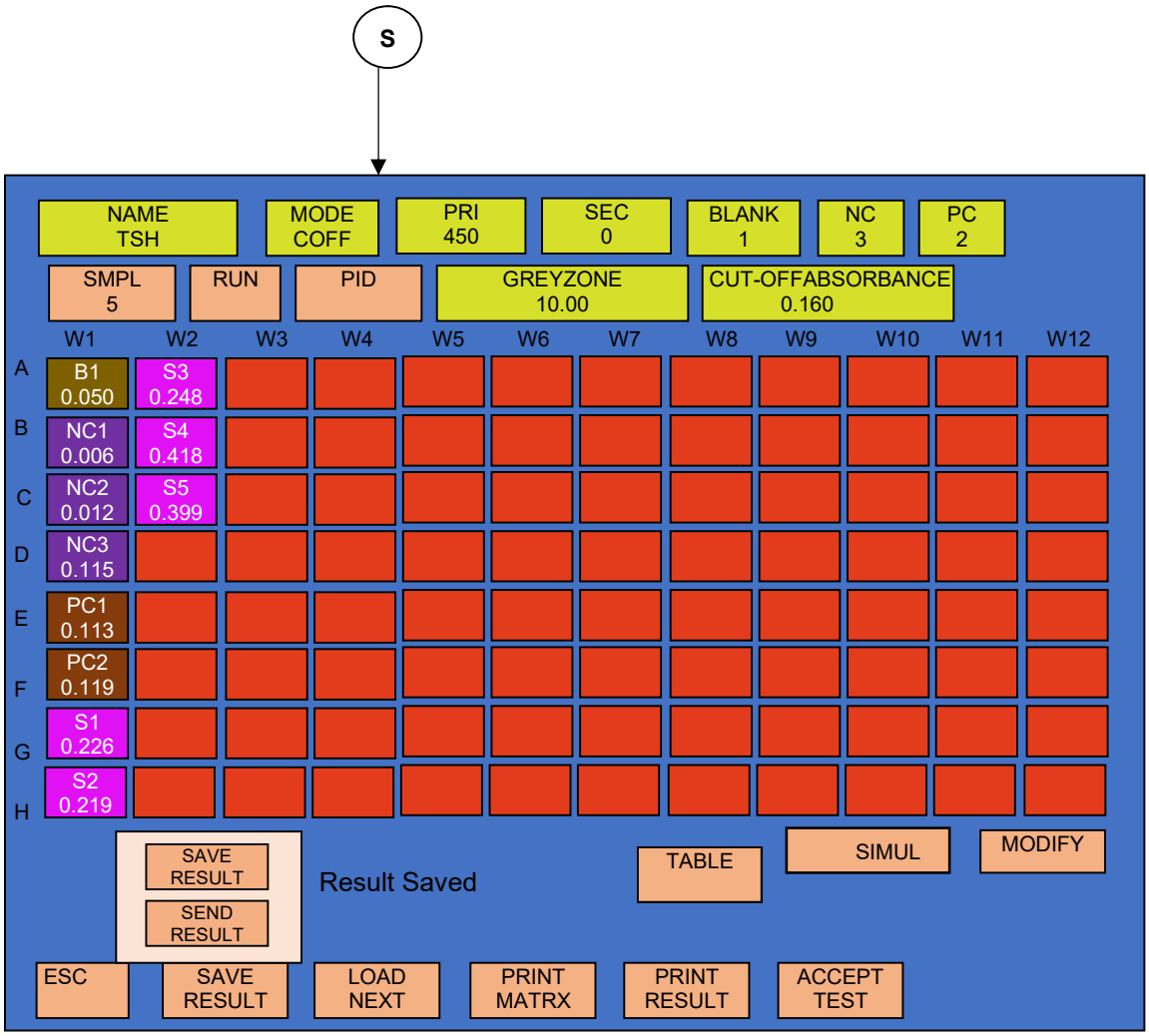
**A) In Cut Off mode:**

After running the cutoff mode select “ACCEPT TEST” option, it will display the message i.e. “Test Accepted”.

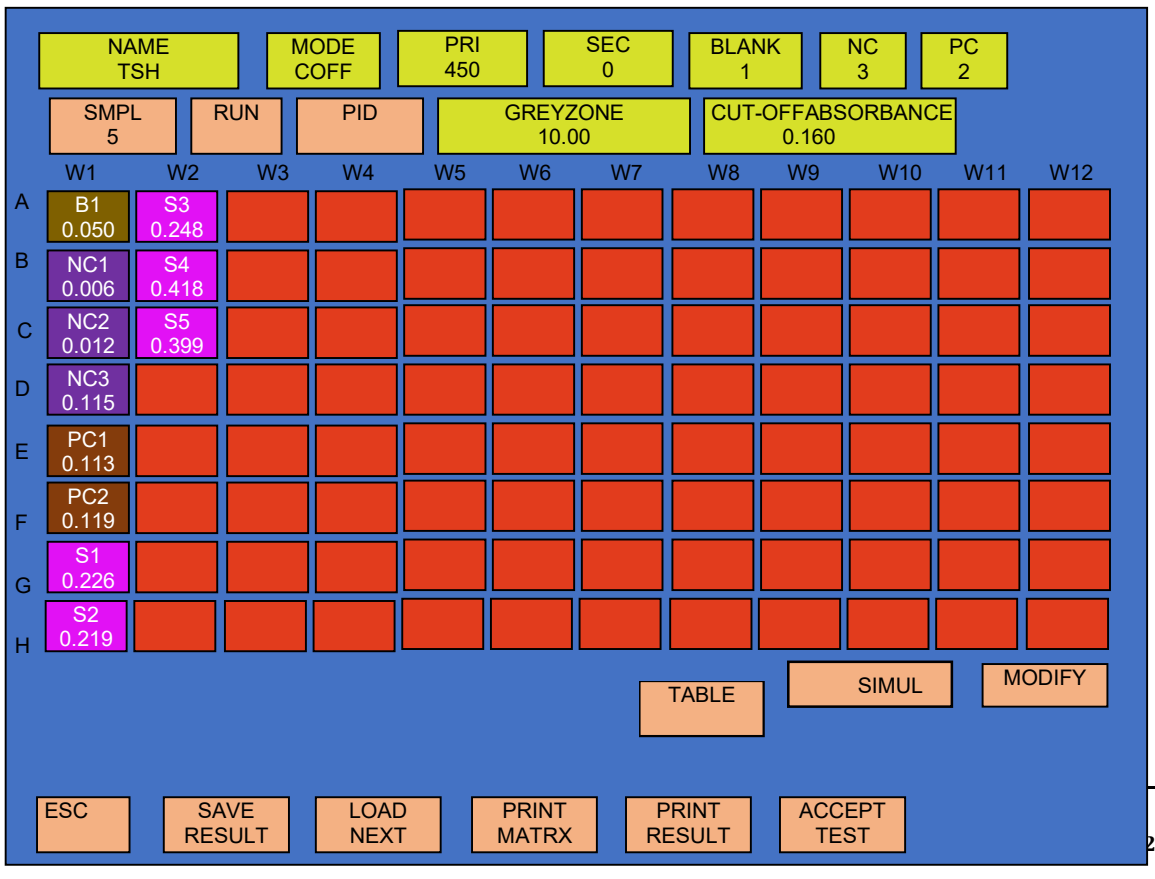


After test accepted select save result option present in run screen. It will display two option i.e. “SAVE RESULT” & “SEND RESULT”, in that select “SAVE RESULT” option






After completing plate and result save process it will display following screen.



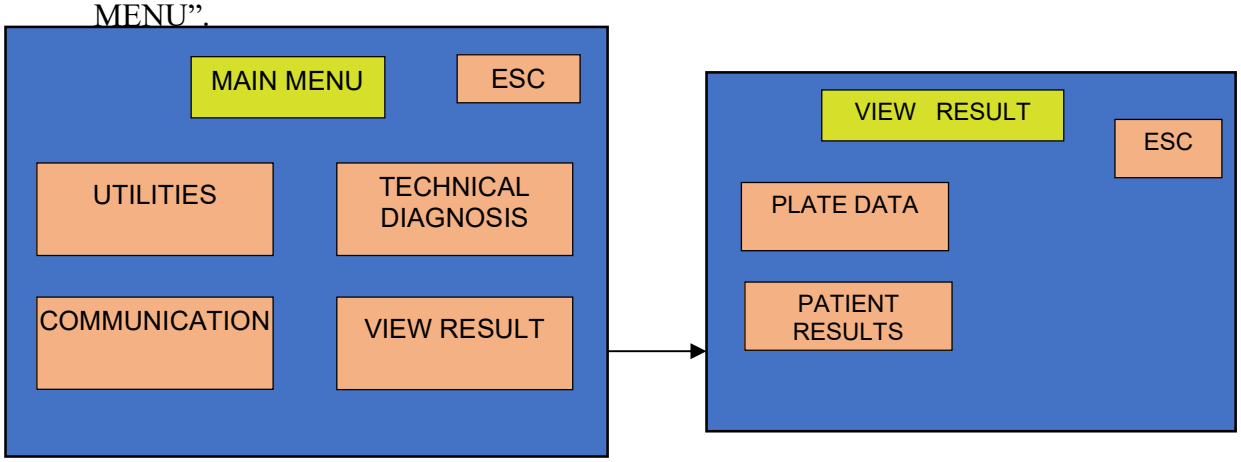
1. “SEND RESULT” is used to send the data from instrument to computer through USB or serial RS232 connection.

2. “SAVE RESULTS” option is used to save the details related to samples and it helps the user to save the entire plate information along with the control/calibrator information (maximum 100 plate data can be saved).

.

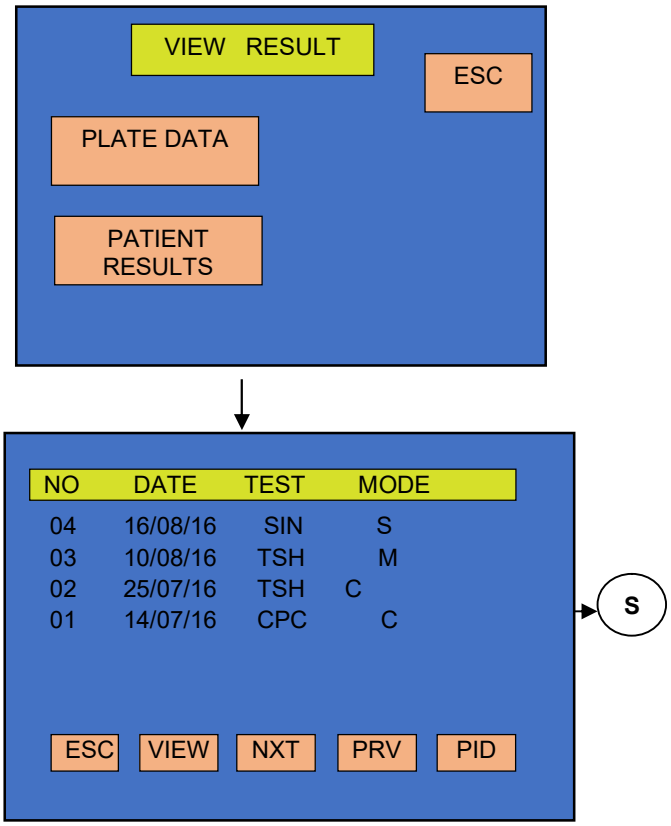
# 14. VIEW STORED DATA

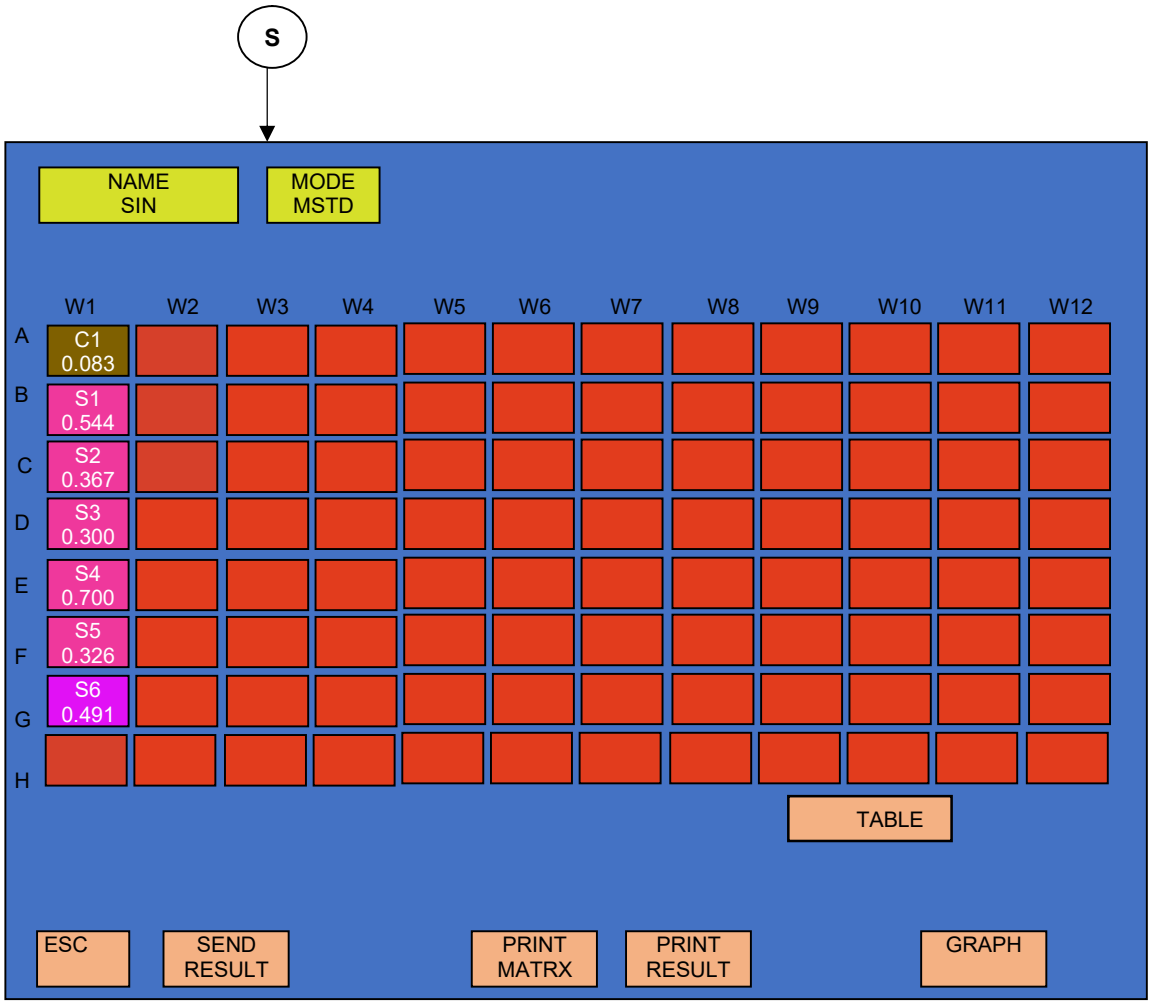
The stored plate or stored results appear on the screen by selecting option “View Plate” in “MAIN MENU”.




