

# **IT9000 Control Software**

## **PV6800A-B User Manual**

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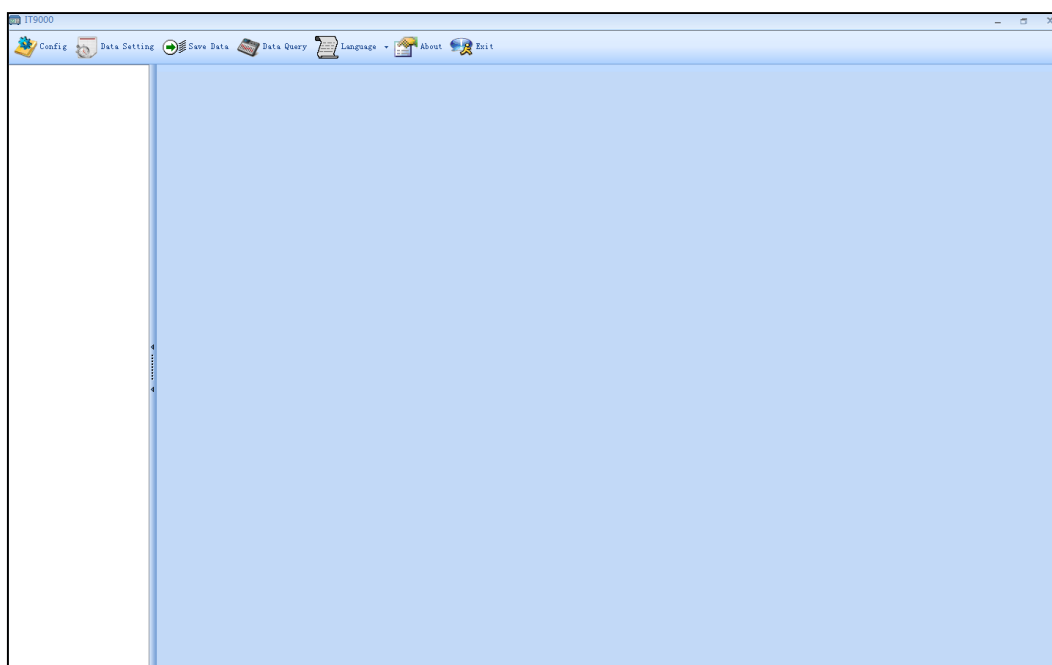
# Chapter1 Brief Introduction

## 1.1 Software Introduction

IT9000-PV6800A-B is a kind of easy-to-use and practicable control software designed by Itech Electronic Co., Ltd. It is applicable to Itech IT6800A/B Series power supply. With this software, you can take all operations for power supply front panel via computer control and enjoy great convenience in remote control. This software supports RS232, USB, GPIB and Ethernet serial port communication.

## 1.2 IT9000 Interface Introduction

After run IT9000, the software will initialize, in about 2 seconds, the below interface will appear:



The interface is described as follows:



- **Config**  
Configuration function, to configure hardware information for control power supply device of IT9000 software control, including power supply device alias, device interface and interface parameter, and to configure sub-devices (e.g., channels) for each device.
- **Date Setting**  
Data setting, mainly to select numeric field to be saved, device alias and save interval before data saving.
- **Save Date**  
Data saving, mainly to save current test data. Before data saving, please set data at first.

- **Date Query**  
Data query, to open the data file saved before.
- **Language**  
To select software language version, including Simplified Chinese, Chinese-traditional and English.
- **About**  
To list related information of software, including Company website.
- **Exit**  
To exit IT9000 software.



Note

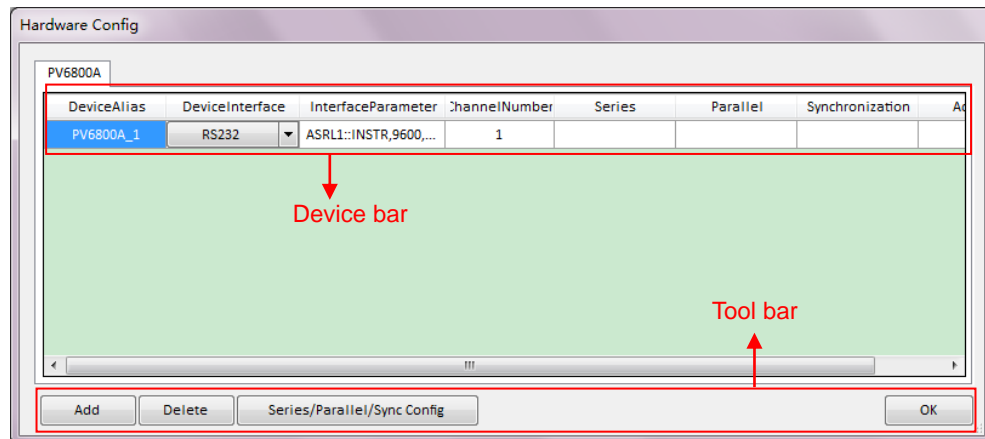
About the detailed function of IT6800A-B, please refer to IT6800A-B User Manual.

## Chapter2 Basic Operation

### 2.1 Hardware Configuration

#### 2.1.1 Function Introduction

The hardware configuration interface of IT9000 software is as shown below.



- The “Device bar” includes settings for device alias, device interface, interface parameter and channel number:
  - ◆ Device Alias: the alias of a device, used to distinguish devices of same model.
  - ◆ Device Interface: drop-down options include RS232, GPIB, USB and Ethernet.
  - ◆ Interface Parameter: the interface parameter corresponding to device interface.
  - ◆ Channel Number: to set the channel number of sub-device.
  - ◆ Series: to display series configuration name in series connection of devices.
  - ◆ Parallel: to display parallel configuration name in parallel connection of devices.
  - ◆ Synchronization: to display synchronization configuration name in synchronization of devices.
  - ◆ Address: to set power supply communication address (used for devices with frame format protocol).
- Main toolbar functions:
  - ◆ Add: to add hardware device.
  - ◆ Delete: to delete specific device.
  - ◆ Series/Parallel/sync Config
  - ◆ OK: to confirm hardware configuration information.

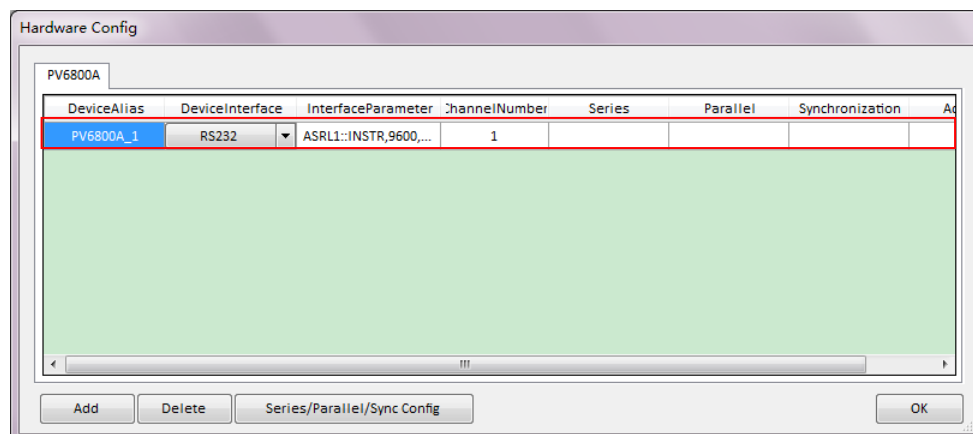
#### 2.1.2 Configuring Hardware

This function enables the user to create new hardware information or modify

existing hardware device information. Detailed operation steps will be given below taking creation of new device information as example.

