Specifications

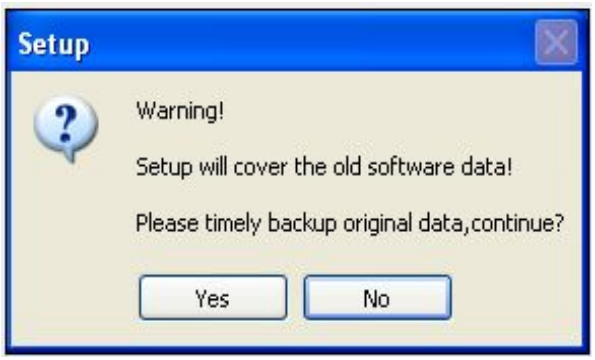
Contents

Specifications

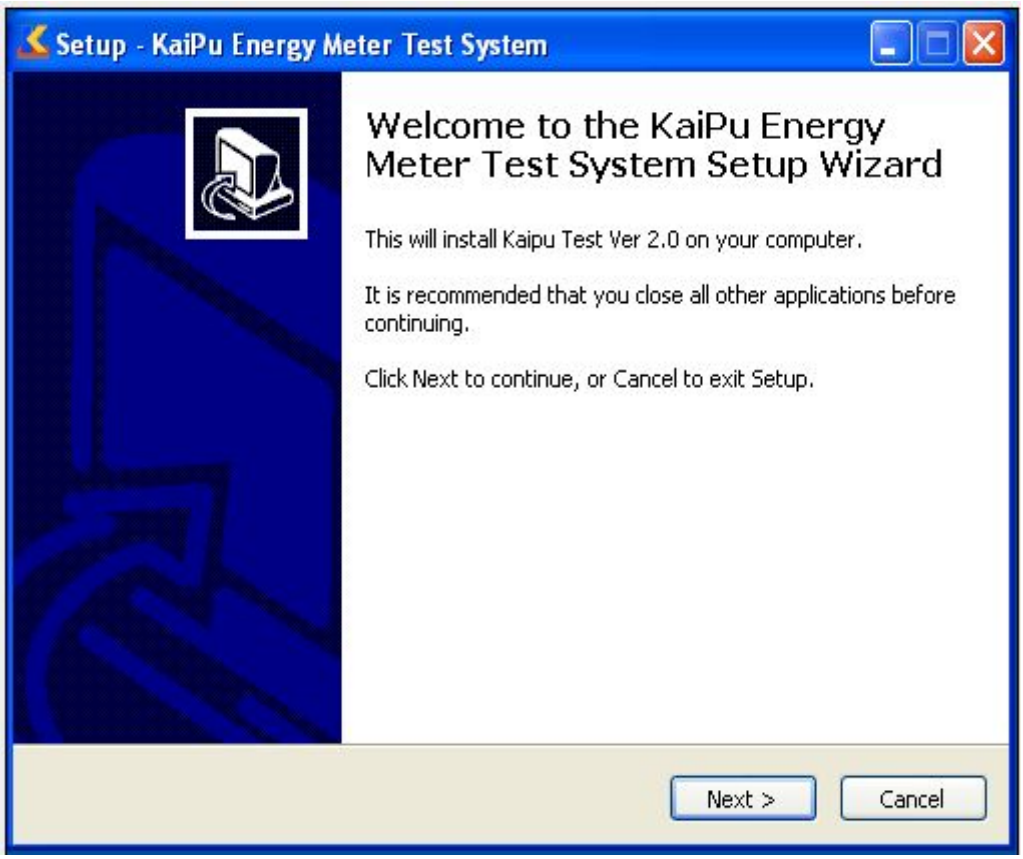
text

1. Software Installation:

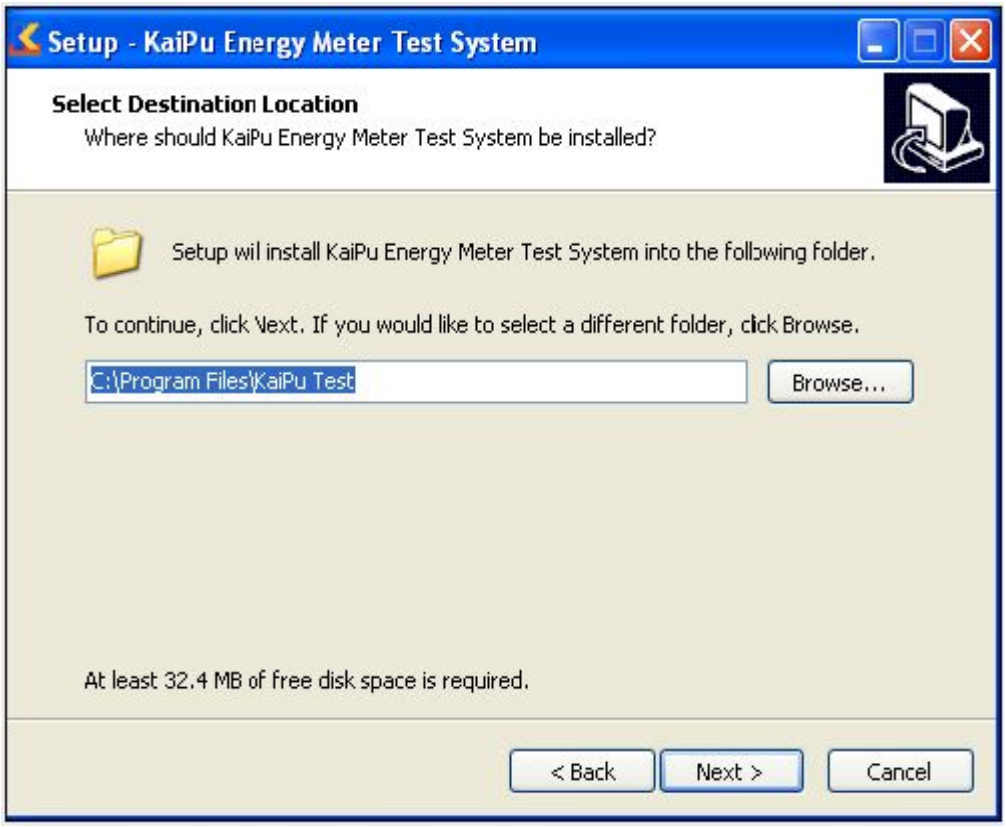
1. Open the installation directory and double click KpSetup file to install;
2. As shown in figure:



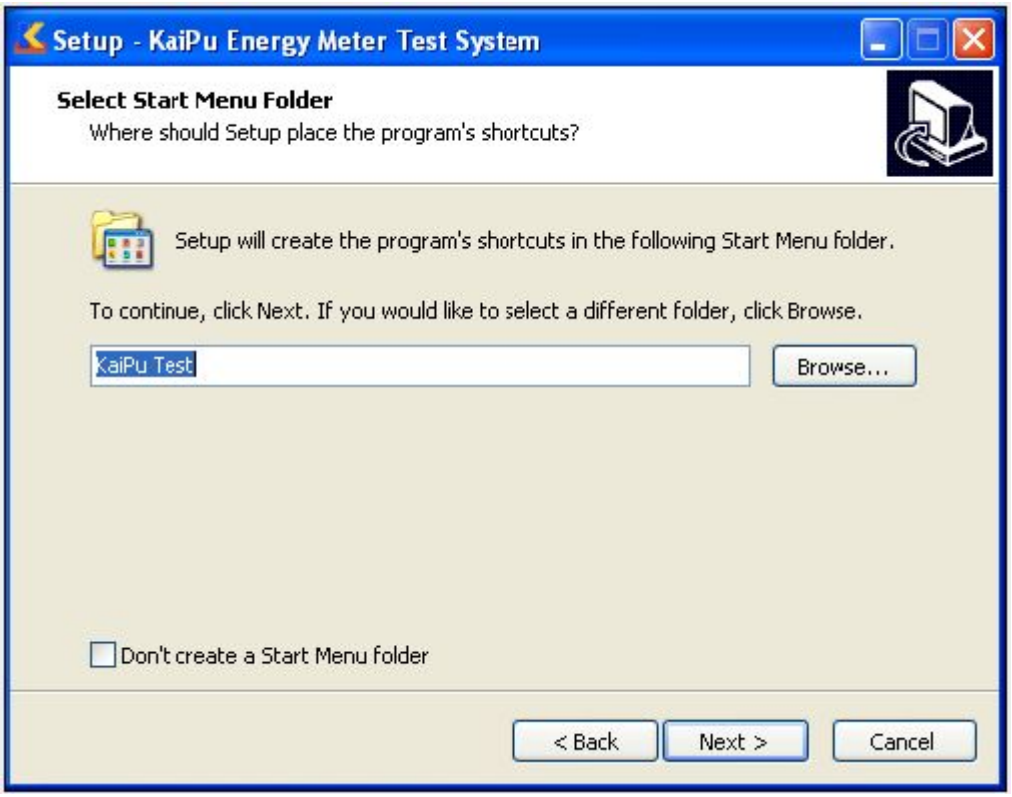
Click [Yes] to continue installation. (as pictured above)



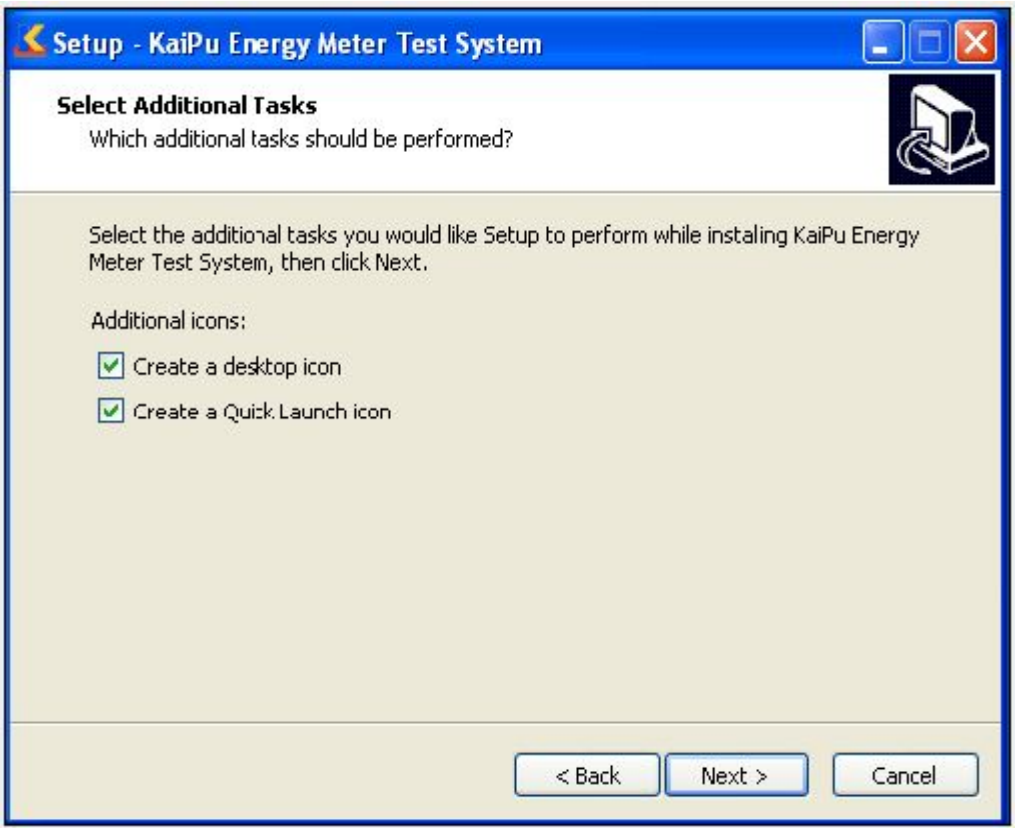
Click [Next] to continue installation. (as pictured above)



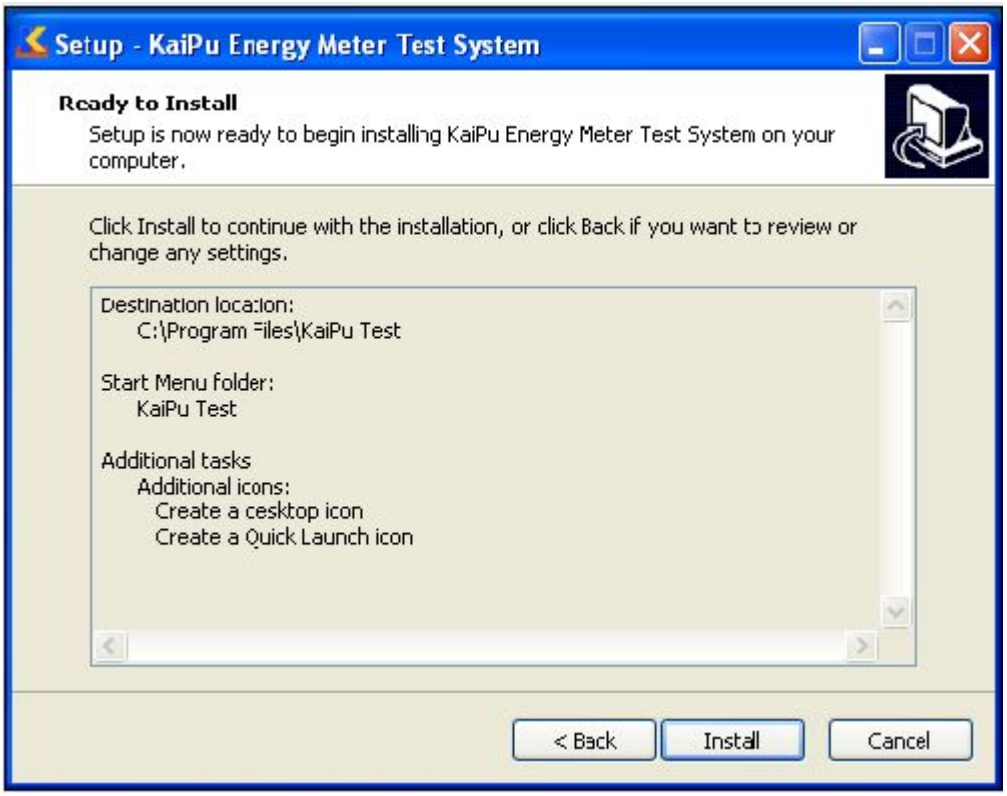
Choose a directory to install, It is not suggested to install on the system disk, please change the installation directory and click [Next] to continue installation. (as pictured above)