## 14.1. PLATE RESULT:

14.1.a. It displays the details of stored plate (last 100 plates) with date, test name and mode of operation in descending order. User can select any test to view its plate results by selecting this option.

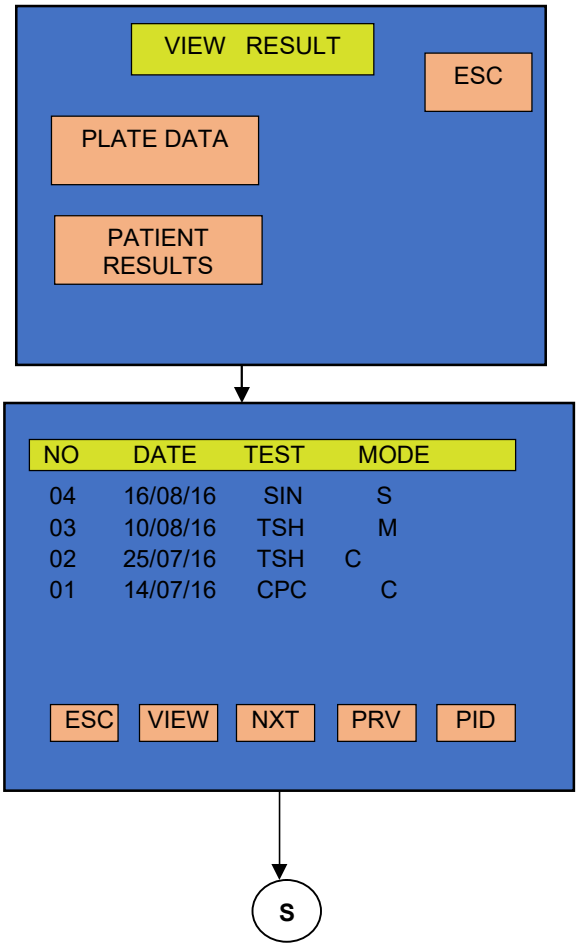


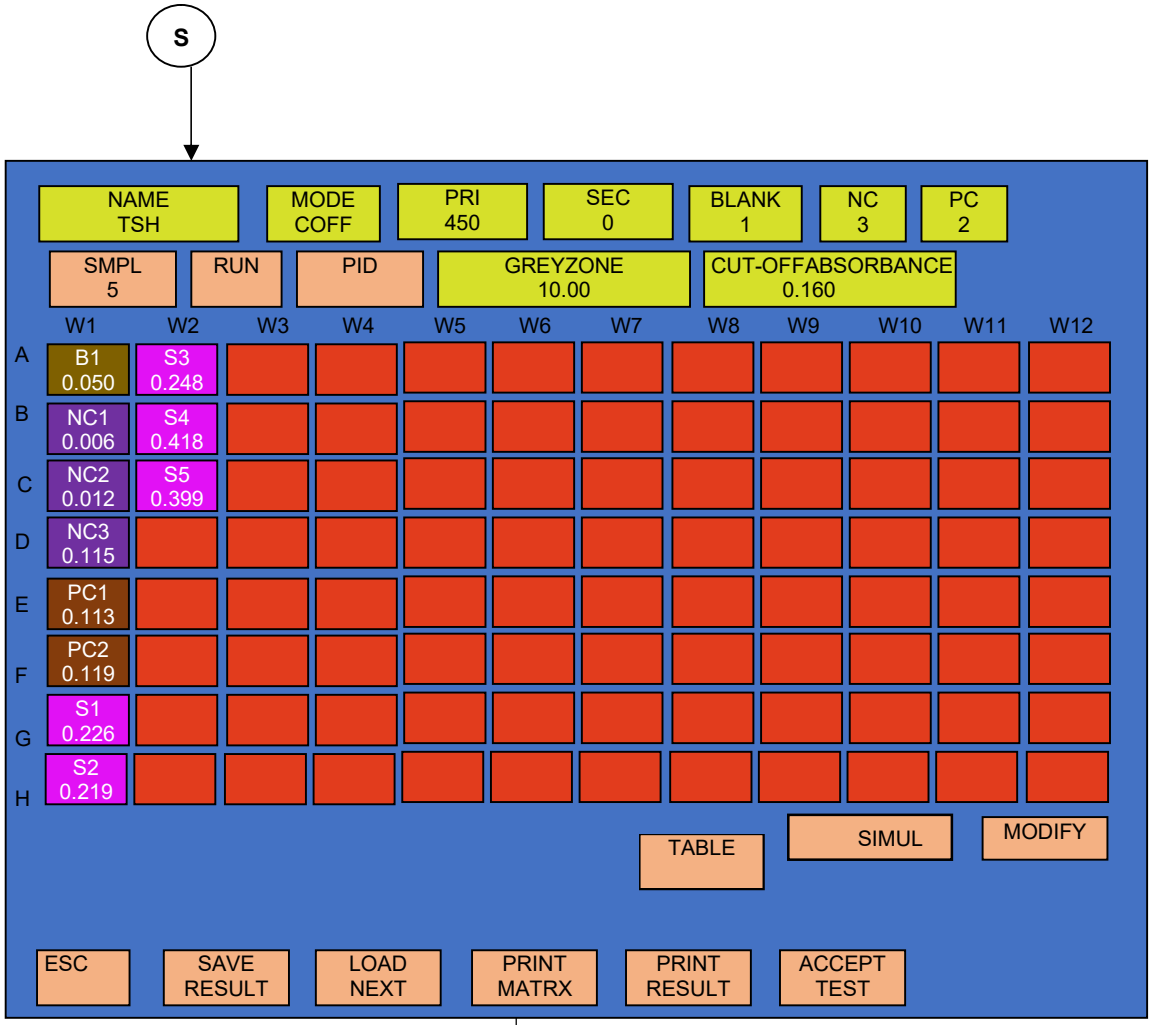

S
NAME
SIN
MODE
MSTD
W1
W2
W3
W4
W5
W6
W7
W8
W9
W10
W11
W12
A
B
C
D
E
F
G
H
C1
0.083
S1
0.544
S2
0.367
S3
0.300
S4
0.700
S5
0.326
S6
0.491
TABLE
ESC
SEND
RESULT
PRINT
MATRX
PRINT
RESULT
GRAPH

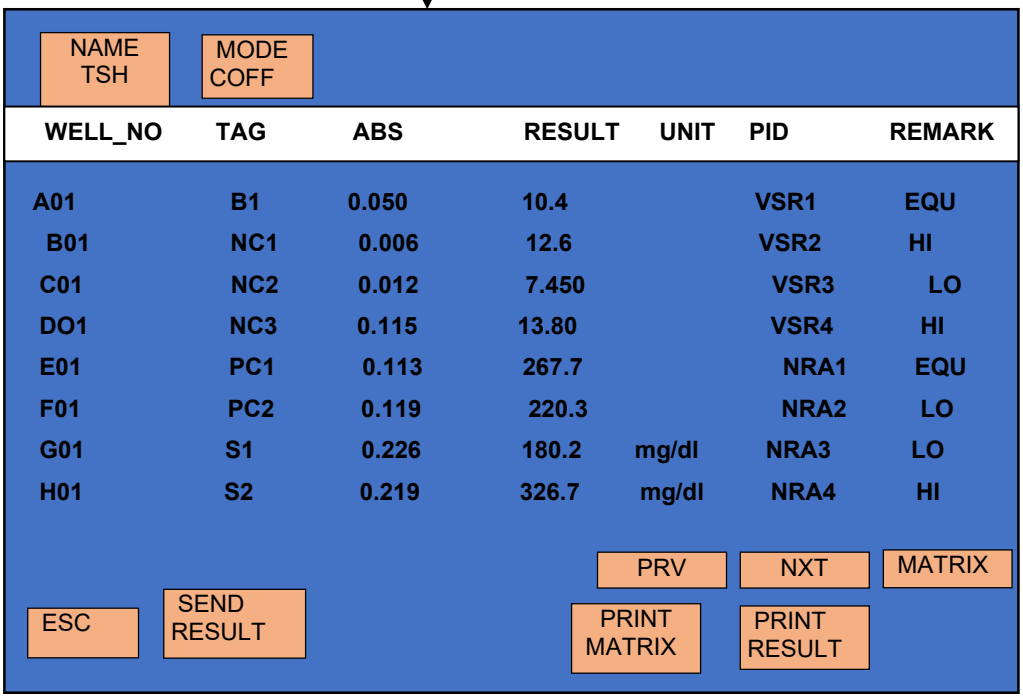
"PRINT MATRX" will print the details of entire plate in matrix format as explained earlier.
"PRINT" will print only the data displayed on screen.
"SEND RESULT" can be used to send the data from instrument to computer through USB or serial RS232 connection.

14.1.b. TABLE:

It shows the result in tabular form. It displays the details of stored plate (last 100 plates) with well no., Tag, unit, PID, remark, absorbance and there result.

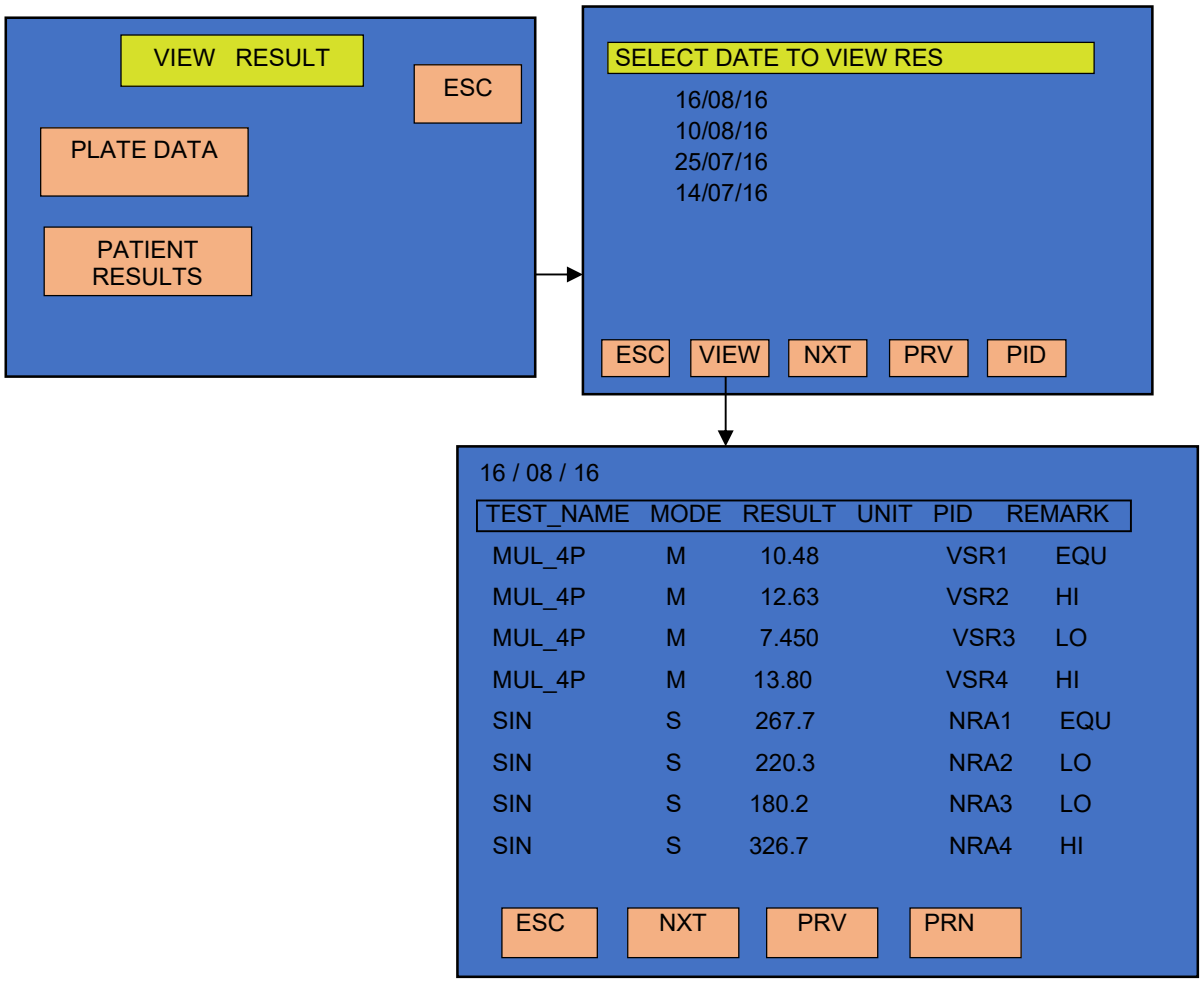



S
NAME TSH
MODE COFF
PRI 450
SEC 0
BLANK 1
NC 3
PC 2
SMPL 5
RUN
PID
GREYZONE 10.00
CUT-OFFABSORBANCE 0.160
W1 W2 W3 W4 W5 W6 W7 W8 W9 W10 W11 W12
A B1 0.050 S3 0.248
B NC1 0.006 S4 0.418
C NC2 0.012 S5 0.399
D NC3 0.115
E PC1 0.113
F PC2 0.119
G S1 0.226
H S2 0.219
TABLE
SIMUL
MODIFY
ESC
SAVE RESULT
LOAD NEXT
PRINT MATRX
PRINT RESULT
ACCEPT TEST


