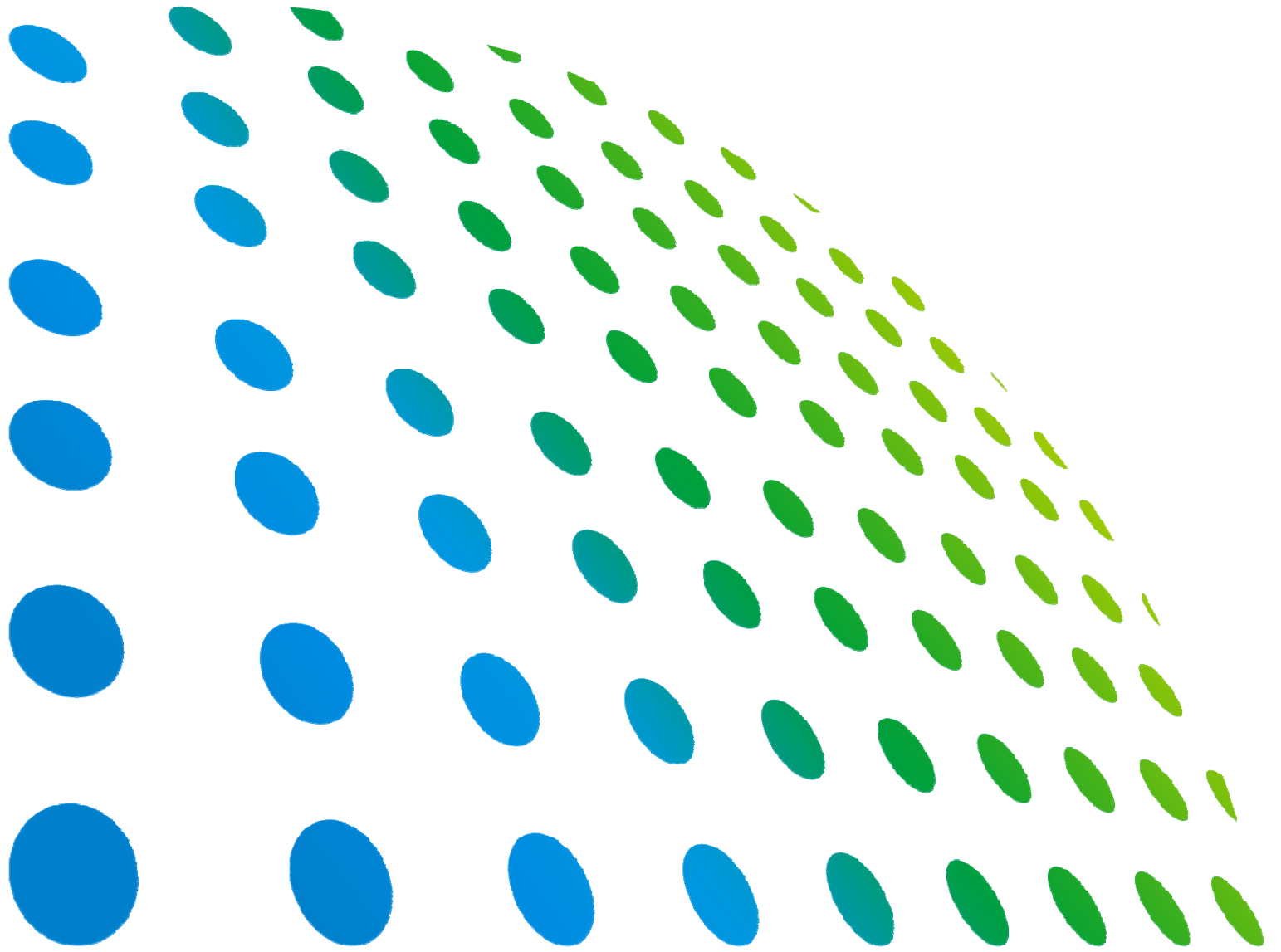




# Electrical Safety Tester

190xx

## Software User's Manual





# Electrical Safety Tester 190xx Software User's Manual



Version 1.1  
June 2013

# Legal Notices

The information in this document is subject to change without notice.

Chroma ATE INC. makes no warranty of any kind with regard to this manual, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. Chroma ATE INC. shall not be held liable for errors contained herein or direct, indirect, special, incidental or consequential damages in connection with the furnishing, performance, or use of this material.

## **CHROMA ATE INC.**

66 Hwaya 1st Rd., Kueishan Hwaya Technology Park, Taoyuan County 33383, Taiwan

Copyright Notices. Copyright 2005 - 2013 Chroma ATE INC., all rights reserved.  
Reproduction, adaptation, or translation of this document without prior written permission is prohibited, except as allowed under the copyright laws.

# Warranty

All Chroma instruments are warranted against defects in material and workmanship for a period of one year after date of shipment. Chroma agrees to repair or replace any assembly or component found to be defective, under normal use during this period. Chroma's obligation under this warranty is limited solely to repairing any such instrument, which in Chroma's sole opinion proves to be defective within the scope of the warranty when returned to the factory or to an authorized service center. Purchaser is responsible for the shipping and cost of the service item to Chroma factory or service center. Shipment should not be made without prior authorization by Chroma.

This warranty does not apply to any products repaired or altered by persons not authorized by Chroma, or not in accordance with instructions furnished by Chroma. If the instrument is defective as a result of misuse, improper repair, or abnormal conditions or operations, repairs will be billed at cost.

Chroma assumes no responsibility for its product being used in a hazardous or dangerous manner either alone or in conjunction with other equipment. High voltage used in some instruments may be dangerous if misused. Special disclaimers apply to these instruments. Chroma assumes no liability for secondary charges or consequential damages and in any event, Chroma's liability for breach of warranty under any contract or otherwise, shall not exceed the purchase price of the specific instrument shipped and against which a claim is made.

Any recommendations made by Chroma for use of its products are based upon tests believed to be reliable, but Chroma makes no warranty of the results to be obtained. This warranty is in lieu of all other warranties, expressed or implied, and no representative or person is authorized to represent or assume for Chroma any liability in connection with the sale of our products other than set forth herein.

## **CHROMA ATE INC.**

66 Hwaya 1st Rd., Kueishan Hwaya Technology Park,  
Taoyuan County 33383, Taiwan  
Tel: 886-3-327-9999  
Fax: 886-3-327-2886  
e-mail: [info@chromaate.com](mailto:info@chromaate.com)  
<http://www.chromaate.com>

# Revision History

The following lists the additions, deletions and modifications in this manual at each revision.

Date	Version	Revised Sections
Feb. 2005	1.0	Complete this manual.
Jun. 2013	1.1	<p>Add the sections of <i>“Miscellaneous”</i>, <i>“Get Offset Button”</i> and <i>“Get CS Button”</i>.</p> <p>Modify the following sections:</p> <ul style="list-style-type: none"><li>– Descriptions in the section of <i>“Introduction”</i>.</li><li>– Descriptions and Figures in the sections of <i>“Installing Chroma EST Software”</i>, <i>“Operation Procedure for Chroma EST Software”</i> and <i>“Scan Box Selection”</i>.</li><li>– Descriptions and Figures in the chapter of <i>“Editing Test Program”</i>.</li><li>– Descriptions and Figures in the chapters of <i>“Transmission Protocol Setting”</i> and <i>“Connection Test (GO/NOGO)”</i>,</li></ul>

## Table of Contents

<b>1.</b>	<b>Introduction.....</b>	<b>1-1</b>
1.1	General Information.....	1-1
1.2	Requirements.....	1-1
<b>2.</b>	<b>Installing Chroma EST Software.....</b>	<b>2-1</b>
<b>3.</b>	<b>Menu and Toolbar.....</b>	<b>3-1</b>
3.1	Menu.....	3-1
3.2	Toolbar.....	3-2
<b>4.</b>	<b>Operating the Program.....</b>	<b>4-1</b>
4.1	How to Start Chroma EST Software.....	4-1
4.2	Operation Procedure for Chroma EST Software.....	4-1
4.3	Scan Box Selection.....	4-2
<b>5.</b>	<b>Editing Test Program.....</b>	<b>5-1</b>
5.1	Editor Window.....	5-1
5.2	Add Step.....	5-2
5.3	Scan Box Setting.....	5-4
5.4	Delete Step.....	5-6
5.5	Insert Step.....	5-6
5.6	Cut, Copy and Paste Step.....	5-7
5.7	Save Test Program.....	5-8
5.8	Open Existed TP.....	5-9
5.9	Miscellaneous.....	5-10
5.9.1	Preset Function.....	5-10
5.9.2	Barcode Function.....	5-11
5.9.3	Option Function.....	5-12
5.10	Get Offset Button.....	5-13
5.11	Get CS Button.....	5-14
<b>6.</b>	<b>Transmission Protocol Setting.....</b>	<b>6-1</b>
<b>7.</b>	<b>Connection Test (GO/NOGO).....</b>	<b>7-1</b>
7.1	Report Function.....	7-2
7.2	Offset Test.....	7-2
7.3	Get CS Test.....	7-4
7.4	Safety Test.....	7-4
7.5	Multiple UUTs Safety Test.....	7-8
7.5.1	Group Test.....	7-8
7.5.2	Save Judge Data.....	7-9
<b>8.</b>	<b>Test Program and User Page.....</b>	<b>8-1</b>
8.1	Test Program.....	8-1
8.1.1	TP Release Function.....	8-2
8.1.2	TP Export Function.....	8-3
8.1.3	TP Import Function.....	8-4
8.1.4	TP Deletion Function.....	8-6
8.2	User Page.....	8-8
8.2.1	Add New User.....	8-9
8.2.2	Edit User.....	8-10
8.2.3	Delete User.....	8-11
<b>9.</b>	<b>Report.....</b>	<b>9-1</b>
<b>10.</b>	<b>Statistics.....</b>	<b>10-1</b>

10.1	Fail Rate Statistics Chart .....	10-2
10.1.1	Description .....	10-3
10.1.2	Display Statistics Chart .....	10-4
10.1.3	Save Statistics Chart.....	10-4
10.1.4	Print & Print Preview Statistics Chart.....	10-5
10.2	Fail Item Statistics Chart.....	10-6
10.2.1	Description .....	10-6
10.2.2	Display Statistics Chart .....	10-7
10.2.3	Save Statistics Chart.....	10-8
10.2.4	Print & Print Preview Statistics Chart.....	10-8
10.3	Cpk Statistics Chart .....	10-8
10.3.1	Description .....	10-8
10.3.2	Display Statistics Chart .....	10-10
10.3.3	Save Statistics Chart.....	10-11
10.3.4	Print & Print Preview Statistics Chart.....	10-11
10.4	Raw Data .....	10-11
10.4.1	Description .....	10-11



# 1. Introduction

## 1.1 General Information

Chroma Electrical Safety Tester is a software for management and statistics report. Hi Pot 190xx series (includes 19032P) process test and result analysis under convenient and simple human-machine interface by communicating via communication interface.

Notice items:

- The instrument firmware version Chroma EST supported:  
The 19032 is varied by different software version.

EST Software Version	Supported Firmware Version
1.00	4.00 5.12
1.11	5.20
1.12	5.24
1.13 ~ 1.16	5.30
1.17 ~ 2.0	6.00
2.1.0	6.11

The 19032P is varied by different software version.

EST Software Version	Supported Firmware Version
Version 2.1.0 or above	1.00~1.90
2.1.0	3.00

- If users operate Hi Pot desired via this software, please don't set any setting on the unit by manual. This is for preventing different settings between PC and the unit may cause unpredictable error.
- When Chroma EST and the unit are under off-line status, do any modification on the unit by manual is need to restart Chroma EST software for avoiding the possibility of the error generated.

## 1.2 Requirements

- Installing the PC with Windows 98 SE/2000/XP operating system.
- Best resolution 1024x768 lowercase.
- Communication interface support GPIB and RS232.
- Microsoft Excel 2000 or above version.



## 2. Installing Chroma EST Software

Execute Setup.exe in the installation CD to enter the installation procedure as Figure 2-1 shown.



Figure 2-1 Chroma EST Setup

Four items in the main screen:

- Install Chroma EST Software  
Chroma EST main installation program
- NI VISA and NI IVI Engine  
These two sets of software provide by National Instruments. According to your computer if NI VISA or NI IVI Engine is installed, to decide whether the two sets of software kit to be installed. **The installation procedures to suggest you are:** Installing “NI-VISA” firstly, then “NI-IVI Engine” and “Chroma EST Software” lastly for ensure connecting with the instrument correctly. Moreover, the installation of NI VISA and NI IVI Engine are very simple, we don’t explain it further at here.
  - ※ Chroma can’t provide the software of NI\_VISA because of copyright. However, the NI\_VISA can be installed by attached CD when purchase GPIB card or these two sets of software can be downloaded from NI website by yourself. (<http://www.ni.com/visa>)
- Exit: It exits from the installation program.

## Installing Chroma EST Software

1. First of all, please click "Install Chroma EST Software" then enter Chroma EST main installation program (Figure 2-2).

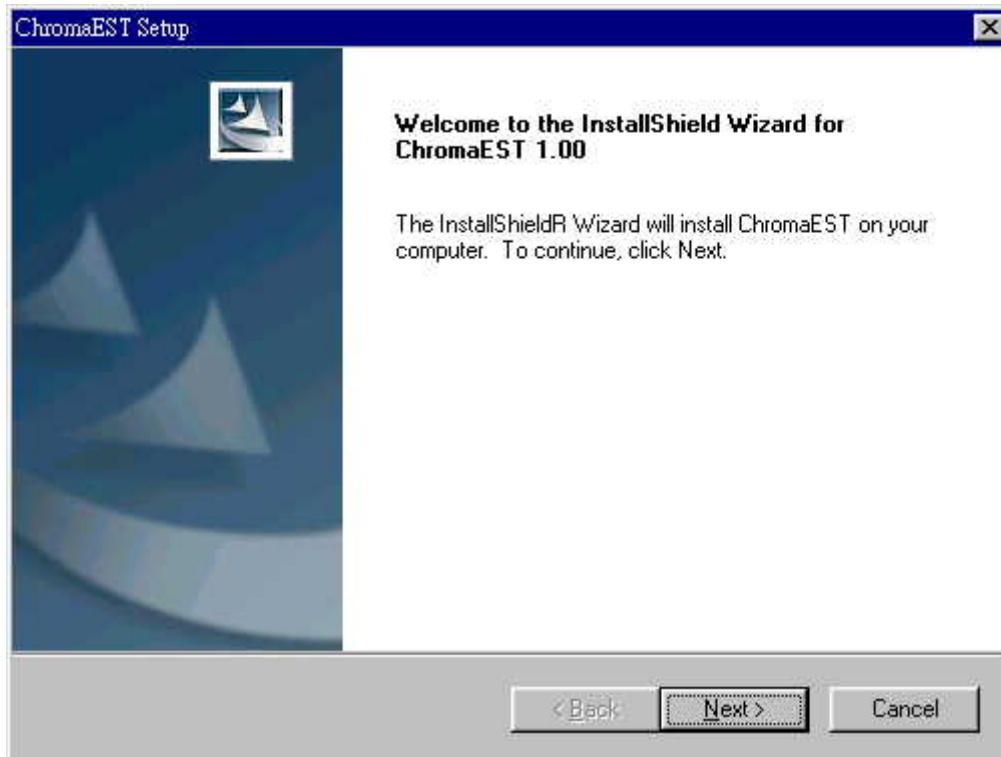


Figure 2-2 Chroma EST Setup Screen 1

2. Press **Next >** button to enter license agreement. (Figure 2-3)



Figure 2-3 Chroma EST Setup Screen 2

3. Press **Yes** button, the screen shows customer information about entering user's name and company. (Figure 2-4)

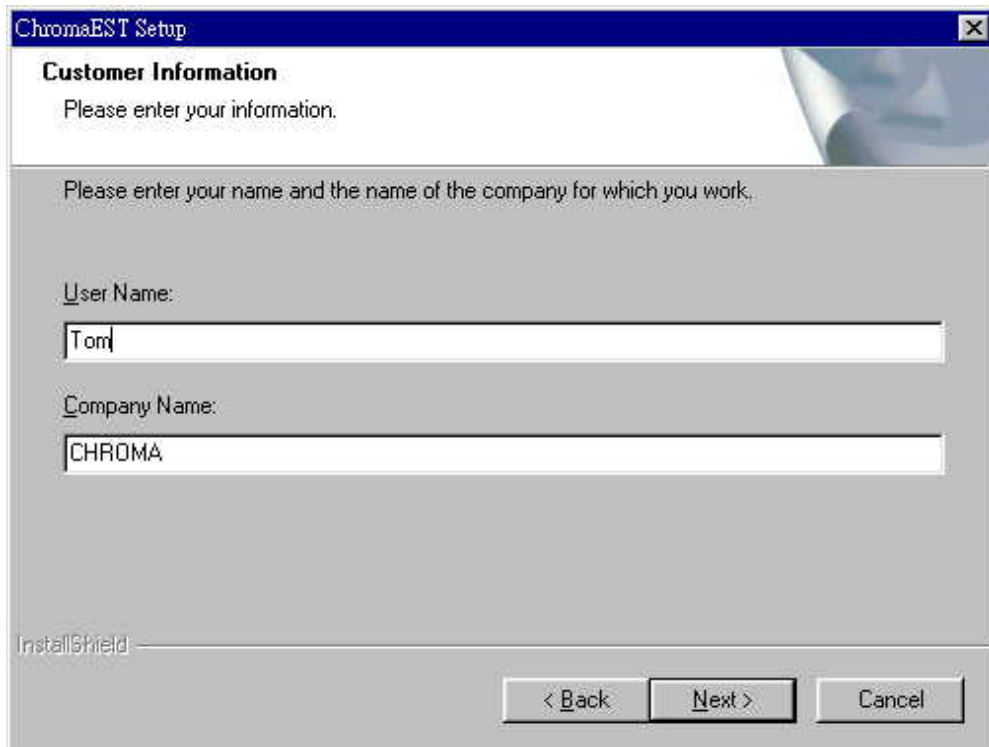


Figure 2-4 Chroma EST Setup Screen 3

4. Press **Next >** button to select the folder where install file (Figure 2-5). If you don't select folder, the installation program will setup a default folder for Chroma\ChromaEST system software in C: \Program Files automatically. Thus, all related programs and files are installed in this folder. Press **Next >** button directly is recommended.

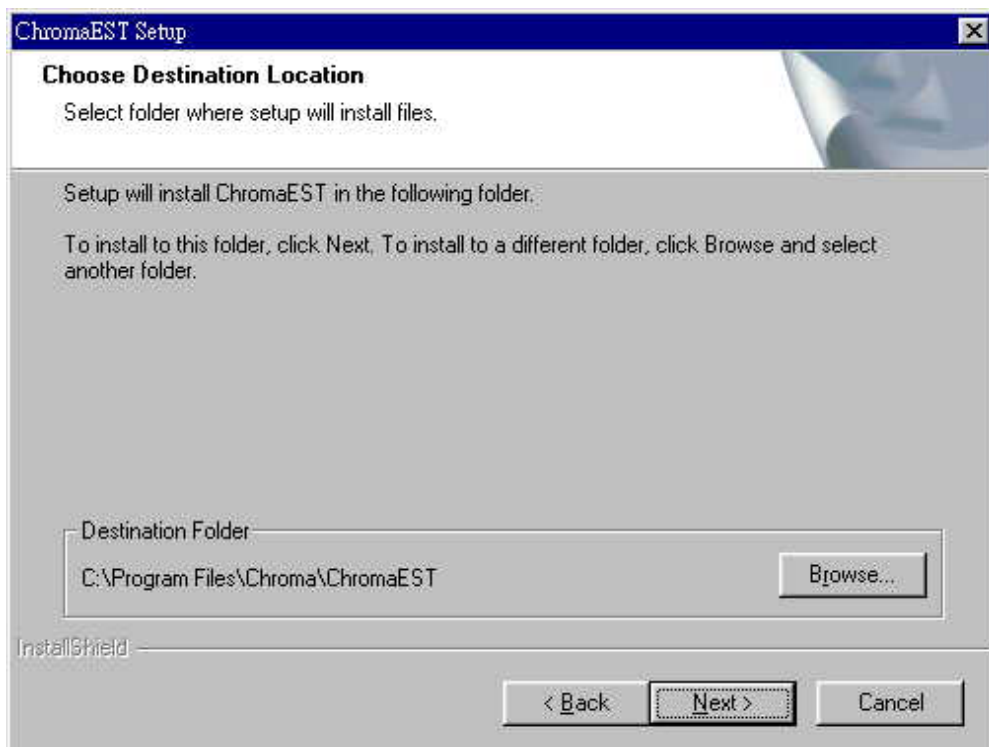


Figure 2-5 Chroma EST Setup Screen 4

- Next, the program starts to install as *Figure 2-6* shown.

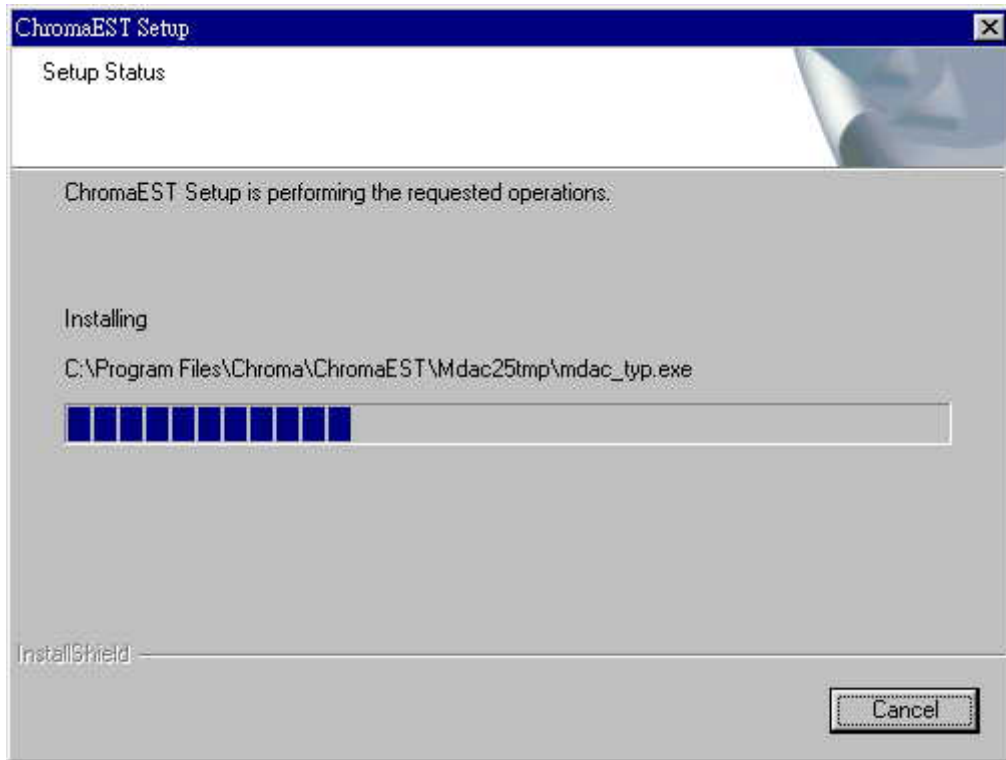


Figure 2-6 Chroma EST Setup Screen 5

- After Chroma EST software installation is completed, the program will request users to install CVI Runtime Engine as *Figure 2-7* shown.



Figure 2-7 CVI Engine Setup Screen 6

6. After the installation is completed, the program will request the user to reboot to ensure this software normal use. (Figure 2-8)

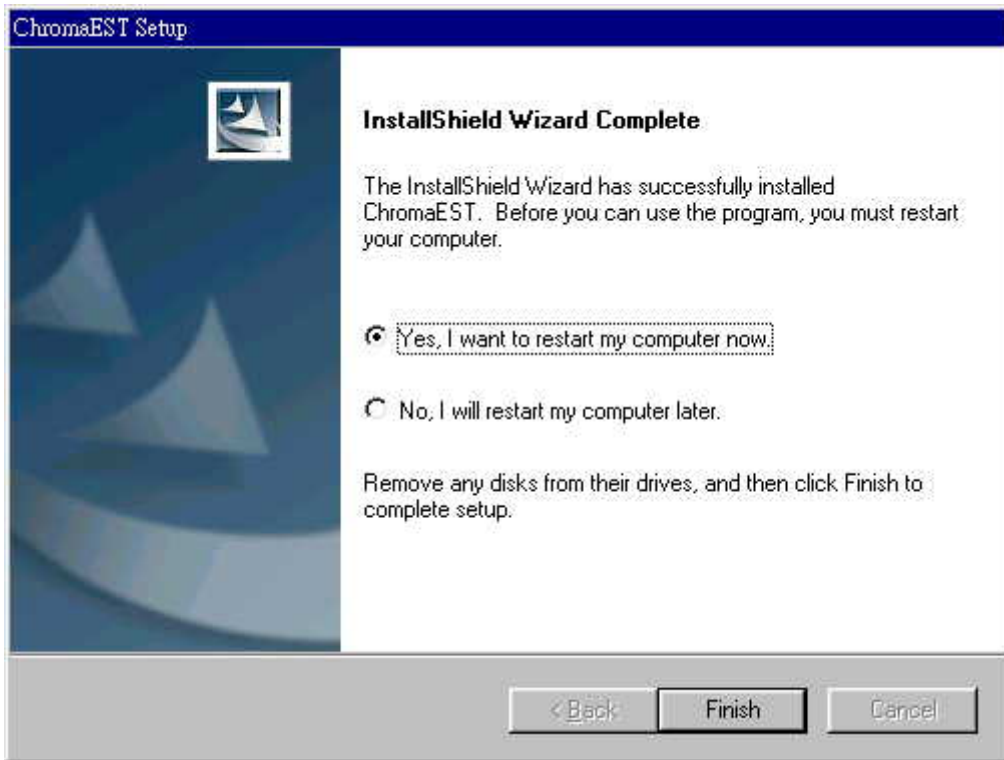


Figure 2-8 Chroma EST Setup Screen 7





## 3. Menu and Toolbar

### 3.1 Menu

<p><b>File Menu</b></p> <ul style="list-style-type: none"> <li>New</li> <li>Open...</li> <li>Save</li> <li>Save As...</li> </ul> <hr/> <ul style="list-style-type: none"> <li>Print...</li> <li>Print Preview</li> </ul> <hr/> <ul style="list-style-type: none"> <li>Exit</li> </ul>	<p>New : Create new .stp file.  Open...: Open file. (.stp file)  Save : Save file (Editor: .stp file or Statistics: .bmp file)  Save As...: Save as new file. (.stp file)  Print...: Print out (Please refer section 10.1.4)  Print Preview (Please refer section 10.1.4)  Exit: Exit from program.</p>
<p><b>Edit Menu</b></p> <ul style="list-style-type: none"> <li>Insert Ctrl+I</li> <li>Delete Ctrl+D</li> <li>Cut Ctrl+X</li> <li>Copy Ctrl+C</li> <li>Paste Ctrl+V</li> </ul>	<p>Insert: Insert a Step  Delete: Delete a Step  Cut: Cut a Step  Copy: Copy a Step  Paste: Paste a Step</p>
<p><b>Function Menu</b></p> <ul style="list-style-type: none"> <li>Config</li> <li>✓ Editor</li> <li>GO/NOGO</li> <li>Report</li> <li>Statistics</li> <li>Management</li> </ul>	<p>Configuration: Switch to Configuration.  Editor: Switch to Editor (The ticked means the program is in this screen)  GO/NOGO: Switch to GO/NOGO.  Report: Switch to Report.  Statistics: Switch to Statistics.  Management: Switch to Management.</p>
<p><b>View Menu</b></p> <ul style="list-style-type: none"> <li>✓ Toolbar</li> <li>Status Bar</li> </ul>	<p>Toolbar: The toolbar is shown or hidden.  Status Bar: The status bar is shown or hidden.  × The checked indicates the item is shown, unchecked indicates that is hidden.</p>
<p><b>Help Menu</b></p> <ul style="list-style-type: none"> <li>About ChromaEST...</li> </ul>	<p>About Chroma EST program information.</p>

Table 3-1 Menu

## 3.2 Toolbar

The toolbar corresponds to Function menu in function list.