## Operation steps

1. Run IT9000 software and click “Configure” icon.
2. Click “Add” button in the Configuration Interface and display the currently added hardware device information and default parameter of device in the “Device bar” at top. As shown below.



To change default parameter of hardware device (e.g., device interface, interface parameter and channel number), you may click the parameter for change.

- Device Alias: double click to edit device alias.
  - Device Interface: to select from the drop-down box.
  - Interface Parameter: double click to configure in the Configure Dialog. For details, refer to Section 2.1.3 “Communication Interfaces of Configuration Device”.
  - Channel Number: set the channel number of sub-device. The channel number is changeable.
3. Click “OK” to save the configuration information of current hardware device. At this time, the device name (device alias @ channel number) will be displayed at top left of the interface. To pop up the Control Interface, you need to double click the Device Name.

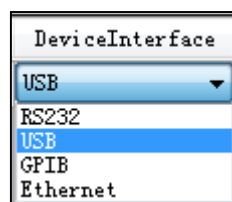


## 2.1.3 Configuring Interface of Device

IT9000 software is installed in PC and interacts with matching hardware devices via different communication interfaces. This software supports interfaces like USB, RS232, GPIB and Ethernet interface. When configuring the hardware device, configure different interface types based on actual needs and set corresponding interface parameters for different interfaces.

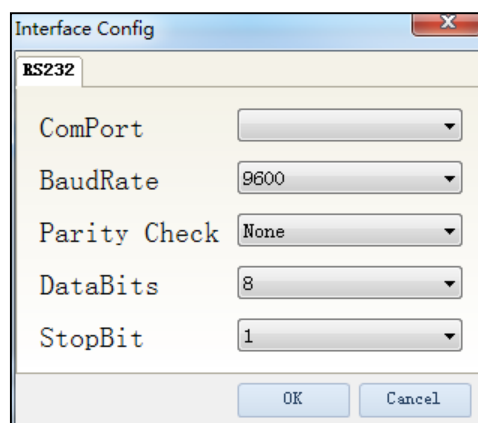
## Operation steps

1. Select the device interface corresponding to the hardware device to be edited from the Hardware Configuration Interface, and select the interface type from the drop-down list.



2. After selecting the device interface, double click corresponding "Interface Parameter" column. The system will pop up "Interface Configuration" window.

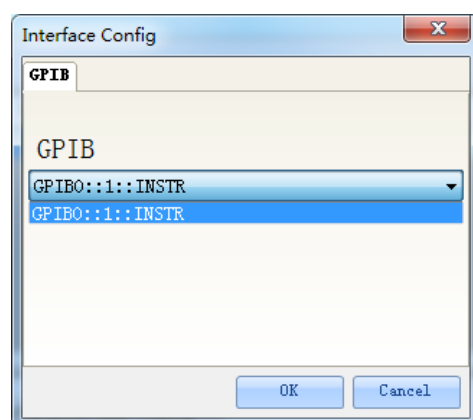
### ● RS232 Interface Parameter Configuration



Serial interface: to select serial interface, i.e., the serial interface number occupied by RS232 communication cable interface.

Baud rate, parity check bit, data bits and stop bit must be configured consistently with those in menu setup.

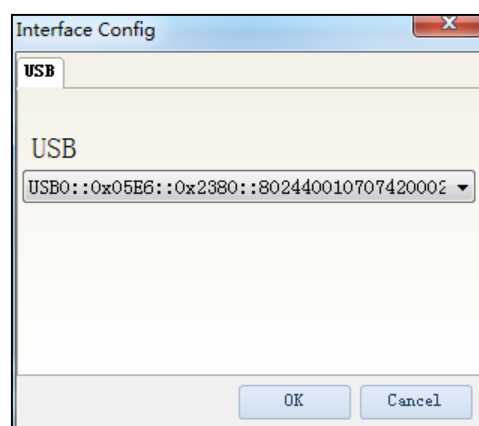
### ● GPIB Interface Parameter Configuration



During GPIB communication of power supply device, the address setting range is: 1-30.

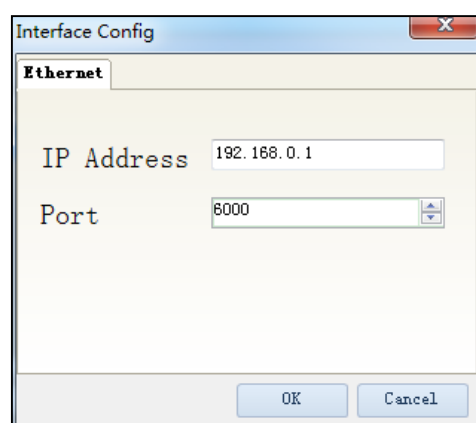


- USB Interface Parameter Configuration



- LAN Interface Parameter Configuration

If LAN interface is used for communication, both computers and device are connected via HUB (or, the device and computer are directly connected via cross network cable). The computer and device IP setting should be in a same network segment.



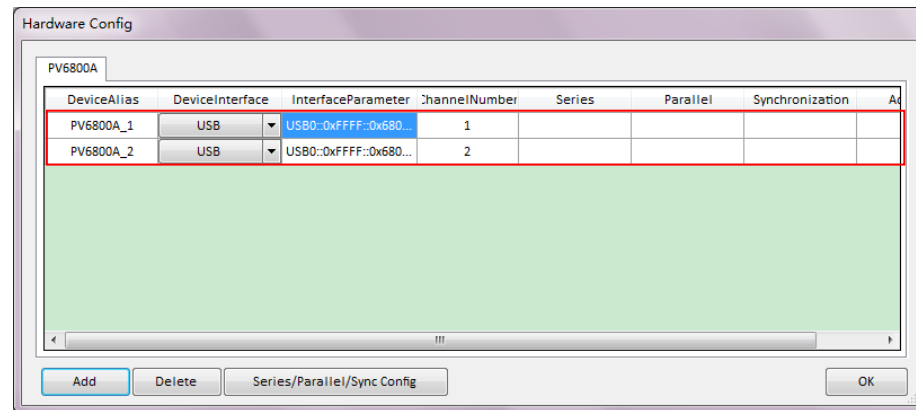
3. After interface parameter configuration, click "OK". Finish interface parameter configuration.

## 2.1.4 Series, Parallel and Synchronization Configuration

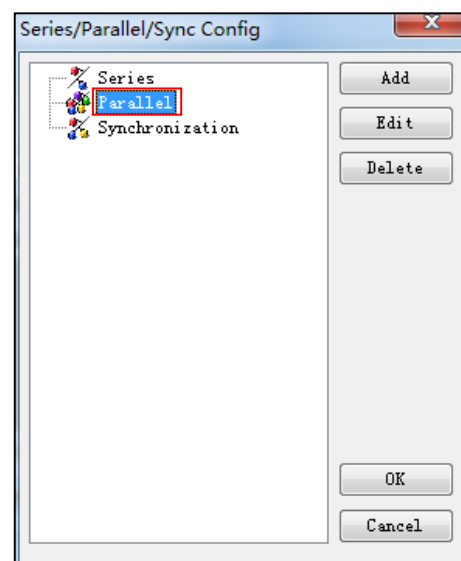
This configuration is used when several devices or several channels are connected. Setting types include series, parallel and synchronization. IT6800 Series can be configured with parallel and synchronization.