NAME TSH
MODE COFF
WELL_NO TAG ABS RESULT UNIT PID REMARK
A01 B1 0.050 10.4 VSR1 EQU
B01 NC1 0.006 12.6 VSR2 HI
C01 NC2 0.012 7.450 VSR3 LO
DO1 NC3 0.115 13.80 VSR4 HI
E01 PC1 0.113 267.7 NRA1 EQU
F01 PC2 0.119 220.3 NRA2 LO
G01 S1 0.226 180.2 mg/dl NRA3 LO
H01 S2 0.219 326.7 mg/dl NRA4 HI
PRV
NXT
MATRIX
ESC
SEND RESULT
PRINT MATRIX
PRINT RESULT

## 14.2. PATIENT RESULTS

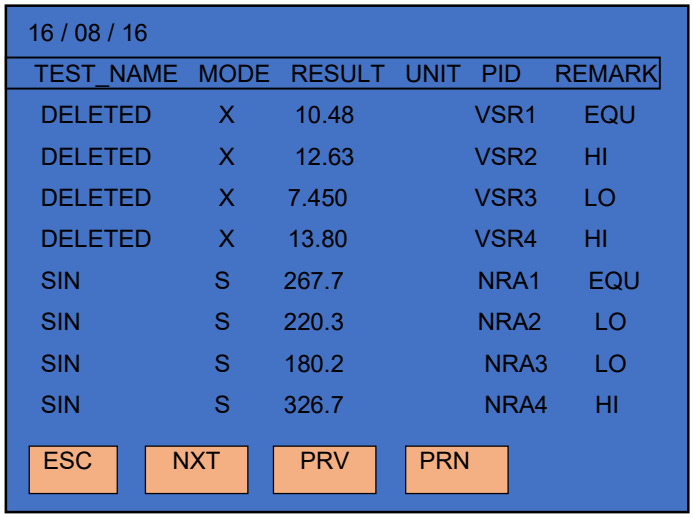
It will show the details of all samples, saved in memory using option “SAVE RESULTS” in all different modes, as explain earlier. This option will display the data in table format as shown below. Test name, Mode of test operation, result of sample, PID and Remark will appear on the screen. The instrument has a memory to store 2500 sample results.
This option doesn’t show the information of controls or calibrators.




“PRN” is used to print the details as available on the screen.
“NXT” and “PRV” options are used to browse through the pages so that one can view all the results one after the other.

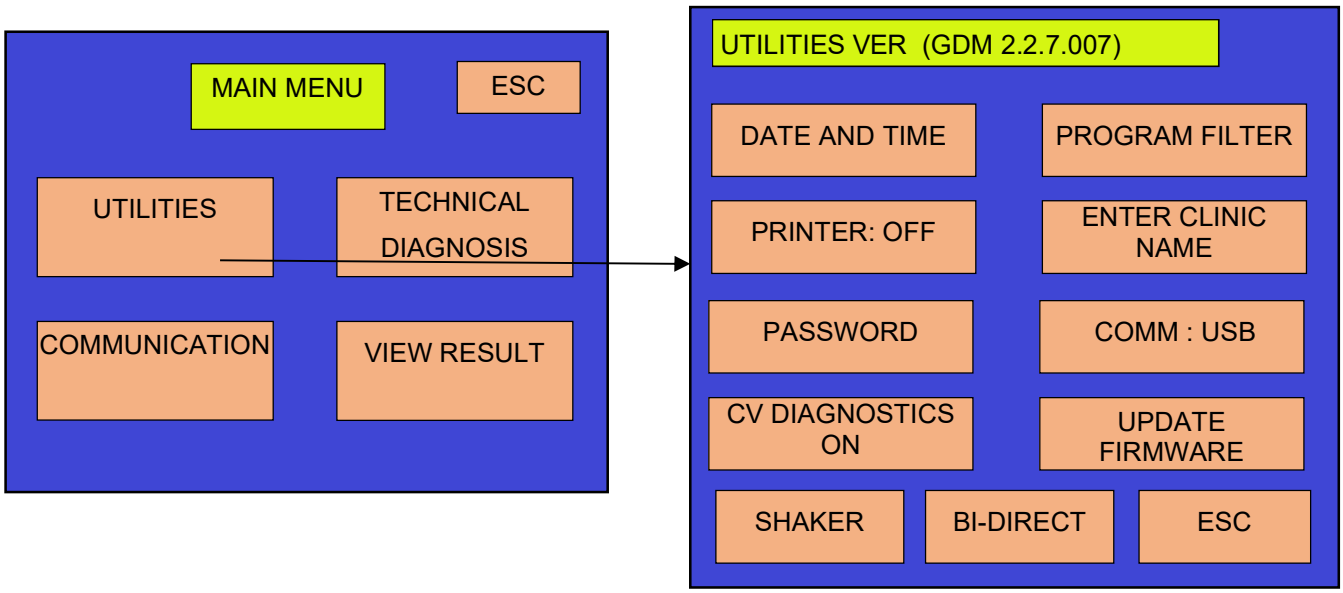
NOTE:

1. It's display alert message for last 10 plate data to store the results.
   i.e. "Only 10 plates remaining"
2. After completing 100 plate data it will display the message i.e.
   "Record full"
3. When there is not enough memory the following message appears:
   "First plate data Deleted"
   The instrument automatically deletes a number of samples that are stored in the beginning and then save the new samples at that location.
4. If a test is being deleted or edited then previously stored results of that particular test are displayed with their test mode as "X". But test name will display as 'Deleted'.



# 15. UTILITIES

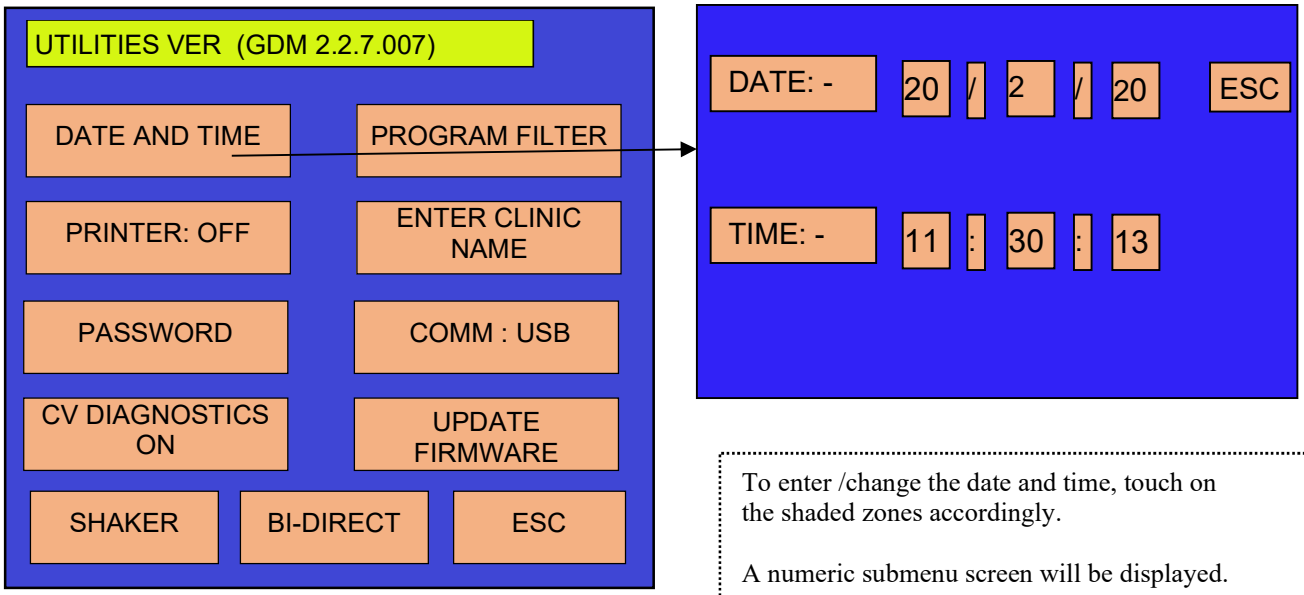
UTILITIES consists of 10 different functions which can be viewed as follows-




## 15.1. Date & Time Setting

This Utility helps the user to set current Date and Time.

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




To enter /change the date and time, touch on the shaded zones accordingly.

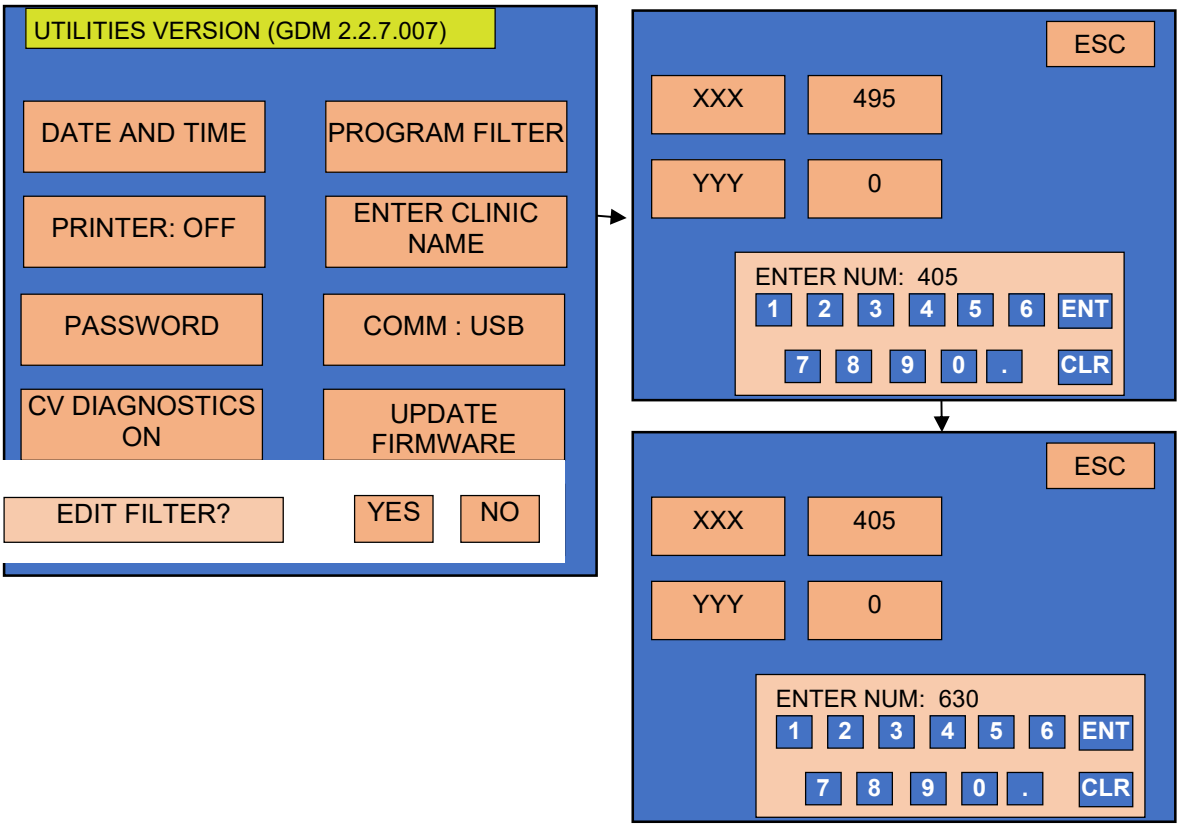
A numeric submenu screen will be displayed.

Enter the current date and time.

On completion, Touch ESC to escape

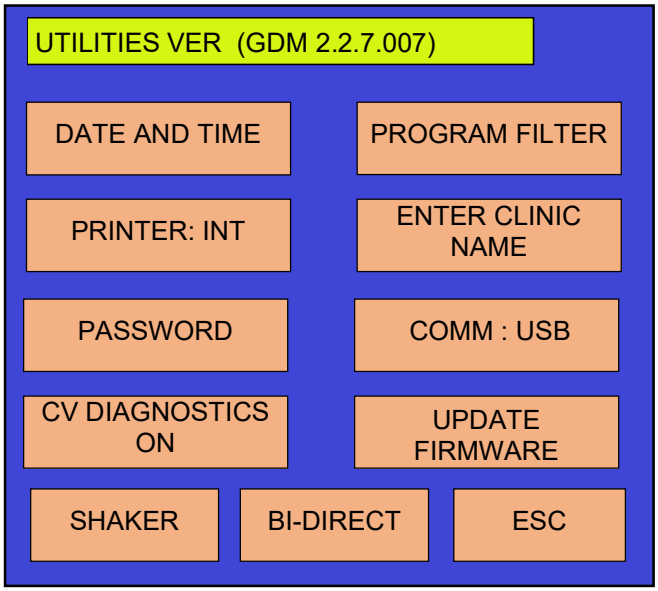
## 15.2. Program Filter

It consists of two editable filters and thus helps the user to edit the filters if any.