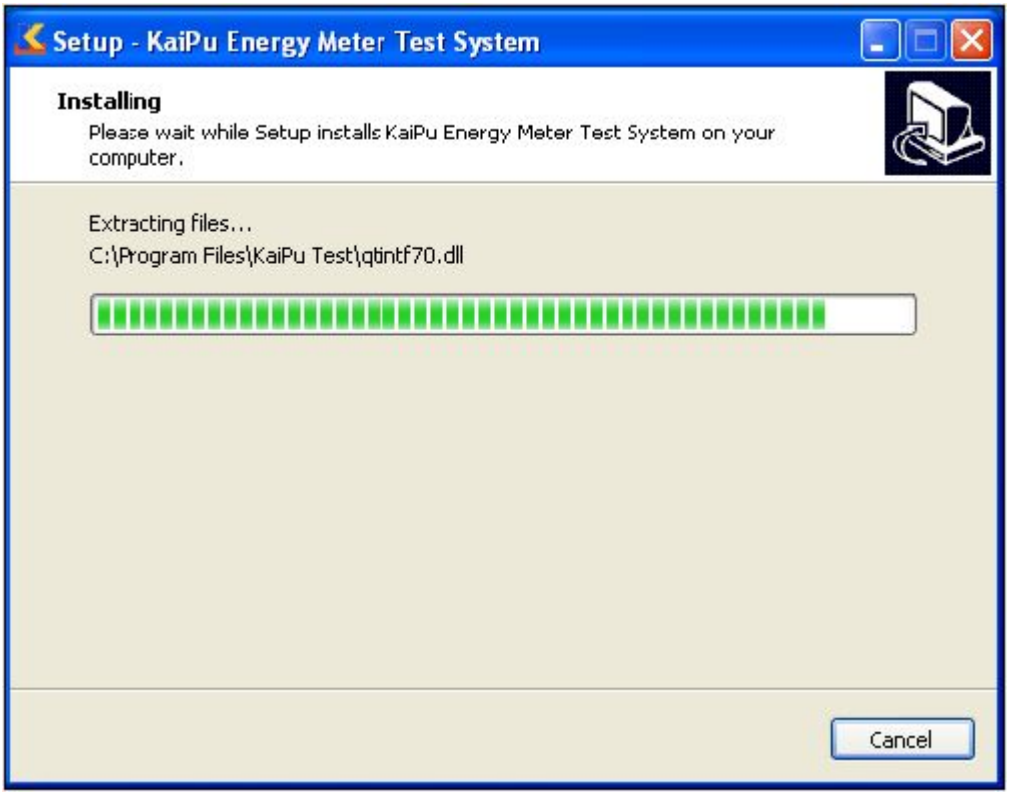
Users can click [Next] to continue installation by default. (as picture above)



Users can choose according to the actual situation, it is advised to click [Next] to continue installation. (as picture above)



Please confirm and click [install] to continue. (as picture above)

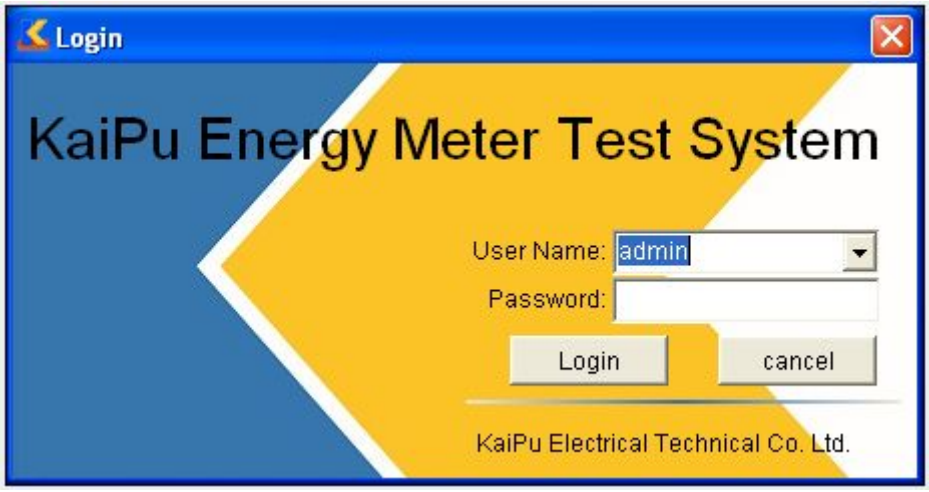


Installing the software, please wait

Enter the test system automatically when software installation is completed.

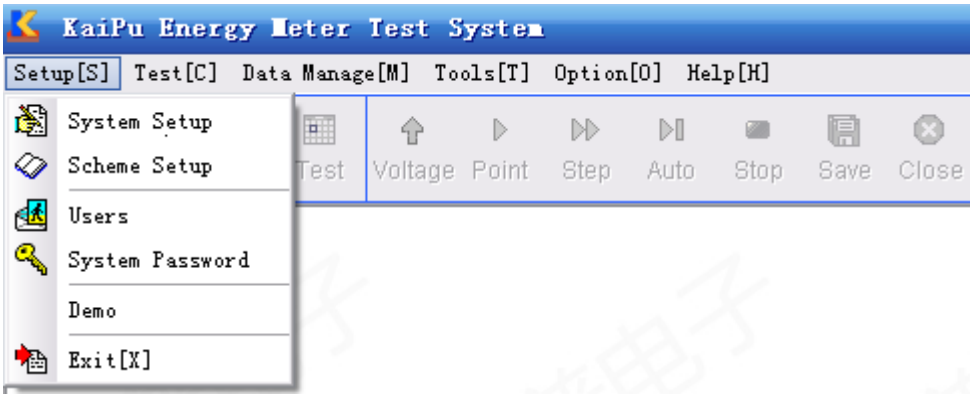
2. Software configuration settings: (eg, State Grid single-phase double-loop 48 stations device)

2.1 Double click the icon on the desktop, entering the test system landing interface, default in user name and password during initialization, users can set up them in the software.