### Parallel configuration

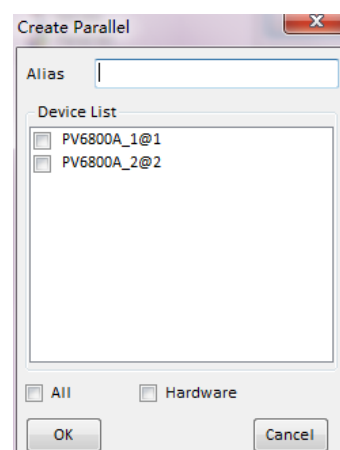
1. Follow the above steps to configure and connect 2 sets of IT6800 devices.



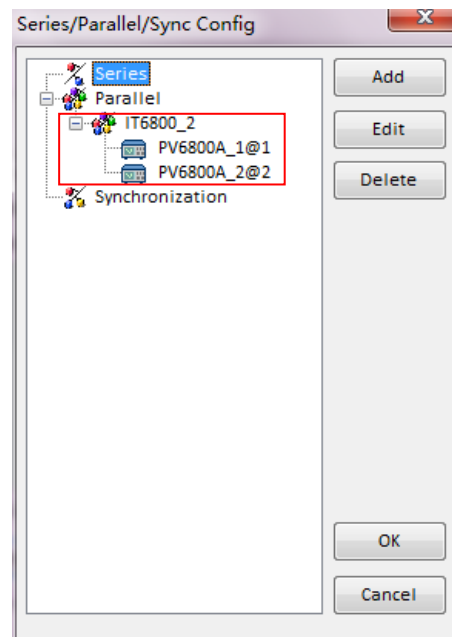
- Click "Series/Parallel/Synchronization" button and click "Parallel" in the figure below.



- Click "Add" button to create parallel.



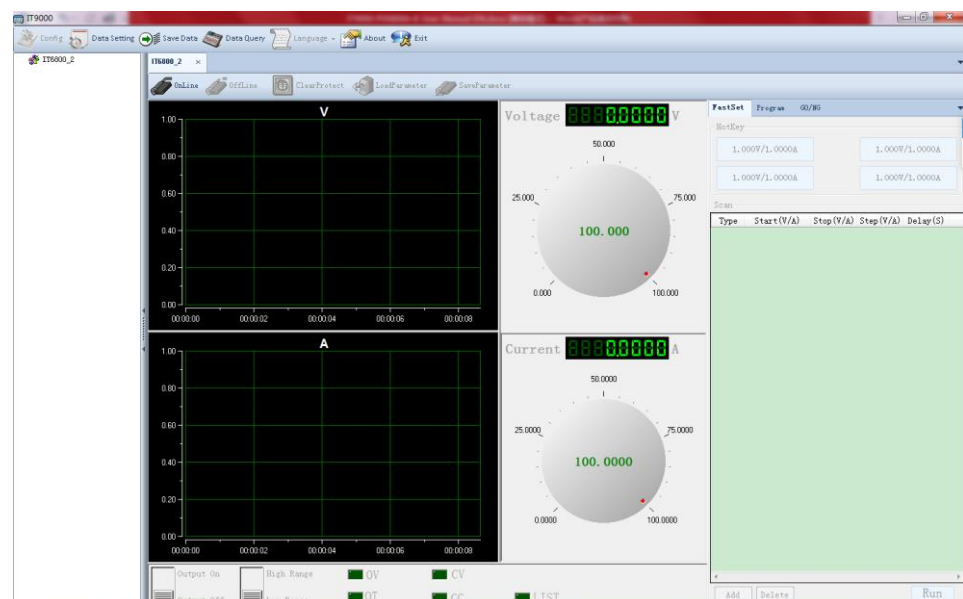
- Name alias: IT6800\_2. Click the box at front of PV6800\_1 and PV6800\_2 and select the devices for parallel.
- Click "OK" button. The Parallel Configuration Interface will display configured device.



6. Click "OK" to save the current parallel configuration information. At this time, the parallel configuration name "IT6800\_2" will be displayed at the left top of the interface.



7. Double click IT6800\_2 to display the Parallel Control Interface.

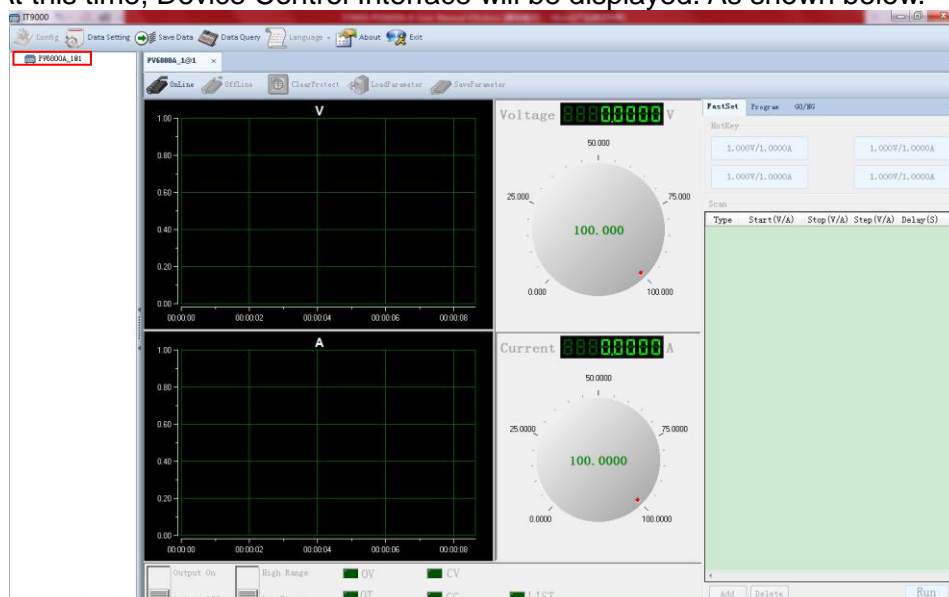


## 2.2 Data Setting and Saving

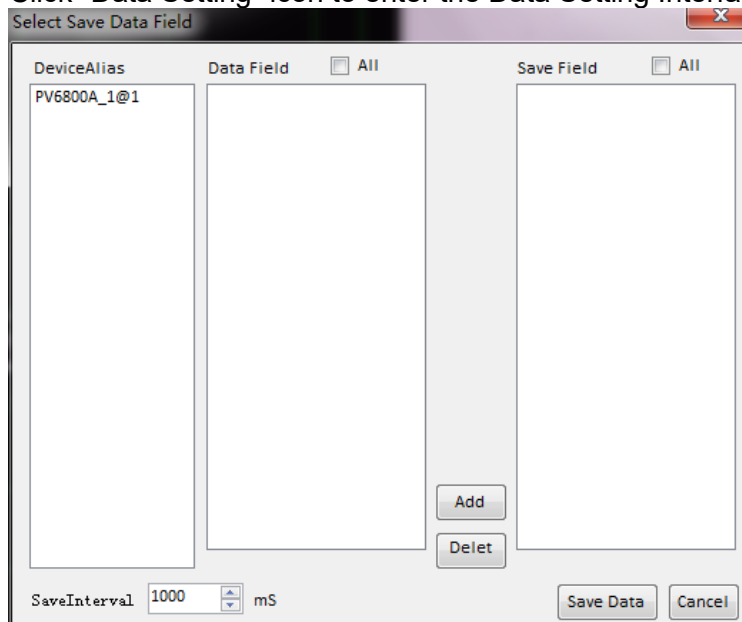
IT9000 can save test data. Before data saving, select the data field to be saved. Select the device alias for saving and the save interval.