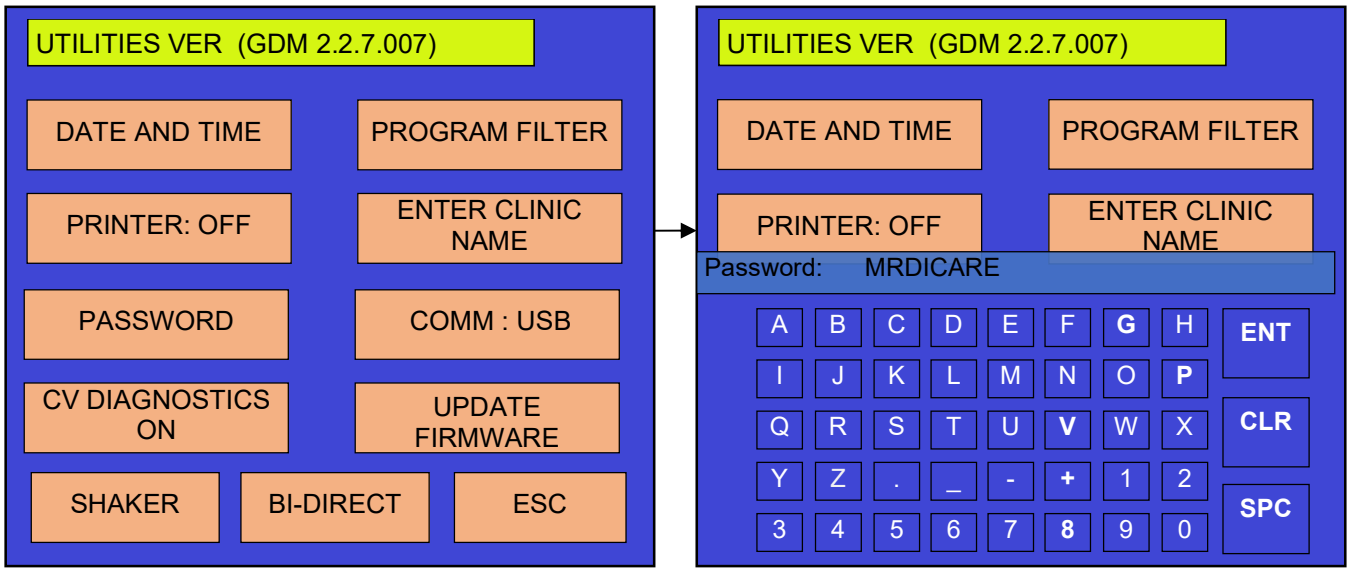

## 15.3. Printer On / Off setting:

This option is use for multi-purpose. Using this option user can use internal printer, external printer or user can switch-off the printer



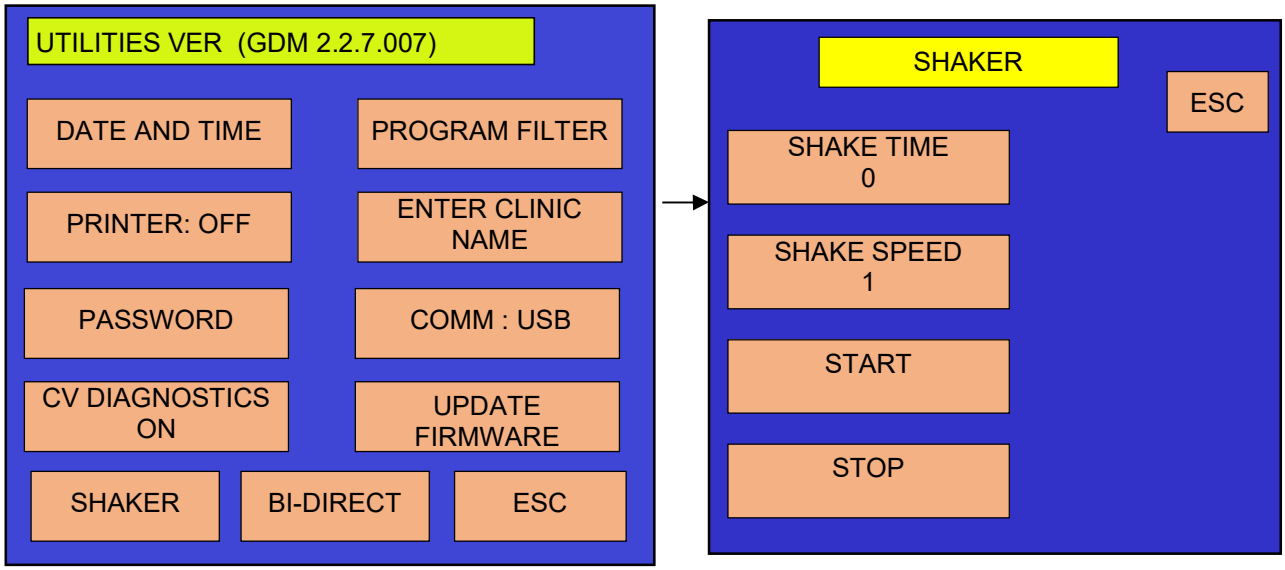
### 15.4. Enter Clinic Name:

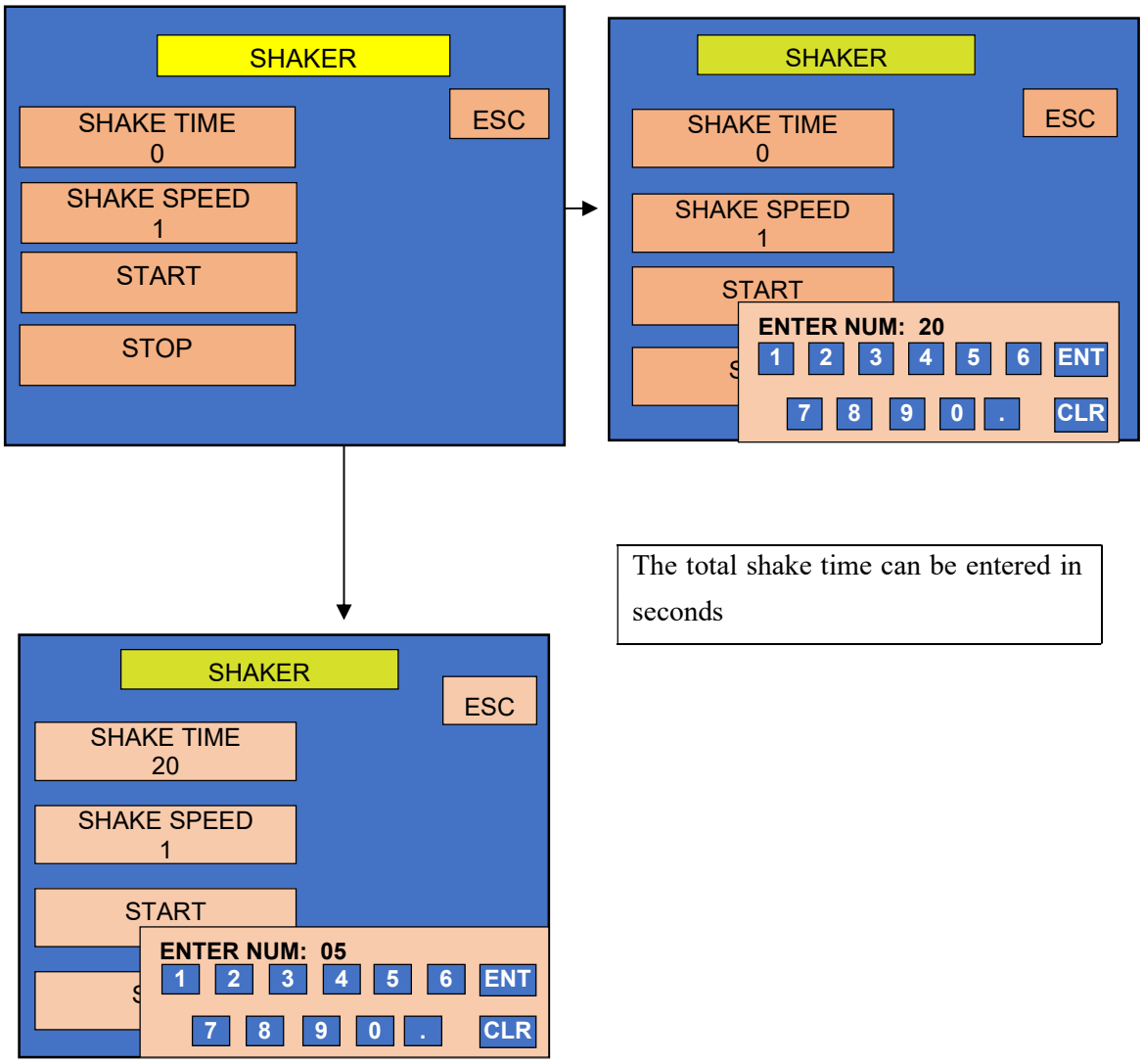
Enter your Clinic Name and select “ENTER”. The character length is maximum 20 characters.




### 15.5. Shaker (Plate Shaking Mode)

Shaker is used for shaking the plate before running any test. The Shaker screen is displayed as ollows –



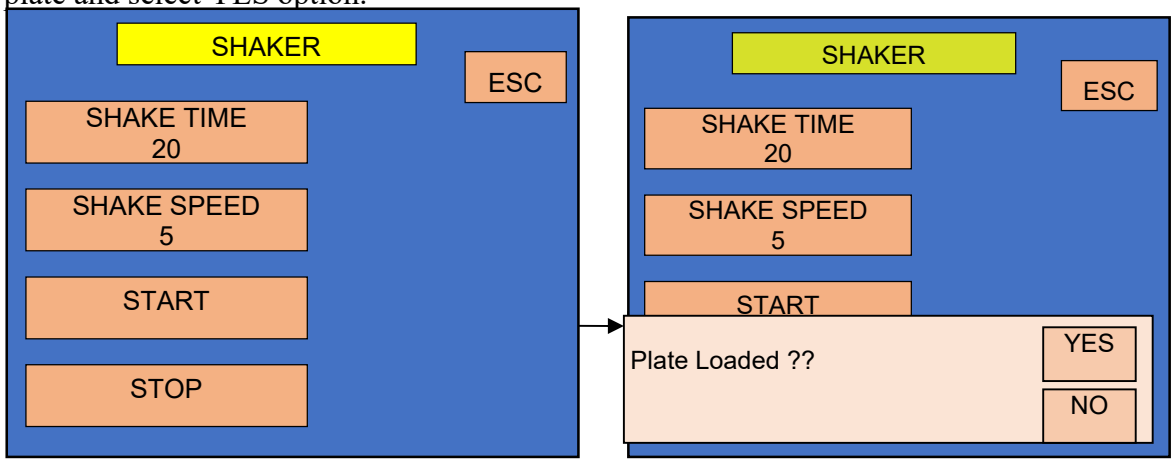



The total shake time can be entered in seconds

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

| Speed | Respective RPM |
|---|---|
| 1 | 200 |
| 2 | 210 |
| 3 | 220 |
| 4 | 230 |
| 5 | 240 |
| 6 | 250 |
| 7 | 260 |
| 8 | 270 |
| 9 | 280 |
| 10 | 290 |

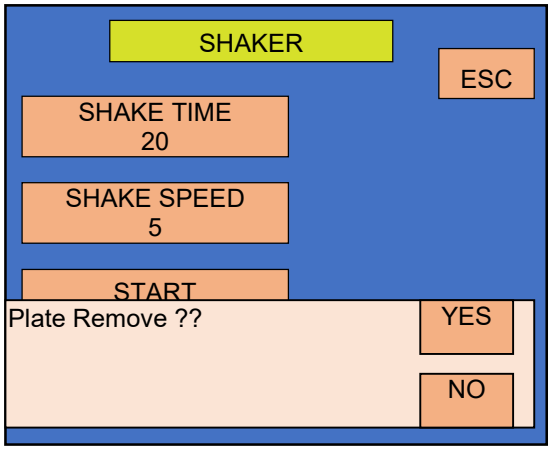
After entering shake time and shake speed, select Start option. When “Start” is selected, the tray will come out and on the screen you will obtain a message “Is plate loaded? Yes / No”. Load the plate and select YES option.