- Configuration : Communication protocol setup
- Editor : Edit Test Program (called as TP for short, the pressed part in above figure indicates the program is in this screen.)
- GO/NOGO : Connection test
- Report : Create report
- Statistics : Statistics analysis
- Management : TP Import/Export and User permission control.

## 4. Operating the Program

### 4.1 How to Start Chroma EST Software

If Chroma EST software is already installed in hard disk, a shortcut icon of Chroma EST software will be shown on the desktop. Please double click on this icon, then can start Chroma EST software. Moreover, execute Chroma EST software by clicking **[START]** → **[Program File]** → **[Chroma EST]**.

After Chroma EST software is executed, *Figure 4-1* will be shown as below.

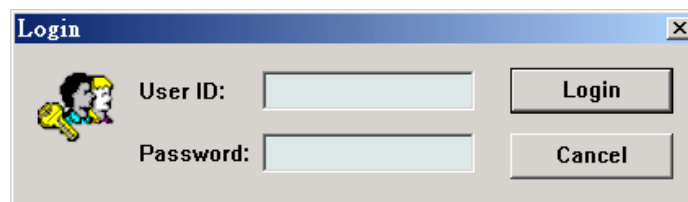


Figure 4-1 Login Screen

Please key User ID and correct Password in column of above figure, then press **Login** to start Chroma EST. If the software is used first time, please key “root” in “User ID” and “Password” and then change the password to ensure using safety.

### 4.2 Operation Procedure for Chroma EST Software

The program enters Open TP Window after login (*Figure 4-2*). “Demo” default TP is provided for executing the program first time. If a new TP is desired, click **New TP** to enter New TP dialog box as *Figure 4-3*.

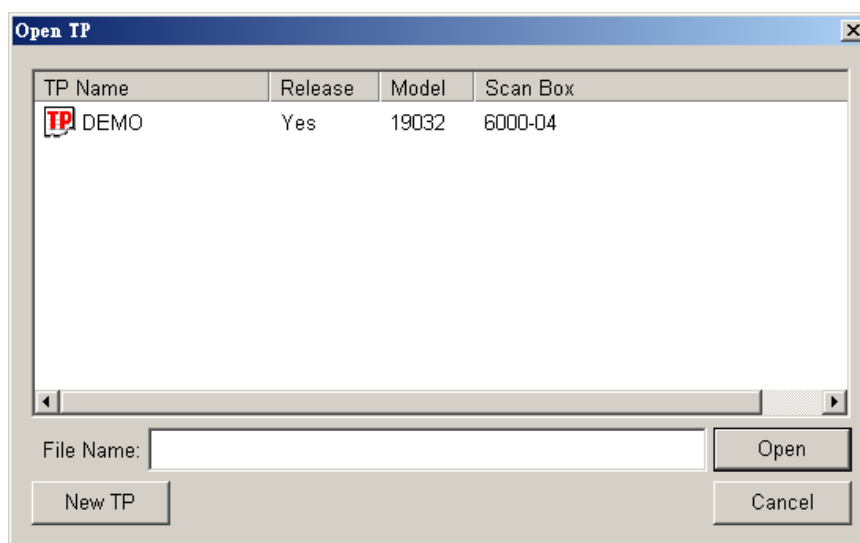


Figure 4-2

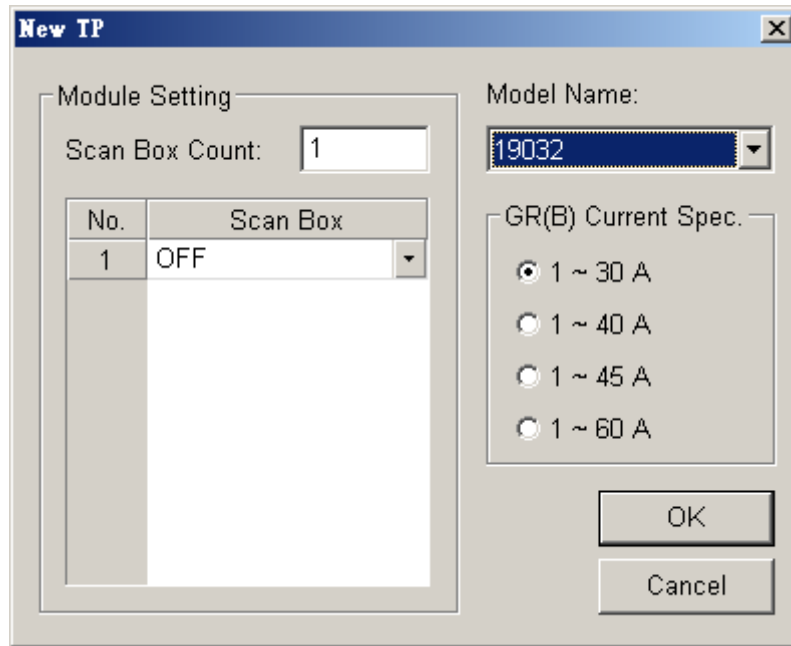


Figure 4-3

The items of New TP dialog box are described as the following:

■ **Model Name**

Select the model of Hi Pot single unit.

■ **Scan Box Count**

The count of Scan Box you need to use. The number range of inputting is 1~8, the input number will effect the below list, the line number is the same as the input number. Moreover, there are a lot of notices for the users.

1. If there don't insert any Scan Box into the instrument, the number of Scan Box Count remains 1, can't input 0. The item of No.1 in the lower list should be OFF.
2. The sequence of selected Scan Box in the lower list should be match to the actual connected Scan Box, or unpredictable error will be occurred.

■ **GR (B) Current Spec.**

Set the instrument used current specification for GR(B) mode.

After all setting are done, press **OK** key then the program entering Editor window directly, you can start to edit Test Program.

The model number and Scan Box in the dialog box are selected. Thus, the TP is fixed and can't be modified and not for other models connection testing as well.

### 4.3 Scan Box Selection

Scan Box has two types of Internal and External. Internal scan box supports 9 models, 6000-(01 ~ 08) and 6000-11; external scan box supports 3 models, 5000- (01~02) and 9030-AG. Settings in Scan Boxes should be noticed as follows.

- If the instrument is without internal and external Scan Box, just remain the selection on “OFF”. The software has a GB Floating in default which corresponds to output terminal on instrument’s rear panel.

■ **Set Scan Box internally:**

**Model: 6000- (01~08), 6000-11**

Key 1 in “Scan Box Count” column, Scan Box table beneath it will show No.1 and then select Scan Box model number on No.1.

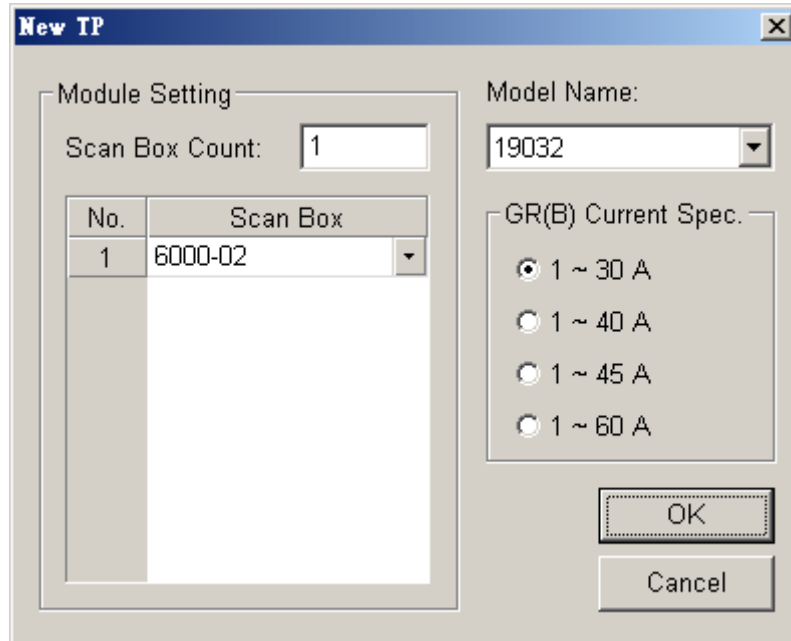


Figure 4-4

■ **Set Scan Box externally:**

Select the Scan Box model on No.1 directly. Here, take 5000-02 as an example.

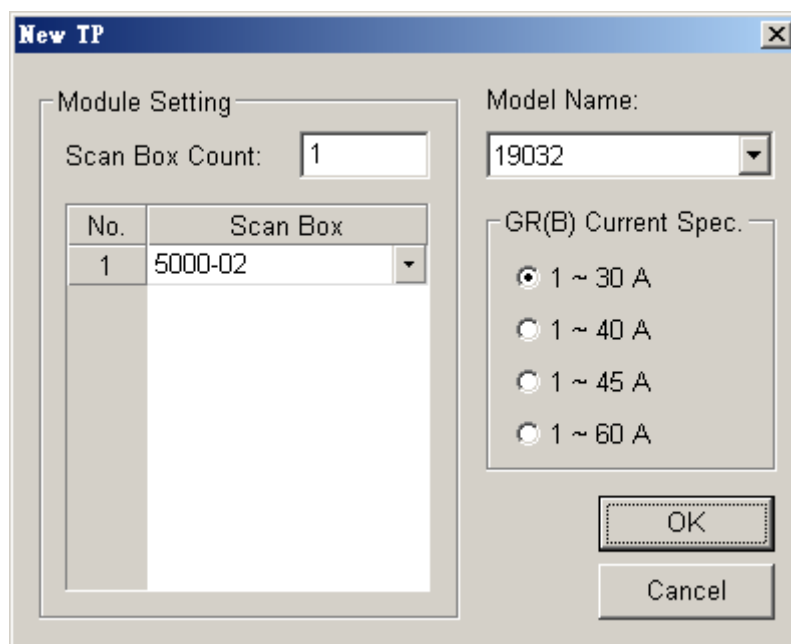


Figure 4-5

■ **Set Scan Box internally and externally:**

Procedures:

1. Please key total number of Scan Box in "Scan Box Count" column.
2. Set internal Scan Box firstly.
3. Next to set external Scan Box.

Here, take 6000-02, 5000-01 and 5000-02 as example, the figure after setting completed is shown as below.

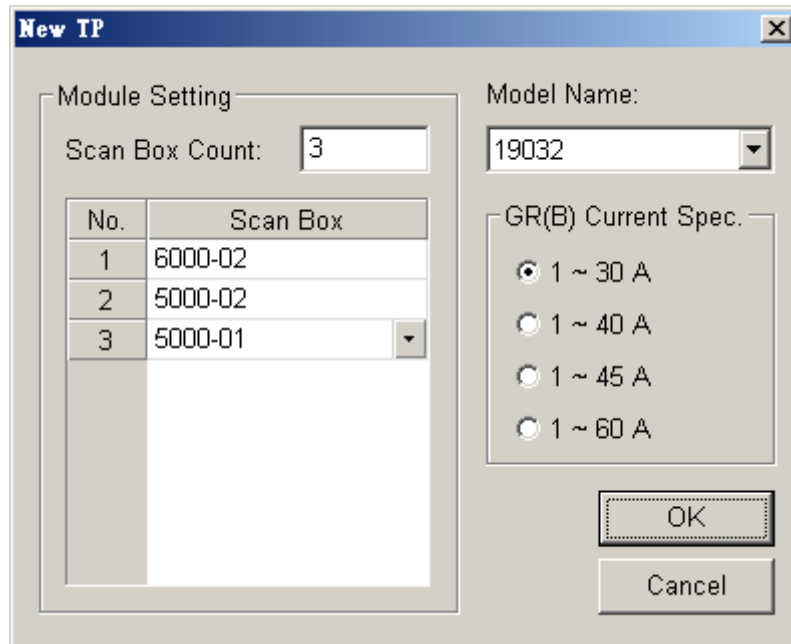


Figure 4-6

## 5. Editing Test Program

### 5.1 Editor Window

Follow the previous section, the program enters Editor window after creating a New TP. The program adds a Step ("GB" Mode) for TP users at the beginning as *Figure 5-1* shown. The window consists of three parts which will be described as follows.

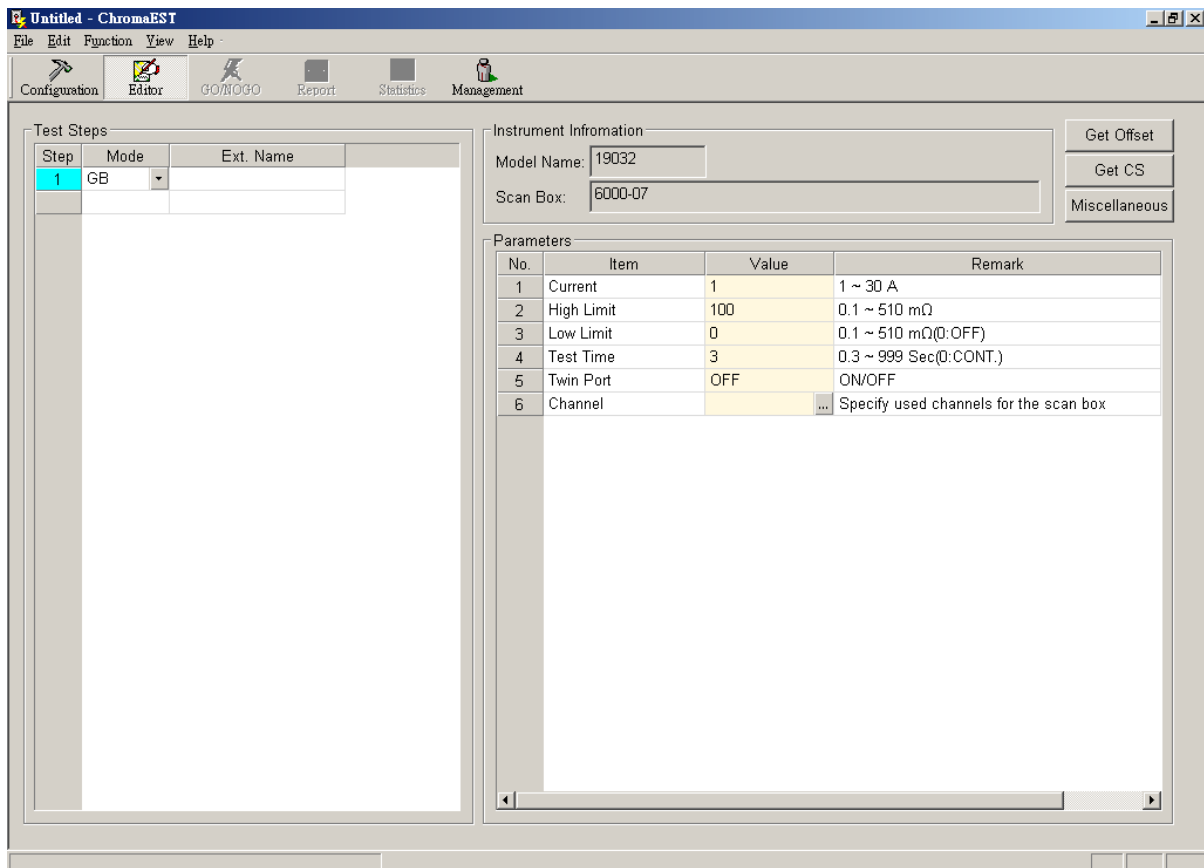


Figure 5-1 Editor Window

- **Instrument Information Group:** It shows information about TP on instrument.

#### Model Name

It shows the Hi Pot model number which is suitable for TP.

#### Scan Box

The TP used Scan Box, use a comma to separate each Scan Box number.

- **Test Steps Group:** It consists of three columns - Step, Mode and Ext. Name.

#### Step Column

It indicates how many step of the TP currently *i.e.* the test step of the TP. Take the figure above as an example, Step1 is for testing GB. Moreover, each TP contains 50 steps at most.

#### Mode Column

It indicates test items with pull-down menu which includes AC, DC, GB, IR, L/C,

Pause and OSC. The descriptions are as follows.

1. If the selected Scan Box is among 6000-04, 6000-05, 6000-06, 6000-07 and 6000-08, thus L/C test item will be in the menu.
2. In the early Firmware version, there is no Pause test item. Please confirm if the instrument supports Pause test item before using it.
3. Each Mode has its own parameter, thus when users select Step in Test Steps Group (click on any column by the mouse), the corresponded parameters will be shown on Parameter Group.

**Ext. Name Column**

Double click on the area to annotate for this test mode or press **Enter** to enter edit mode for users to key in any character.

- **Parameter Group:** Test item parameter setting includes three columns - Item, Value and Remark.

**Item Column**

It shows parameter name.

**Value Column**

It shows parameter setting.

**Remark Column**

It shows parameter range.

## 5.2 Add Step

If users desire to add a new test step, please click on the last Mode column a pull down menu button will be popped up. Click the button and select the desired test item (adding AC Mode) to complete the step as *Figure 5-2* and the figure after completed as *Figure 5-3*.

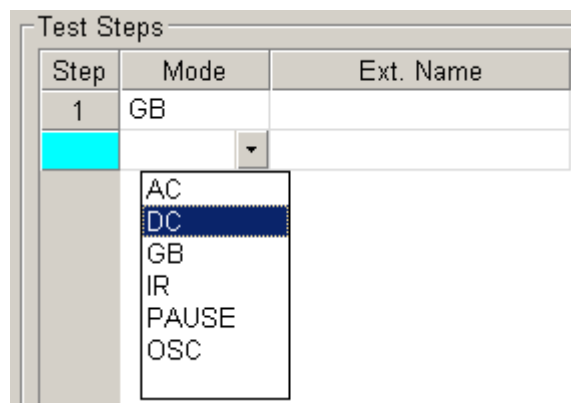


Figure 5-2



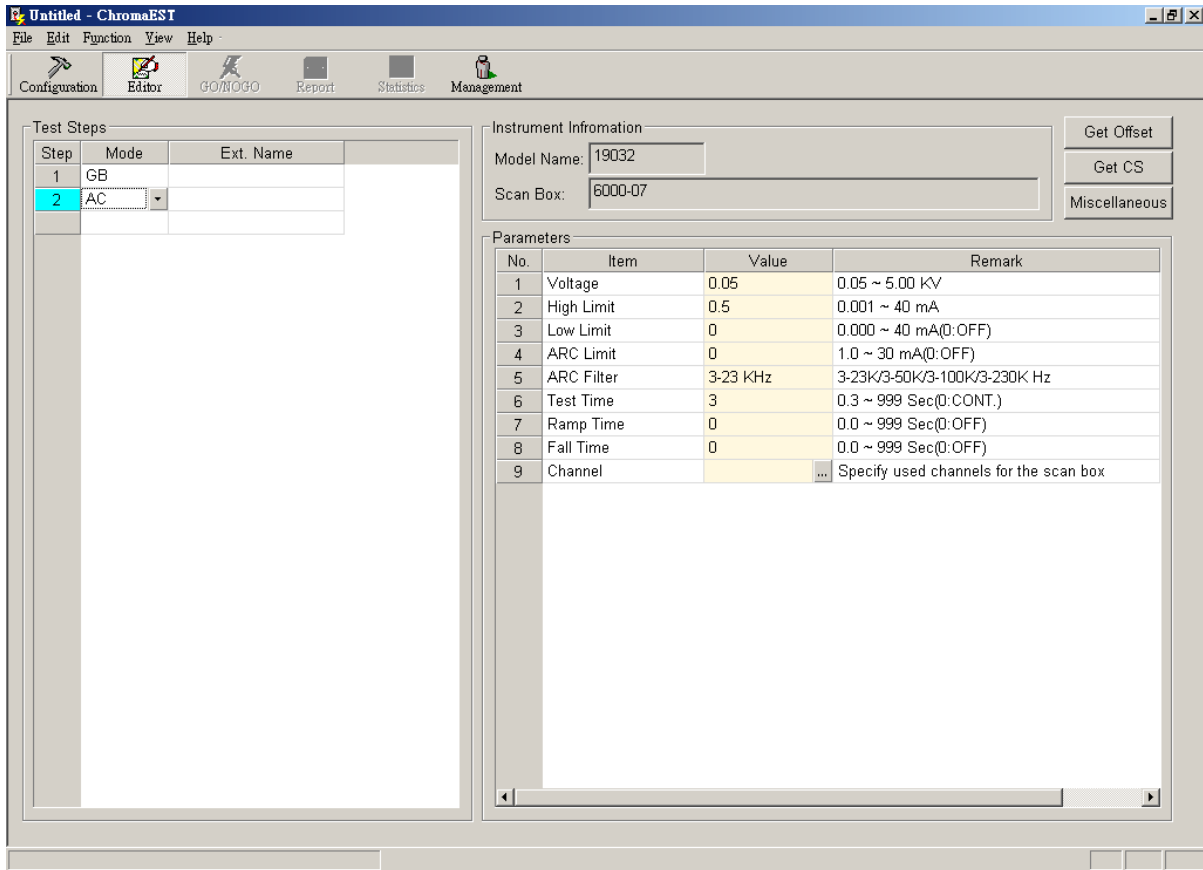


Figure 5-3

From Figure 5-3, users can view the parameter AC Mode to be set are shown on Parameter Group. The parameters in the whole Value column are default given by the program, just double click on the column to be changed or press **Enter** for entering edit mode. Only numeric and decimal point are allowed to key in the column. ("Pause String" in Pause test item is excluded.)

As for the definition of each parameter, please refer the user's manual of various models. Here we don't give detailed explanation furthermore. A DC test item in Parameter Group is "Dwell Time", TP editor should know if the instrument supports the function. If the instrument doesn't support the function, please disable it (the program default has this function) as Figure 5-4 shown. Uncheck Check Box in Remark column, the Value column will turn into gray that user can't edit it. Therefore, the cancellation action is completed as Figure 5-5.

No.	Item	Value	Remark
1	Voltage	0.05	0.05 ~ 6.00 KV
2	High Limit	0.5	0.0001 ~ 12.00 mA
3	Low Limit	0	0.00 ~ 12 mA(0:OFF)
4	Dwell Time	0	<input checked="" type="checkbox"/> 0.0 ~ 999 Sec(0:OFF)
5	ARC Limit	0	1.00 ~ 10 mA(0:OFF)
6	ARC Filter	3-23 KHz	3-23K/3-50K/3-100K/3-230K Hz
7	Test Time	3	0.3 ~ 999 Sec(0:CONT.)
8	Ramp Time	0	0.0 ~ 999 Sec(0:OFF)
9	Fall Time	0	0.0 ~ 999 Sec(0:OFF)
10	Channel	...	Specify used channels for the scan box

Figure 5-4 DC Mode Parameter (Dwell Time function default)

No.	Item	Value	Remark
1	Voltage	0.05	0.05 ~ 6.00 KV
2	High Limit	0.5	0.0001 ~ 12.00 mA
3	Low Limit	0	0.00 ~ 12 mA(0:OFF)
4	Dwell Time		<input type="checkbox"/> 0.0 ~ 999 Sec(0:OFF)
5	ARC Limit	0	1.00 ~ 10 mA(0:OFF)
6	ARC Filter	3-23 KHz	3-23K/3-50K/3-100K/3-230K Hz
7	Test Time	3	0.3 ~ 999 Sec(0:CONT.)
8	Ramp Time	0	0.0 ~ 999 Sec(0:OFF)
9	Fall Time	0	0.0 ~ 999 Sec(0:OFF)
10	Channel	...	Specify used channels for the scan box

Figure 5-5 DC Mode Parameter (Disable Dwell Time function)

### 5.3 Scan Box Setting

See the last item "Channel" in GB Mode Parameter Grid of *Figure 5-1*. Click  button in Value column, a Scan Box dialog box will be popped up as *Figure 5-6*.

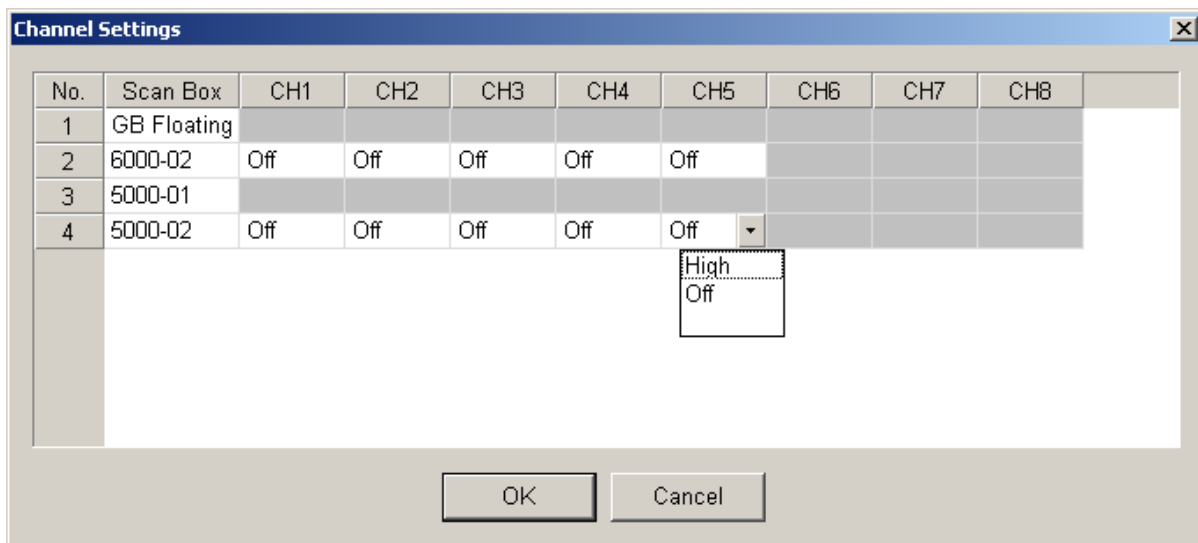


Figure 5-6 Scan Box Dialog Box (GB Mode)

All channels can be set by “6000-02”, “5000-01” and “5000-02” are shown on the dialog box. The default value is Off (unused), and the column in gray indicates Channel 6 ~ Channel 8 of “6000-02” Scan Box don’t support GB Mode output setting. If users desire to set a certain Channel, the method is selecting the status to be outputted via pull down menu.

The output status will be varied by different Modes. Assume the current test item is AC Mode, Channel output status of Scan Box can be viewed from *Figure 5-7*.