### Operation step

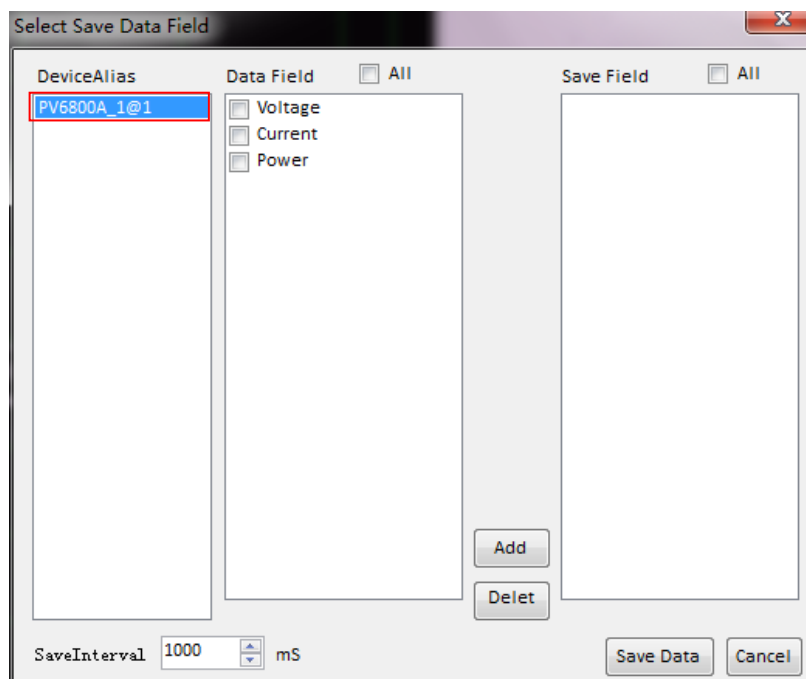
1. After device hardware configuration is finished, double click the device name (device alias @ channel number) displayed at top left of the interface. At this time, Device Control Interface will be displayed. As shown below.



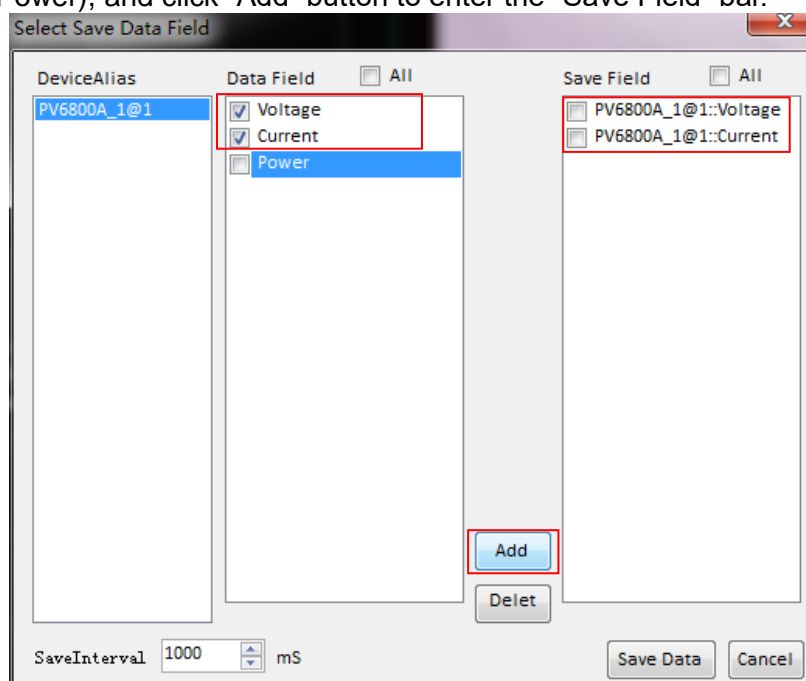
2. Click "Data Setting" icon to enter the Data Setting Interface.



3. Click the alias of the device requiring data saving.

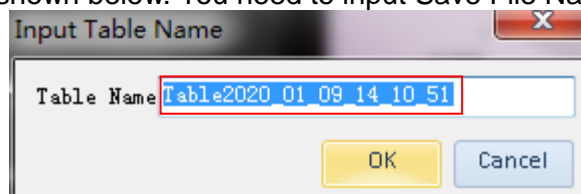




4. In "Data Field" bar, check the box at front of Data Field (Voltage, Current, Power), and click "Add" button to enter the "Save Field" bar.



You may also click the Field Name in the Save Field bar. Click "Delete" button to delete the saved field.

5. Set "Save Interval".
6. Click "Save Data" button to save data setting.
7. In the Control Interface, click "Save Data" icon to appear the interface as shown below. You need to input Save File Name.




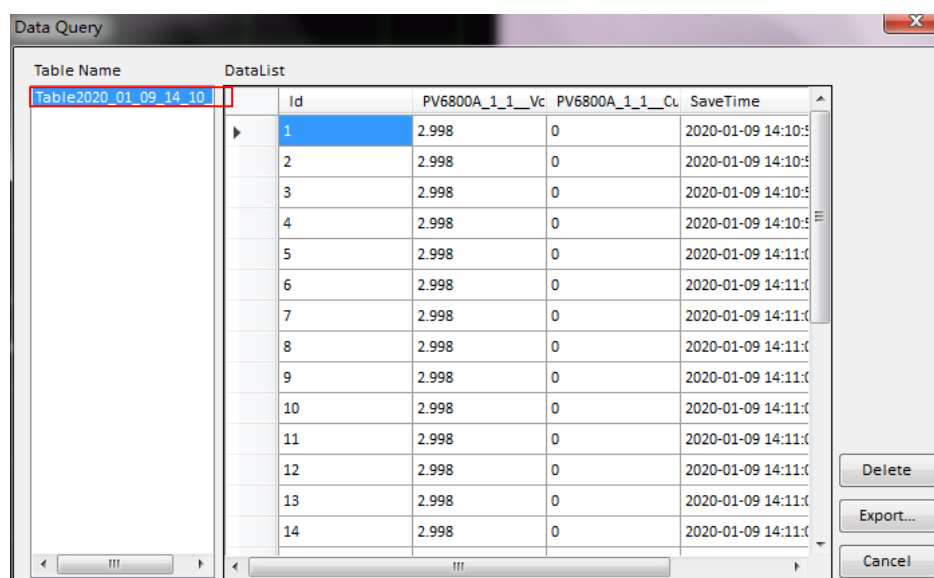
8. Click “OK” button in the figure above to start data save. Then, the icon will change to , and “Data Setting” and “Data Query” will be grayed out. Click  icon to stop saving.

## 2.3 Data Query

IT9000 software provides query function for measured data. You can query measured data at different periods of time and export and save these measured data.

### Operation steps

1. Click  icon to enter the Data Query Interface.
2. In Data Query Interface, select and click the “Table Name” of data saving, and the test data will be displayed in the data list. As shown below.