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 the shaking is finished, the plate holder will come out and display a message-

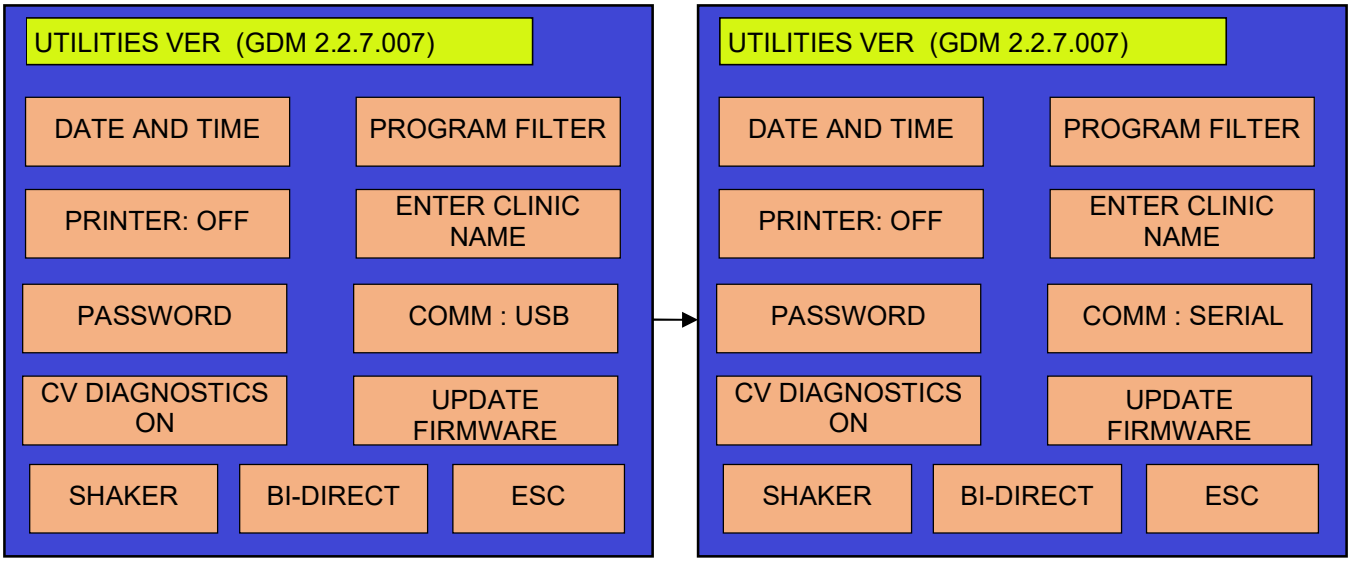
“Is plate removed? Yes / No”. Remove the plate and select ‘YES’ to end the process.




Similarly, to stop the Shaking process in between select “STOP” option present on the screen. After selecting STOP option it will display the message string – ‘Is Plate Removed? YES / NO’. Select NO to terminate the ongoing process.

### 15.6. Communication:

It is a toggle between USB and SERIAL communication. User can either switch to USB or Serial communication by connecting their respective cables.




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 cable.

### 15.7. CV Diagnostics: OFF

**NOTE: The option "CV DIAGNOSTIC OFF" is not for users. It is for factory use only.**

### 15.8. UPDATE FIRMWARE

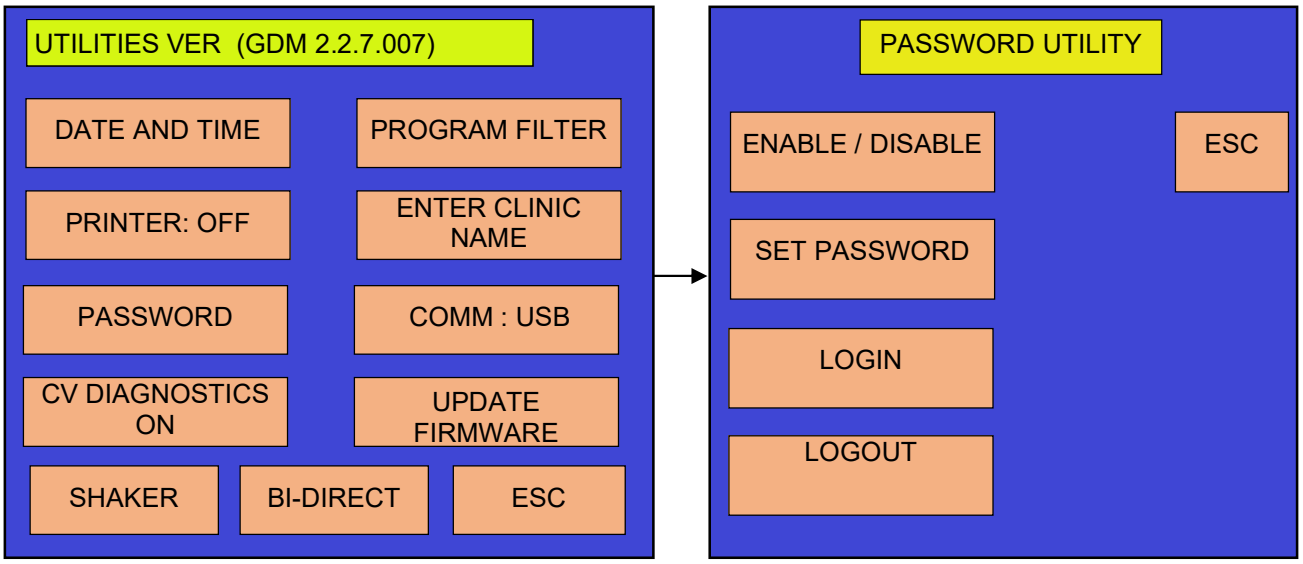
**NOTE: The option "UPDATE FIRMWARE" is not for users. It is for factory use only.**

### 15.9. BI-DIRECT:

**This software use to transfer the data for LIS software.**

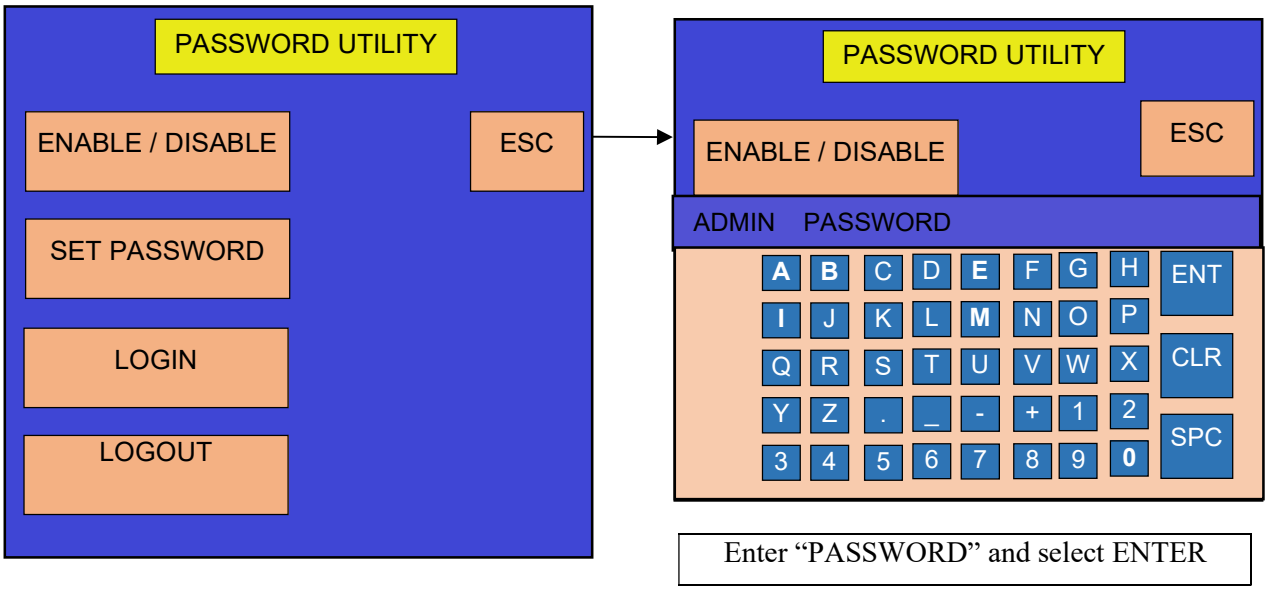
### 15.10. PASSWORD:

Select Password option in order to Set the Password so that one can't ADD, EDIT, DELETE and SEND / RECEIVE Test records without entering the valid Password.




### A) ENABLE / DISABLE:

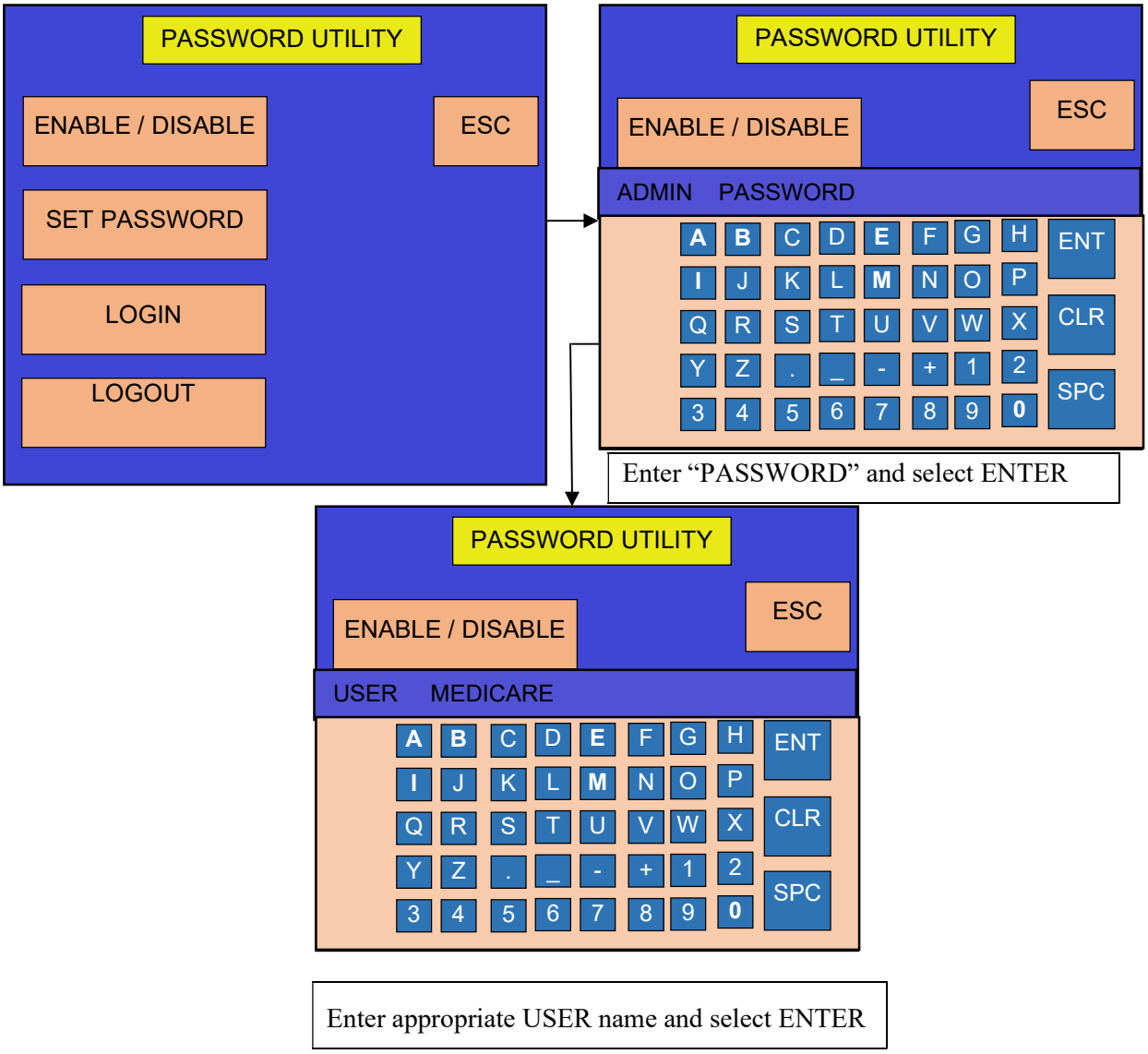
Enable / Disable helps the user to set the Password or Remove the Password from the Password Utility. Enter Password with the help Alphanumeric screen which is displayed after selecting Enable / Disable option.




Enter "PASSWORD" and select ENTER

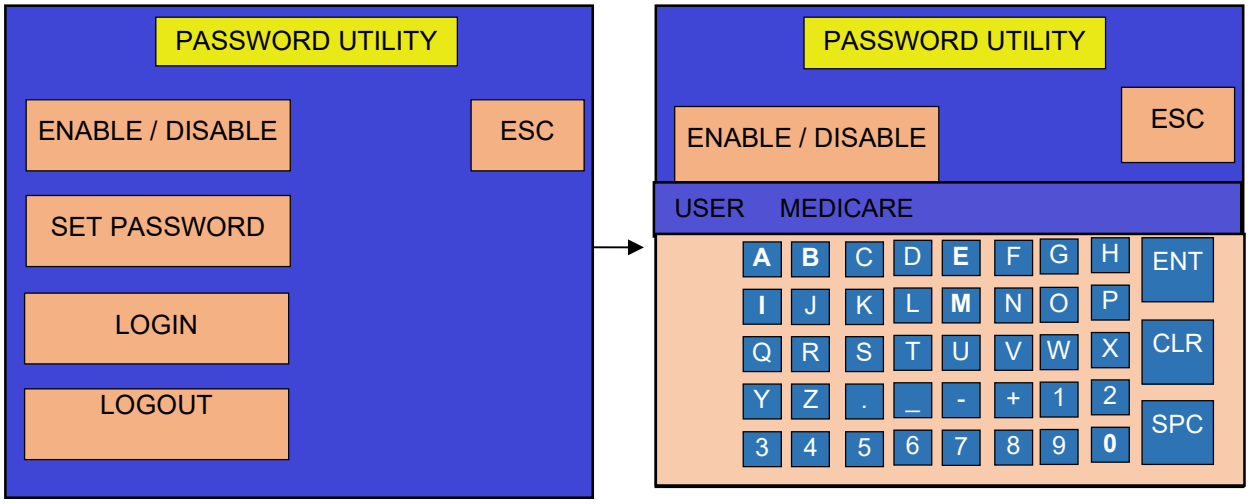
**B) SET PASSWORD:**

This option helps to set the PASSWORD along with the USER name.