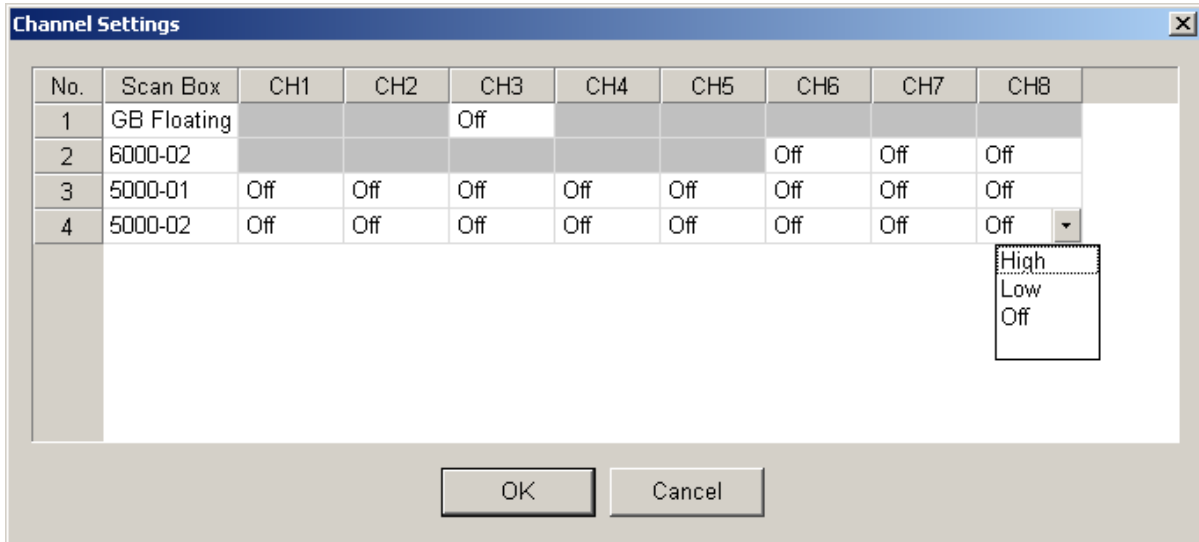


Figure 5-7 Scan Box Dialog Box (AC Mode)

After setting each Channel output status, click **OK**. It will return to Parameter Grid for viewing all channel statuses which are shown on “Channel” in Value column. Thus, users can see each Channel setting conveniently from *Figure 5-8*.

No.	Item	Value	Remark
1	Voltage	0.05	0.05 ~ 5.00 KV
2	High Limit	0.5	0.001 ~ 40 mA
3	Low Limit	0	0.000 ~ 40 mA(0: OFF)
4	ARC Limit	0	1.0 ~ 30 mA(0: OFF)
5	ARC Filter	3-23 KHz	3-23K/3-50K/3-100K/3-230K Hz
6	Test Time	3	0.3 ~ 999 Sec(0: CONT.)
7	Ramp Time	0	0.0 ~ 999 Sec(0: OFF)
8	Fall Time	0	0.0 ~ 999 Sec(0: OFF)
9	Channel	X,X,L,X,X,X,X  X,X,X,X,L,H,Q ...	Specify used channels for the scan box

Figure 5-8

- H: High
- L: Low
- O: Off
- X: Don’t support this Mode

One point needs to be explained: If all channels of Scan Box and specified Mode are not to be supported, a hint message dialog will be popped up as *Figure 5-9* while clicking **...**.

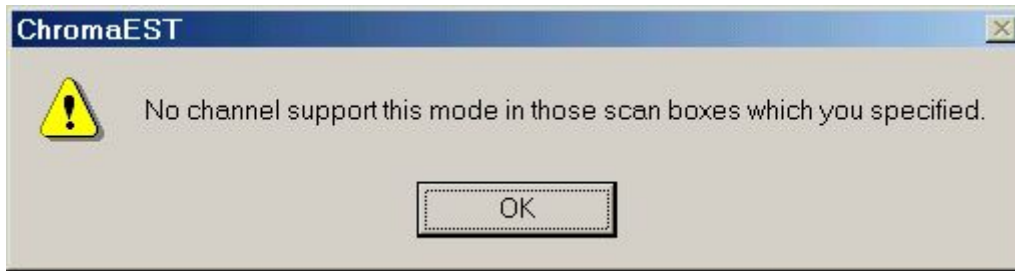


Figure 5-9

## 5.4 Delete Step

If a Step to be deleted, please highlight the Step. The highlight method is simple, just left click on the Step column to highlight it as *Figure 5-10*.

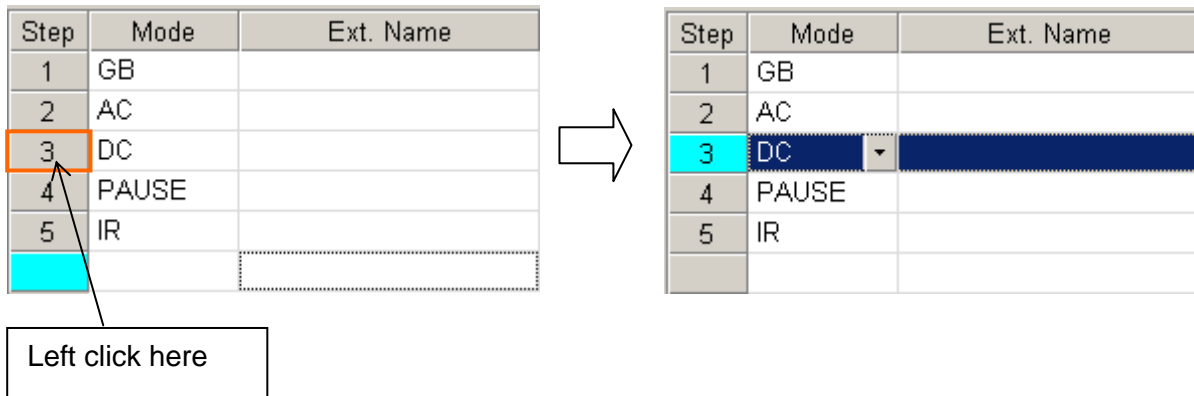


Figure 5-10 Select a Step

After the Step is highlighted, click Edit ->Delete in menu or press **Ctrl** + D. The Step 3 (DC Mode) will be deleted, the sequential Steps move forward a Step automatically (*Figure 5-11*).

Step	Mode	Ext. Name
1	GB	
2	AC	
3	PAUSE	
4	IR	

Figure 5-11

## 5.5 Insert Step

<Step 1>

To highlight the row desire to insert a Step, refer *Figure 5-11*.

<Step 2>

Click Edit->Insert in Menu or press **Ctrl** + I, the Insert dialog box will be popped up.



Figure 5-12

<Step 3>

Choose the Step to be inserted as *Figure 5-13*, click **OK** to insert the specified Step. The sequential Steps move backward a Step automatically (*Figure 5-13*).

Step	Mode	Ext. Name
1	GB	
2	AC	
3	GB	
4	PAUSE	
5	IR	

Figure 5-13

## 5.6 Cut, Copy and Paste Step

<Step 1>

To highlight the row desire to cut or copy a Step.

Select (highlight) a Step the user want to cut, copy.

<Step 2>

If users desire to cut a step, click Edit -> Cut in Menu or press **Ctrl** + X. The highlighted step will be cut, as "Delete" action the sequential Steps move forward a Step automatically. If users desire to copy a step, click Edit -> Copy in Menu or press **Ctrl** + C thus the highlighted Step will be copied.

<Step 3>

Paste step is the same as cut and copy. To highlight a Step firstly, click Edit -> Paste on Menu or press **Ctrl** + V thus paste action is completed. The sequential Steps move backward a Step automatically.

**Note** : The paste action inserts a Step into the highlighted Step instead of overwriting the Step.

## 5.7 Save Test Program

Assume that a TP is already edited currently and accept all default values. The entire TP content is as the figure below.

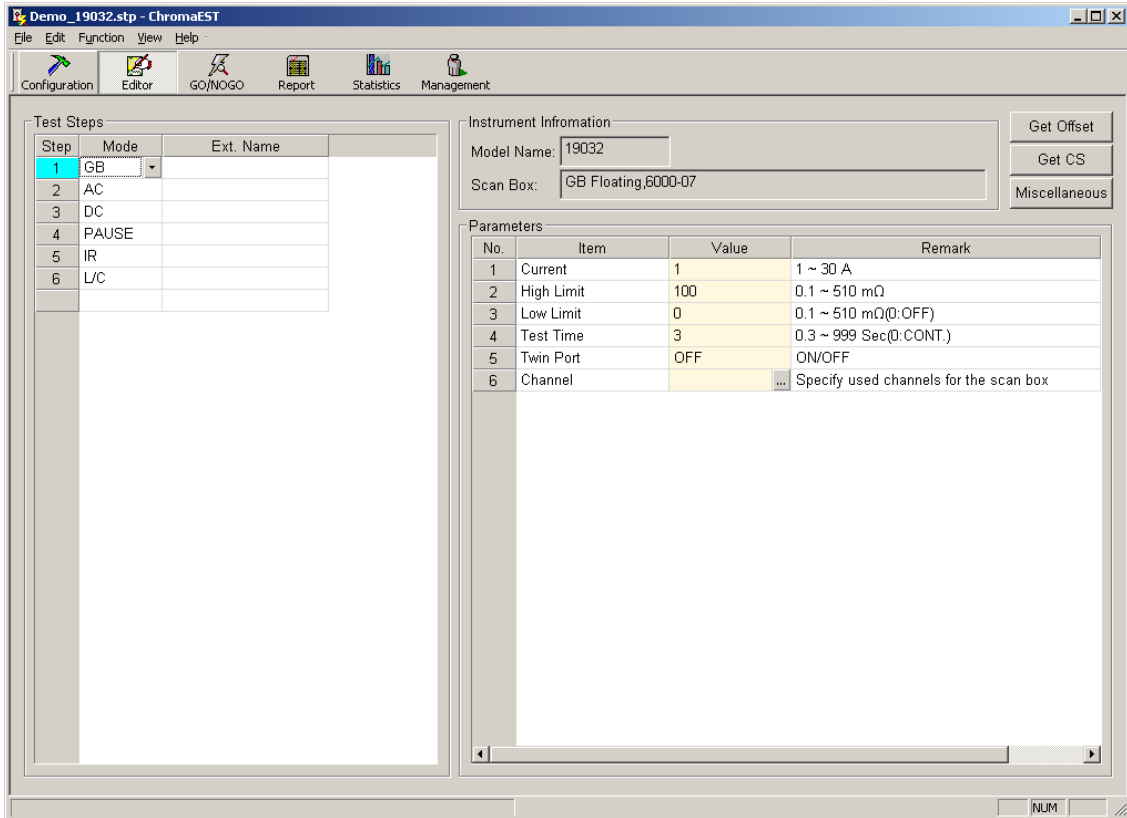


Figure 5-14

After a TP is edited, execute the TP under GO/NOGO or Report. Click File -> Save to save the TP or click File-> Save as... to open Save as dialog box as *Figure 5-15*.

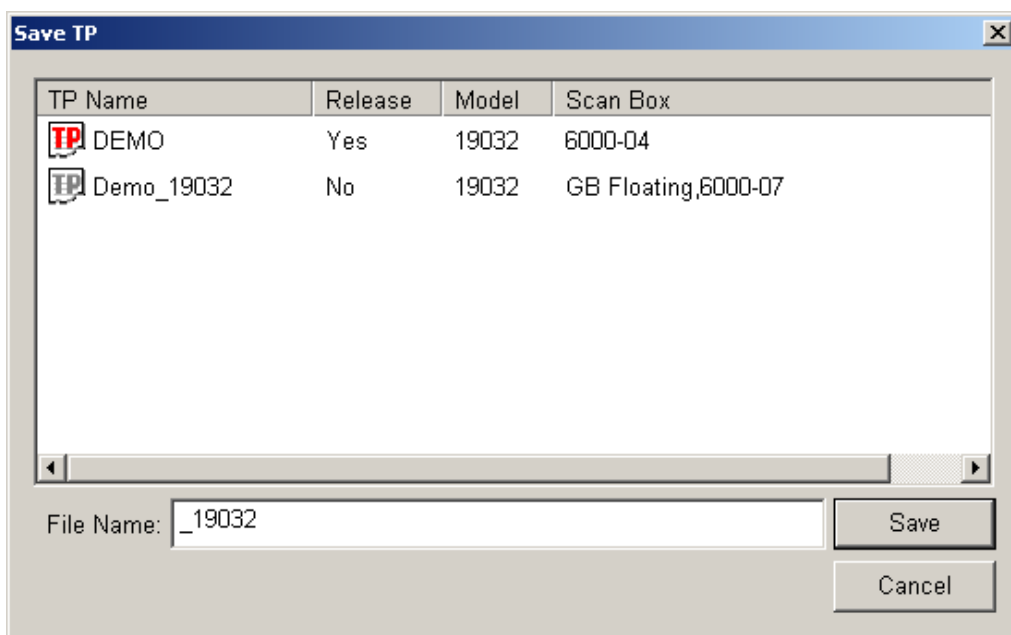


Figure 5-15

A default file name “\_19032” is existed in File Name column for users’ management conveniently. Users also can give the file name instead of default, the example is named as “Demo\_19032”.

After the files are saved, “GO/NOGO” and “Report” on toolbar are changed to Enable.

## 5.8 Open Existed TP

This section describes how to open an existed TP, select Open TP when the program is activated and the dialog box is shown. A TP is opened and another TP to be opened, click File -> Open on Menu to enter Open TP dialog box as *Figure 5-16*.

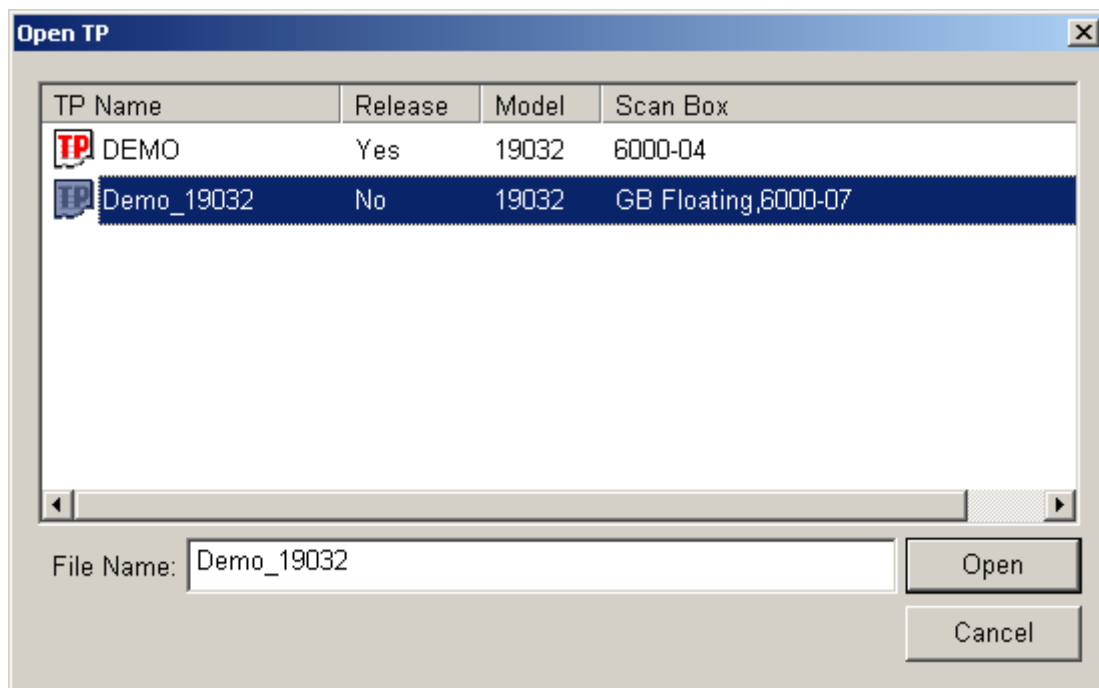


Figure 5-16 Open TP Dialog Box

Each item (a row) has a lot of information in the dialog box.

TP\_Name: Name of Test Program  
 Release : Release or not (Yes or No)  
 Model : The TP specified model  
 Scan Box: The TP specified Scan Boxes

What is Release? (Also has description in the sequential section.)

Release indicates all TP contents can't be changed. If a released TP is modified, the program will request user to save the modified TP as new file when entering GO/NOGO or ending the program.

## 5.9 Miscellaneous

Click **Miscellaneous**, other functions will be shown as *Figure 5-17*. It is divided into three parts, click **Save Misc.** to save the settings.

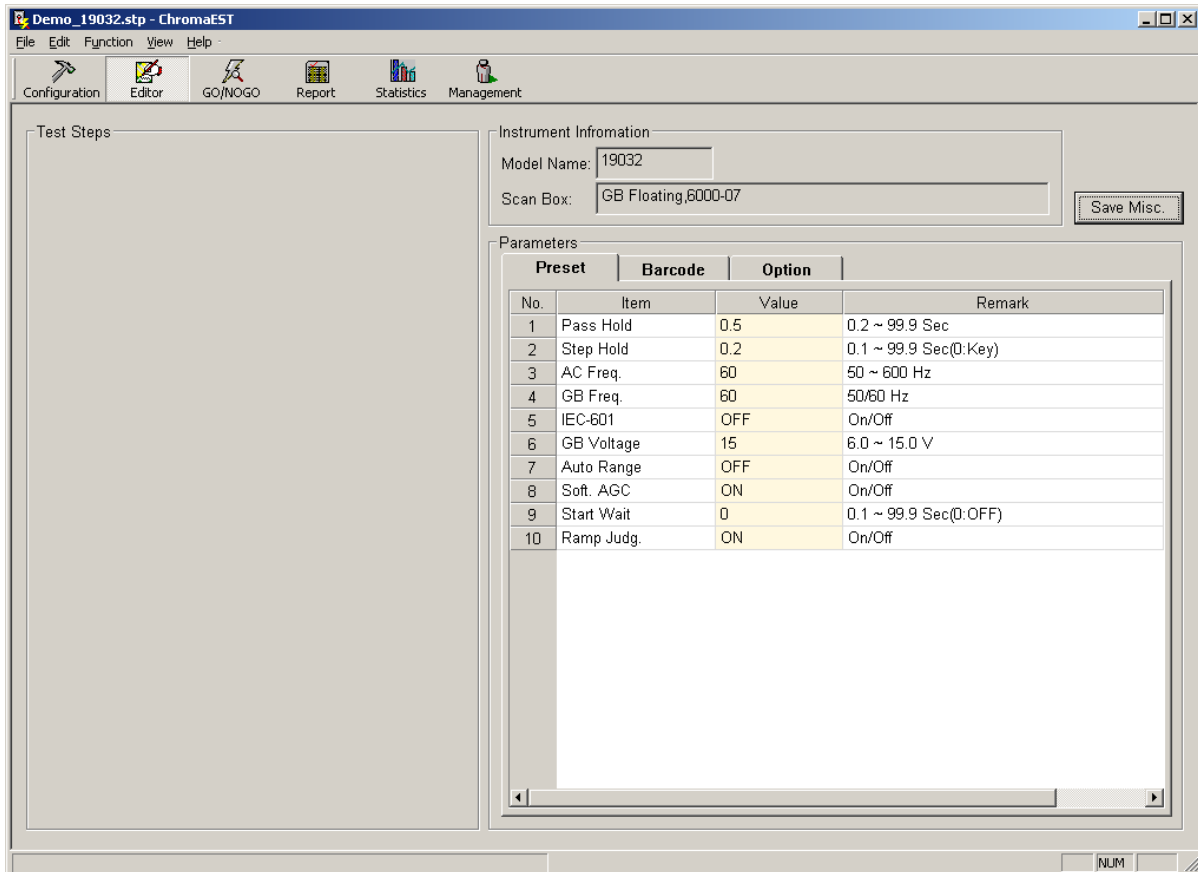


Figure 5-17 Miscellaneous

### 5.9.1 Preset Function

*Figure 5-17* corresponds to Preset function on stand-alone, some advanced test functions can be set at here. For more function descriptions, please refer stand-alone User's Manual. Before entering Gonogo, the software will process Preset loading firstly and next to download test items of TP.



## 5.9.2 Barcode Function

The screenshot shows a software interface for configuring a barcode function. It is divided into three tabs: 'Preset', 'Barcode', and 'Option'. The 'Barcode' tab is selected. Under the 'Barcode' section, there are three radio button options: 'Auto' (selected), 'Barcode', and 'None'. The 'Auto' option is active, showing fields for 'Serial Number' (containing 'HIPOT00001'), 'Prefix' (containing 'HIPOT'), 'Digit' (a dropdown menu set to '5'), and 'Start No.' (a dropdown menu set to '1'). The 'Barcode' option is also visible, showing 'Length' (a dropdown menu set to '10') and 'Scan barcode count' (a text box containing '1'). Below these is a 'Format(\*:omit)' text box. The 'Report' section at the bottom has an unchecked checkbox for 'Auto Output Txt Report' and a 'File Path' text box with a browse button (three dots).

Figure 5-18 Barcode Function

### Barcode Group:

- **Auto**  
It generates serial number automatically and edits the format.  

“Serial Number”	The generated serial numbers are based on Prefix, Digit and Start No. settings.
“Prefix”	Prefix word of serial number
“Digit”	Digit behind prefix word
“Start No.”	Start serial number
  
- **Barcode**  
After this function is activated, click **Start(F10)** under GO/NOGO to start testing the Scan Barcode window will be popped up.  

“Length”	It limits barcode length, the error hint will be occurred when over the limit.
“Scan barcode count”	The function provides scanning multiple barcode once.
“Format(*:omit)”	It checks if input Barcode format is correct (* indicates the character is omitted). For example, “HIPOT0****” is keyed in the column that indicates only first six digits “HIPOT0” will be checked and the sequential digits won’t do format check.

- None  
Testing only, without any serial number

Report Group:

It generates simple txt report, the tested data file name will be given by scanned Barcode. If the result is Pass thus it will be saved into Pass folder of specified path and Fail folder of specified path conversely.

- Auto Output Txt Report  
The function checked indicates the test result will generate txt file each time and place it into the specified folder.
- File Path  
It specifies the path for txt file.

### 5.9.3 Option Function

Figure 5-19 Option Function

- Group  
To group the test item, it is for a TP testing multiple DUTs and will be explained detail in *section 7*. The Group column will be added in Test Steps Window after the function is checked and saved. The numbers to be selected are depended on Count setting.

Step	Mode	Group	Ext. Name
1	GB	1	
2	AC	1	
3	DC	1	
4	PAUSE		
5	L/C	2	
6	IR	2	

Figure 5-20 Group Column Setting

- **JUDGEMENT ON PA MODE**  
It coordinates with the Group item, the function is changed to settable as Group item is checked. The detail function will be described in *section 7*.
- **FAIL LOCK**  
If the function is checked, the test result is Fail and Password column will be shown on error message window. Key in the correct password thus the message window will be ended.
- **INPUT OFFSET**  
The Offset column will be added in Test Steps Window after the function is checked and saved. Users can get Offset value of each test item and save it by clicking **Get Offset** at upper right side of Editor Window. Open the TP next time and load the parameter to single machine, the Offset value will be set into single machine with simultaneous. It will save the action and time of getting Offset at each time new testing.

**Note**    No Offset value under IR mode.

Step	Mode	Offset	Ext. Name
1	GB	0.023	
2	AC	0.012	
3	DC	0.001	
4	PAUSE		
5	L/C	0.005	
6	IR		

Figure 5-21 Offset Column Setting

## 5.10 Get Offset Button

When  INPUT OFFSET is checked in the previous section, click **Get Offset** to get Offset value of each test item. Before testing, please ensure the single machine and the entire connections are connected. Therefore, the tested wire loss and the test result at last will be accurate.

During Offset test procedure, Editor Screen has real time display effect for users viewing execution step currently. If the Pause mode is encountered during test procedure, the software will quit to next step to continue test automatically.

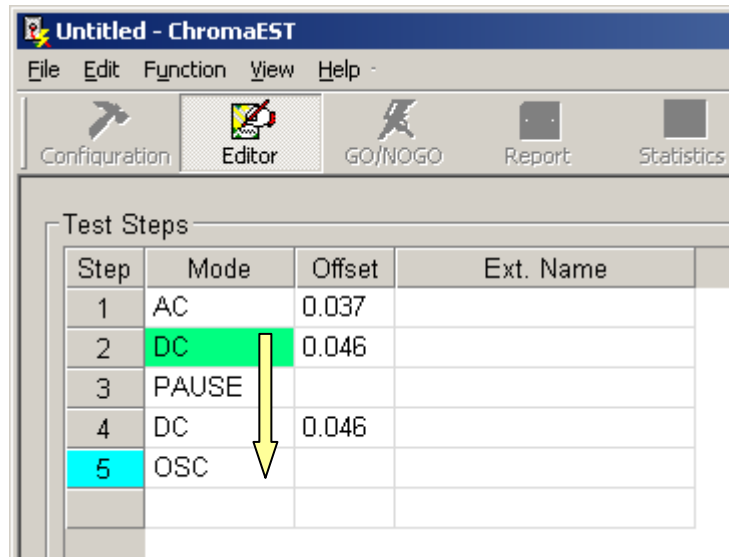


Figure 5-22 Offset Testing

## 5.11 Get CS Button

Click **Get CS** to get CS value of each OSC test item. Before testing, please ensure the single machine and the entire connections are connected. Therefore, the tested wire loss and the test result at last will be accurate.

During CS test procedure, Editor Screen has real time display effect for users viewing execution step currently. If the Pause mode is encountered during test procedure, the software will quit to next step to continue test automatically.

## 6. Transmission Protocol Setting

Before connecting test (executing GO/NOGO) with the instrument, please set transmission protocol in advance. Select the interface to be used and set a lot of parameters. Please switch the window to Configuration as *Figure 6-1* shown.

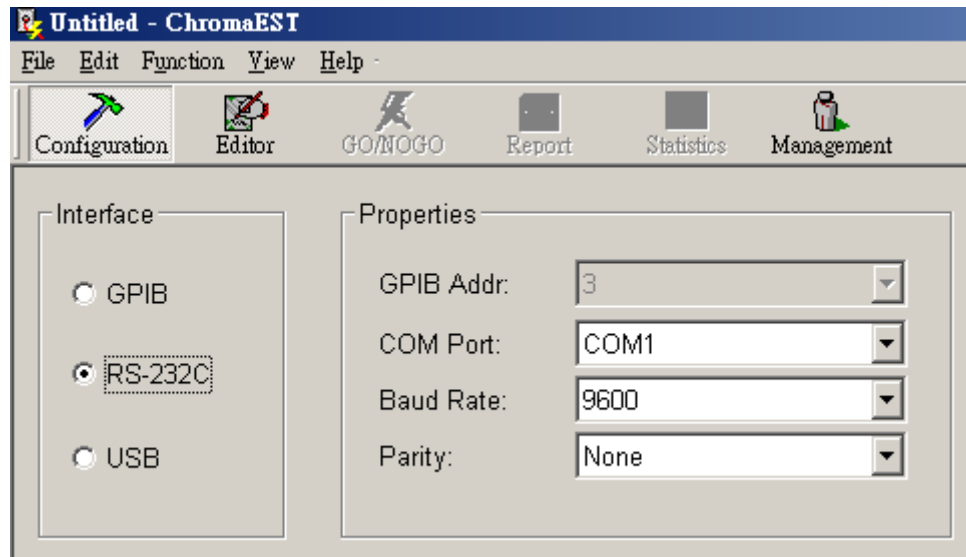


Figure 6-1 Configuration Window

In configuration function, it consists of Interface and Properties. Interface provides user to select using interfaces – RS232C, GPIB and USB, the selection will affect the parameter number of Properties setting. If the GPIB interface is selected, only GPIB Addr control item in Properties is enabled. If the RS-232C is selected, COM Port, Baud Rate and Parity in Properties are enabled, whereas the control item of GPIB Addr is disabled. USB is no need to process any parameter setting.