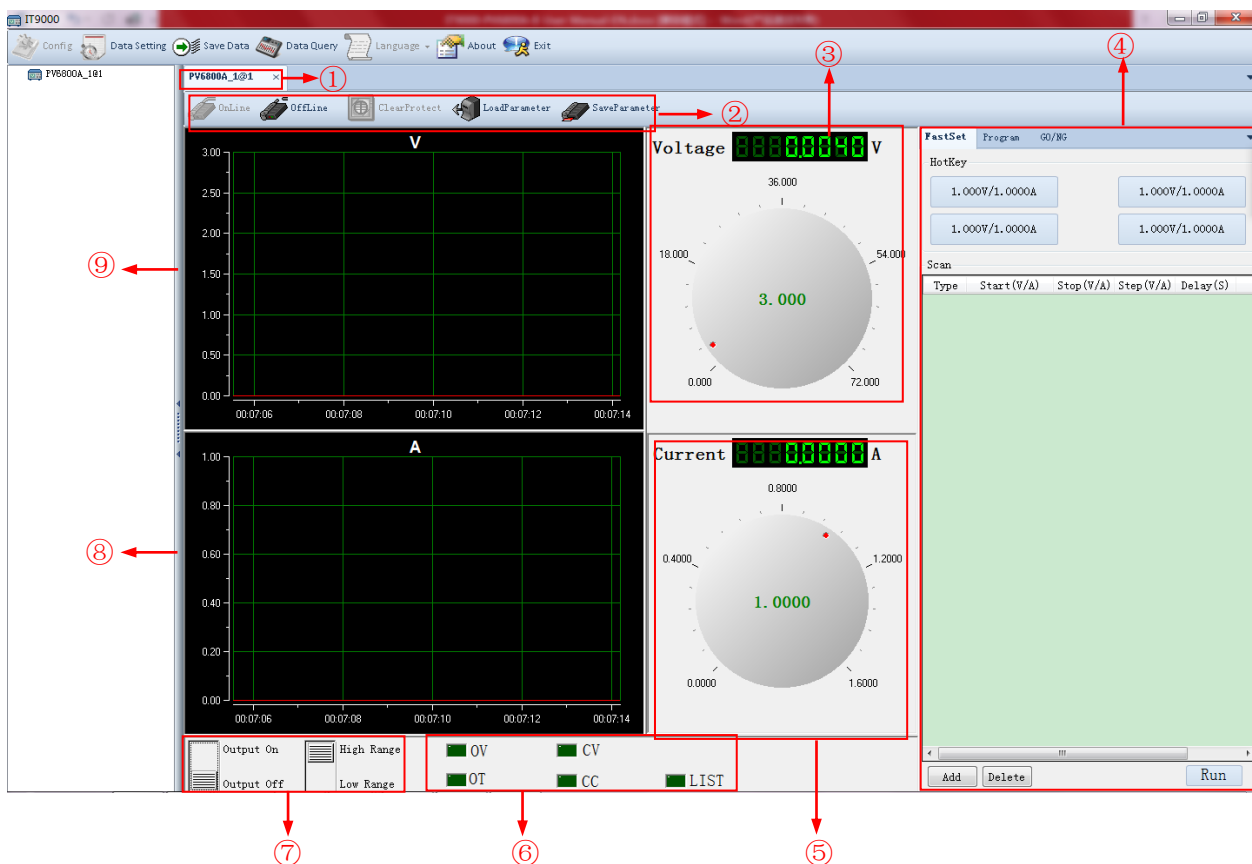


- Delete: to delete the data in current data list.
- Export: Click Export to export the data in current data list to EXCEL table. Saving path is optional.
- Cancel: to exit the Data Query Interface.

## Chapter3 PV6800 Control Interface

### 3.1 Introduction of Control Interface

The PV6800 Control Interface of IT9000 software is as shown below.



1. Tab bar, to switch the display of Control Interfaces of different devices.
2. Toolbar, main functions include:
  - Online:** remote control, to set the power supply to Remote Control mode.
  - Offline:** local switch, to return the power supply back to Local Mode from Remote Mode.
  - Clear Protect:** to clear power supply protection status.
  - Load Parameter:** to call test parameters saved before, including fast setting, scan, program and test parameters.
  - Save Parameter:** to save fast setting, scan, program and test parameters, for fast access and usage by the user.
3. Pulsating knob to control voltage.
4. Fast setting, program and test operation area.
5. Pulsating knob to control current.
6. Display power supply status (constant voltage (CV), constant current (CC), over voltage (OV), over temperature (OT), program test (LIST).
7. Output status and Range status
8. Current curve graph.

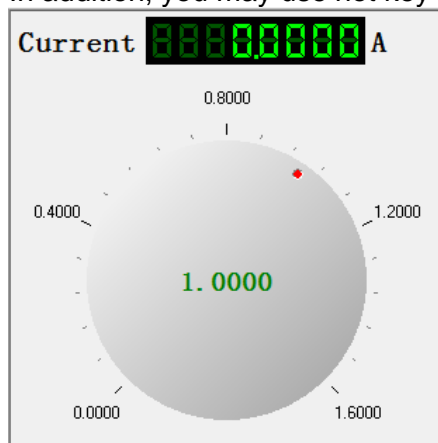
9. Voltage curve graph.

## 3.2 Setting Voltage and Current

You can set voltage and current via Simulated Pulsating Knob (not so accurate setting) or Fast Setting Function (accurate setting).

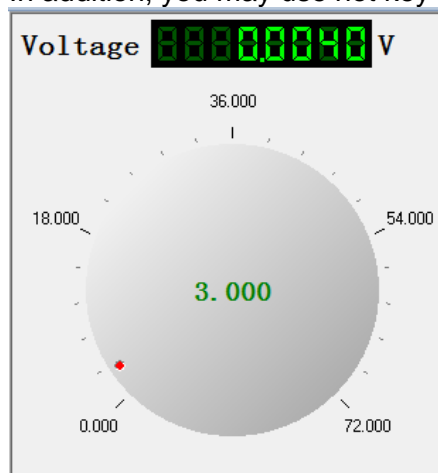
### Setting Current

1. Move the mouse to Simulated Pulsating Knob. Click and rotate the mouse to set the current value.
2. In addition, you may use hot key (described latter) for accurate setting.



### Setting Voltage

1. Move the mouse to Simulated Pulsating Knob. Click and rotate the mouse to set the voltage value.
2. In addition, you may use hot key (described latter) for accurate setting.



Note

When setting the set value with software, be sure that you have clicked to make it gray out. Set the power supply to Remote Control status.

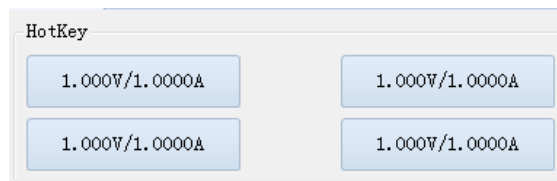


icon



## 3.3 Fast Set

### Hotkey

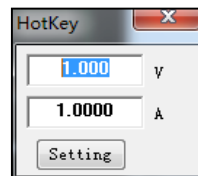


Hotkey:

This is a fast setting convenient for usage. Under each mode, there are 4 setting values available for fast selection. Under different operation modes, you only need to set required value and click mouse to execute corresponding operation.