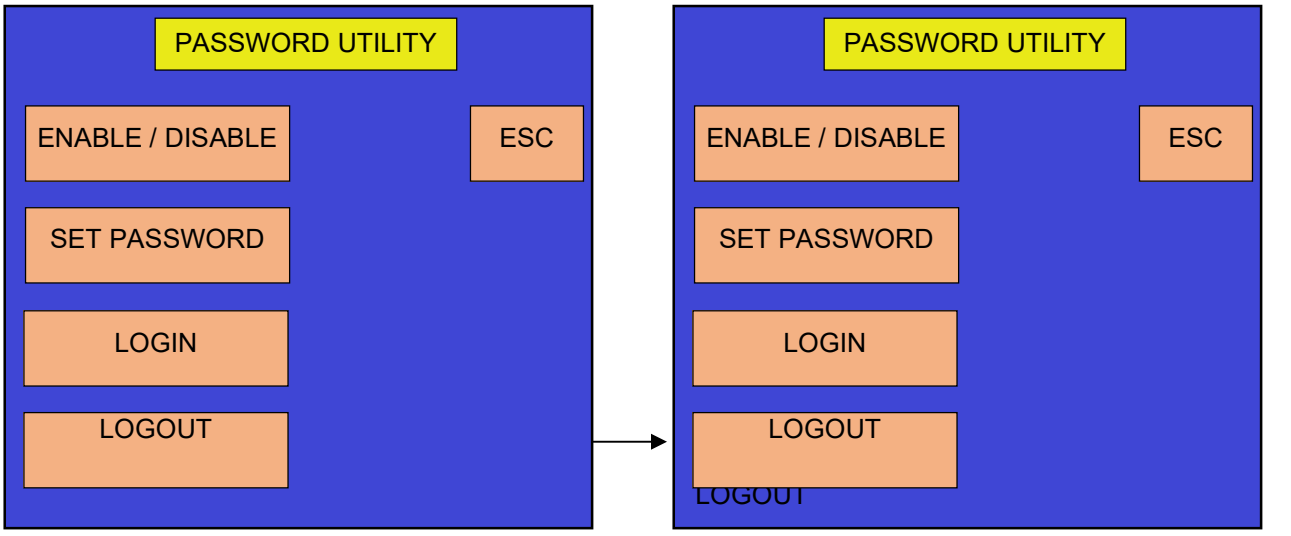
### C) LOGIN:

After entering the Password user needs to select LOGIN.




To Login/ enable user, enter the USER name and select ENTER

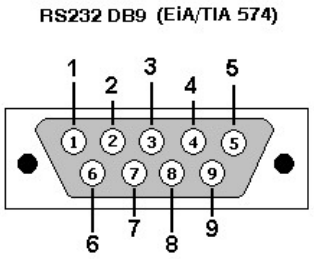
### D) LOGOUT:




To Logout / disable user, select LOGOUT option present on the screen

# 16. COMMUNICATION

The instrument is equipped with an RS232 serial port for PC configuration ie. User-computer interface. A cable is available to link the instrument to PC.

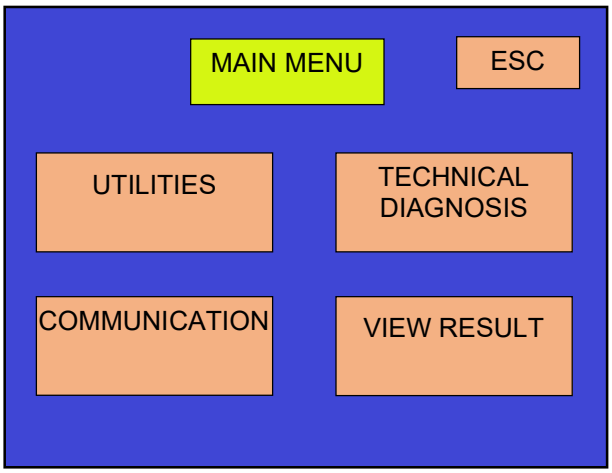



Communication will only start when both ends detect the presence of an active terminal or device.

RS232 port settings in a windows Operating system.

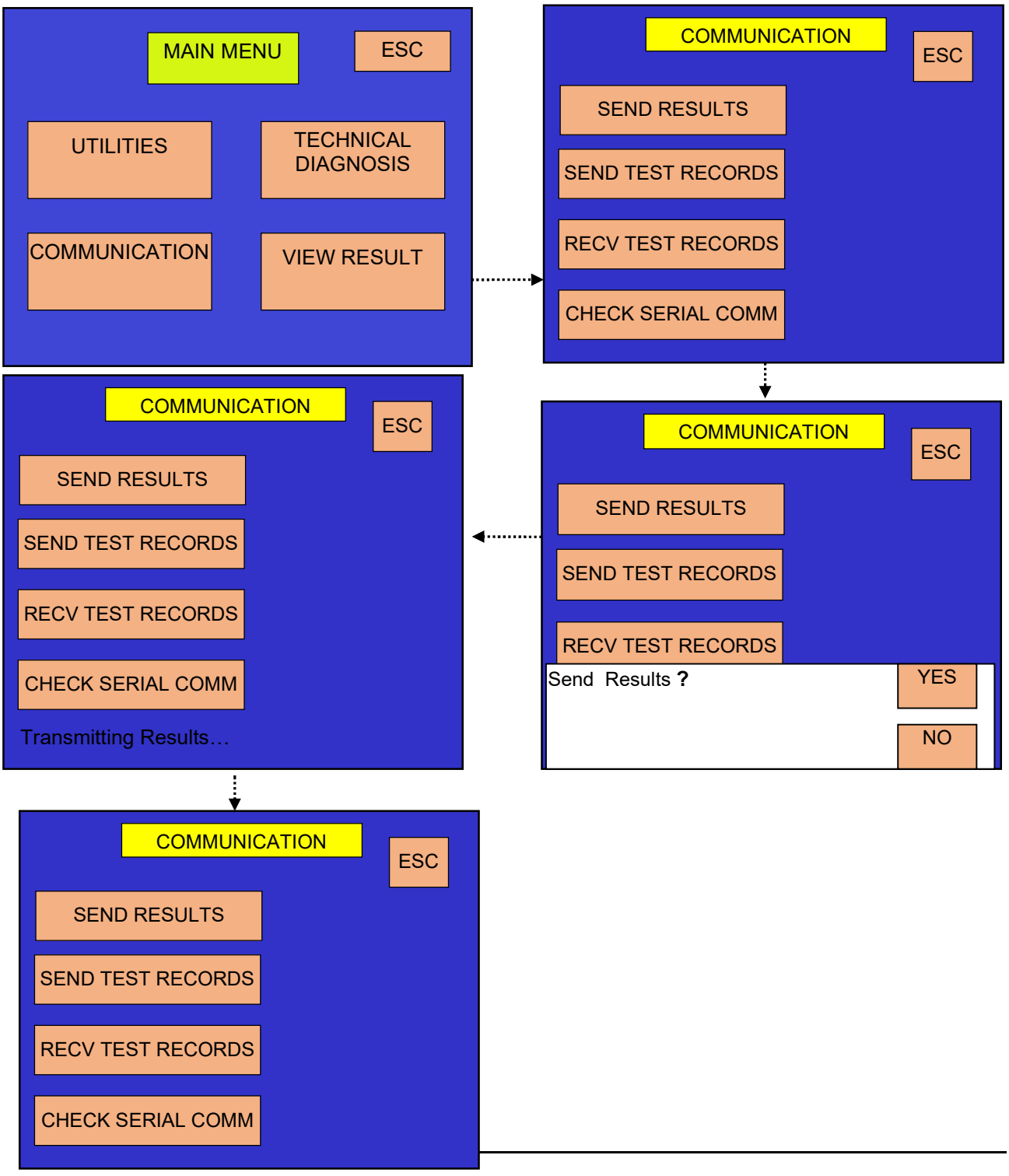
| PORT SETTINGS | |
|---|---|
| Bits per second | : 9600 |
| Data Bits | : 8 |
| Parity None | : None |
| Stop Bits | : 1 |
| Flow control | : None |

There is an option present on the Main menu screen named as COMMUNICATION which is used for transferring data from instrument to the computer and also from instrument to instrument.

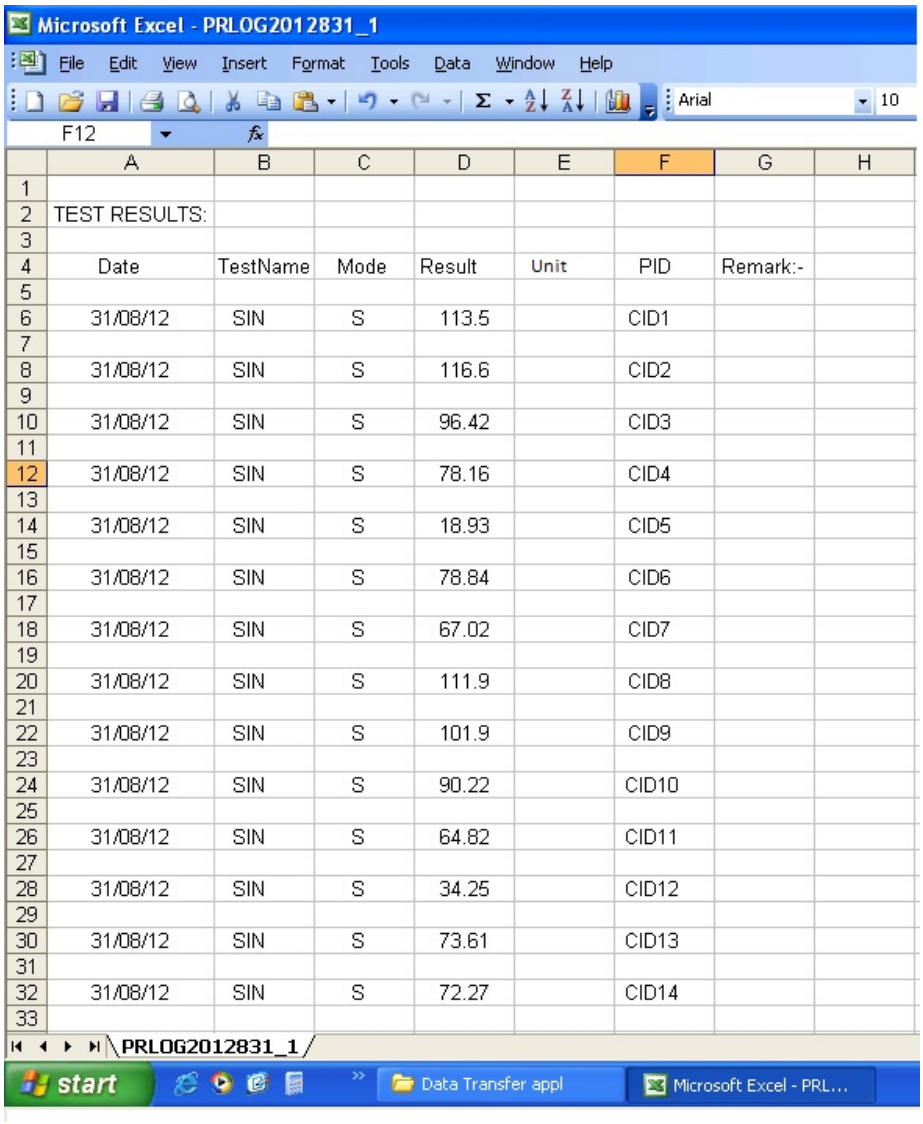


### 16.1. Send Results:

**SEND RESULTS** helps the user to transfer all the Results stored in the instrument to the computer via Serial Communication.
Results can be send either through USB or SERIAL communication.
Before Sending the Results check whether the Serial cable / USB cable is connected to both the ends of the instrument and the computer respectively.