After the Configuration window is set, enter GO/NOGO for connection test at once.



## 7. Connection Test (GO/NOGO)

Before connecting for the test (execute for GO/NOGO), please be sure that the power of instrument is turned off. The program proceeding the connection for the test before entering GO/NOGO, and download each parameters of all steps of TP to the instrument. There will be a schedule list on the status bar under processing connection and download, the mouse will show funnel. After finishing the download and make sure it is correct, the program enters GO/NOGO window (Figure 5-9).

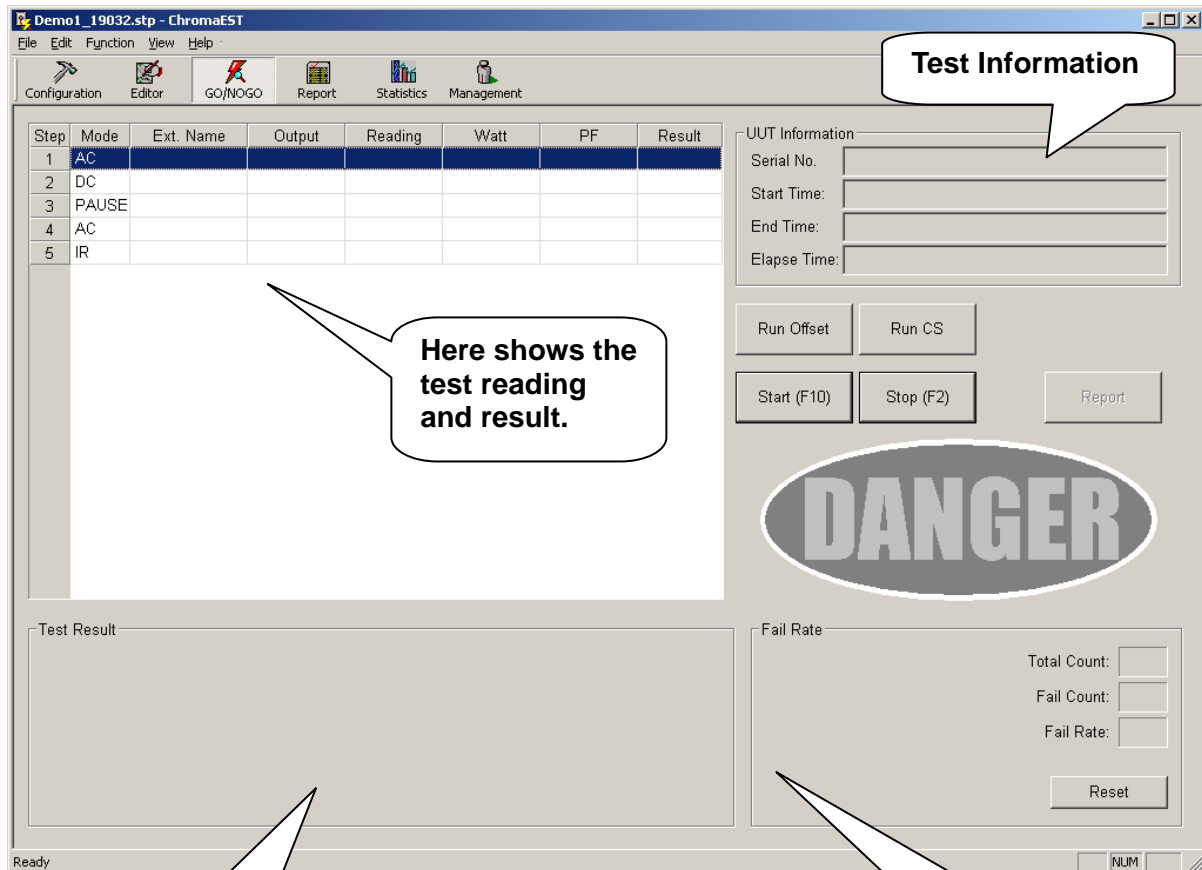


Figure 7-1 GO/NOGO Window

Show Total Result

Show Fail Rate statistics

Button descriptions are as follows.

**Start(F10)** : Start safety test, Offset test or continuous button while encountering Pause mode.

**Stop(F2)** : Stop all tests

**Run Offset** : Run Get Offset test

**Run CS** : Run Get CS test (for OSC mode)

**Report** : Open tested report last time in .txt file.

The columns in test result table are described as follows.

Mode : Name of test item

Ext. Name : Annotation of test item

Output : Output voltage or current value

- Reading : The measured result
- Watt : The outputted power value of single machine returned to external power (for 19032-P + 6000-08).
- PF : The outputted PF value of single machine returned to external power (for 19032-P + 6000-08).
- Result : Test result Pass or Fail

## 7.1 Report Function

Click **Report** at each time a DUT tested, the test result will be displayed.

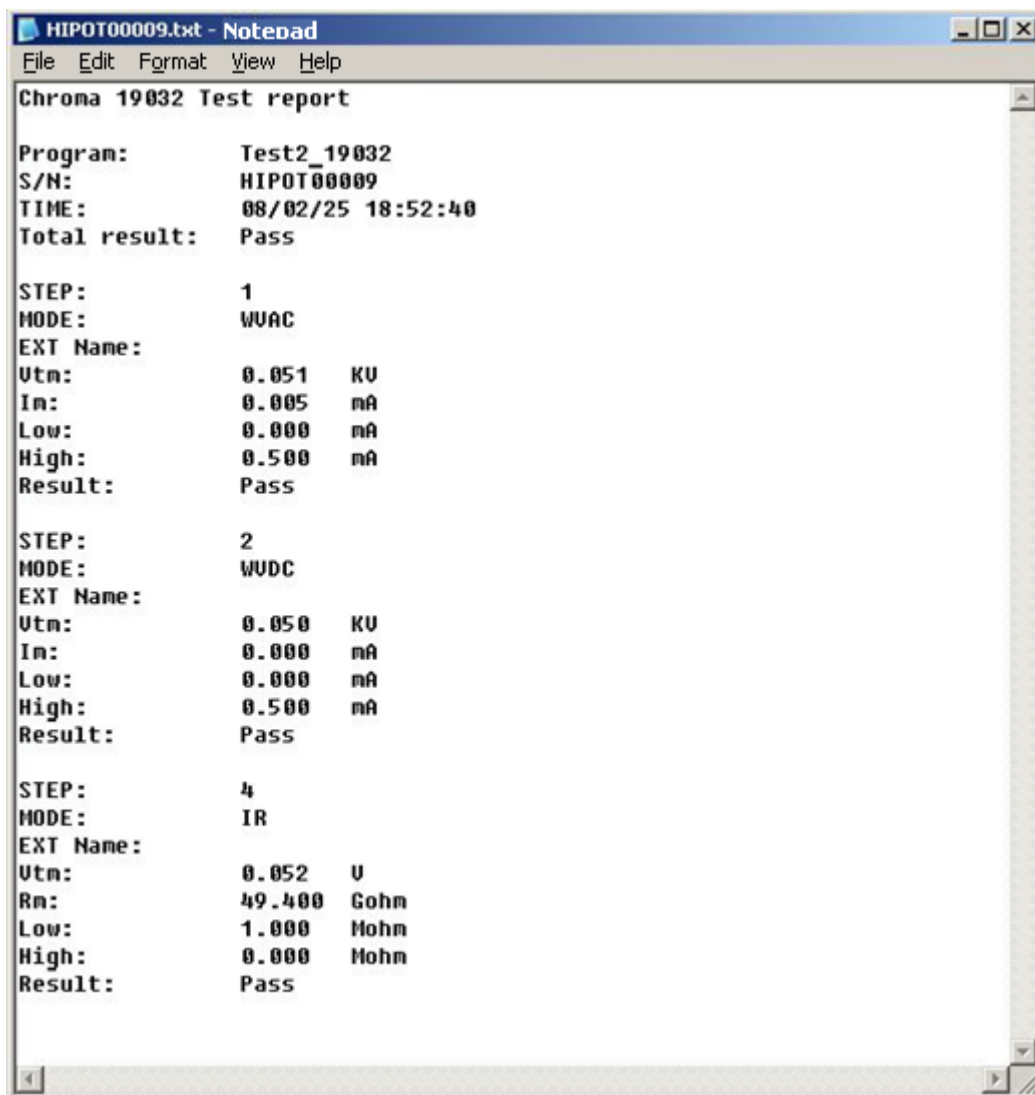


Figure 7-2

## 7.2 Offset Test

Its purpose is for calculating wire loss under test mode, the result data will deduct the wire loss automatically after safety test is done for getting more accurate test data.



Click **Start** or press “F10” on keypad to enter test program. If Offset is selected in the window, the program will query if process Offset test for test cable and request to connect Offset test circuit.

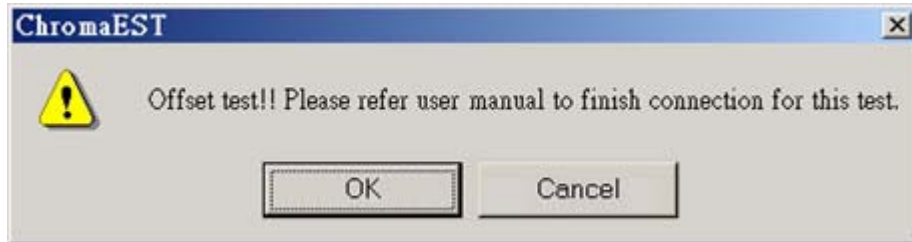


Figure 7-3

After Offset test circuit connection is finished (refer User’s Manual) and click **OK**, the program starts to process Offset test. **DANGER** icon in *Figure 7-4* will be changed from gray to red that warns all personnel the instrument outputting high voltage or high current at present. Don’t touch the instrument and DUT to avoid mortal danger. Only **Stop** can be operated under testing, other functions are locked including close program.

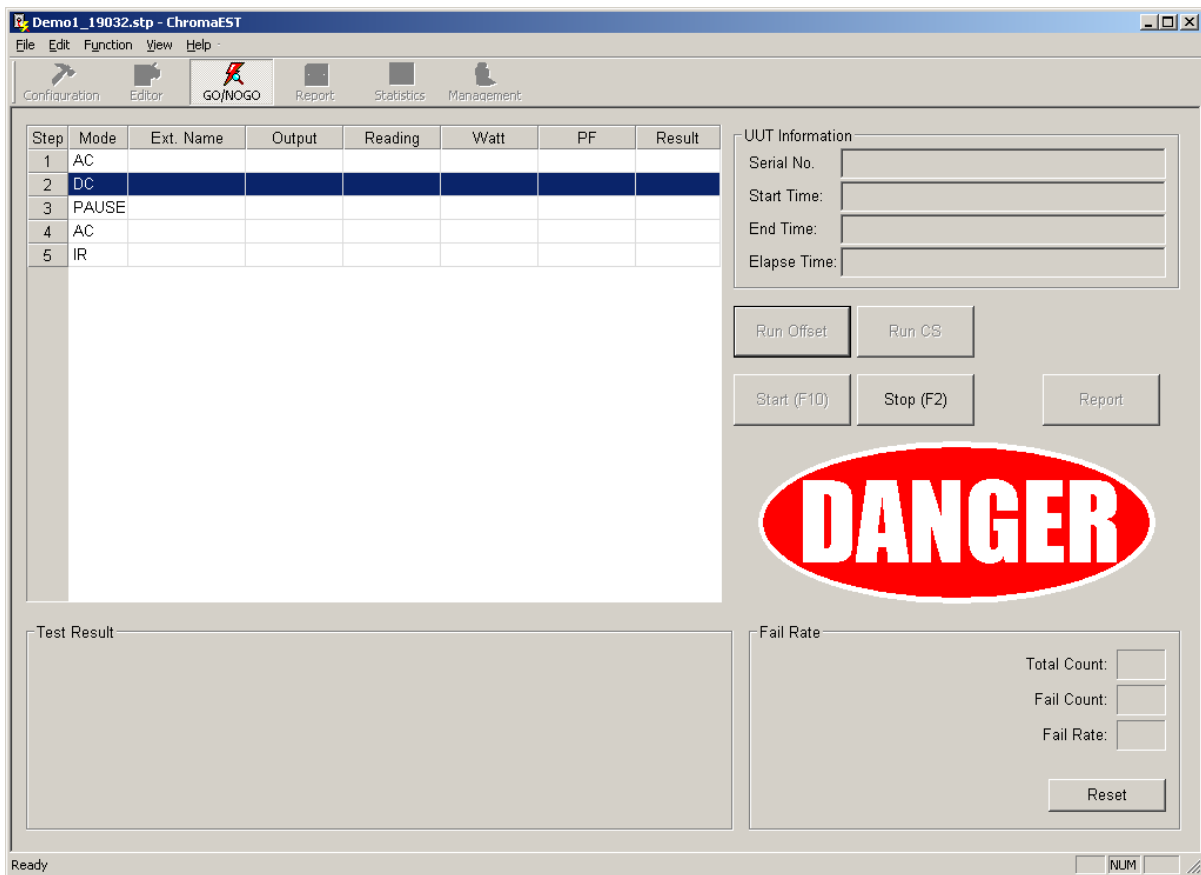


Figure 7-4 Offset Test Window

The test step includes Pause Mode (such as Step4), while testing the Step the instrument will stop output voltage or current and Pause Message will be popped up. Click **OK** and **Start(F10)** to continue the test.

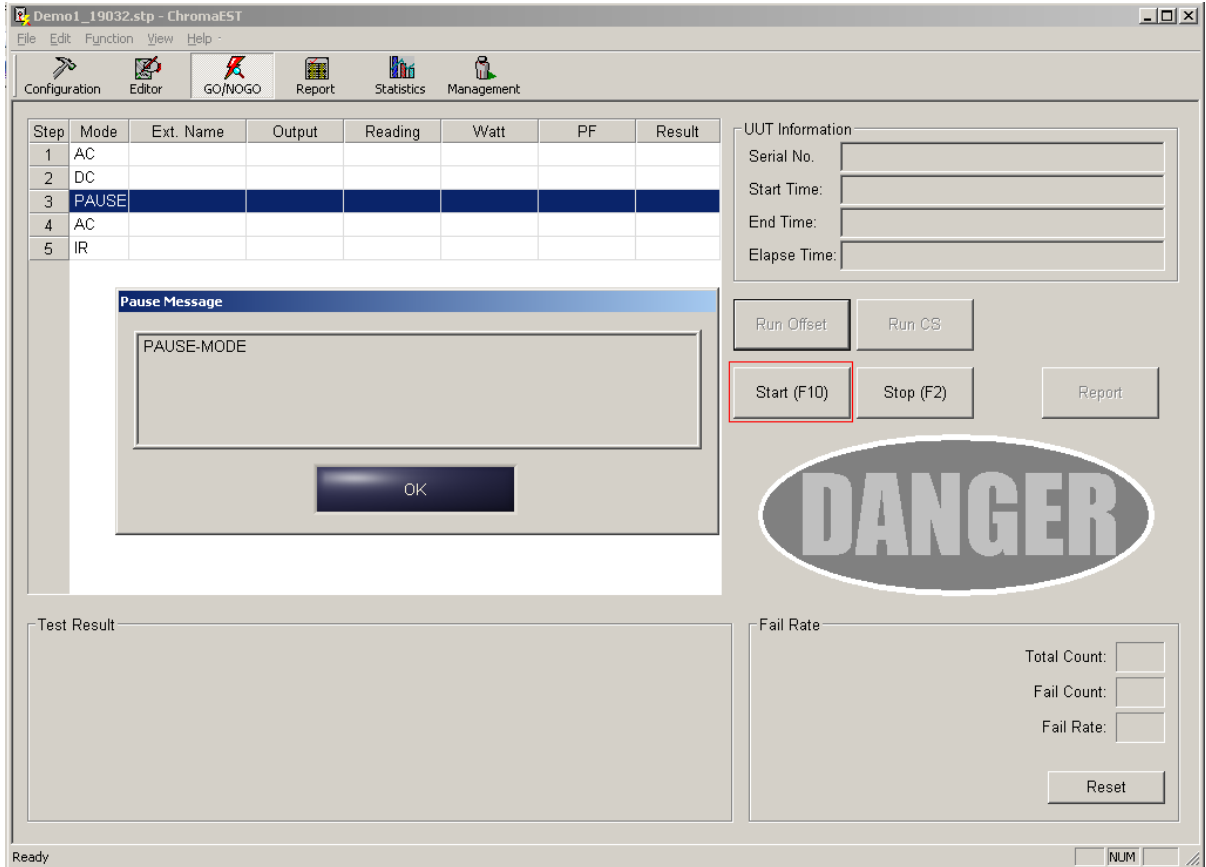


Figure 7-5

### 7.3 Get CS Test

Click **Get CS** to start Get CS test. The test is for testing OSC mode, its step is the same as Offset test.

### 7.4 Safety Test

Offset test is done or Offset is unchecked, click **Start** to start safety test. If the TP Barcode setting is Auto or None, the software will start test directly. If Barcode is selected, Get UUT serial number dialog box as *Figure 7-6*. The method to input serial number is from Bar Code Scanner or by manually.

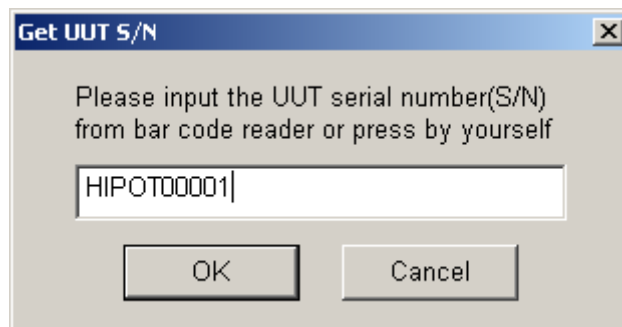


Figure 7-6 UUT S/N Dialog Box

Click **OK** after serial number is inputted thus enter UUT safety test. The screen under testing is the same as Offset testing, UUT S/N edit column at upper right corner will show UUT serial number currently. During test procedure, users can click **Stop** or press **F2** on keypad to stop the test.

A Pause Message will be popped up if encountered Pause Mode. Pause Mode edited messages are shown on the screen for hinting users' sequential action.

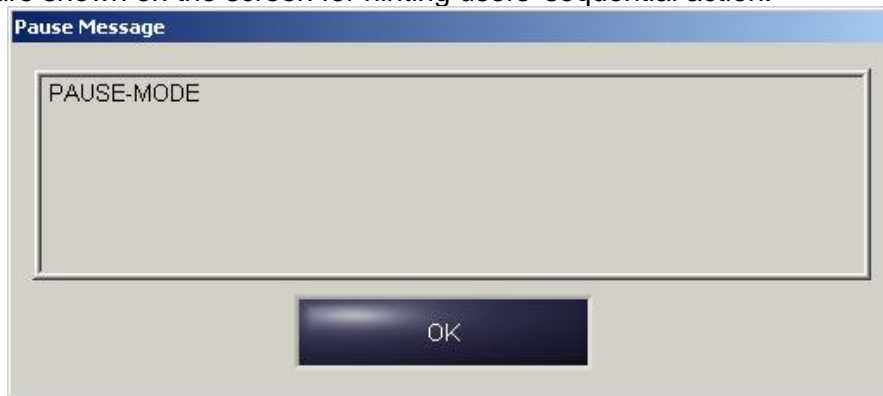


Figure 7-7

After UUT safety test is finished, a lot of information will be shown as *Figure 7-8*. It includes each Step reading and Result at upper left grid, total test result Pass or Fail word at lower left corner, UUT serial No. start, elapse and end time at upper right corner UUT Information Group and the TP all tested UUT Fail Rate statistical chart and analysis at lower right corner Fail Rate column.

After UUT safety test is finished, Get UUT S/N dialog box will be popped up automatically to request users to input next UUT serial number.

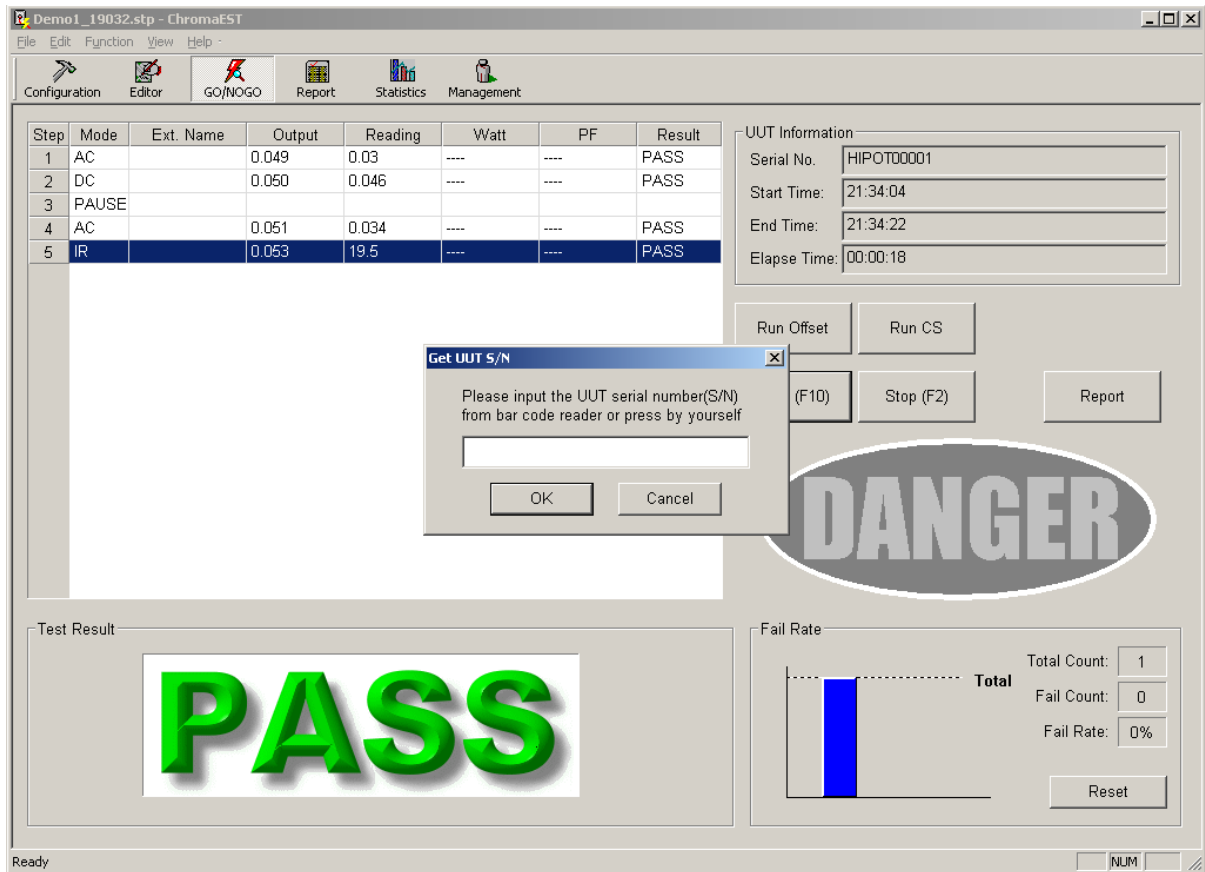


Figure 7-8

Figure 7-9 is the window test result is Fail, please compare it with Figure 7-8.

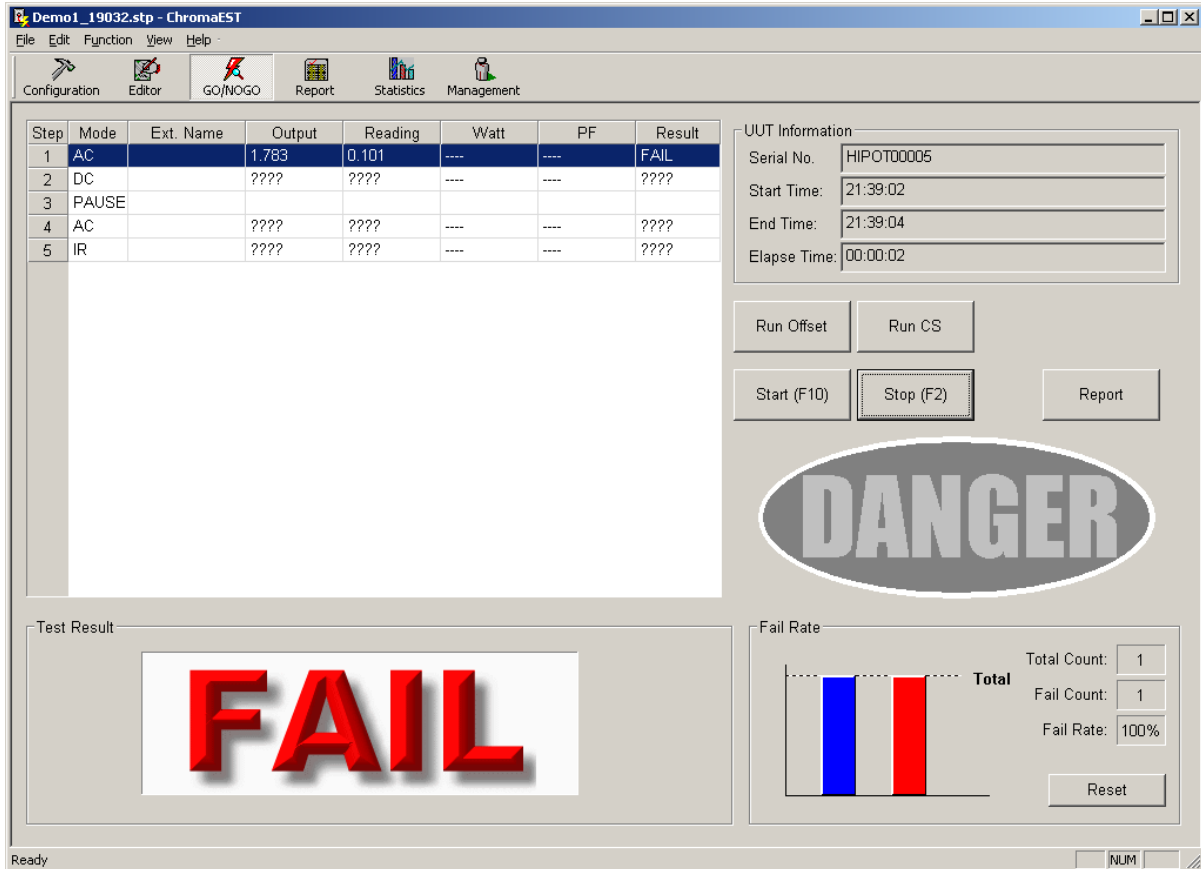


Figure 7-9

Upper left corner Result Grid in Test Result Fail window generates error when testing Step1, “Fail” word in red will be shown on Test Result Column. The sequential steps are indicated by “????” here due to not tested. The Fail Rate statistical chart at lower right corner is adding red Fail Count histogram, its height is the same as Total Count.

Whatever testing how many UUT, Total Count only has one count. This is because the TP not release yet that test result only remains the last UUT report. How to release a TP, please refer *Chapter 8 Test Program and User* .