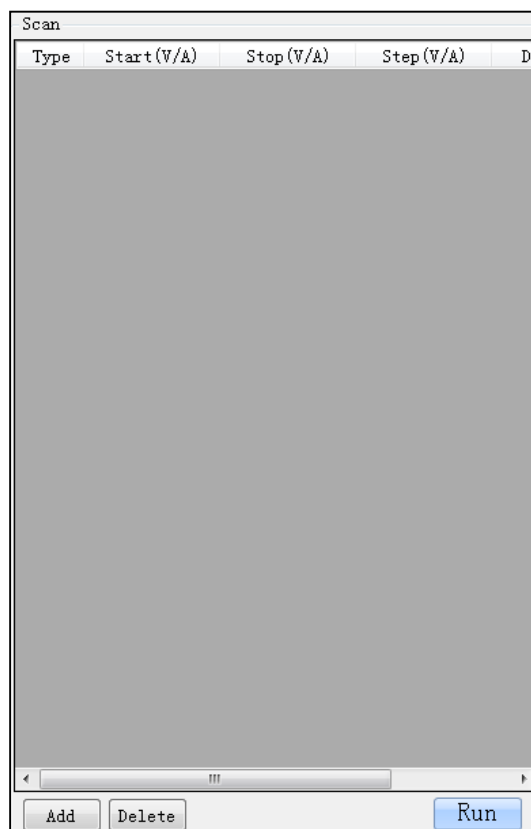
### Change data:

1. Right click the area for data change to pop up the dialog as shown below.



2. You may change the fast setting value for voltage/current based on requirements.

### Scan



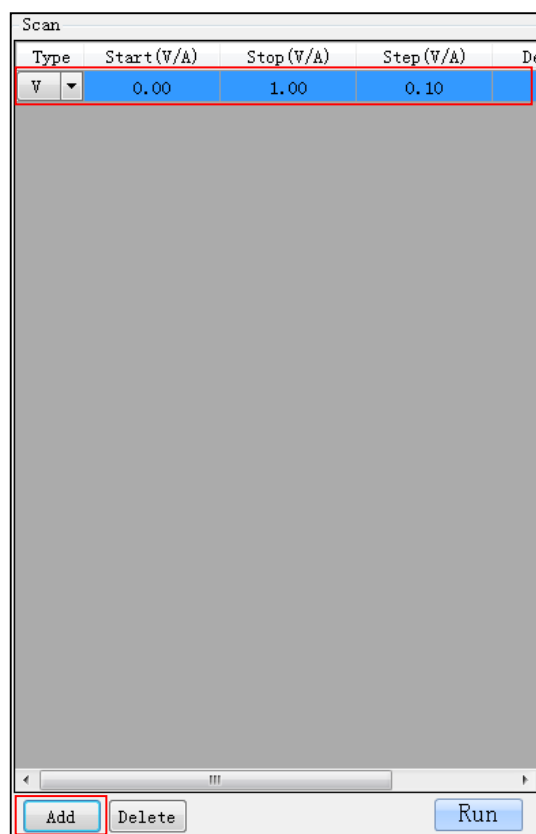
→ Scan edit area

### Scan Voltage:

Set a series of voltage values. For example: Start value=1V, stop value=10V, step value=1V, delay=2s. Click “Run” and power supply will be run based on those scan values.

Under scan operation, be sure to select one operation type (V, I). Scan operation steps will be described below taking scan voltage as an example.

1. Click “Add” button and add a group of scan data in the scan edit area.



2. Select scan type. Click the drop-down arrow under the Type bar to pop up the Type List as shown. Click and select required type.



3. Double click the value corresponding to scan data (Start, Stop, Step, Delay, Loop). Set them to required values and click OK.
4. Click “Run” button to execute scan operation.

Scan

Type	Start (V/A)	Stop (V/A)	Step (V/A)	De
V	1.00	5.00	1.00	

Add

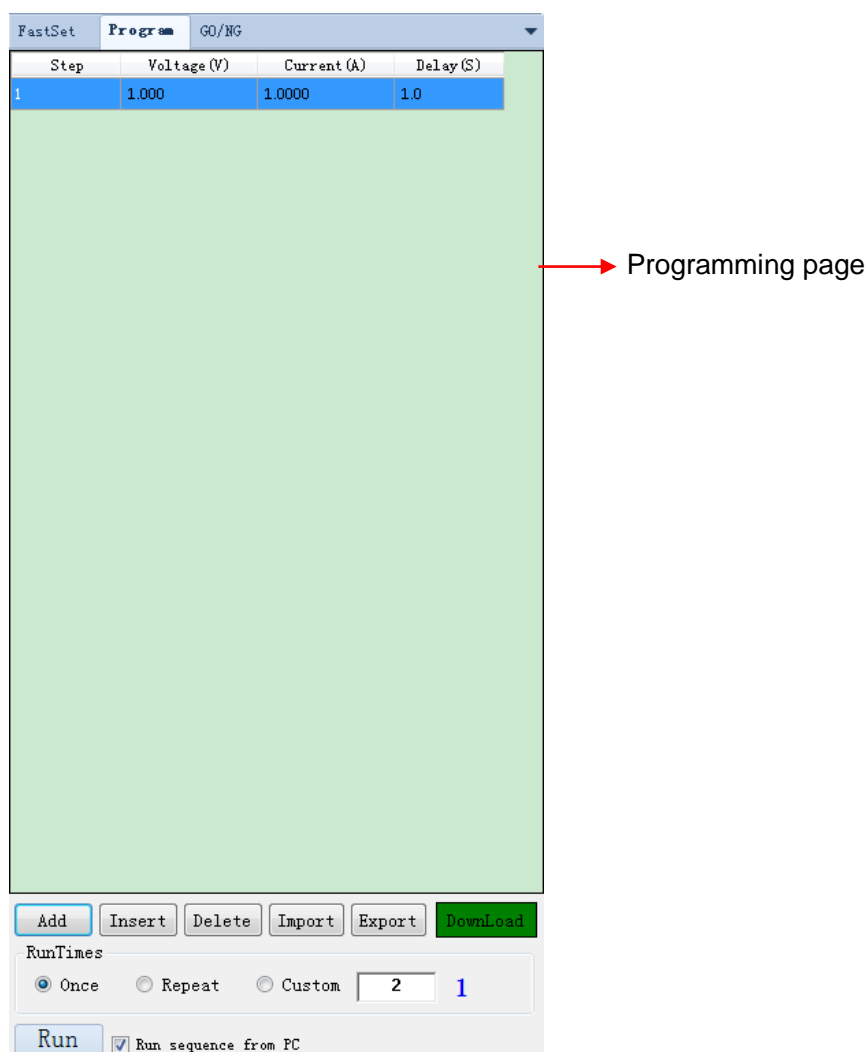
Delete

Stop

- Click "Stop" button to stop scan operation.

## 3.4 Program

The User can edit the test procedures composed of several steps through the application (List) function.



### Introduction of List display

**Add:** Add a step. Click this button to add 1 step.

**Insert:** Insert a step. Click this button to insert 1 step before current step.

**Delete:** Delete a step. Click this button to delete current step.

**Import:** Import external List documents.

**Export:** Export List file being edited.

**Run Times:** Run times of List programs, which can be set as Once/Repeat or Custom.

**Download:** Download the editing List file on the current Software Interface to the selected number file for local running by power supply.

**Run:** Run List program.

**Run sequence from PC:** If the box in front of "Run sequence from PC" is checked, it means that test is done via PC. You may record the run times.