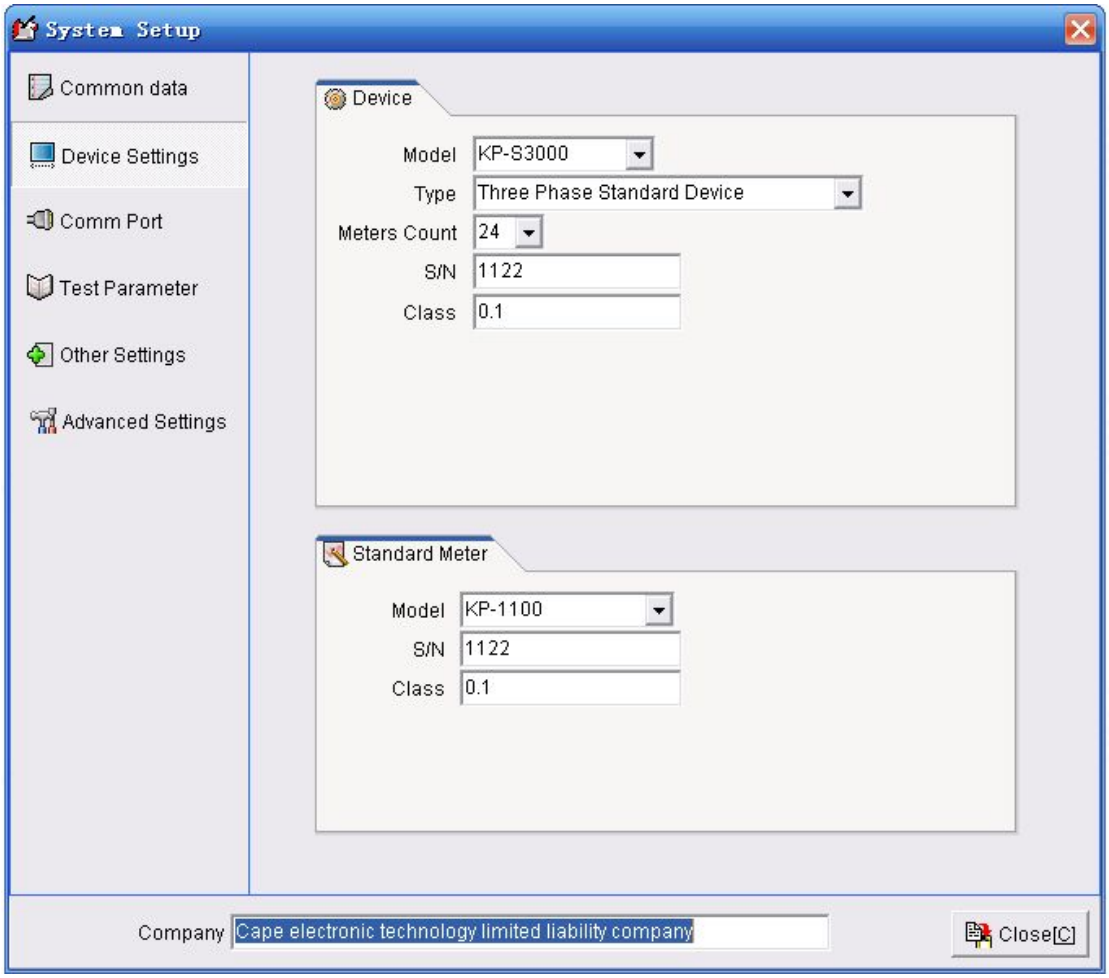
Click [login] to land the main interface

There will be a dialog box like picture above for your first entry, please click [confirm] to set up, and the next time, it will not appear.



Click [set.] at the upper left of the main interface, a dialogue box appears as follows.

System Setup interface

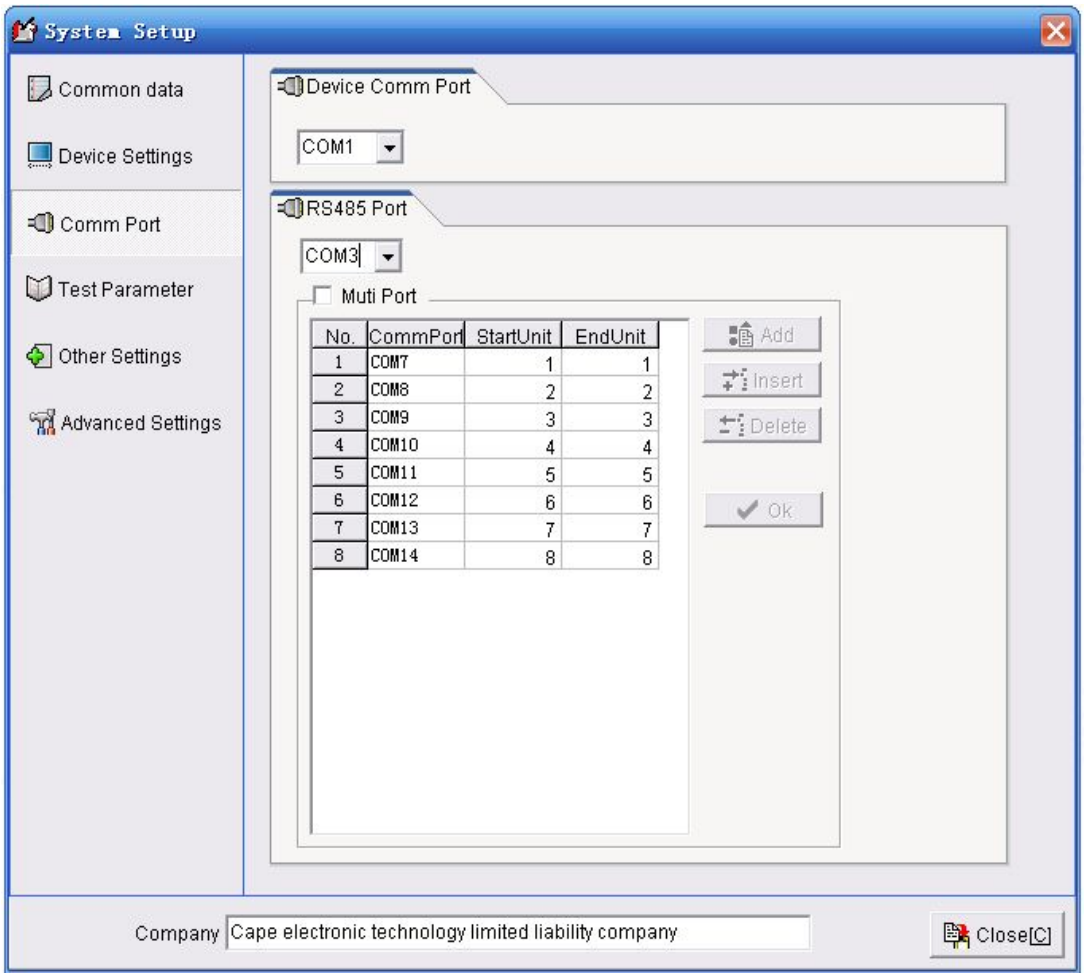


Click [Device Settings], the settings page appears, users can set up according to the device. Model, Type, Meter stations must be selected, S/N and Class may not be chosen, which are related to the printed report, but not to the software regulating meter.

Users must choose the correct model of standard meter, which can affect the error of meter calibration and multi-function test.

The S/N and Class may not be chosen, which are related to the printed report, but not to the software regulating meter.

Users can choose the company according to the actual situation, and it is related to the printed report, but not to the software regulating meter.