A lot of points need to explain as follows.

1. After an unreleased TP is run and return to Editor Window for modification. It will cause Step parameter reload and re-execute Offset. The released TP is without this problem, the program will request the modified TP to save as a new TP file and use new TP file to do test.
2. Whatever Offset test or safety test, please don't turn the instrument power off under testing. It avoids the program to happen unpredictable error.

## 7.5 Multiple UUTs Safety Test

### 7.5.1 Group Test

EST software can set Group count to group test item which is used for testing multiple UUTs. Refer *Figure 7-10* to set Group count in advance.

Click **Miscellaneous** and "Option" tab,  Group is checked and then input 2 to Count column. Click **Save Misc.**, the data will be saved.

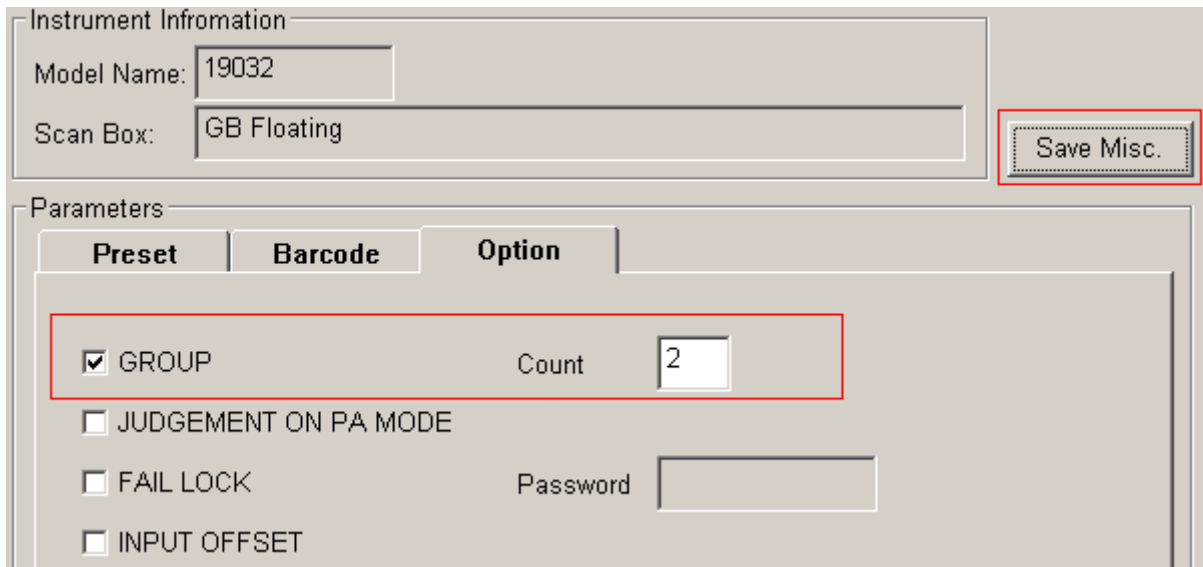


Figure 7-10 Group Setting

The item to be tested is grouped by Group number and saved the data as *Figure 7-11*.

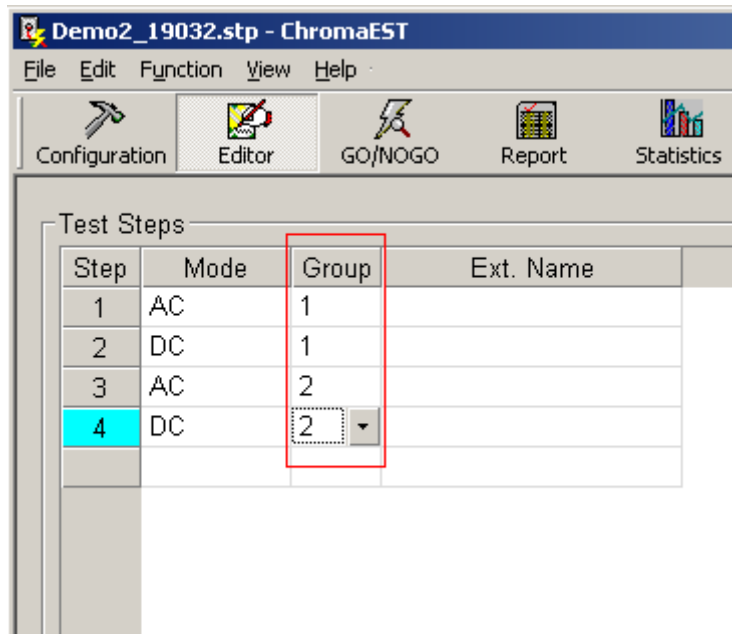


Figure 7-11 Group Setting in Test Steps

Enter GO/NOGO window, the software will load the entire TP into single machine and click **Start(F10)** to start the test. After the entire TP is tested, the column at the bottom will base on Group count to display test result.

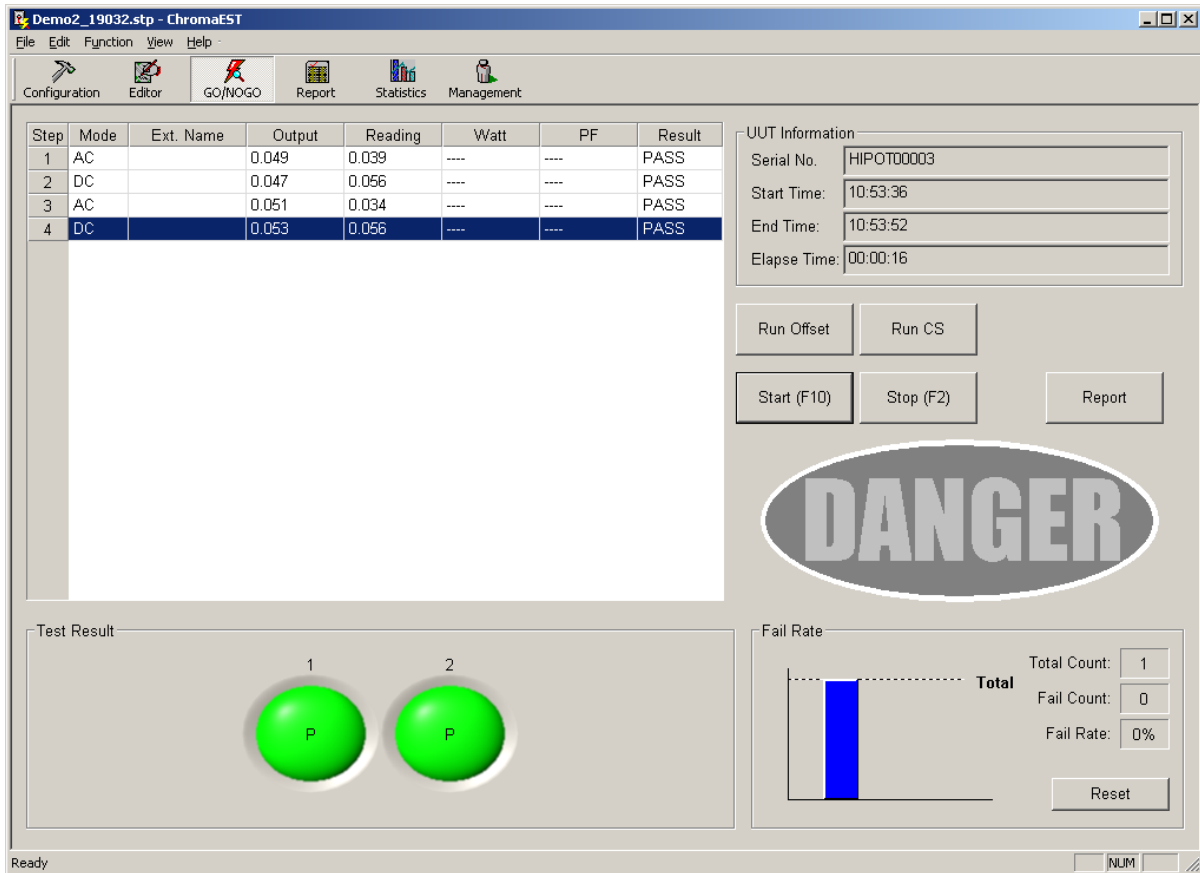
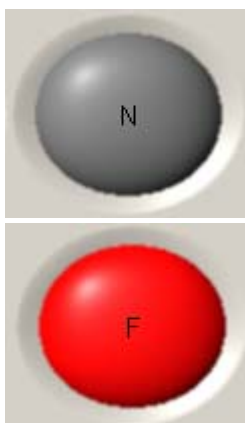


Figure 7-12 Group Result

There are two LEDs and its definitions are as follows.



The test step is not tested.

The test step result is Fail.

## 7.5.2 Save Judge Data

The previous section test result is grouped by Group method, the test data don't be saved separately, *i.e.* there is only an entry of test result can be searched in Report window (Figure

7-12, serial number: HIPOT00003). If the test data is saved by Group, the setting needs to do some modifications.

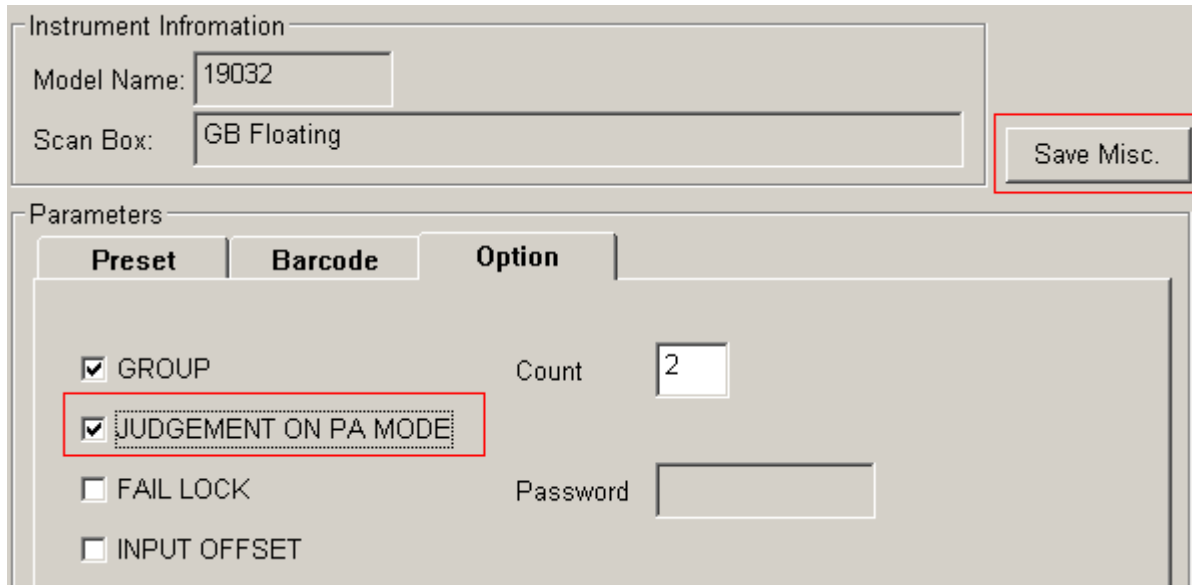


Figure 7-13 Judge Setting

Click **Miscellaneous** and “Option” tab in Editor Window,  JUDGEMENT ON PA MODE is checked. Click **Save Misc.**, the data will be saved.

Insert a Pause mode into two steps and save it.

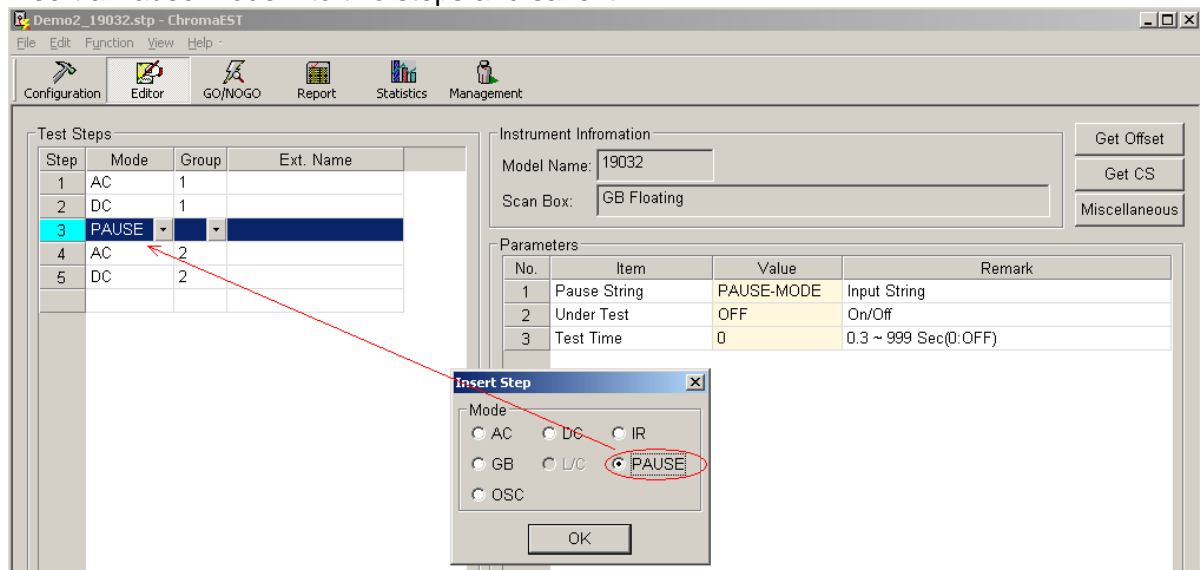


Figure 7-14 Insert Pause Mode

Enter GO/NOGO test, each test step result in the Group will be shown as testing Pause mode.



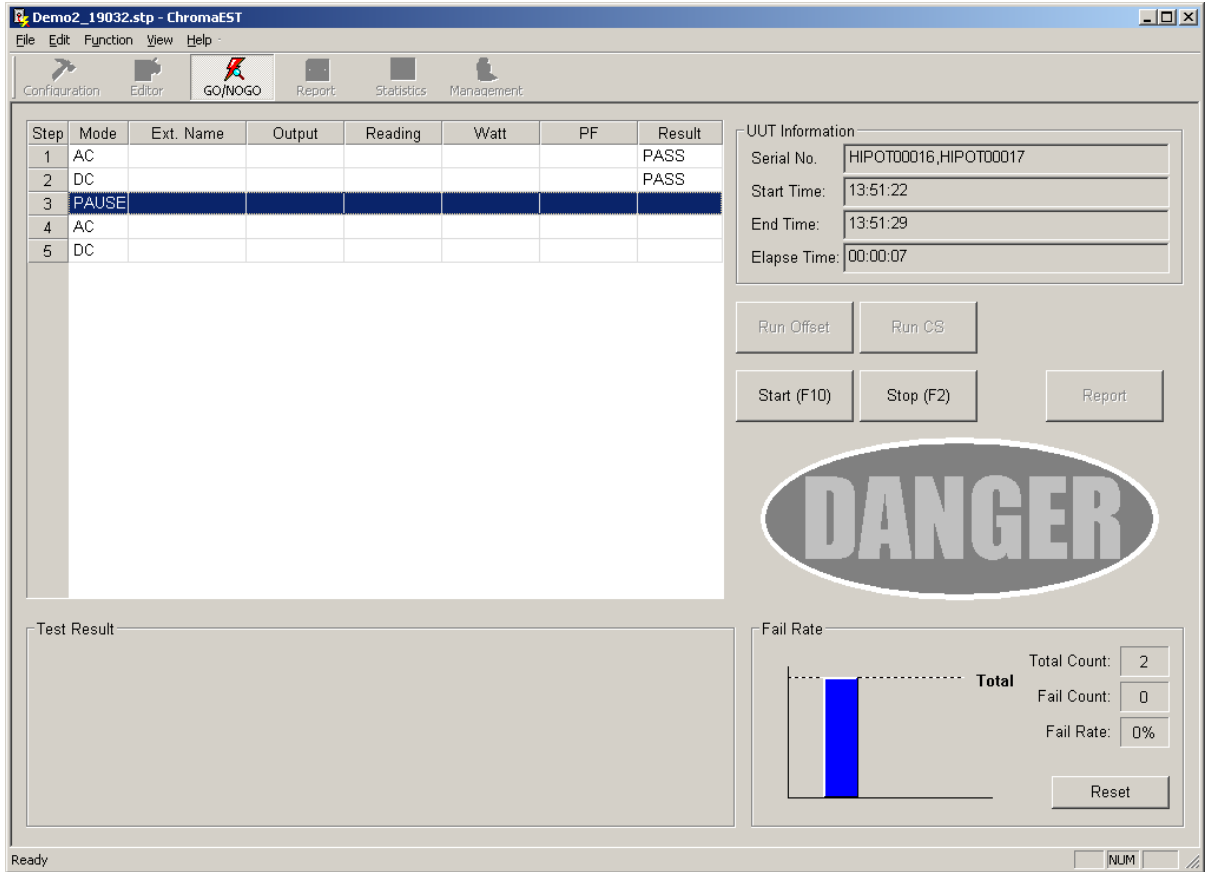


Figure 7-15 Test Result of Group1

Click **Start(F10)** to continue the test, after the entire TP is tested, the column at the bottom will base on Group count to display test result.

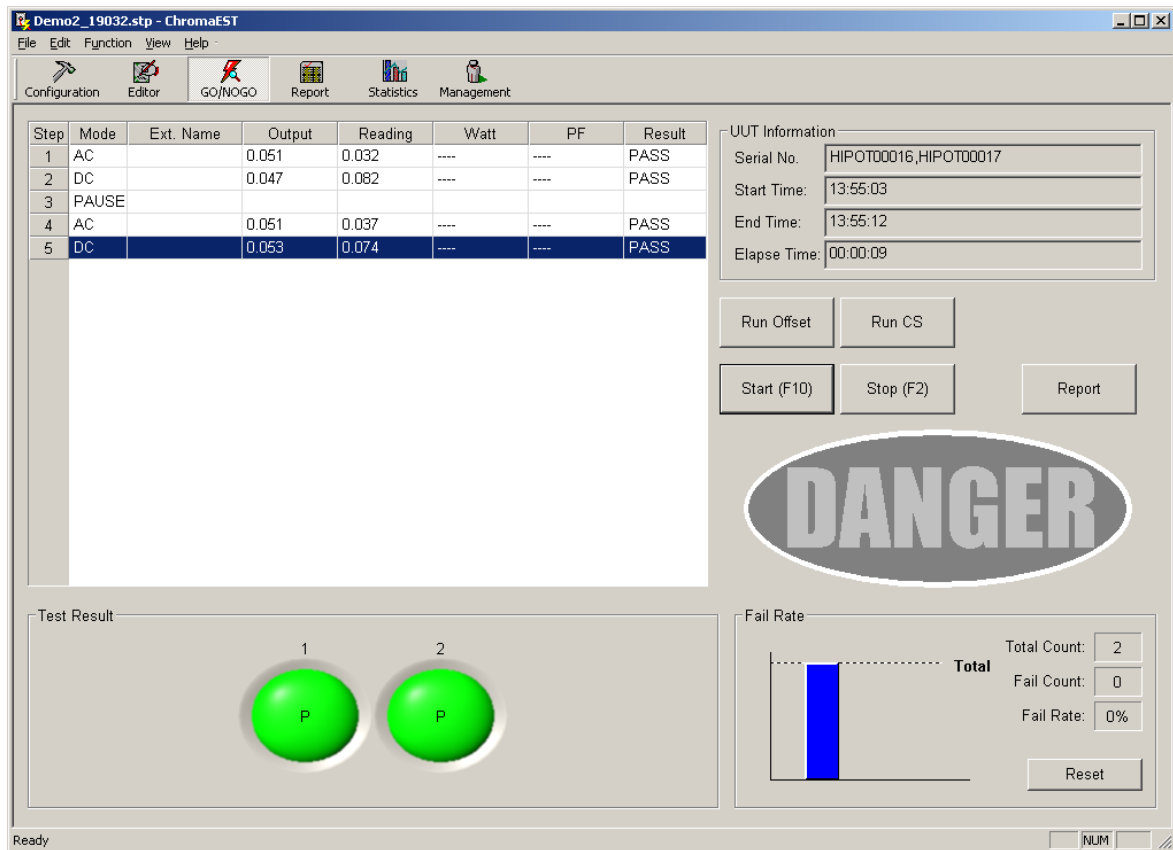


Figure 7-16 Test Result

Two entries of test result can be searched in Report Window (Figure 7-17, serial number: HIPOT00016, HIPOT00017).

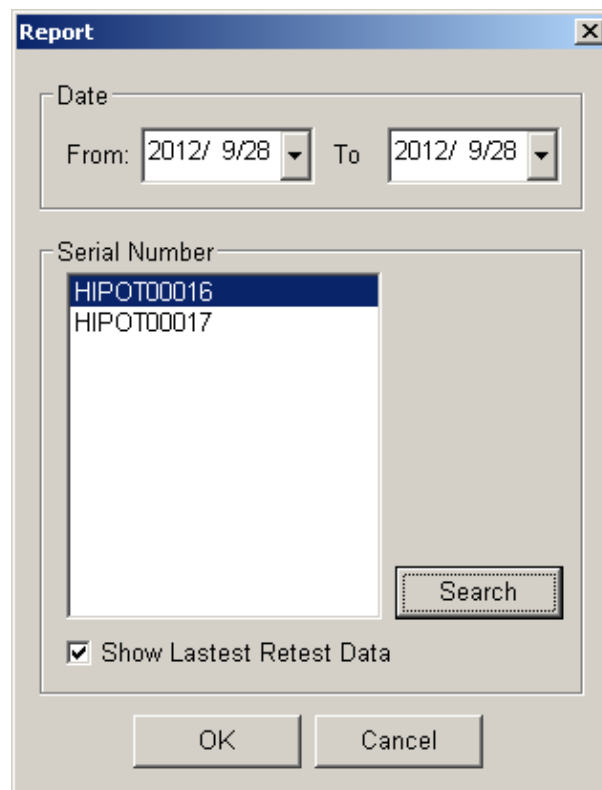


Figure 7-17 Test Reports of Two UUTs

## 8. Test Program and User Page

If a TP to be released, please switch the window to Management. Two pages in Management Window: Test Program and User. Test Program page can do TP release and export, import and delete functions. User page can do authority control for users.

### 8.1 Test Program

“Test Program” page is shown as *Figure 8-1*.

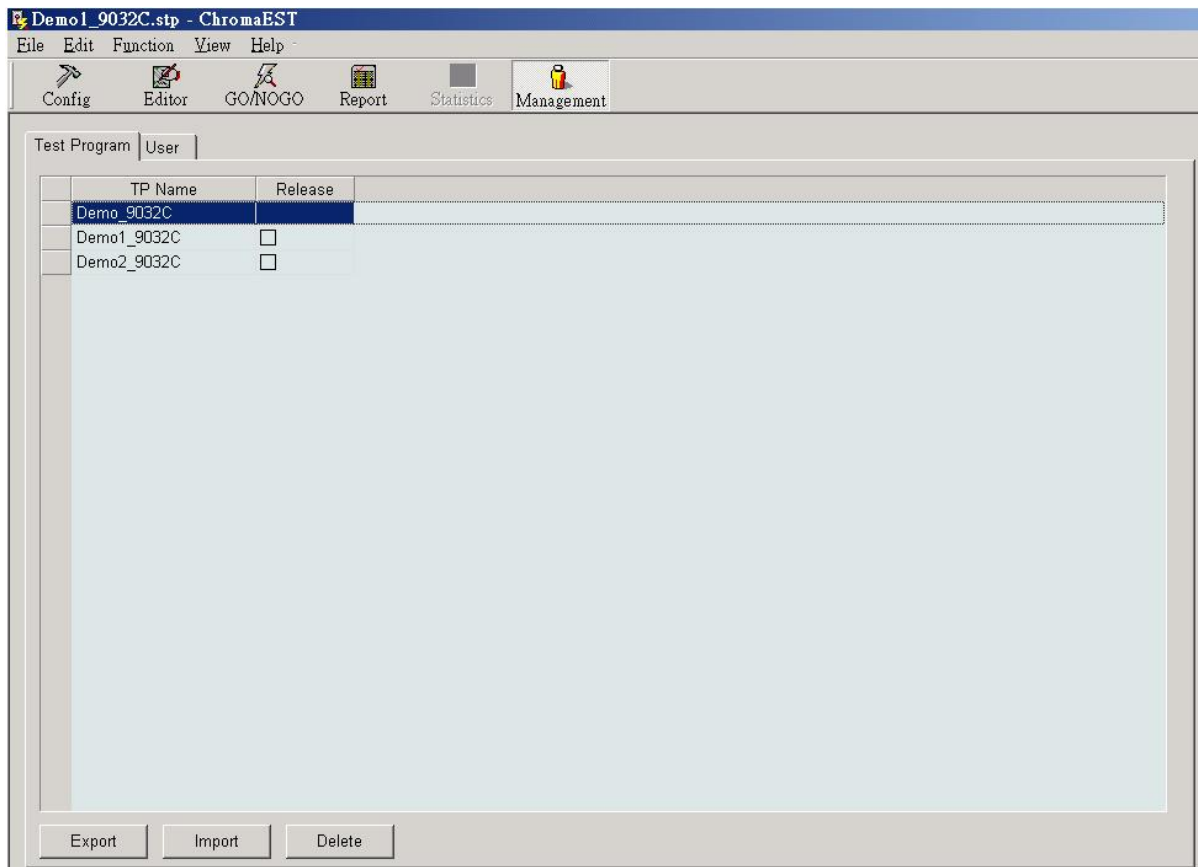


Figure 8-1 Test Program Page

## 8.1.1 TP Release Function

Two columns in *Figure 8-1*: TP\_Name and Release. It records all TP names currently in TP Name column. It informs users if TP is released in Release column. If the TP is unreleased, a Check Box control item is in the column such as Demo1\_9032C, Demo2\_9032C and released TP is without the check box such as Demo\_9032C.

If the TP of Demo1\_9032C will be released, please left click on "Check Box" in Release column. A confirmation message will be shown as *Figure 8-2*.