These Results are send through Application which are created in ".csv" format, Convert the corresponding format to Excel file which is created as shown below –



Microsoft Excel - PRLOG2012831_1

File Edit View Insert Format Tools Data Window Help

F12

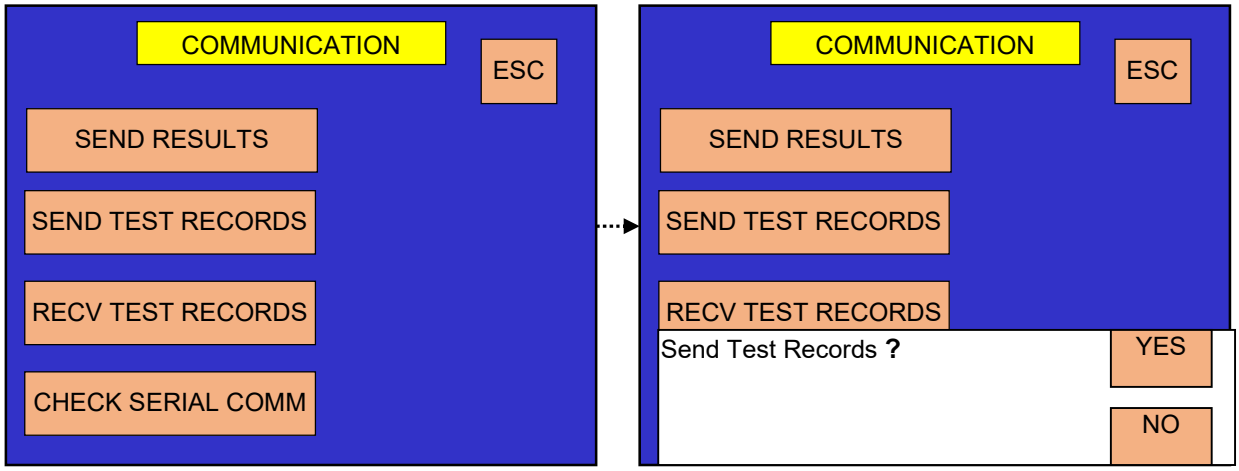
| | A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | |
| 2 | TEST RESULTS: | | | | | | | |
| 3 | | | | | | | | |
| 4 | Date | TestName | Mode | Result | Unit | PID | Remark:- | |
| 5 | | | | | | | | |
| 6 | 31/08/12 | SIN | S | 113.5 | | CID1 | | |
| 7 | | | | | | | | |
| 8 | 31/08/12 | SIN | S | 116.6 | | CID2 | | |
| 9 | | | | | | | | |
| 10 | 31/08/12 | SIN | S | 96.42 | | CID3 | | |
| 11 | | | | | | | | |
| 12 | 31/08/12 | SIN | S | 78.16 | | CID4 | | |
| 13 | | | | | | | | |
| 14 | 31/08/12 | SIN | S | 18.93 | | CID5 | | |
| 15 | | | | | | | | |
| 16 | 31/08/12 | SIN | S | 78.84 | | CID6 | | |
| 17 | | | | | | | | |
| 18 | 31/08/12 | SIN | S | 67.02 | | CID7 | | |
| 19 | | | | | | | | |
| 20 | 31/08/12 | SIN | S | 111.9 | | CID8 | | |
| 21 | | | | | | | | |
| 22 | 31/08/12 | SIN | S | 101.9 | | CID9 | | |
| 23 | | | | | | | | |
| 24 | 31/08/12 | SIN | S | 90.22 | | CID10 | | |
| 25 | | | | | | | | |
| 26 | 31/08/12 | SIN | S | 64.82 | | CID11 | | |
| 27 | | | | | | | | |
| 28 | 31/08/12 | SIN | S | 34.25 | | CID12 | | |
| 29 | | | | | | | | |
| 30 | 31/08/12 | SIN | S | 73.61 | | CID13 | | |
| 31 | | | | | | | | |
| 32 | 31/08/12 | SIN | S | 72.27 | | CID14 | | |
| 33 | | | | | | | | |

PRLOG2012831_1

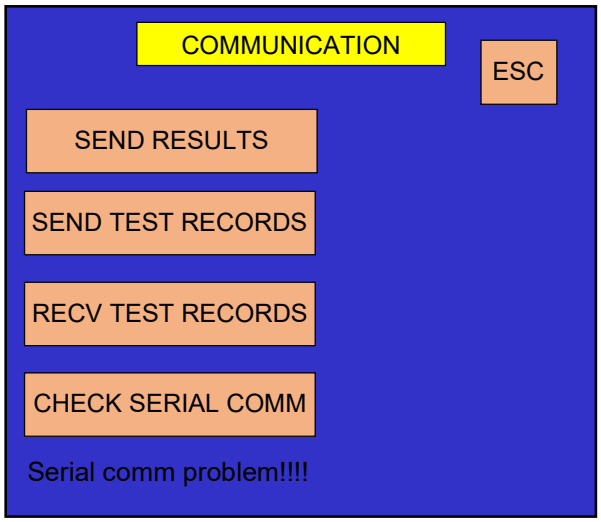
start Data Transfer appl Microsoft Excel - PRL...

### 16.2. Send Test Records:

This option helps the user to send the Test Records created in one instrument to another instrument serially with the help of serial cable. And therefore one has to select serial communication in Utilities.

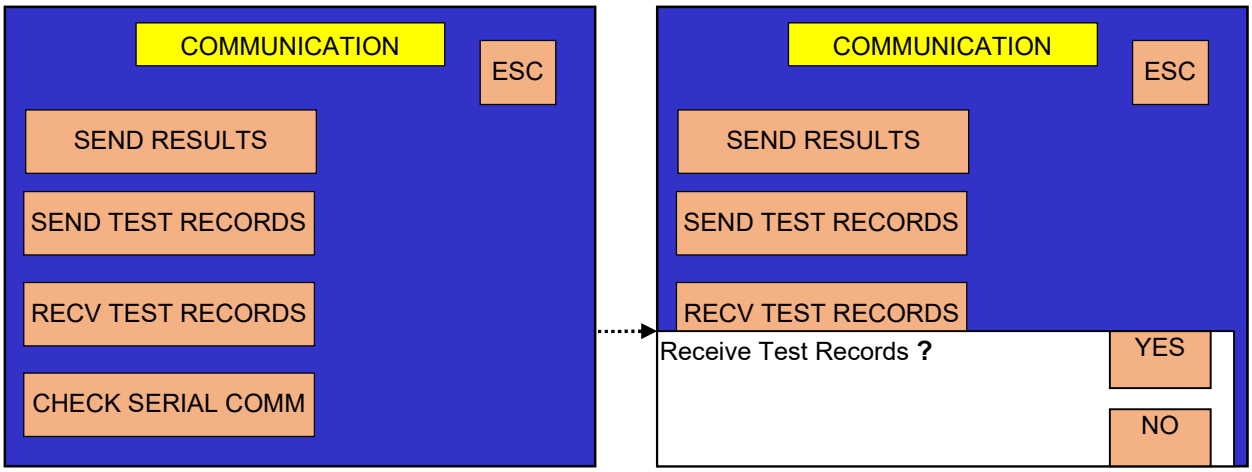



Suppose by default if Communication is set to USB then it will display following screen with msg string.



### 16.3. Receive Test Records:

This option is used for receiving the Test Records from one instrument to another. On selecting "RECV TEST RECORDS"; it will display the string – Receive Test Records? Yes / No. Select "Yes" in order to receive the data from the other instrument.




Note: 1. User must first restart the instrument before sending the data from one instrument to another.

2. Remember that while transferring Test Records from one instrument to another one must first select "RECV TEST RECORDS" and then select "SEND TEST RECORDS" in order to send the data from one instrument to another.

For instance, let us take an example which will show how the Test Records are transferred from instrument to instrument.

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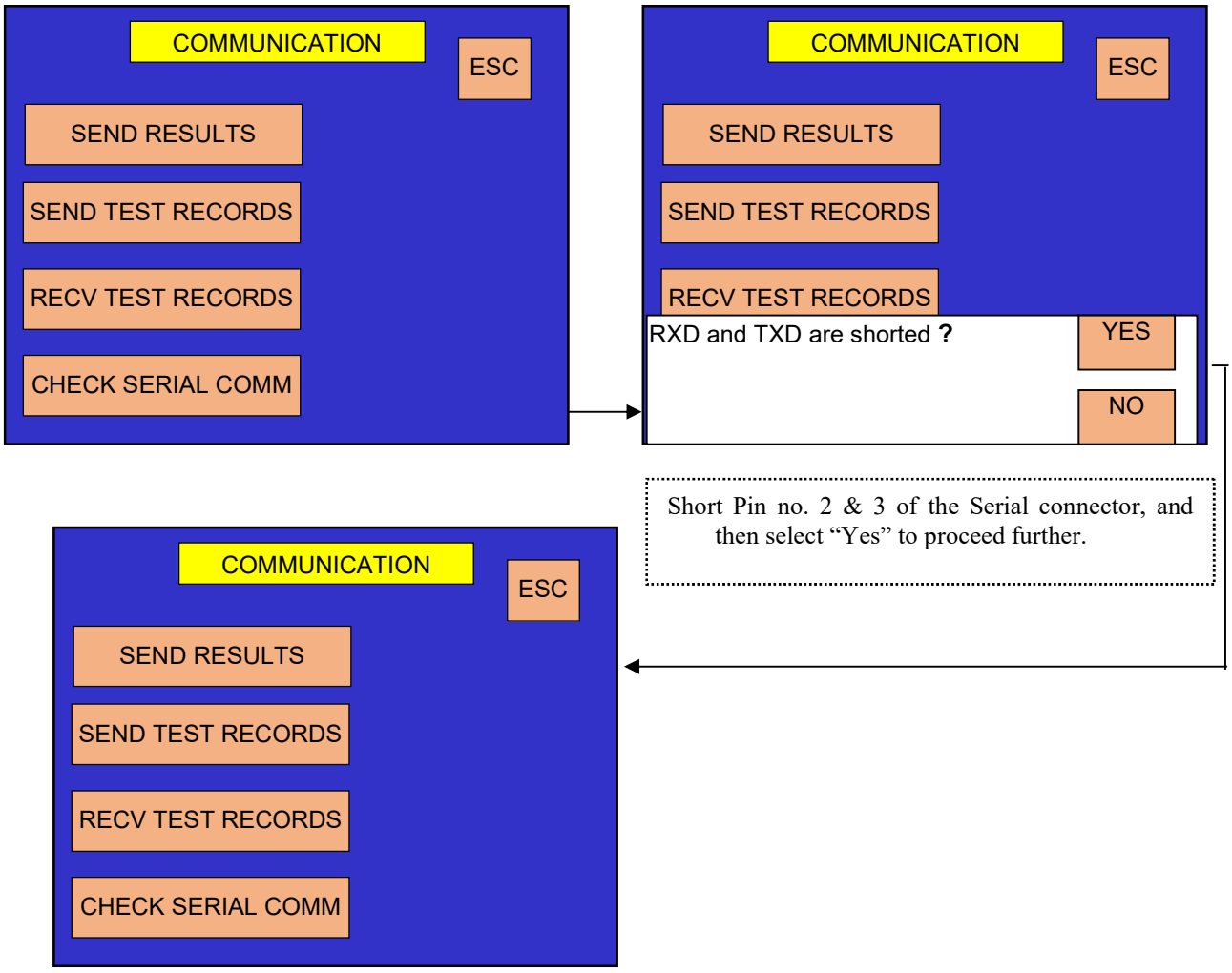
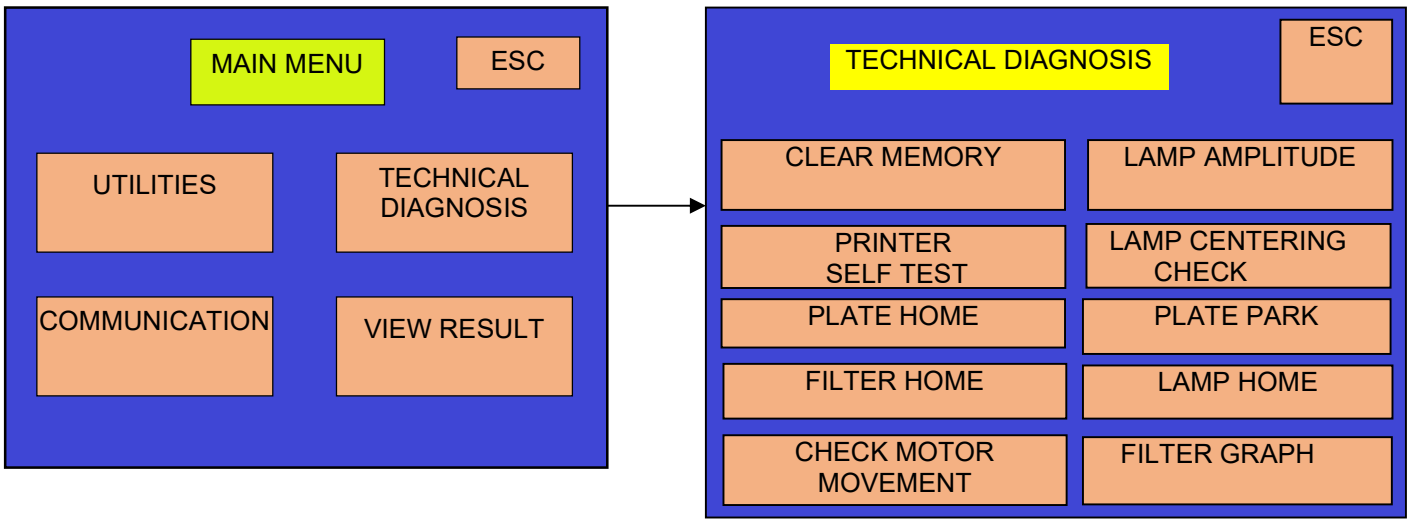
### 16.4. Check Serial Communication:




**This option is only applicable for Serial Communication. If Communication is set to USB then it will display the message i.e. "Serial comm problem!!!!"**

# 17. TECHNICAL DIAGNOSIS

Technical Diagnosis is present in “Main Menu”.