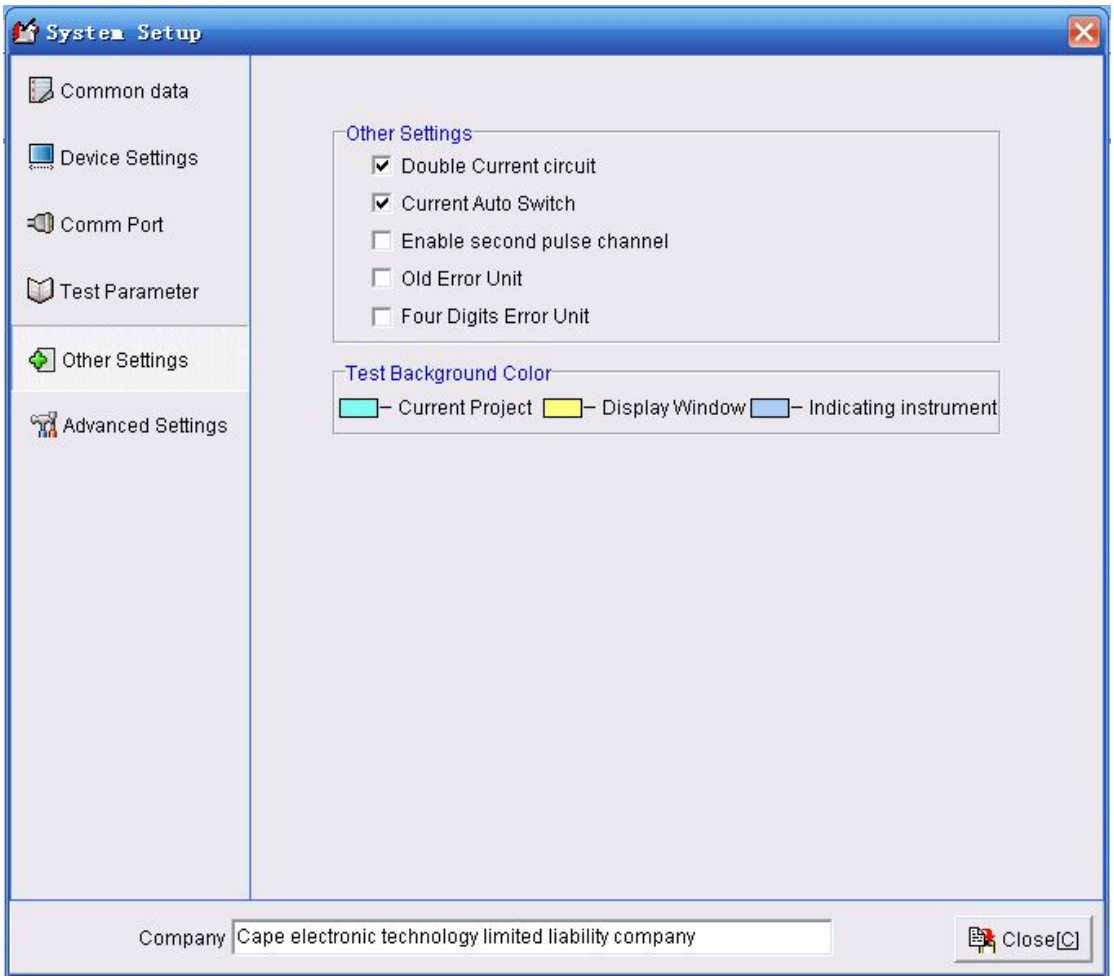
Click [comm port] and set the Device Comm Port according to the port number of PC which connected to the device through RS232. Generally, the computer motherboard has a COM1, and it also has extension ports.

Users can set RS485 Port according to the device configuration.

1)If it is single serial communication，users can set the port corresponding to the port number of PC which connected to the device through RS485. Generally, it is the extension port of PC.

2) If it is MOXA communication, the software chooses multiple serial-port communication. Connecting the MOXA card to the device will generate a series of numbers, users can set the ports according to these numbers, and it is also set according to the meter stations. For example, the device of 48 stations uses 8-circuits MOXA card, 6 stations correspond to 1 port, the settings are shown in picture above. If the device of 24 stations uses 8-circuits MOXA card, 3 stations correspond to 1 port, realizing 8-circuits simultaneous communication, which is 8 times the speed of the single serial communication.

3)If it is serial server configuration, the device of 48 stations virtually generates 48 ports, users can set the corresponding ports, the start station is set 1 and the end station is set 1, realizing 48 circuits simultaneous communication, which can improve efficiency of regulating meters.

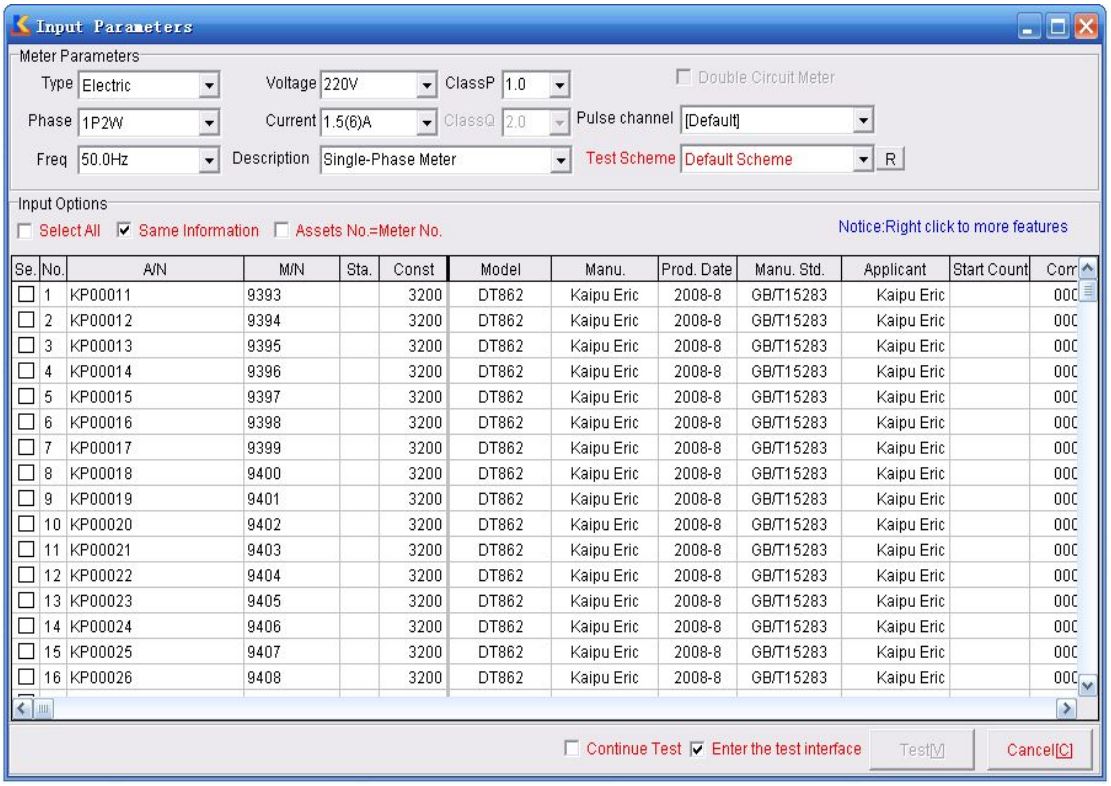


Click [Test parameter] and the dialog box shows: the default settings are State Grid standard. Users can define it as well. Generally, users may not set it and it can run on default settings.