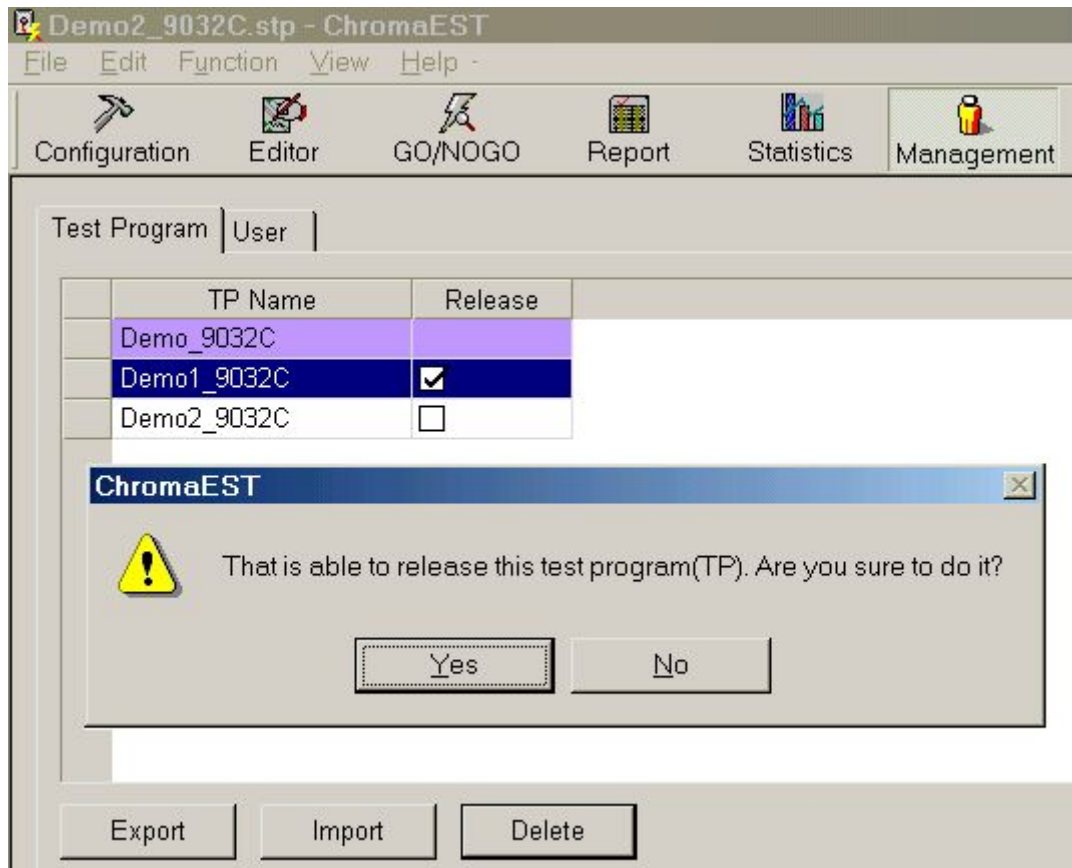


Figure 8-2

Click **Yes** to complete Release procedure. Some variations are occurred in the column currently.

1. "Check Box" control item is disappeared.
2. The color of column turned into purple, it indicates the TP is already released.
3. Statistics icon on toolbar is changed from Disable to Enable status. (*Figure 8-3*)

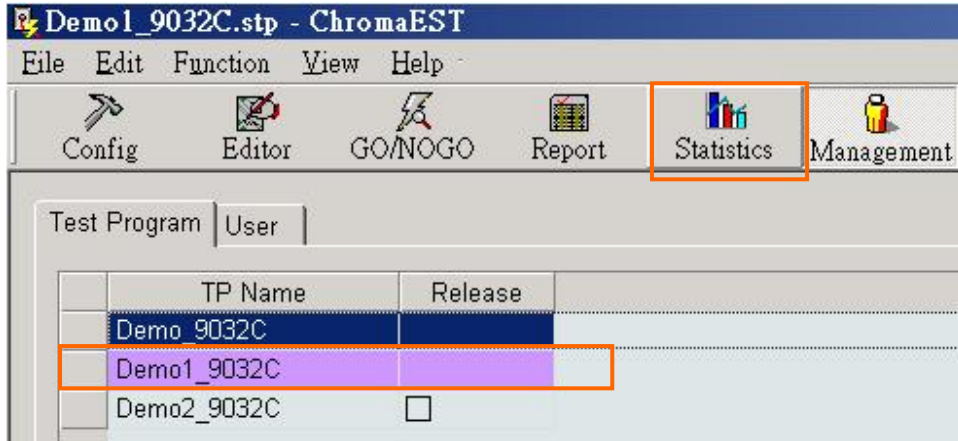


Figure 8-3

For other TP Release, just repeat the procedure above. The TP of “Demo1\_9032C” tested UUT result in GO/NOGO will be recorded for the sequential Report and Statistics used.

### 8.1.2 TP Export Function

TP export function can export single or multiple TP to “Export” file at the same time. Export the file to other computer, it will get the same TP and no need to edit repeatedly. The export function won’t export UUT test result (Log Data) simultaneously, *i.e.* the computer with imported TP won’t have Log Data of exported TP computer tested. The export steps are as follows.

<Step 1> Select the TP to be exported by using the mouse, left click for pulling down or press **Shift**, **Ctrl** as Figure 8-4.

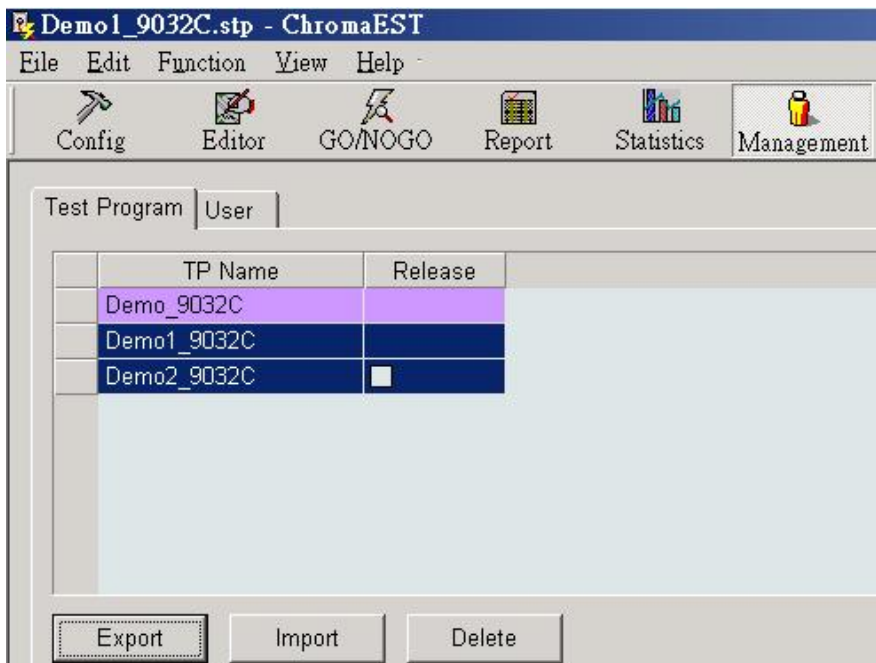


Figure 8-4

<Step 2> Click **Export** key to exit from the dialog box, please input file name to be saved then

click **Save** to complete export action (*Figure 8-5*). (File extension name is .stx)

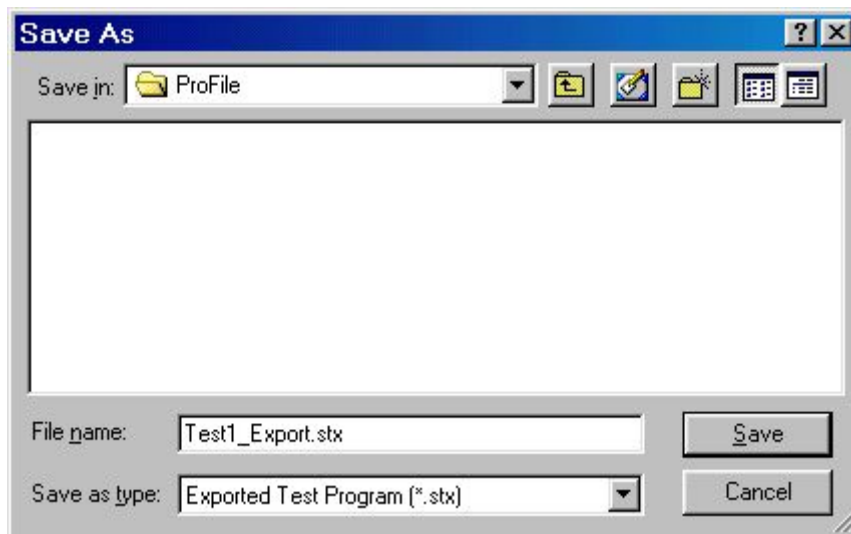


Figure 8-5

If the TP in activating is a new open one and not save the file yet (UnTitled.stp) thus any information about the TP can't be seen as entering Management Page. Save the file in Editor Page firstly and give it a file name, next to switch it to Management Page for viewing the TP related information.

In addition, if the TP is activating and unreleased, the program will show a message to inform users that the TP can't be exported currently as *Figure 8-6* shown. The reason is that users exports the activating TP and saves the revised TP in Editor Page, it will cause the different contents between the exported TP and the current TP. The protection is only for reducing the incidence of this condition.

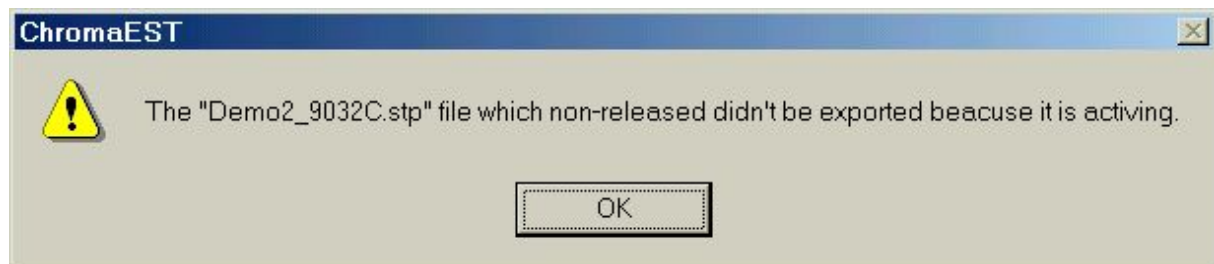


Figure 8-6

### 8.1.3 TP Import Function

The steps for importing a .stx file are as follows.

<Step 1> Click **Import** key to exit from Open Dialog Box, select the file to be imported (here is Test1\_Export.stx). (*Figure 8-7*)

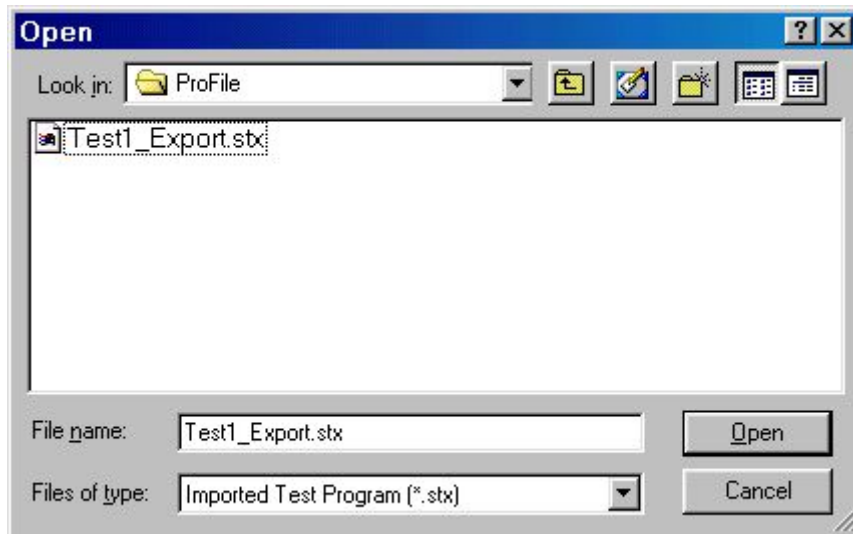


Figure 8-7

<Step 2> After clicking **Open**, Import Dialog Box will be popped up. The TP information can be imported shown on the Import Dialog Box (*Figure 8-8*). Select the TP to be imported by using the mouse (left click for pulling down or press **Shift**, **Ctrl** key), click **OK** to enter next step.

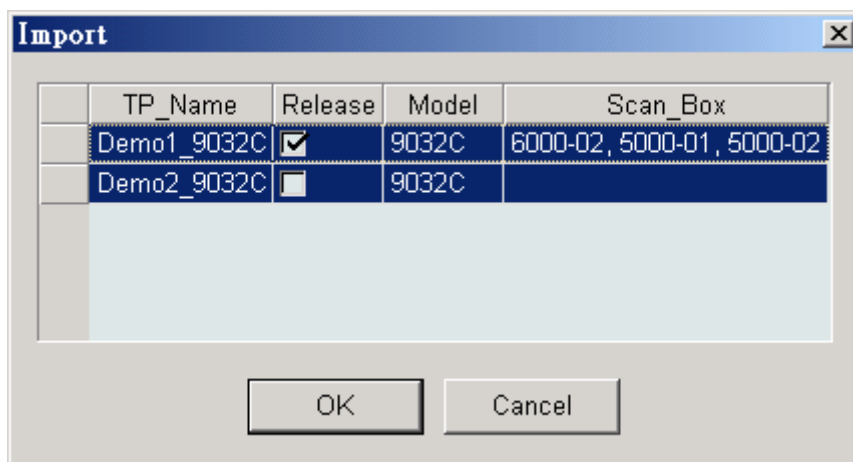


Figure 8-8

<Step 3> If the imported TP name is the same as current management name, the program will query if rename the imported TP as *Figure 8-9* shown. Click **Yes** for renaming it, the New TP Name Dialog Box will be popped up as *Figure 8-10*. Click No for not renaming it, the TP all information won't be imported. Repeat the step to import other the selected TP in Import Dialog Box. In this example, rename the first TP to be imported as "Demo1-1\_9032C" and not rename the second one to be imported as *Figure 8-11* shown.

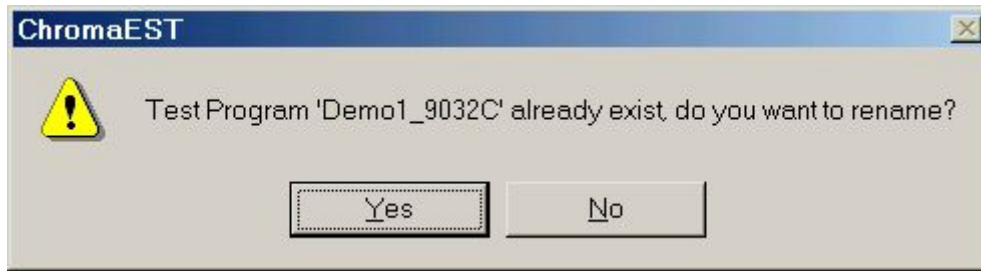


Figure 8-9

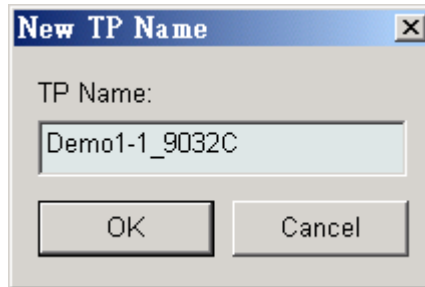


Figure 8-10 New TP Name Dialog Box

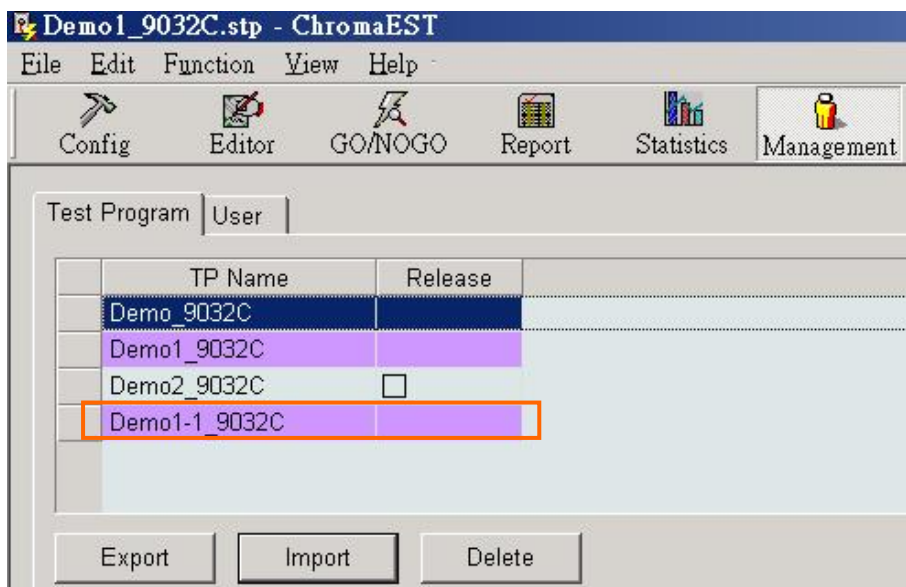


Figure 8-11

### 8.1.4 TP Deletion Function

Delete single or multiple unused TP, the steps are as follows.

<Step 1> Select the TP to be deleted by using the mouse (left click for pulling down or press **Shift**, **Ctrl**) as *Figure 8-12* shown.



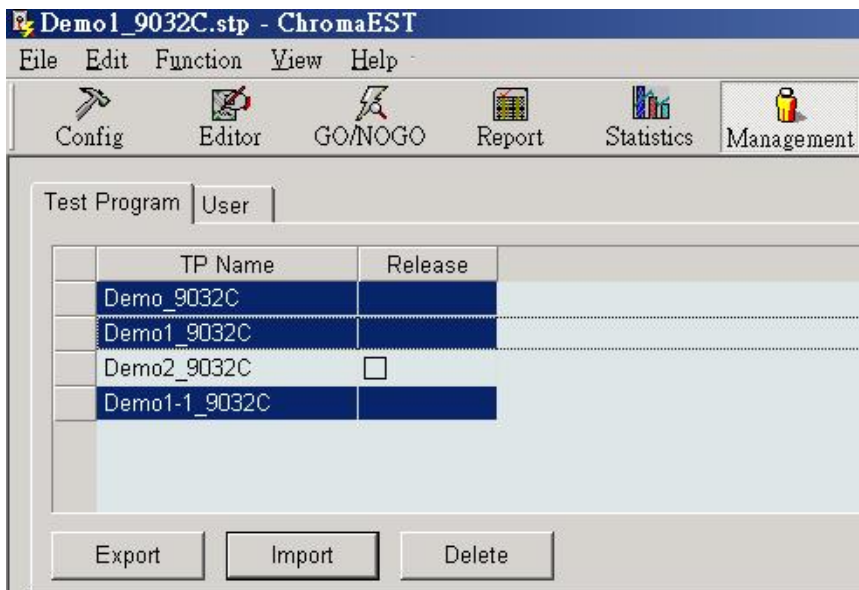


Figure 8-12

<Step 2> After clicking **Delete**, it will query if the action to be executed. Click **Yes** thus all selected TP will be deleted (Figure 8-13). If the selected TP which is activating, a message dialog box will be popped up to inform users the TP can't be deleted currently (Figure 8-14) and the result after deleted is as Figure 8-15 shown.

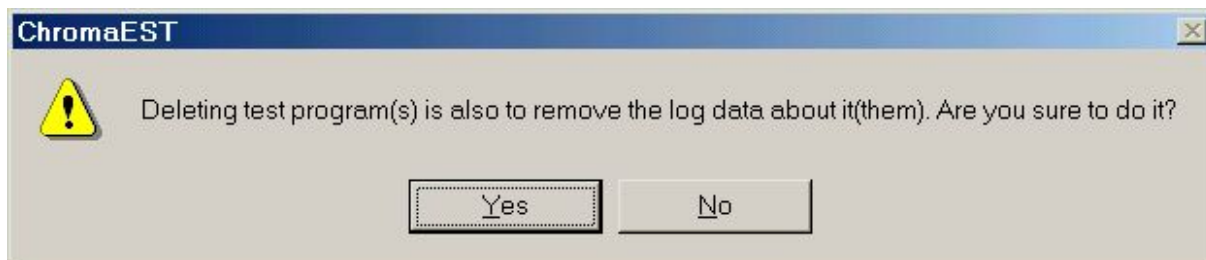


Figure 8-13



Figure 8-14

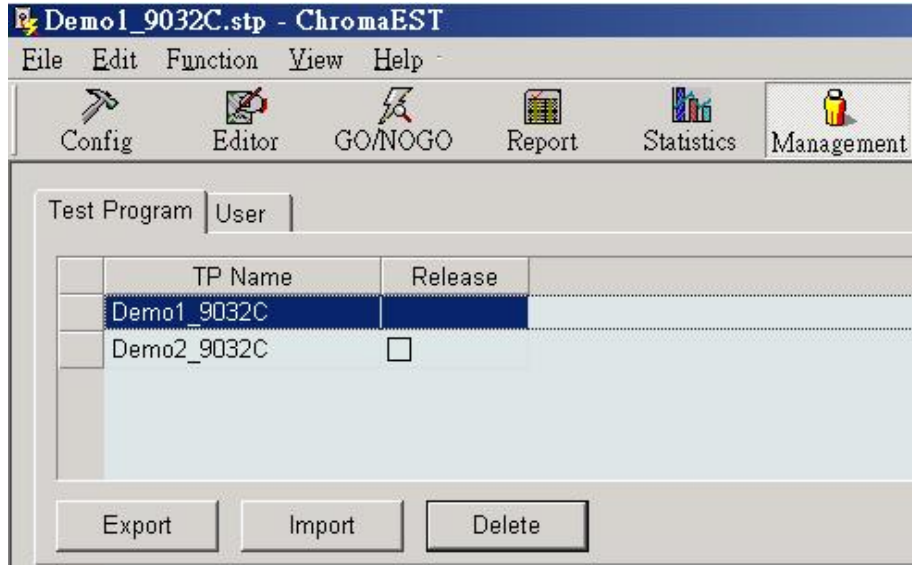


Figure 8-15

## 8.2 User Page

User page as *Figure 8-16* includes two columns: User ID and Level Name. User ID column logs current management each User name in the software; and Level Name column displays users' permission. If Level Name is "Supervisor", all functions in the program can be enabled. If Level Name is "Operator", the program only can enter GO/NOGO Window for safety test.

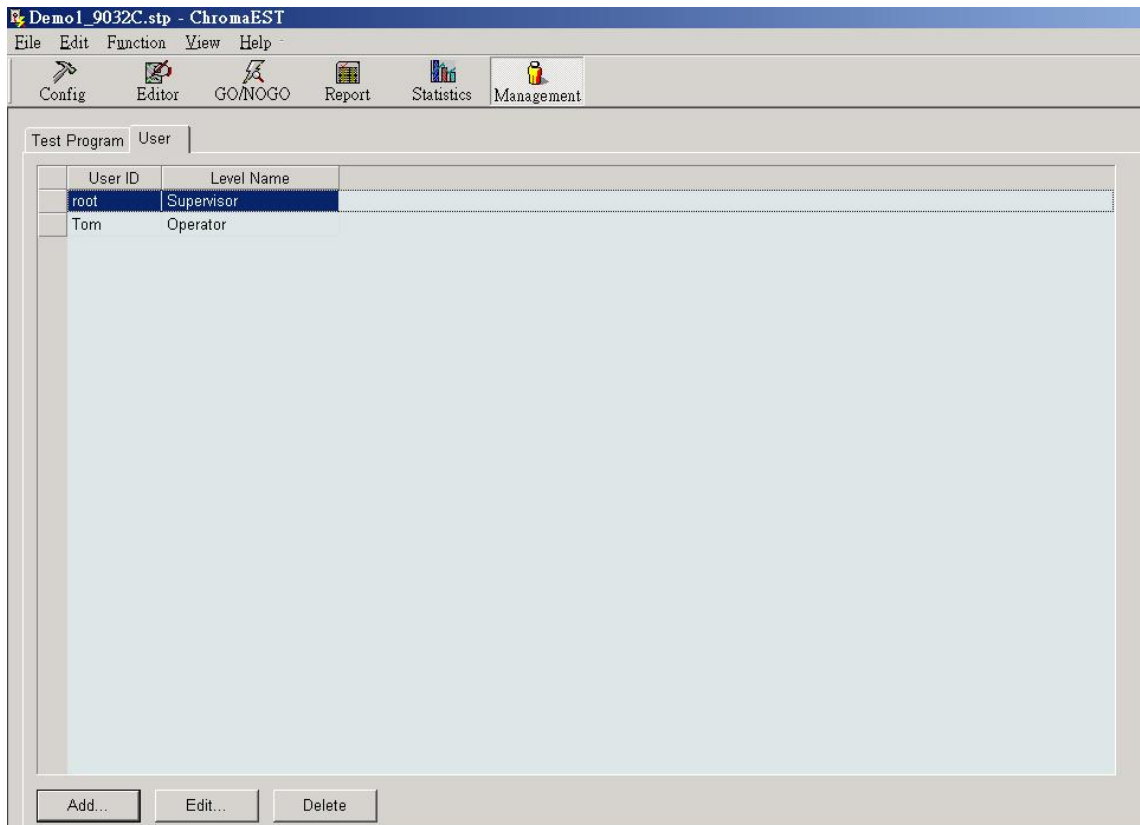


Figure 8-16 User Page

The functions of **Add...**, **Edit...** and **Delete** are described as below.

- Add... : Add a new user.
- Edit... : Edit a user.
- Delete : Delete single or multiple users.

## 8.2.1 Add New User

Click **Add...** to add a new user, “Add New User” dialog box will be popped up as *Figure 8-17* shown.

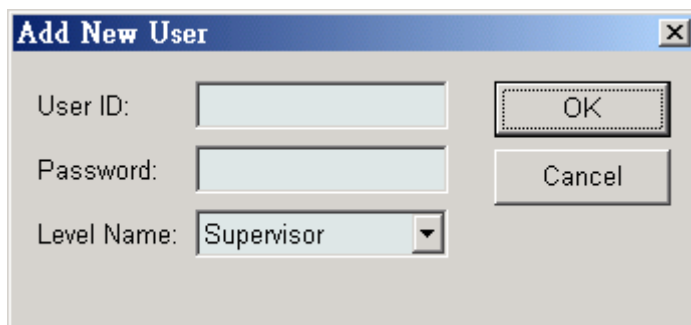


Figure 8-17 Add New User Dialog Box

- User ID : New user name (can't be blank)
- Password : New user password (can't be blank)
- Level Name : New user permission (Supervisor or Operator)

Assume that input “TestUser” into User ID column, input “123” for “Password” and select “Supervisor” for “Level Name” then click **OK**, the Input password dialog box will be popped up as *Figure 8-18* shown.

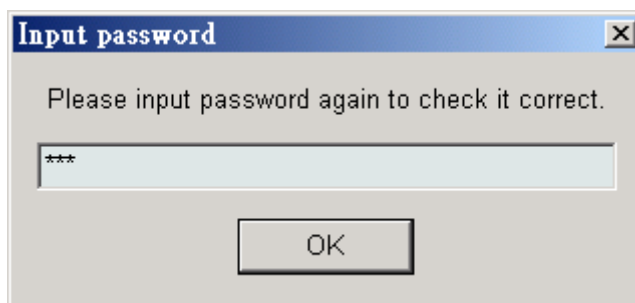


Figure 8-18 Input Password Dialog Box

After inputting password again, click **OK** add new user step will be completed. A new created User log will be seen in User Page as *Figure 8-19*.

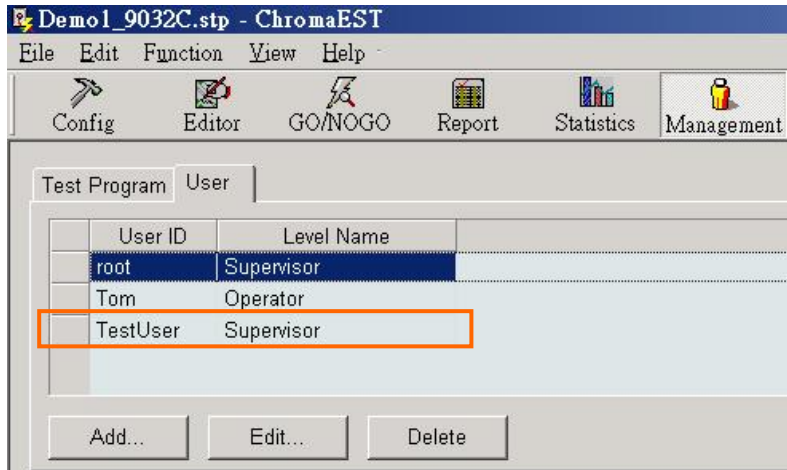


Figure 8-19

## 8.2.2 Edit User

Click the User to be modified (click TestUser) next to click **Edit...**, the program will pop up Edit User Dialog Box as *Figure 8-20*.