## Edit List

1. Click "Program" tab to enter Fast Programming page.
2. At the bottom of Programming page, click "Add" button to add the first step of program.

FastSet	Program	GO/NG	
Step	Voltage (V)	Current (A)	Delay (S)
1	1.00	1.00	1.0

3. Double click the value corresponding to program step (Voltage, Current, Delay). Set them to required values and click OK.
4. Repeat step 2-3 to set other four steps in List file.

FastSet	Program	GO/NG	
Step	Voltage(V)	Current(A)	Delay(S)
1	1.00	1.00	5.0
2	2.00	1.00	5.0
3	3.00	1.00	5.0
4	4.00	1.00	5.0
5	5.00	1.00	5.0

## Import List file from externals

IT9000 software supports import function of list files. The user can finish the editing of List file in Excel and import it into the software. This function simplifies the List file edit and facilitates user operation. Detailed operation steps are as below:

1. Create a new Excel document on local PC and name it List 1.
2. Open the Excel document and save it as in "other formats" i.e. "(\*.csv)".
3. Open the List 1.csv document and edit the List. Set every step of the List and corresponding parameters.

	1	2	3	4
1	Voltage(V)	Current(A)	Delay(S)	
2	1.5	0.5	5	
3	2	1	5	
4	1	0.6	5	
5	4	0.5	5	
6	3	1	5	
7				

4. Click "Import" button. Select and open List 1.csv file. Finish import of the List file.

FastSet	Program	GO/NG	
Step	Voltage(V)	Current(A)	Delay(S)
1	1.50	0.50	5.0
2	2.00	1.00	5.0
3	1.00	0.60	5.0
4	4.00	0.50	5.0
5	3.00	1.00	5.0

## Run List

- Follow the steps above to edit List file.
- Set Run Times, including Once/Repeat or Custom. When Custom is selected, you may set the repetition count of programs.

RunTimes

☒ Once
 ☐ Repeat
 ☐ Custom
 
3

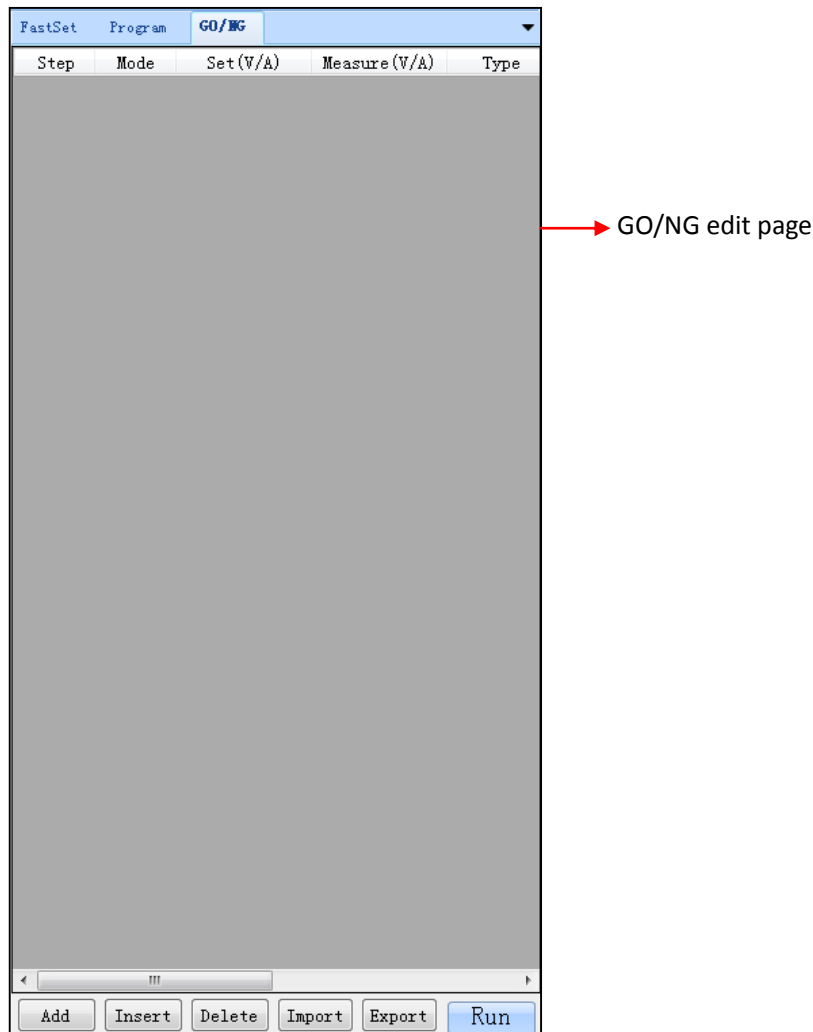
- Select PC or Local Running LIST program.
  - Run sequence from PC
 

If the box in front of “Run sequence from PC” is checked, it means that test is done via PC. You may record the run times.
  - Local Run
 

If the box in front of “Run sequence from PC” is not checked, it means that List is run via local device. At first, select the number of current editing List file (0~9) and click “Download” button to download the editing List file on the current Software Interface to the selected number file for local running by power supply.
- Click **“Run”** to run program file. Click **“Stop”** to stop operation.

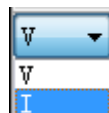
## 3.5 GO/NG

With this function, you can test whether the selected power supply meets required specifications.



### Introduction of GO/NG interface

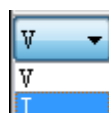
**Mode:** to select mode. Click the drop-down arrow in Mode bar to pop up the mode list as shown below. Select the required mode.



**Set(V/A):** to set the set value under specific mode, like I 3A.

**Measure(V/A):** this option is a read-back value and requires no setting.

**Type:** This option is measured value type. Setting method is same as mode selection. Options include V, I.



**Max(V/A):** to set maximum read-back value.

**Min(V/A):** to set minimum read-back value.

**Delay(S):** to test the delay time of each step.

**Pass:** to judge test results. This option cannot be set.

## Edit GO/NG program

1. Click "GO/NG" tab to enter Test page.
2. At the bottom of Test page, click "Add" button to add the first step of Test procedure.

FastSet	Program	GO/NG			
Step	Mode	Set(V/A)	Measure(V/A)	Type	
1	V	1.00	0.00	V	

3. Set mode and type.
4. Double click the value corresponding to test program step (Set, Max, Min, Delay). Set them to required values and click OK.
5. Repeat steps 2-4 to set other four steps of Test Procedure.

FastSet	Program	GO/NG			
Step	Mode	Set(V/A)	Measure(V/A)	Type	
1	V	5.00	0.00	V	
2	I	1.00	0.00	I	
3	V	3.00	0.00	V	
4	I	0.50	0.00	I	
5	V	6.00	0.00	V	

## External import of GO/NG program

1. Create a new Excel document on local PC and name it Test 1.
2. Open the Excel document and save it as in "other formats" in (\*.csv).
3. Open the Test 1.csv document and edit the Test. Set every step of the Test and corresponding parameters.

	A	B	C	D	E	F	G	H
1	Mode	Set(V/A)	Measure(V/A)	Type	Max(V/A)	Min(V/A)	Delay(S)	Pass
2	V	10	0	V	10	0	1	
3	I	1	0	I	10	0	1	
4	V	5	0	V	10	0	1	
5	I	0.5	0	I	10	0	1	
6	V	1	0	V	10	0	1	
7								

4. Click "Import" button. Select and open Test 1.csv file. Finish import of the



Test file.