Click [Other settings], and users can set them according to the device. If it is the latest State Grid double-loops device, please choose [Double Current circuit] and [Current Auto Switch]; if it is a single phase device, please choose [Enable second pulse channel], and it is not for the three phase device; and choose [Old Error Unit] if it is an old version. At present, State Grid supports version 2.002. Please choose [Old Error Unit] if it is lower than version 1.45. And choose [Four Digits Error Unit] if it is the older error unit with 4 digits. At present, the common error units have 6 digits.

[Advanced Settings] should be set by the commissioning engineers. Users need not set them. Please close the dialog box after the setup is complete!

3. Meter Testing



Se.	No.	A/N	M/N	Sta.	Const	Model	Manu.	Prod. Date	Manu. Std.	Applicant	Start Count	Corr
☐	1	KP00011	9393		3200	DT862	Kaipu Eric	2008-8	GB/T15283	Kaipu Eric		000
☐	2	KP00012	9394		3200	DT862	Kaipu Eric	2008-8	GB/T15283	Kaipu Eric		000
☐	3	KP00013	9395		3200	DT862	Kaipu Eric	2008-8	GB/T15283	Kaipu Eric		000
☐	4	KP00014	9396		3200	DT862	Kaipu Eric	2008-8	GB/T15283	Kaipu Eric		000
☐	5	KP00015	9397		3200	DT862	Kaipu Eric	2008-8	GB/T15283	Kaipu Eric		000
☐	6	KP00016	9398		3200	DT862	Kaipu Eric	2008-8	GB/T15283	Kaipu Eric		000
☐	7	KP00017	9399		3200	DT862	Kaipu Eric	2008-8	GB/T15283	Kaipu Eric		000
☐	8	KP00018	9400		3200	DT862	Kaipu Eric	2008-8	GB/T15283	Kaipu Eric		000
☐	9	KP00019	9401		3200	DT862	Kaipu Eric	2008-8	GB/T15283	Kaipu Eric		000
☐	10	KP00020	9402		3200	DT862	Kaipu Eric	2008-8	GB/T15283	Kaipu Eric		000
☐	11	KP00021	9403		3200	DT862	Kaipu Eric	2008-8	GB/T15283	Kaipu Eric		000
☐	12	KP00022	9404		3200	DT862	Kaipu Eric	2008-8	GB/T15283	Kaipu Eric		000
☐	13	KP00023	9405		3200	DT862	Kaipu Eric	2008-8	GB/T15283	Kaipu Eric		000
☐	14	KP00024	9406		3200	DT862	Kaipu Eric	2008-8	GB/T15283	Kaipu Eric		000
☐	15	KP00025	9407		3200	DT862	Kaipu Eric	2008-8	GB/T15283	Kaipu Eric		000
☐	16	KP00026	9408		3200	DT862	Kaipu Eric	2008-8	GB/T15283	Kaipu Eric		000

Click [Test] → [Select] and there will be a dialogue box like picture above, please Tick [Select All] and begin to test by clicking [Test] in the lower right corner.

1) Type: the electric meter to Electric and the mechanical meter to Mechanical, because different methods have different test standards.

2) Select the proper phase, voltage and current according to the nominal voltage and current shown on the meter. If the voltage and current are too low, the meter cannot work properly. And the high voltage will damage the meter.

3) According to the meters, please select the proper wiring mode, check, description, A/N, M/N, Model, Manu., Prod. Date, Manu. Std., Applicant, etc. These meter information relates to printing.

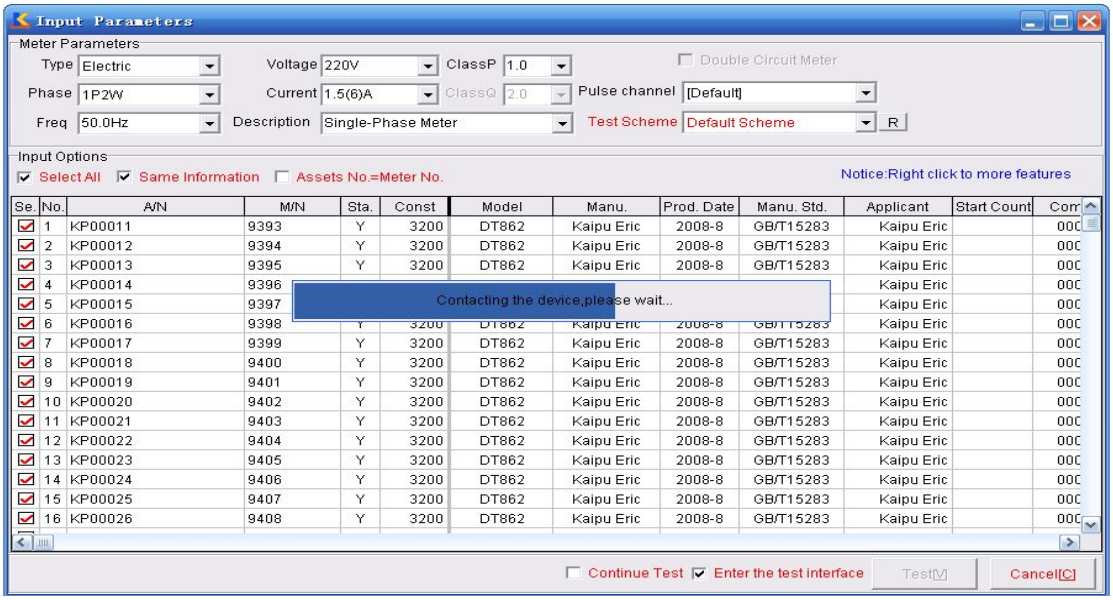
4) Select the proper meter constants which can affect the error display. Select the proper meter class which can affect the judgment of qualification rate. Select the proper pulse channel which can affect pulse acquisition, failing to display error.

5) Users can set others according to the actual situation. Right click to find more features.

6) Users can tick the boxes below [se.] to choose the meters. And tick [Select All] to choose all. Then click the [Test] in the lower right corner to test meters.