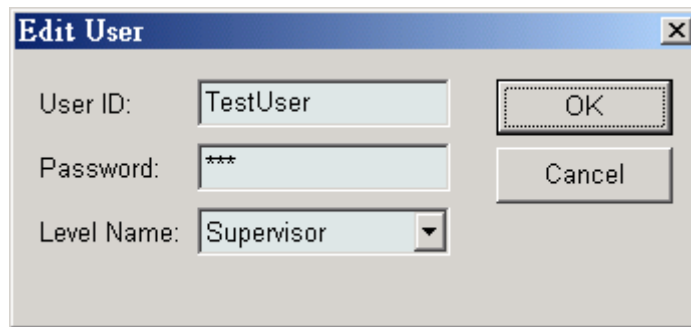


Figure 8-20 Edit User Dialog Box

Click **OK** after User ID or Level Name is modified, the program will save the modified data and updated User page. If the password is changed, click **OK** to show dialog box as *Figure 8-18*, confirm the password again to complete the modification. If the inputted password isn't inconsistent with the previous one, the message dialog box will inform user the password error as *Figure 8-21* and returns to Edit User Dialog Box. The setting for each column will back to the initial value that is the data as *Figure 8-20*.



Figure 8-21

## 8.2.3 Delete User

The function is for deleting single or multiple users, click the User to be deleted and click **Delete** thus the program will pop up a message for confirmation as *Figure 8-22* shown.

is able to delete one or many users, please select the user you want to delete by the mouse, and then press **Delete** button. The program will pop up a message for confirmation as *Figure 8-22* shown.

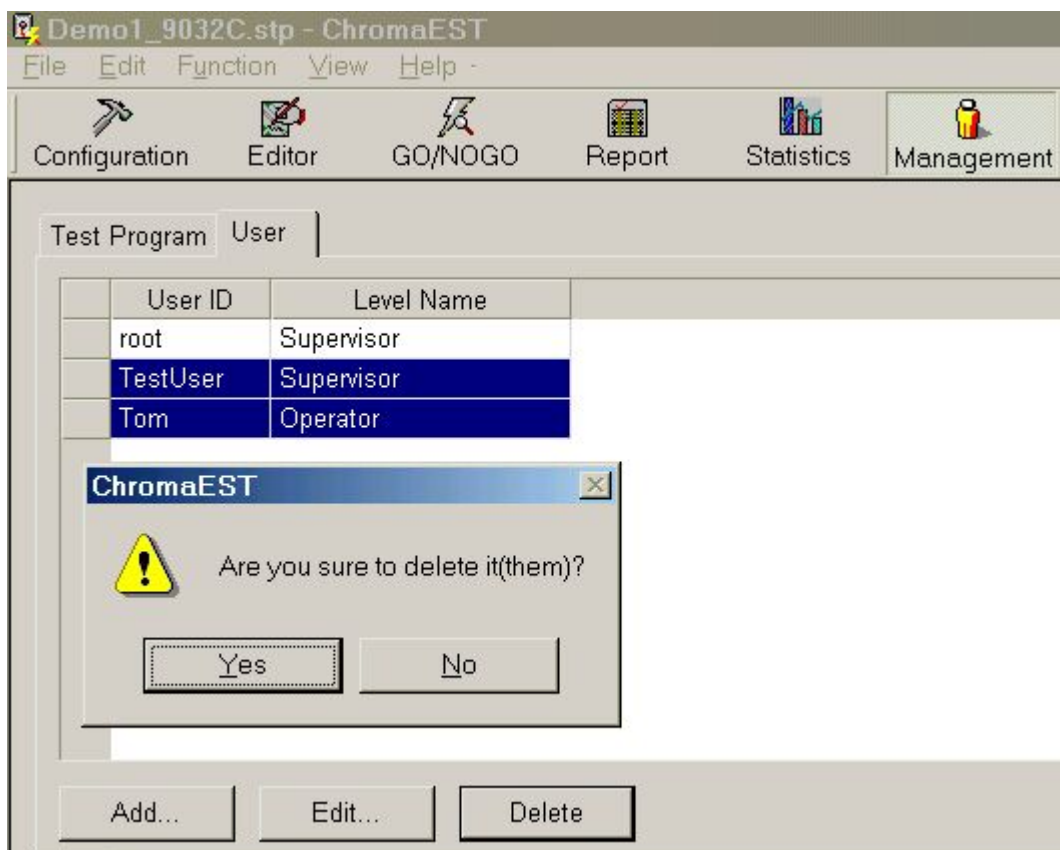


Figure 8-22

Click **Yes** to complete the deletion as *Figure 8-23*.

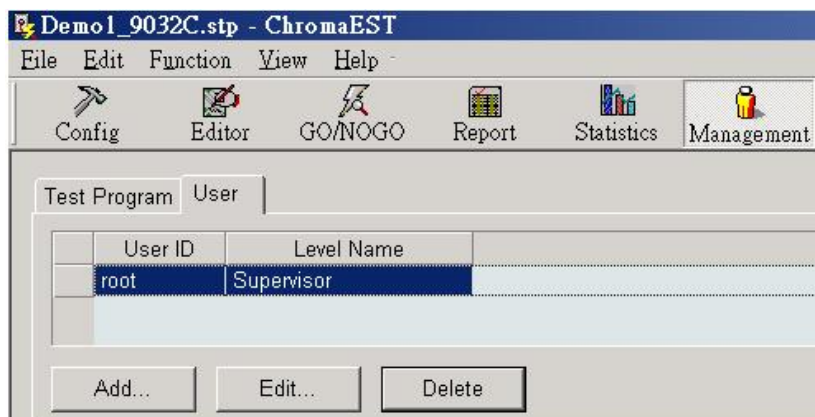


Figure 8-23



## 9. Report

After testing UUT in “GO/NOGO” window, enter “Report” window to create a report. Click Report icon on toolbar, Report Dialog Box will be shown as *Figure 9-1*.

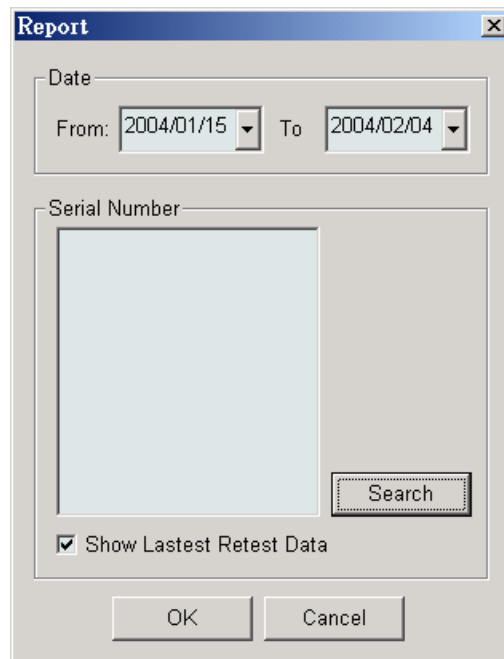


Figure 9-1 Report Dialog Box

In Date Group, it shows from the test date of first UUT to the last one. Click any pull down button ▼ of these two items, a calendar of the current month will be popped up (*Figure 9-2*). Users can choose other dates, click the tested UUT serial number in specified date range (the maximum range of these two items is from the test date of first UUT to the last one).

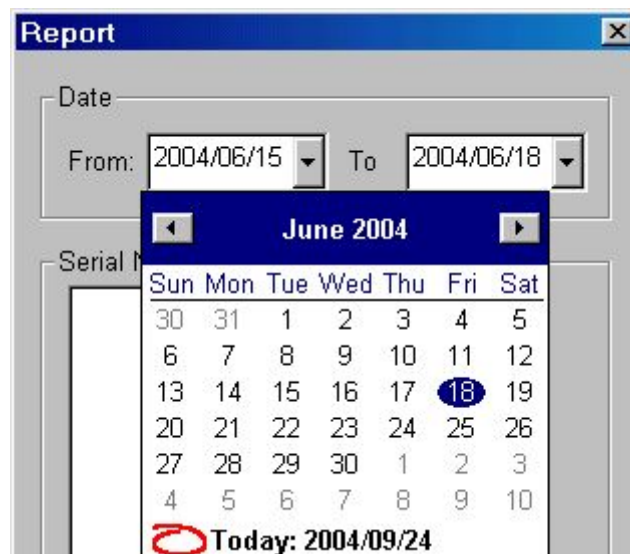


Figure 9-2

Users can select if lists UUTs last time retested Log data (default) or UUTs first time tested Log data (uncheck Show Lastest Retest Data) in Serial Number Group. Click **Search**, all

UUT serial numbers under setting condition as *Figure 9-3* shown.

If **Search** is clicked, UUT S/N under new condition to be searched thus clicks **Search** to search again.

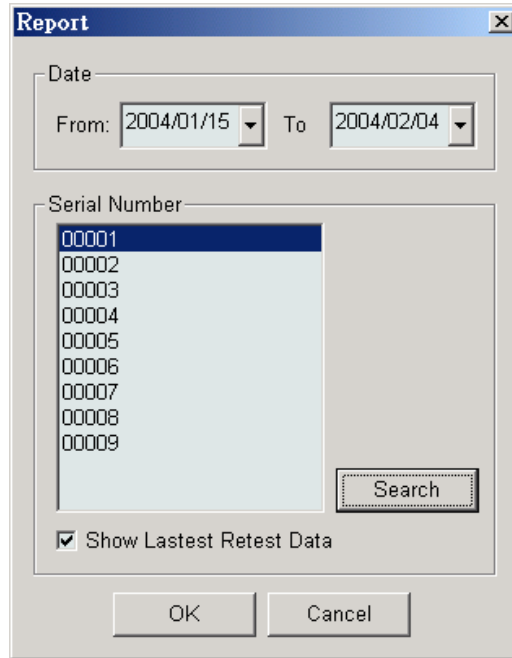


Figure 9-3

By using the mouse and **Ctrl**, **Shift** to choose UUT S/N to be created as report, click **OK** the program will open Microsoft Excel software to fill log data in Excel spreadsheet as *Figure 9-4*.

Microsoft Excel - Book2																										
File Edit View Insert Format Tools Data Window Help																										
S37 =																										
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	
	S/N	Step No.	WV-AC				WV-DC				GR				IR				LC				Judge		Date & Time	
			Vtm [KV]	Im [mA]	Low [mA]	High [mA]	Vtm [KV]	Im [mA]	Low [mA]	High [mA]	Itr [A]	Rm [moh]	Low [moh]	High [moh]	Vtm [KV]	Rm [Goh]	Low [Moh]	High [Moh]	Vtm [V]	Im [mA]	Low [mA]	High [mA]	Step	Total		
4	0001	1									40.013	9.8	0	100									PASS		2004/06/18	
5		2	2.347	2.84	0	5																	FAIL	FAIL	10:15:26	
6		3					0.05	0.21	0	5													????		12:15:06	
7	0002	1									40.013	9.8	0	100									PASS		2004/06/19	
8		2	0.05	0.007	0	0.5																	PASS	PASS	13:10:26	
9		3					0.05	0.21	0	5													????		2004/06/19	
10	0003	1									40.013	9.8	0	100									PASS		2004/06/19	
11		2	0.05	0.007	0	0.5																	PASS	FAIL	13:10:26	
12		3					0.05	5.62	0	0.5													FAIL		2004/06/21	
13	0004	1									40.01	152	0	100									FAIL		2004/06/21	
14		2	0.05	0.006	0	0.5																	PASS	FAIL	10:15:26	
15		3					0.05	0.21	0	5													????		2004/06/21	
16	0005	1									40.013	9.8	0	100									PASS		2004/06/21	
17		2	0.05	0.007	0	0.5																	PASS	PASS	15:15:26	
18		3					0.05	0.21	0	5													????			

Figure 9-4

After log data is exported to Excel, a Report icon on toolbar as *Figure 9-5* shown. If the icon is clicked, Report Dialog Box will be popped up as *Figure 9-1*. Users can select other UUT S/N for generating report.



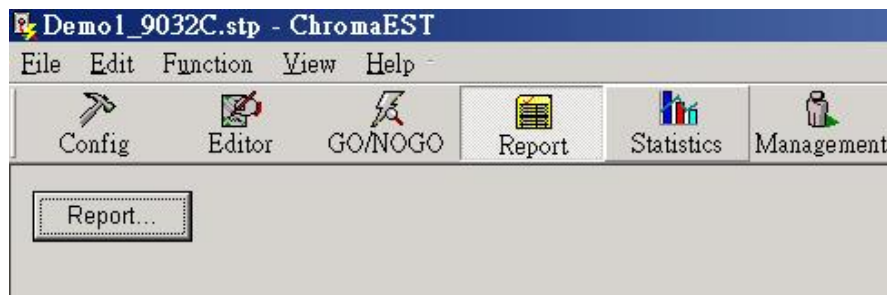


Figure 9-5



## 10. Statistics

Click “Statistics” on the tool bar, Pick UUTs Dialog Box will be popped up as *Figure 10-1*.

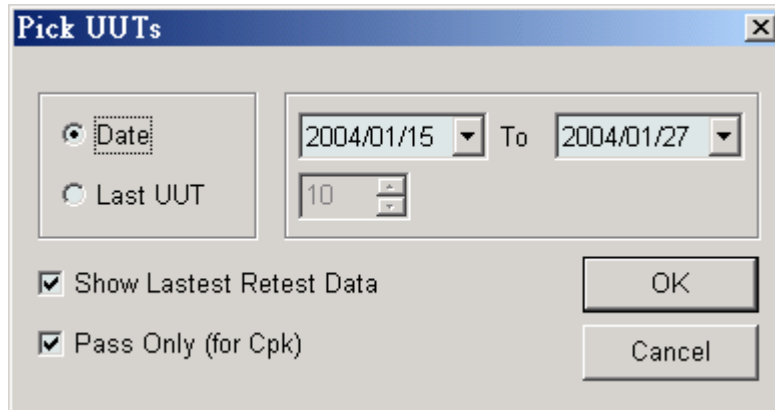


Figure 10-1 Pick UUTs Dialog Box

The descriptions for each component are as follows.

### Date

The function is the same as “Date Group” description of *Figure 9-1* in the previous chapter.

### Last UUT

After the item is selected, the corresponding control item at the right will become activating as *Figure 10-2* shown. This function is for users selecting n entry UUTs at last test. Take *Figure 10-2* as an example, it selects the last 10 entries UUTs of Log data.

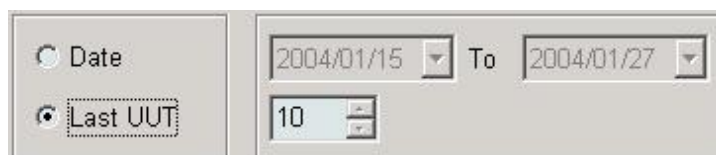


Figure 10-2

### Show Lastest Retest Data

The function is the same as “Serial Number Group” description of *Figure 9-1* in the previous chapter.

### Pass Only (for Cpk)

The function is only for Cpk statistics, it checked indicates only count “Pass” UUT (default) and unchecked indicates count all UUTs including Pass or Fail.

Accept all default conditions here, click **OK** to enter Statistics Window as *Figure 10-3* shown. Four pages in the window: Fail Rate, Fail Item, Cpk and Raw Data. In Fail Rate, Fail Item and Cpk page where divides into two functions. The left side of window is UUT information and the right side of window is parameter setting. The information in Print Setting Group will be shown on statistical figure, the parameters in Parameter Setting Group will affect the shape of statistical figure.

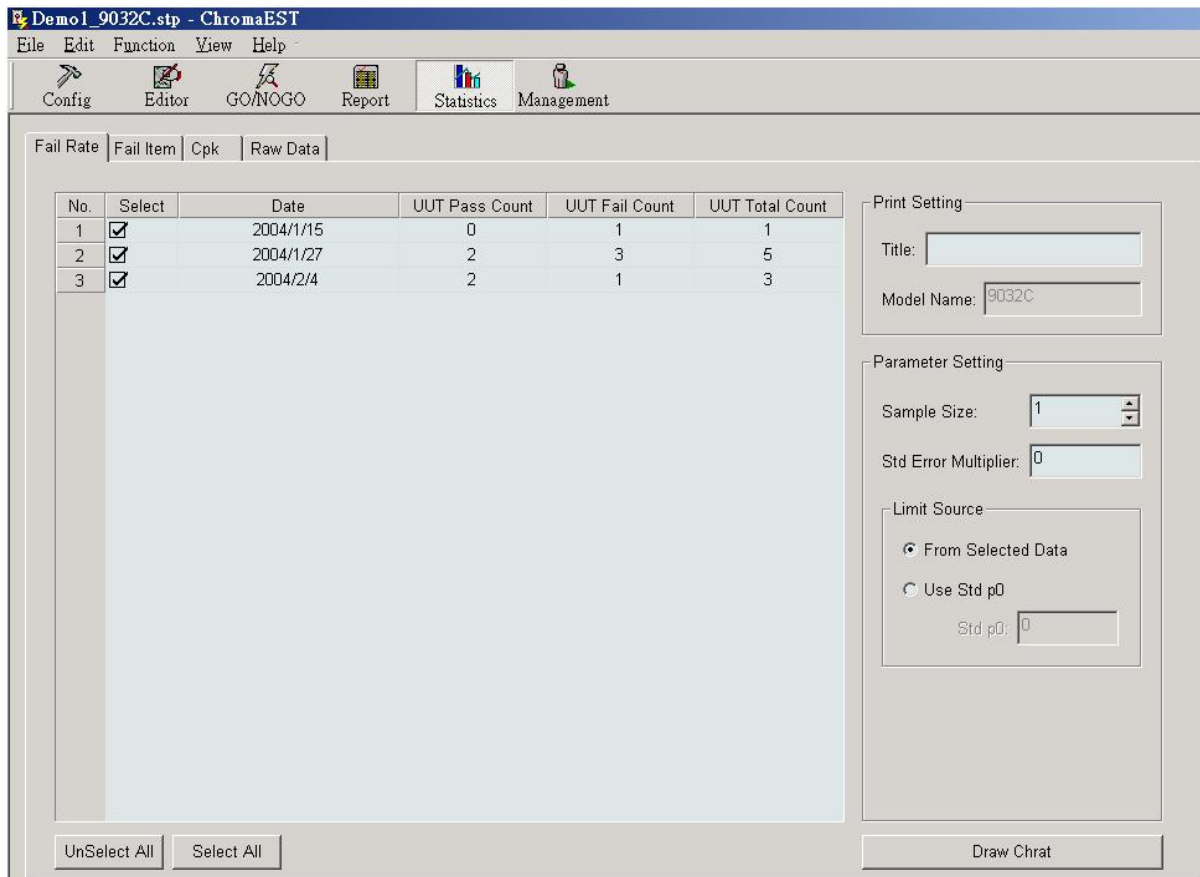


Figure 10-3

## 10.1 Fail Rate Statistics Chart

Fail Rate window is as *Figure 10-4* shown. All UUTs' fail test results in every day are regarded as fail rate via viewing fail rate control chart. The results are gotten by statistics analysis.

## 10.1.1 Description

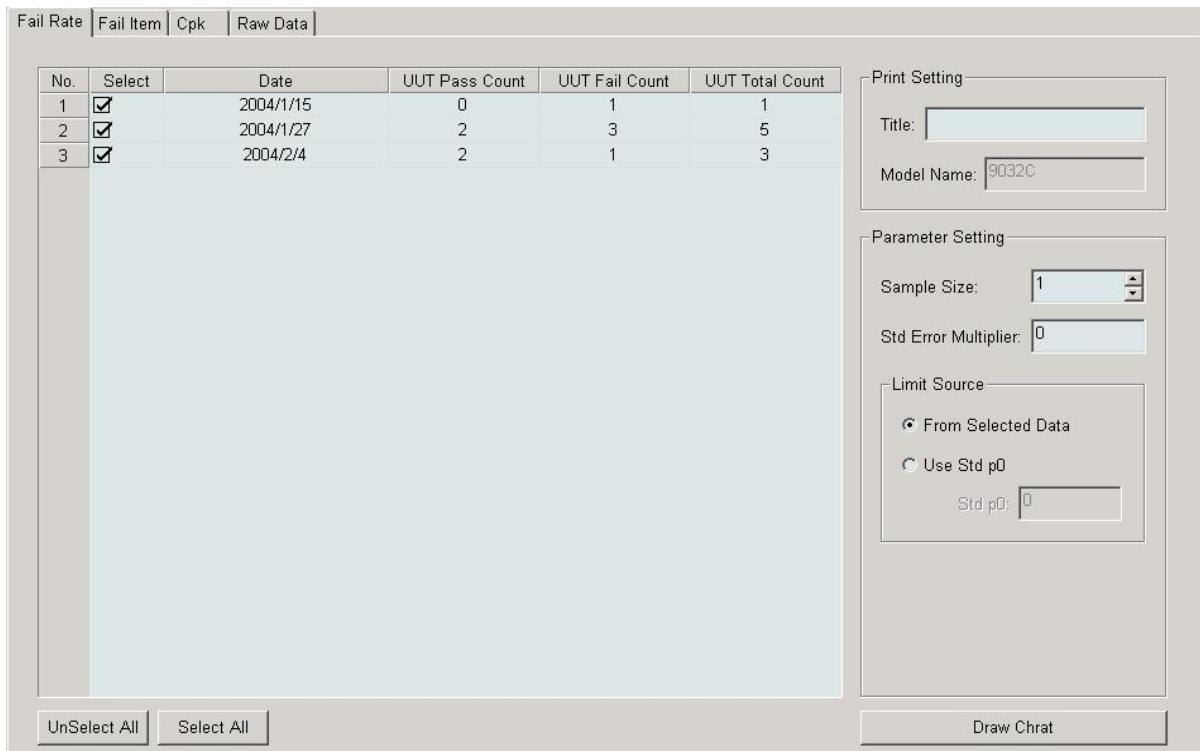


Figure 10-4 Fail Rate Statistics Window

The left window displays the UUT related information, the columns are explained as follows.

<b>No.</b>	The serial number by date sequential.
<b>Select</b>	Check box of test result. The test result of the selected date will be included in statistics operation when preview or print statistics chart.
<b>Date</b>	It displays test date.
<b>UUT Pass Count</b>	The pass count of UUT test result in a certain date.
<b>UUT Fail Count</b>	The fail count of UUT test result in a certain date.
<b>UUT Total Count</b>	The total count of UUT test result in a certain date.

<b>Select All</b>	It selects test results of all UUTs. All check boxes in the window will be selected.
<b>UnSelect All</b>	It unselects test results of all UUTs. All check boxes in the window will be unselected.
<b>Draw Chart</b>	It draws Fail Rate statistics chart.

### [Print Setting]

<b>Title</b>	It sets the title for printing.
<b>Model Name</b>	It sets UUT model name. It is only for displaying, its content can't be modified.

### [Parameter Setting]

<b>1) Sample Size</b>	It sets sample size.
<b>2) Std Err Multiplier</b>	It displays standard error of Spec. Max./Min.
<b>3) Limit Source</b>	It sets limit source.

- ⊙ From Selected Data It calculates the control limits by the selected UUTs' test results.
- ⊙ Use Std p0 Use Std p0 as the standard p0 value for control limits center line.
- Std p0 It sets standard p0 value.

### 10.1.2 Display Statistics Chart

Select the test date result that will be included to calculate from the upper of window then set the page of Parameter Setting and Print Setting and click **Draw Chart** to get Fail Rate Statistics Chart as *Figure 10-5*.

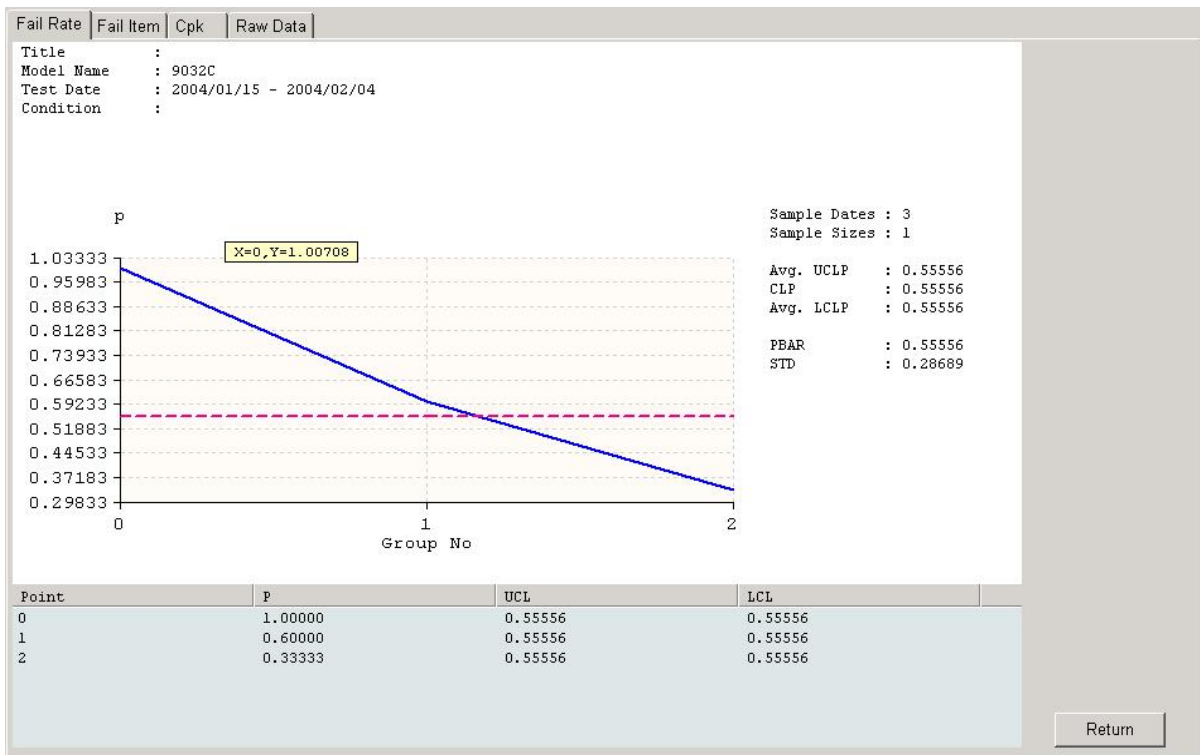


Figure 10-5 Fail Rate Statistics Chart

Click **Return** to back to the window for modifying parameter settings, then click **Draw Chart**.

### 10.1.3 Save Statistics Chart

The program supports each statistics chart and save it as 640x480 Bitmap file. Select File -> Save of function list in *Figure 10-5* (i.e. it is in Chart Window, the parameter setting window cannot save the statistics chart). A save as dialog box will be popped up as *Figure 10-6*, input the file name desired and click **Save** to save Bitmap file of the statistics chart under the specified directory.