### 17.1. Clear Memory

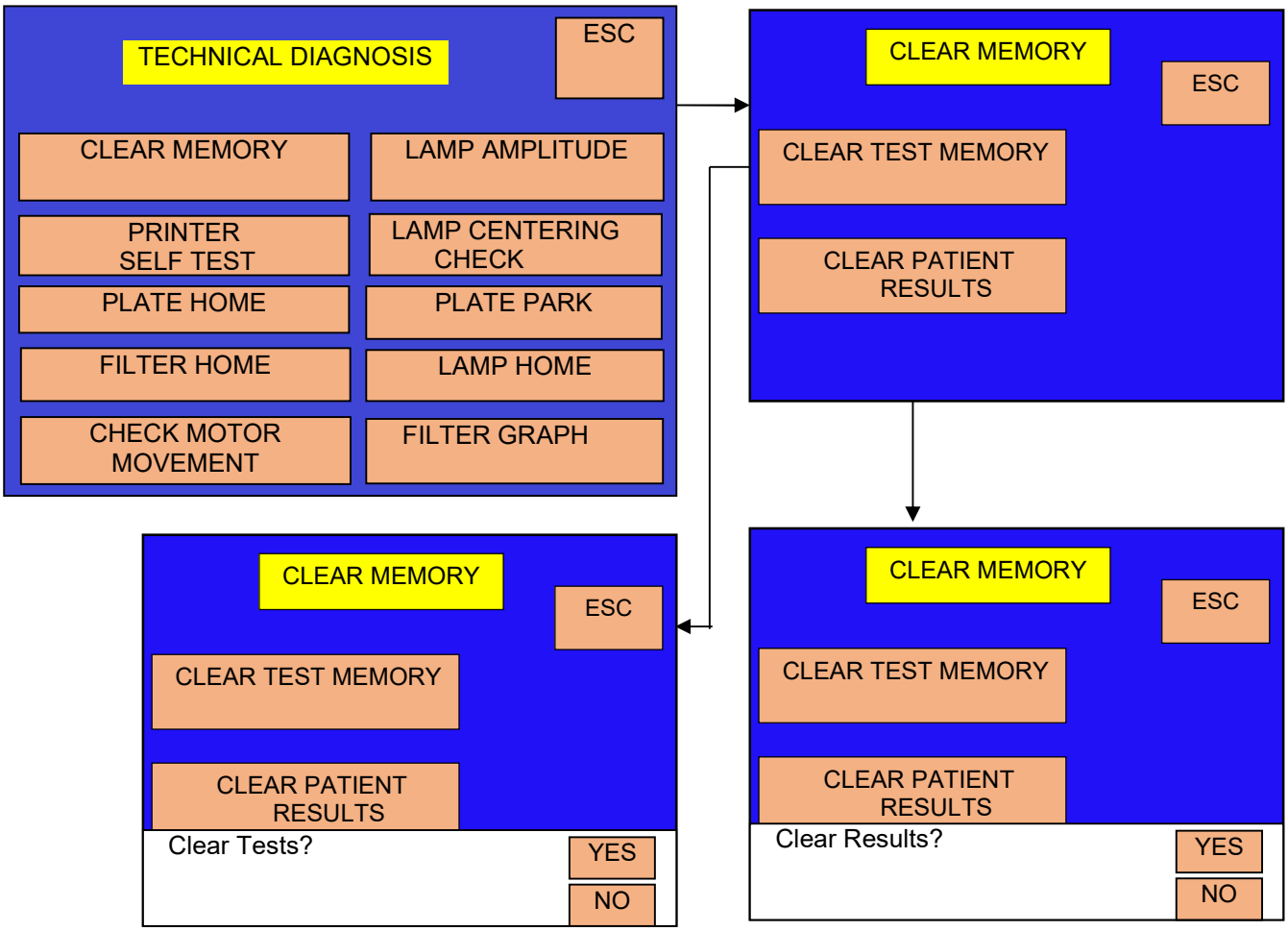
This option is used to clear entire saved test records and entire saved patient results along with saved plates. The “Test Records” are the different kind of programmed test that you have made in different modes of operation and saved in instrument program memory.

When you select Clear Patient Results 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 “Please wait.. ”.

This option does not clear the programmed test saved in instrument memory.

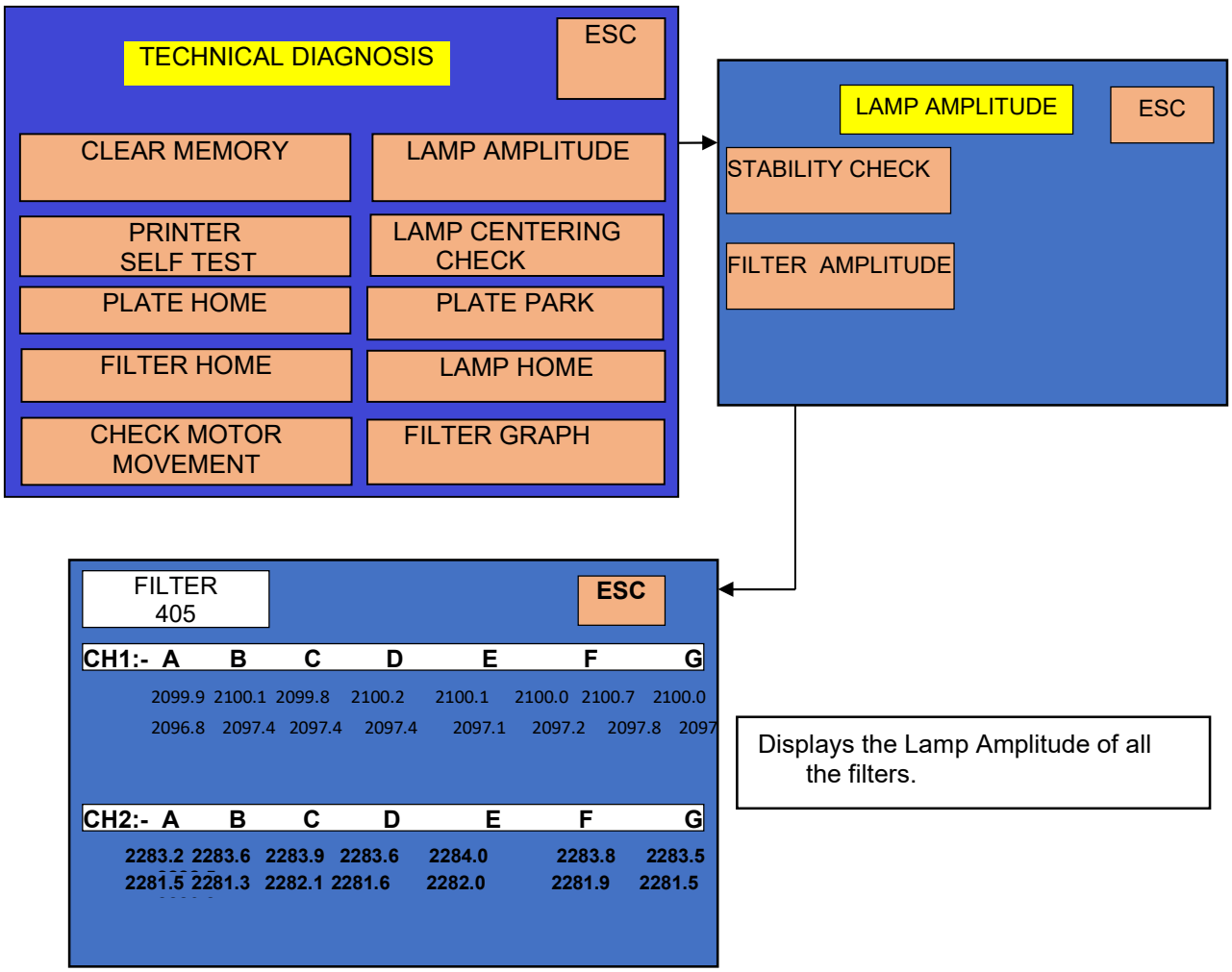
When you select Clear Test Memory option, this time instrument will ask,

“Clear Tests? YES / NO”. If you select “YES” it will start clearing all programmed test saved in instrument memory, and shows message “Please wait ..”.



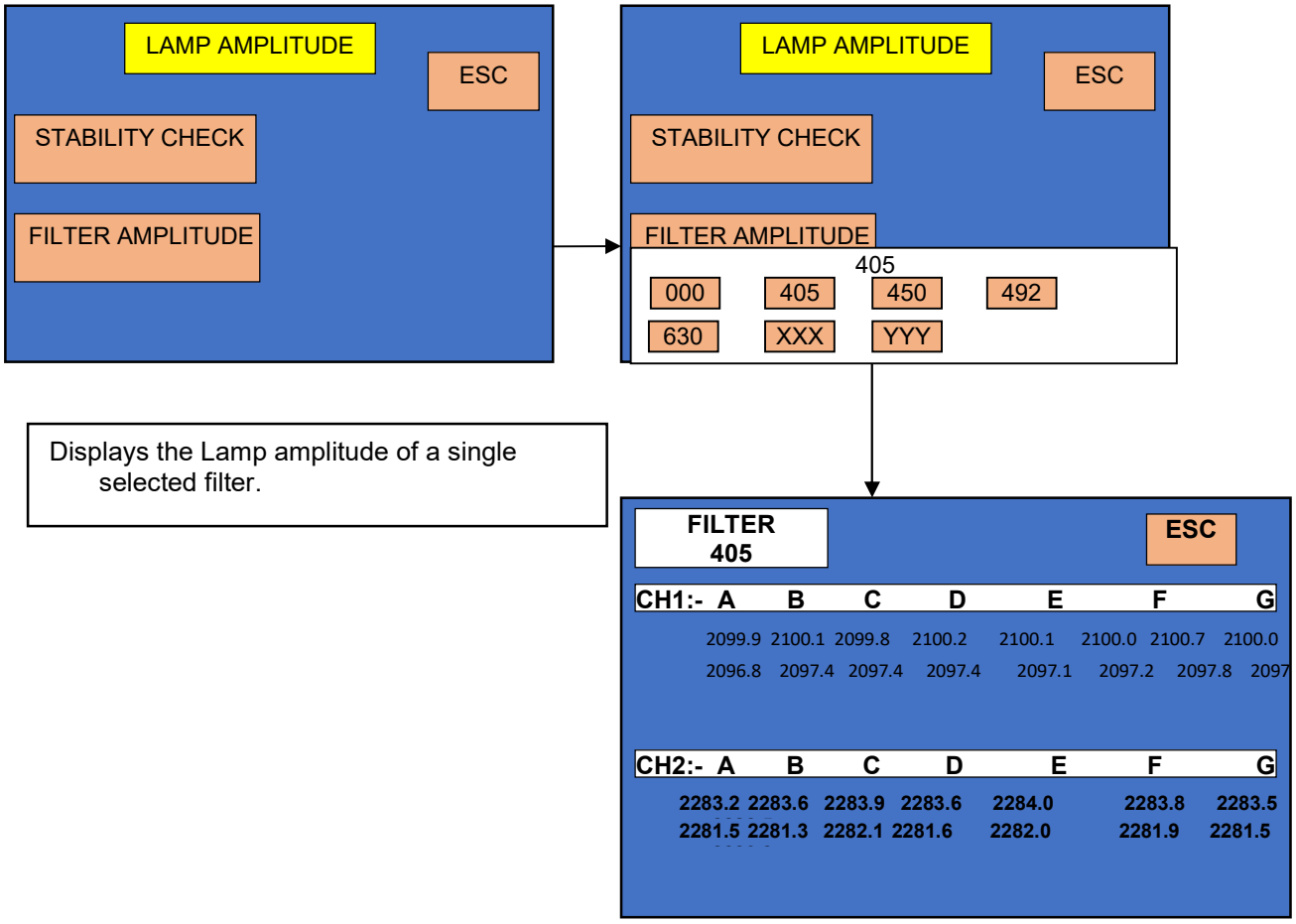

### 17.2. Lamp Amplitude

This option is used to check the light gain of filters used in the instrument. There are 2- channels used of same type. This option shows the gain of each channel filter in table format. In the instrument the range of amplitude is from 800.00 to 2450.00. If the amplitude goes below 800.00 for any channel, the message “Amp –Low” will appear on the screen for that particular channel
if the amplitude goes more than 2490.00, than the over range saturation voltage figure of 2500.00 will be passed.
The gains of filters are set within a required range. When you select this option, the lamps will turn ON, tray holder plate will comes out and the instrument will start showing amplitudes (gains) of all filters one by one.




Displays the Lamp Amplitude of all the filters.

2. Filter Amplitude:



### 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 the message i.e. 'printer check ok'.

### 17.4. Lamp Centering Check:

**NOTE: "Lamp Centering Check" is not for users. It is only for service purpose.**

### 17.5. PLATE HOME:

**NOTE: PLATE" is not for users. It is only for service purpose.**

### 17.6. PLATE PARK:

**NOTE: "PLATE PARK" is not for users. It is only for service purpose.**

### 17.7. FILTER HOME:

**NOTE: "FILTER HOME" is not for users. It is only for service purpose.**

### 17.8. LAMP HOME:

**NOTE: "LAMP HOME" is not for users. It is only for service**

### 17.9. CHECK MOTOR MOVEMENT:

**NOTE: "CHECK MOTOR MOVEMENT" is not for users. It is only for service**

### 17.10. FILTER GRAPH:

**NOTE: "FILTER GRAPH" is not for users. It is only for service**

# 18. Trouble Shooting

| | CAUSE /CORRECTIVE ACTION |
|---|---|
| 1) Printer disabled<br>Disable Printer YES / NO? | 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 service engineer. |
| 2) "Check Light Path!!! CH x"<br><br>Where 'x' is any channel number<br>X = 1/2 | You can get this message in any mode of operation. Before reading absorbance, instrument is checking the filter reference voltages of all 2 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.<br>For ex. If reference voltage of channel 2 is less the message will be displayed "Check Light Path!!! CH 2". It will indicate all channel numbers having less reference voltage, like<br>"Check Light Path!!! CH 1 2 "<br>In such a case, there is a possibility of filter gain of that channel is reduced or intensity of lamp of that channel has become poor, so contact factory engineer. |
| 3) Invalid Assay | If in the Cut Off and Multi standard mode the controls and standards are not ok 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 | Using data receiving application on computer,<br>1) If you have not connected the data cable (USB or Serial) correctly, you will get this message.<br>2) If you have selected 'Communication Setting', 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' |

| | |
|---|---|
| Do you want to continue?<br>YES / NO" | communication, on computer and select 'YES' key to transfer data.<br>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!!!<br>OR<br>Filter Index 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!!!<br>OR<br>Plate Index 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. |
| 8) Please Enter Filter value | Instrument will display this message, if primary filter not enetered |
| 9) Error-Same Filter | Instrument will display this message, if there is Same filter |
| 10) CheckSum Error | Instrument will display this message, if sum is not proper user need to resend the command. |

# 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**

_____

_____