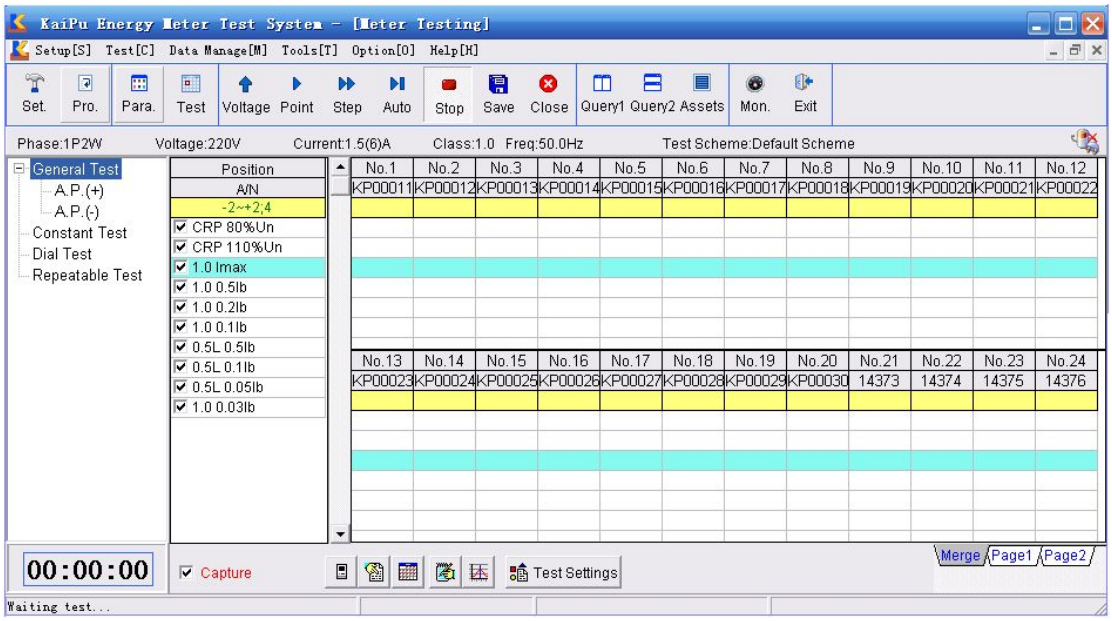
7) The software is for power-supply system and meter manufacturing system. Generally, power-supply system needs to set A/N. In case of that different manufactures warehouse the meters of same M/N, meter manufactures don’t need to set A/N, just tick [Assets No.= Meter No.].

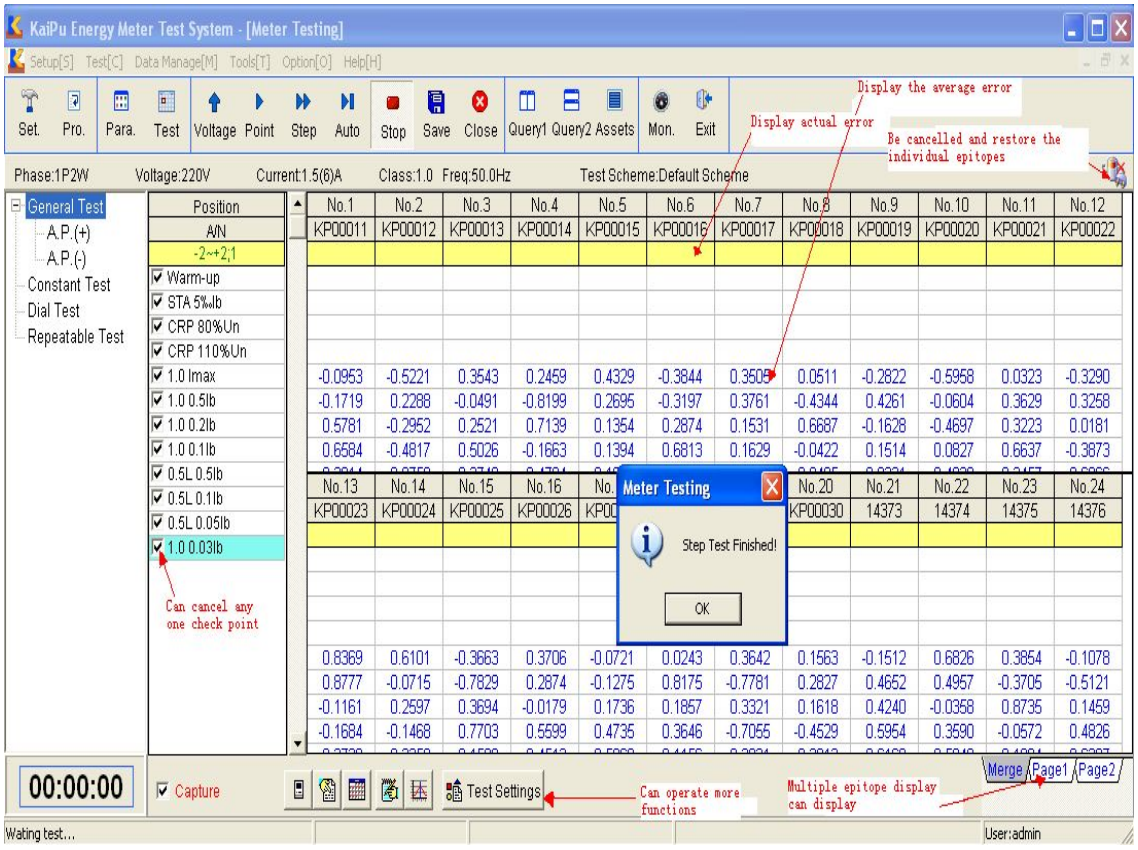
Clicking [test] in the lower right corner to get a dialogue as follows.



When the connection between the device and PC is correct and the communication ports are set properly, the software will go to the next page. But if the connection is not correct or the device is not powered, there will be an alert shown as follows.

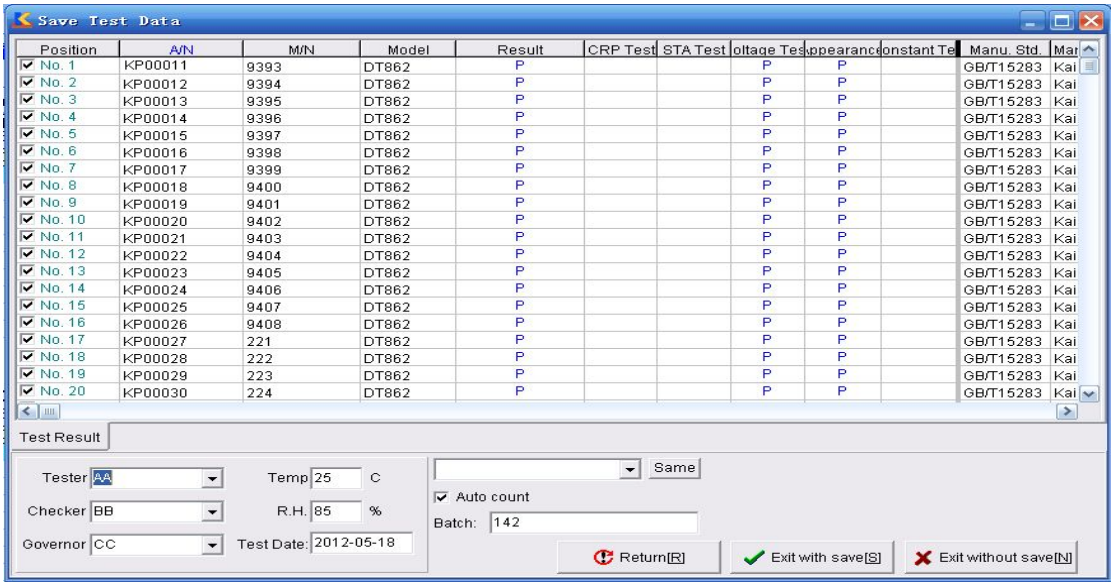
4. Test meter error





When the single test ends, a dialog will pop up and meanwhile, the voltage and current of device fall. Please confirm and save it by clicking [save]. Users can find more features in the main testing interface, the details refer to Appendix 4.