FastSet	Program	GO/NG			
Step	Mode		Set(V/A)	Measure(V/A)	Type
1	V		10.00	0.00	V
2	I		1.00	0.00	I
3	V		5.00	0.00	V
4	I		0.50	0.00	I
5	V		1.00	0.00	V

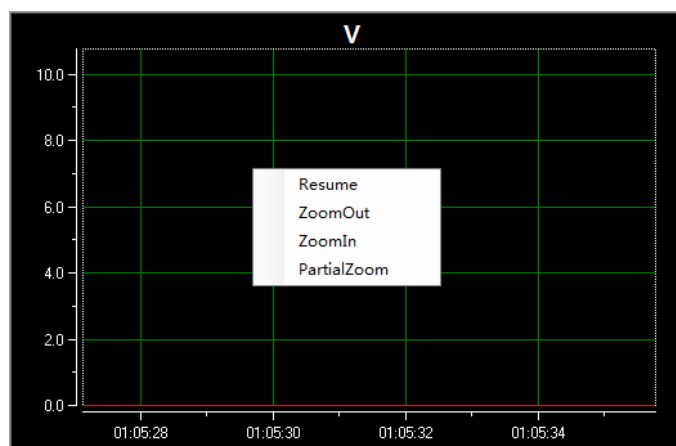
### Run GO/NG Program

1. Follow the steps above to edit Test file.
2. Click **“Run”** to run program file. Click **“Stop”** to stop operation.
3. After running is completed, click **“Export”** to save the test results to Excel.
4. Name the file as **Test**. Open **Test** to display measured value and test result.

	A	B	C	D	E	F	G	H	I
1	Mode	Set(V/A)	Measure(V/A)	Type	Max(V/A)	Min(V/A)	Delay(S)	Pass	
2	V	10	9.991 V	V	10.1	9.9	1	Pass	
3	I	1	0 I	I	1.1	0.99	1	NoPass	
4	V	5	5.003 V	V	5.1	4.99	1	Pass	
5	I	0.5	0 I	I	0.51	0.49	1	NoPass	
6	V	1	1.006 V	V	1.1	0.99	1	Pass	
7									

## 3.6 Curve Zoom Out and Translation

In the IT9000 software, voltage and current curve graphs have such functions as Resume, Zoom Out, Zoom In and Partial Zoom. Right click any one at the curve graph, as shown below.

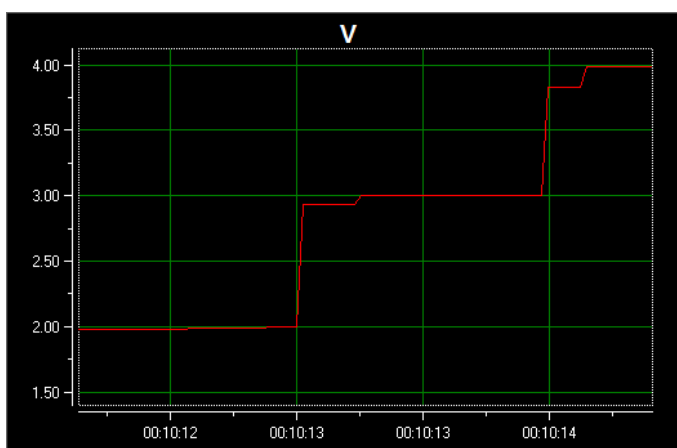
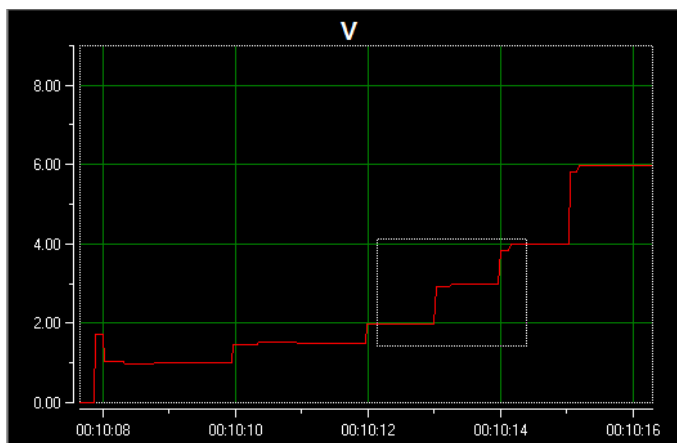


### Curve zoom out

1. Right click the curve graph and select **“Partial Zoom”**. At the bottom of cursor will display a small rectangle box.
2. Move the cursor of small rectangle box to pull out a bigger rectangle box to

define the location which you need enlarge the partial wave.

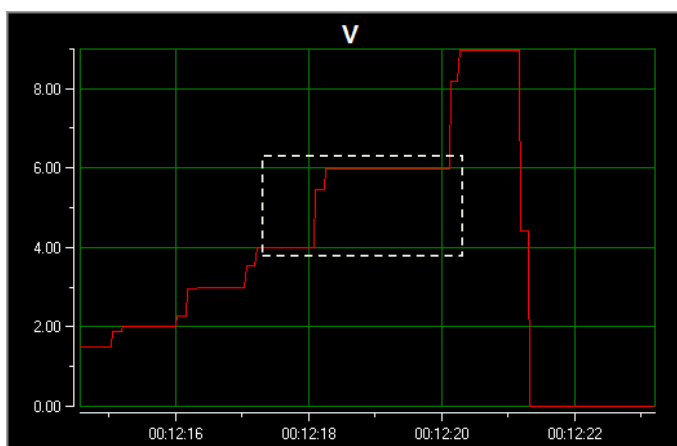
3. Release the mouse left key and the image will be promptly zoomed out.

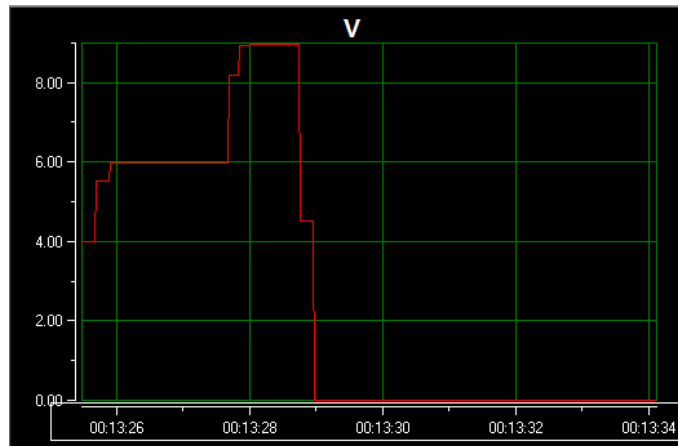


4. To resume dynamic records, right click the curve graph and choose "Resume".

## Translation view

1. Move the cursor shape to any position of the horizontal coordinate axis (Time Axis) and the mouse will change to be a hand.
2. Hold down the mouse left key to move the mouse. When moving left, you will see the curve after the current time; when moving right, you will see the curve before the current time.
3. Similarly, you can translate the voltage/current coordinate to view curve.





4. To resume dynamic records, right click the curve graph and choose "Resume".

## **Contact US**

Thank you for purchasing ITECH products. If you have any doubt about this product, please contact us as follows.

1. Please refer to the CD-ROM of related user's manual in package.
2. Visit ITECH website [www.itechate.com](http://www.itechate.com).
3. Select the most convenient contact for further consultation.