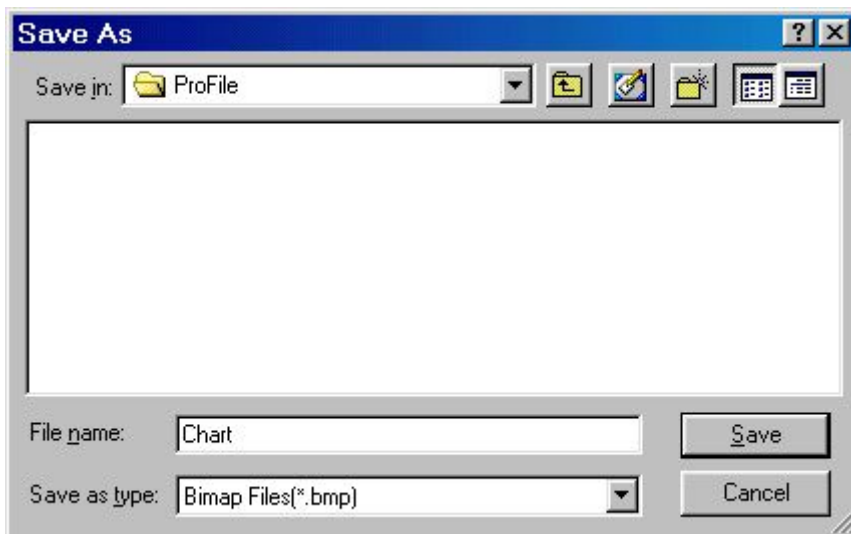


Figure 10-6 Save As Dialog Box

### 10.1.4 Print & Print Preview Statistics Chart

The program supports print and preview functions of all statistics charts. Select File -> Print Preview in function list to print preview statistics chart, the Print Preview Window will be popped up as *Figure 10-7*. Click **Print...** on Print Preview Window to enter print procedure, click **Close** to return to Statistics Window.

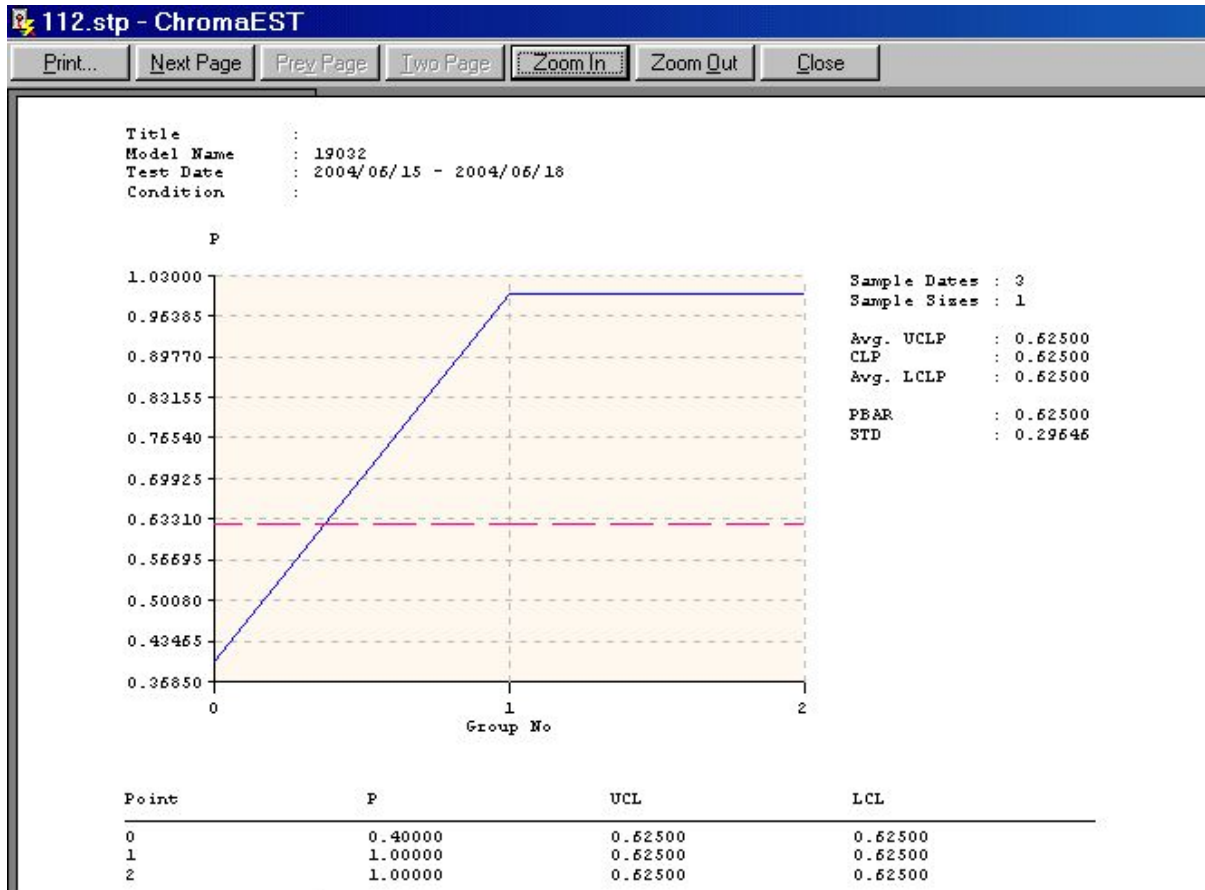


Figure 10-7 Print Preview Window

Select File -> Print... in function list to print statistics chart, Print Dialog Box will be popped up as *Figure 10-8*. After the print item is set, click **OK** to start printing

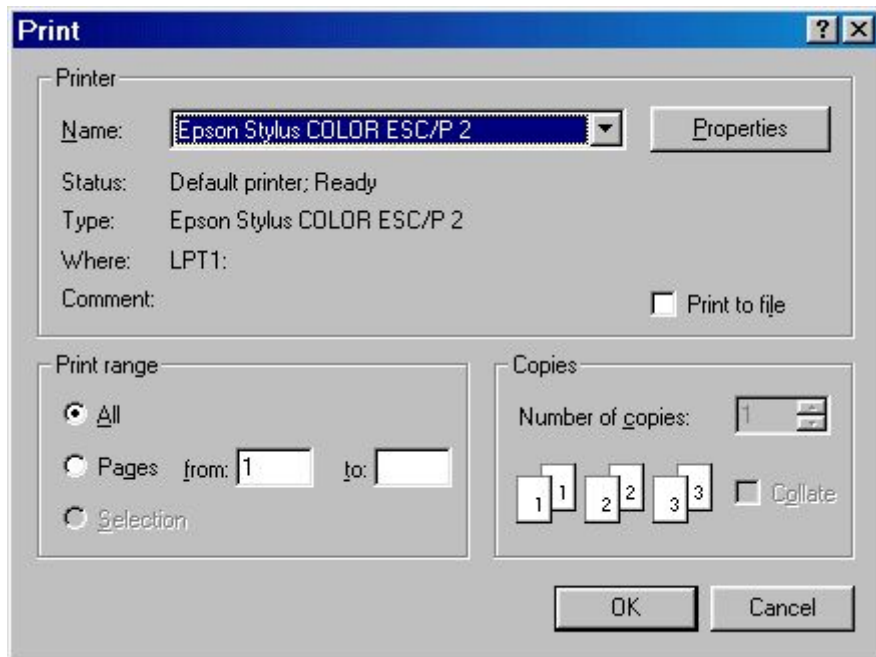


Figure 10-8 Print Dialog Box

## 10.2 Fail Item Statistics Chart

Fail Item Window is shown as *Figure 10-9*. The fail test results of all steps for UUTs are regarded as defect, the results are gotten by statistics operation.

### 10.2.1 Description

Pass or Fail result of each UUT's test step are listed in *Figure 10-9* (???? indicates the previous step is fail so the item doesn't be tested).



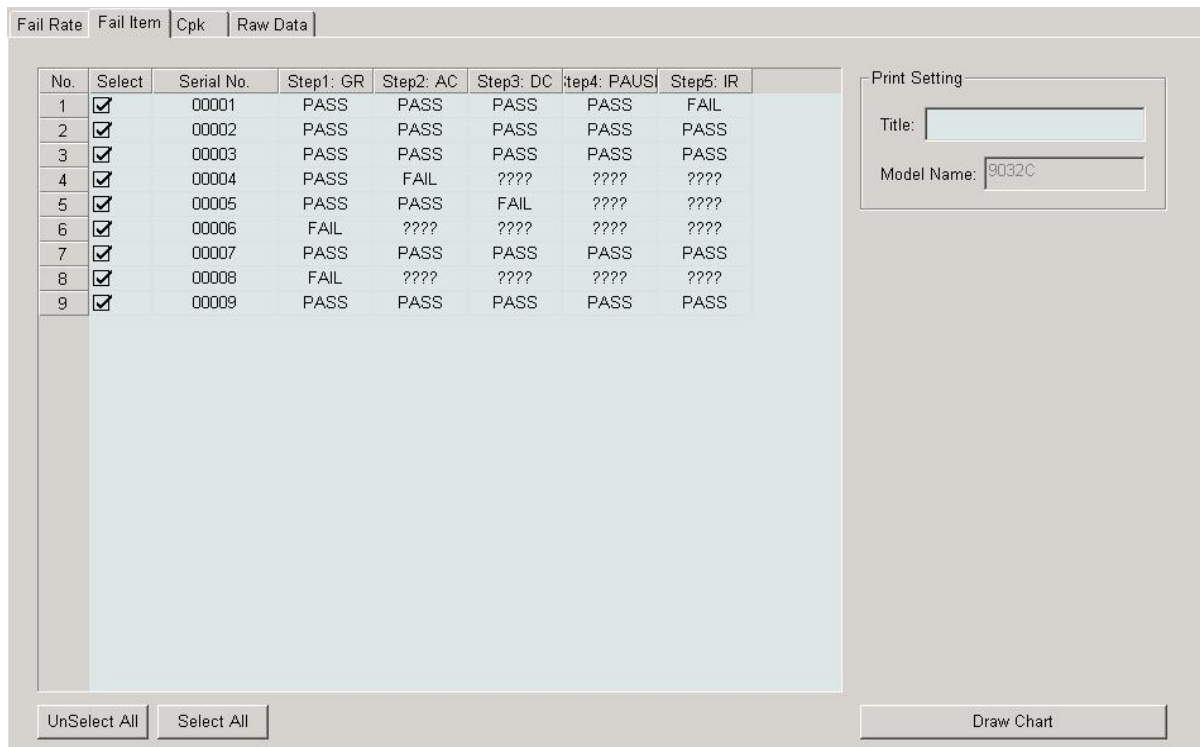


Figure 10-9 Fail Item Statistics Window

The left window displays the UUT related information, the columns are explained as follows.

- No.** The UUT's number.
- Select** Check box of UUT test result. The selected test result will be included in statistics operation when previews or prints statistics chart.
- Serial No.** The UUT's serial number.

Other columns display test results of test step are Pass or Fail.

- Select All** It selects test results of all UUTs. All check boxes in the window will be selected.
- UnSelect All** It unselects test results of all UUTs. All check boxes in the window will be unselected.
- Draw Chart** It draws Fail Rate statistics chart.

**[Print Setting]**

- Title** It sets the title for printing. Users can input title name arbitrarily.
- Model Name** It sets UUT model name. It is only for displaying, its content can't be modified.

## 10.2.2 Display Statistics Chart

Select the UUT result that will be included to calculate from the upper of window then set the page of Print Setting and click **Draw Chart** to get Fail Item Statistics Chart as *Figure 10-10*.

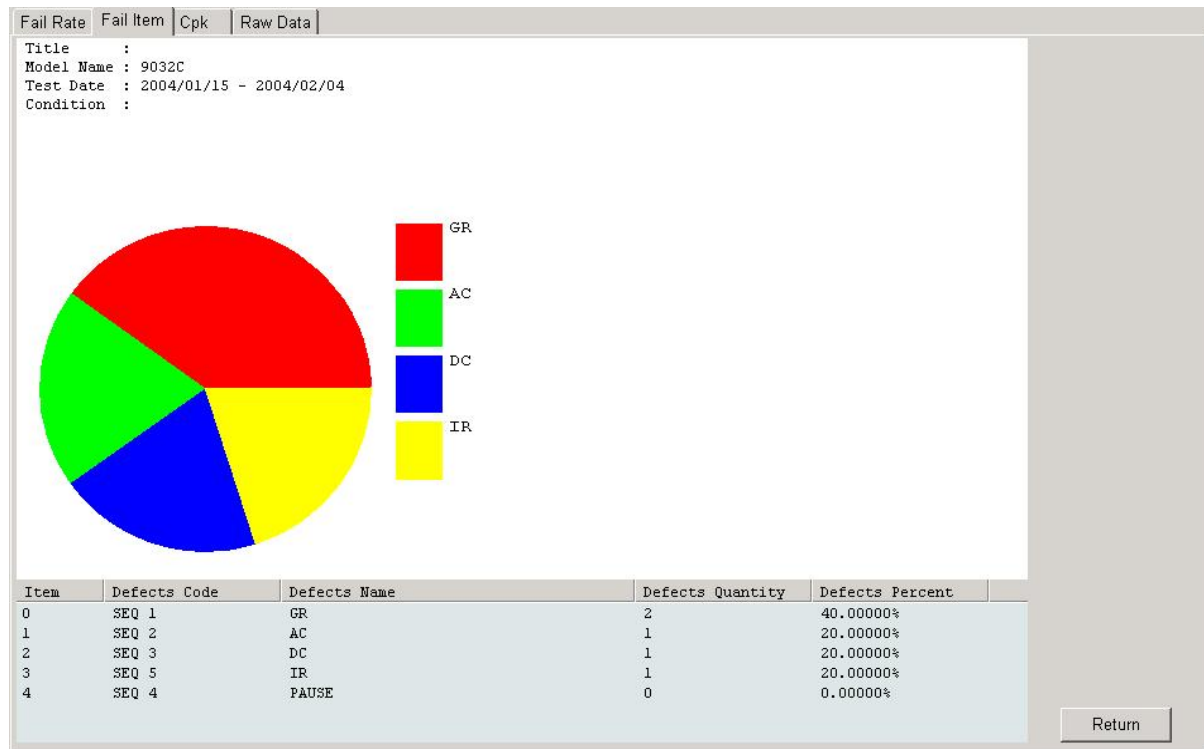


Figure 10-10 Fail Item Statistics Chart

### 10.2.3 Save Statistics Chart

Please refer *section 10.1.3*.

### 10.2.4 Print & Print Preview Statistics Chart

Please refer *section 10.1.4*.

## 10.3 Cpk Statistics Chart

Cpk Window is shown as *Figure 10-11*.

### 10.3.1 Description

Step Table displays all test steps of the test program. Result Table displays all readings of Step Table selected test steps. When users change different test steps in Step Table, all test readings of the test step will be updated in Result Table.

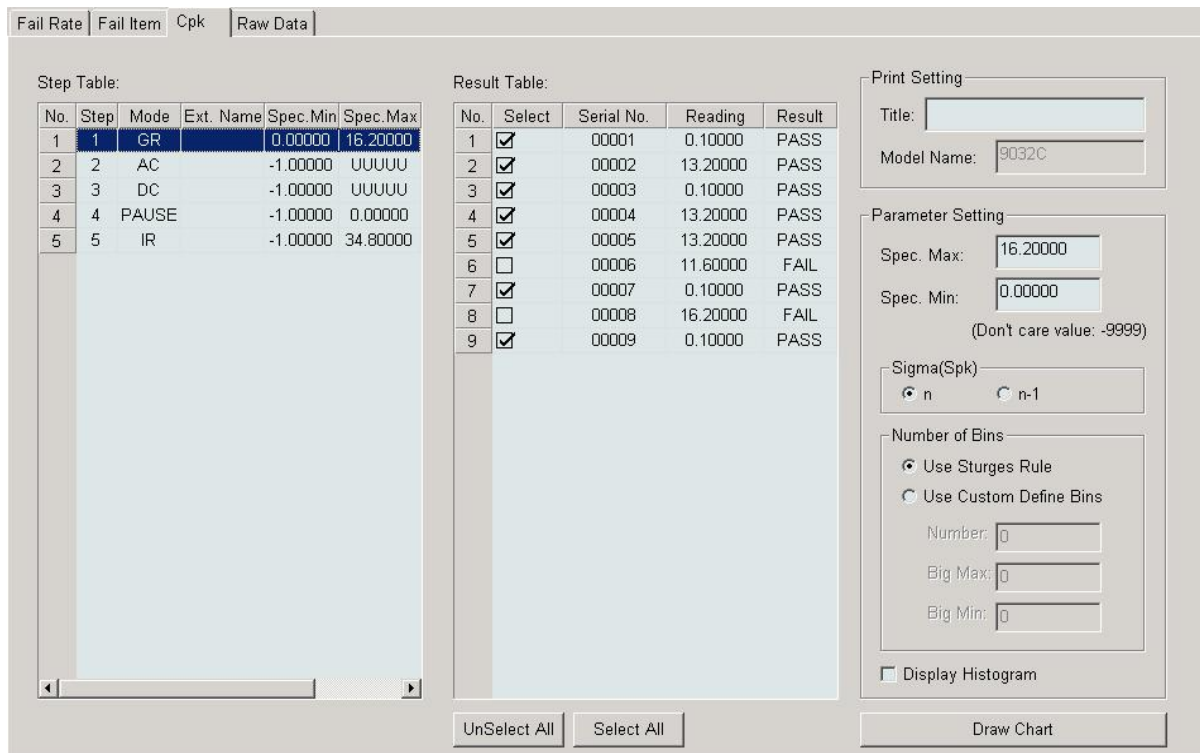


Figure 10-11 Cpk Statistics Chart

Step Table displays the related information of test steps, the columns are explained as follows.

- No.** The serial number of test step.
- Step** The test step name.
- Mode** The test item mode.
- Ext. Name** The annotation of test step.
- MaxSpec** The reference specification high limit of test step (refer the Max. reading in Result Table).
- MinSpec** The reference specification low limit of test step (refer the Min. reading in Result Table).

Result Table displays the test result of a certain test step, the columns are explained as follows.

- No.** The serial number of test reading.
- Select** Check box of test reading. The selected test reading will be included in statistics operation when previews or prints statistics chart.
- Serial No** The UUT's serial number.
- Reading** The result of test reading.
- Result** Test reading is PASS or FAIL.

- Select All** It selects test results of all UUTs. All check boxes in the window will be selected.
- UnSelect All** It unselects test results of all UUTs. All check boxes in the window will be unselected.
- Draw Chart** It draws Cpk statistics chart.

[Parameter Setting]

- 1) **Spec. Max** It sets spec. max of selected step for calculating Cp, Ca and Cpk values.
- 2) **Spec. Min** It sets spec. min of selected step for calculating Cp, Ca and Cpk values.
- 3) **Sigma (Spk)** It selects Sigma calculation method. (n: It is for calculating the entire mother group; n-1: It is for estimating the entire mother group.)
- 4) **Number of Bins** It sets bin numbers of histogram.

*Use Sturges Rule* It gets max and min value from all readings as max and min of histogram bins and count bin number based on all samples. The formula is  $1+3.3*\log(\text{Size of } (X))$ .


*Use Custom Define Bins* The max and min of custom define bins and custom define bin number.

*Number* Custom define bin number

*Bin Max* Max bin number

*Bin Min* Min bin number

**Display Histogram** It selects if display histogram.

-  **CAUTION**
- ◆ If Spec. Max and Spec. Min are not specified, the program will retrieve max and min value from all reading of the variable to fill in these two columns.
  - ◆ If the Sigma of the selected data tends to 0 thus it can't be calculated and drawn.

[Print Setting]

- Title** It sets the title for printing. Users can enter title arbitrarily.
- Model Name** Model name for UUT. The column is for display only, it can't be modified.

### 10.3.2 Display Statistics Chart

It selects test step of Cpk statistics chart to be drawn and which test readings in Result Table to be included for operation. After the items in two tabs of "Parameter Setting" and "Print Setting" are set, click **Draw Chart** to get Cpk statistics chart as *Figure 10-12*.

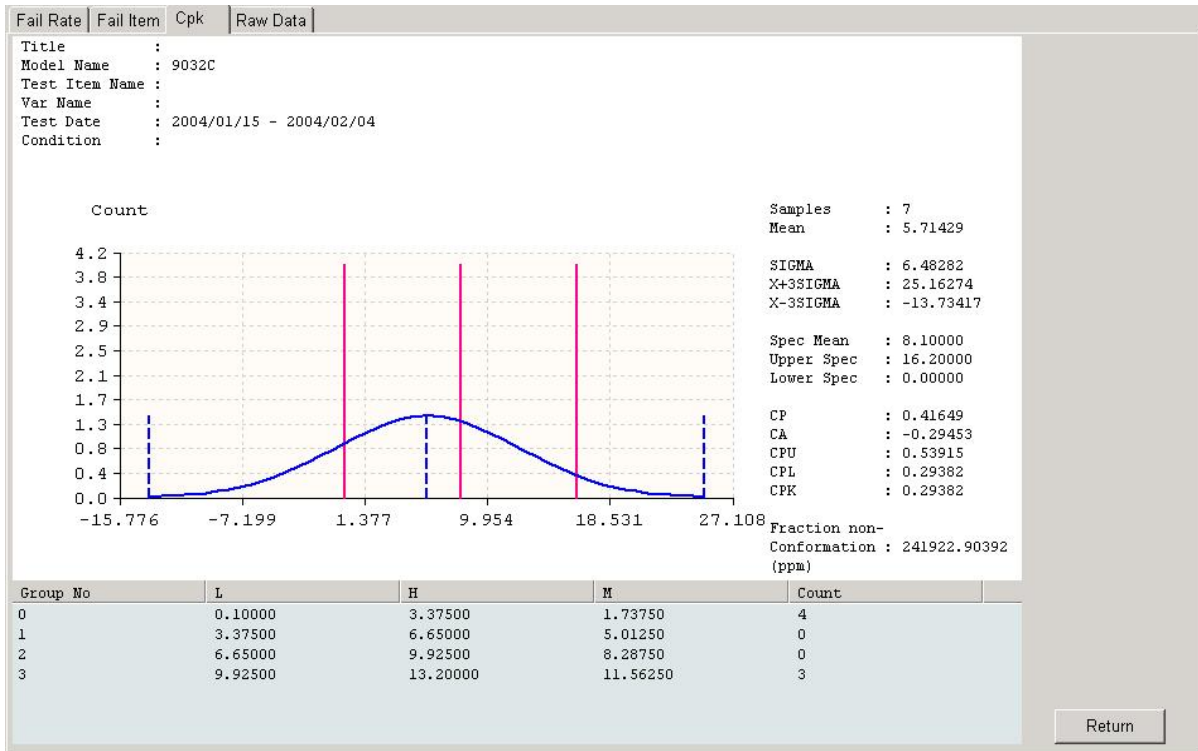


Figure 10-12 Cpk Statistics Chart

### 10.3.3 Save Statistics Chart

Please refer *section 10.1.3*.

### 10.3.4 Print & Print Preview Statistics Chart

Please refer *section 10.1.4*.

## 10.4 Raw Data

Raw Data window is shown as *Figure 10-13*.

### 10.4.1 Description

The readings and results of test steps follow UUT to gather them into the same column and exported it to Excel. Users can analyze the test result further via Excel powerful feature.

No.	Select	Serial No.	Step1: GR Reading	Step1: GR Result	Step2: AC Reading	Step2: AC Result	Step3: DC Reading	Step3: DC Result	Step4: PAUSE	Step4: PAUSE	Step5: IR Reading	Step5: IR Result	T
1	<input checked="" type="checkbox"/>	00001	0.10000	0	0.00700	0	0.00000	0	0.00000	0	34.80000	1	
2	<input checked="" type="checkbox"/>	00002	13.20000	0	0.00000	0	0.00000	0	0.00000	0	24.00000	0	
3	<input checked="" type="checkbox"/>	00003	0.10000	0	0.00700	0	0.00000	0	0.00000	0	25.30000	0	
4	<input checked="" type="checkbox"/>	00004	13.20000	0	UUUUU	1	????	????	????	????	????	????	
5	<input checked="" type="checkbox"/>	00005	13.20000	0	0.08800	0	UUUUU	1	????	????	????	????	
6	<input checked="" type="checkbox"/>	00006	11.60000	1	????	????	????	????	????	????	????	????	
7	<input checked="" type="checkbox"/>	00007	0.10000	0	0.00700	0	0.00000	0	0.00000	0	23.20000	0	
8	<input checked="" type="checkbox"/>	00008	16.20000	1	????	????	????	????	????	????	????	????	
9	<input checked="" type="checkbox"/>	00009	0.10000	0	0.00700	0	0.00000	0	0.00000	0	25.30000	0	

UnSelect All    Select All     Export Specification    Export to Excel

Figure 10-13 Raw Data Window

Raw Data tab displays the related information of UUT, the columns are explained as follows.

- No.** The UUT's number.
- Select** Check box of UUT test result. The selected test result will be included in statistics operation when previews or prints statistics chart.
- Serial No.** The UUT's serial number.

Other columns display test readings and results of test steps.

**Total Result** The total result for this UUT (0: Pass, 1: Fail).

**Select All** It selects test results of all UUTs. All check boxes in the window will be selected.

**UnSelect All** It unselects test results of all UUTs. All check boxes in the window will be unselected.

**Export Spec...** Export max and min in test steps to Microsoft Excel.

**Export to Excel** Export the selected UUTs Log Data to Microsoft Exce.

After the UUTs to be exported are selected (the previous three items are selected in the example), click **Export to Excel**. "Export Specification" unchecked is as *Figure 10-14* shown and as *Figure 10-15* conversely, their difference is only at the top two rows of the window.

	A	B	C	D	E	F	G	H
	Serial No.	Step1: GR Reading	Step1: GR Result	Step2: AC Reading	Step2: AC Result	Step3: DC Reading	Step3: DC Result	Total Result
1								
2	0001	9.8	0	2.84	1	0.05	0.21	1
3	0002	9.8	0	0.007	0	0.05	0.21	0
4	0003	9.8	0	0.007	0	0.05	5.62	1
5	0004	125	1	0.006	0	0.05	0.21	1
6	0005	9.8	0	0.007	0	0.05	0.21	0
7								

Figure 10-14

	A	B	C	D	E	F	G	H
	Serial No.	Step1: GR Reading	Step1: GR Result	Step2: AC Reading	Step2: AC Result	Step3: DC Reading	Step3: DC Result	Total Result
1	<b>Max_Setting</b>	100		5		5		
2	<b>Min_Setting</b>	0		0		0		
3								
4	0001	9.8	0	2.84	1	0.05	0.21	1
5	0002	9.8	0	0.007	0	0.05	0.21	0
6	0003	9.8	0	0.007	0	0.05	5.62	1
7	0004	125	1	0.006	0	0.05	0.21	1
8	0005	9.8	0	0.007	0	0.05	0.21	0
9								

Figure 10-15







CHROMA ATE INC.

致茂電子股份有限公司

66 Hwaya 1st Rd.

Kuei-shan Hwaya Technology Park

Taoyuan County 33383, Taiwan

33383 台灣桃園縣龜山鄉

華亞科技園區華亞一路 66 號

T +886-3-327-9999

F +886-3-327-8898

Mail: [info@chromaate.com](mailto:info@chromaate.com)

<http://www.chromaate.com>