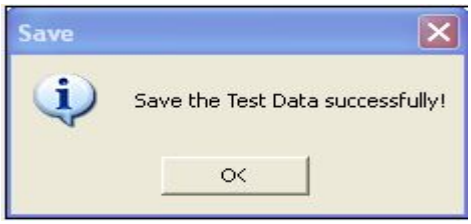
5. Error Data Save



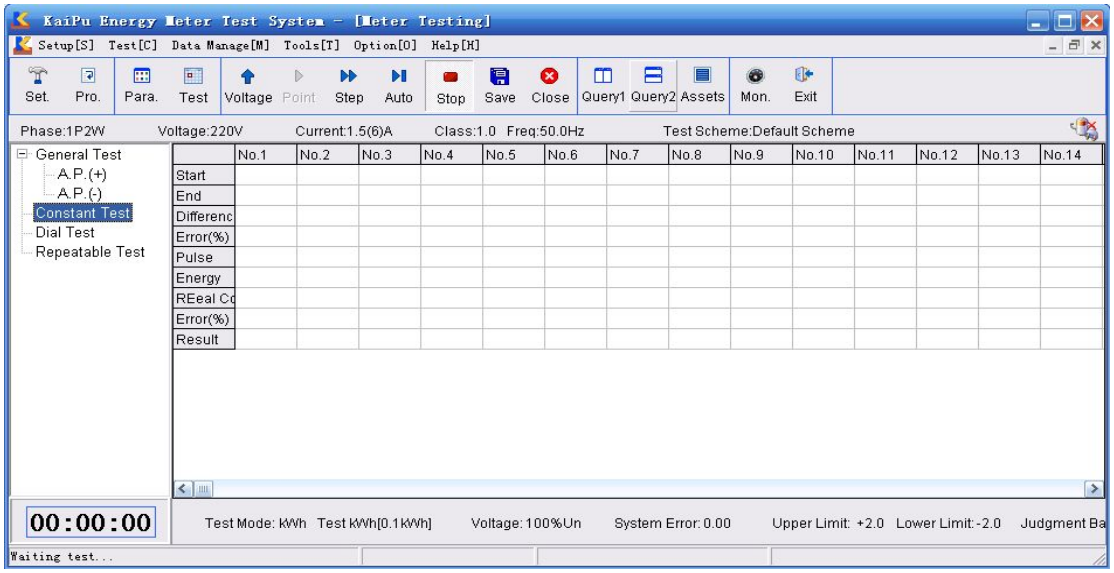
Click [save] after confirmation. Before saving the data ,users can set Tester, Checker, Governor, which can be preset in the software, the details refer to Appendix 1. Click [Exit with

save] after confirming the parameter. If users don't need to save the data, please click[Exit without save]. If users want to back to the test interface, please click [Return].

The picture below will appear after clicking [Exit with save] .



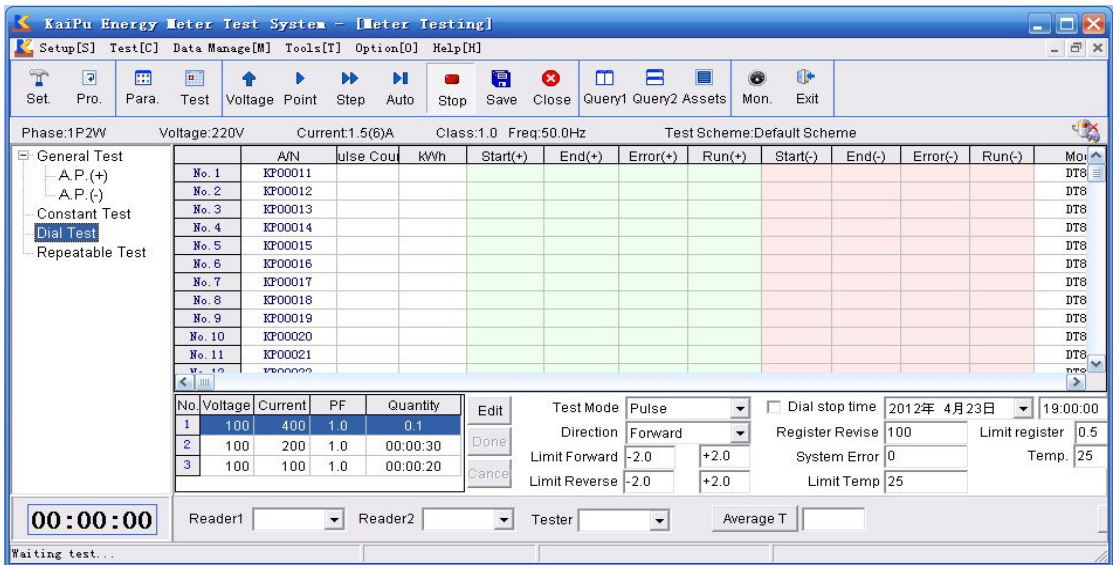
6.Constant Test



Specific operation is set please see Appendix 2

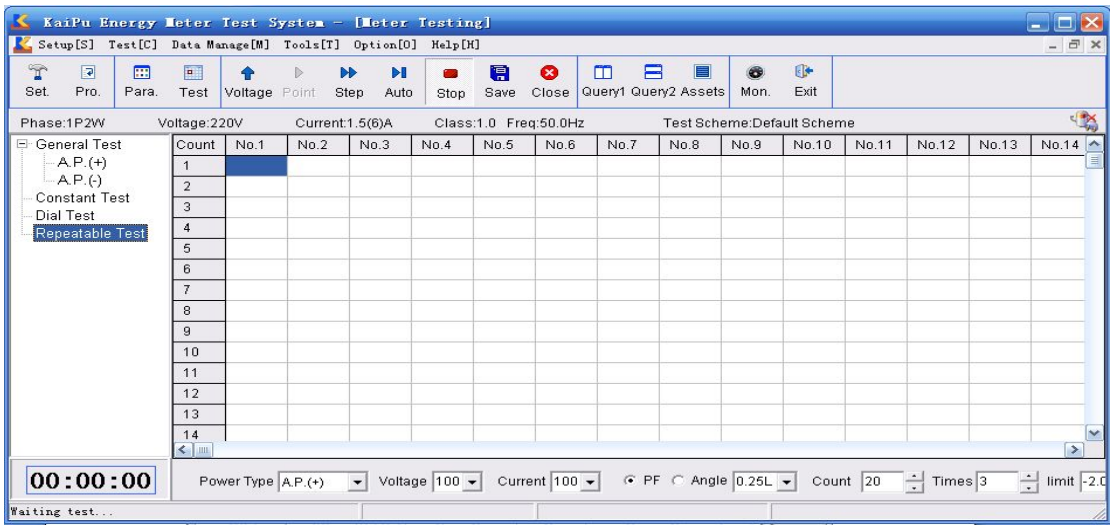
7. Dail Test

Please click [Dial test] in the function-tree and users can customize.



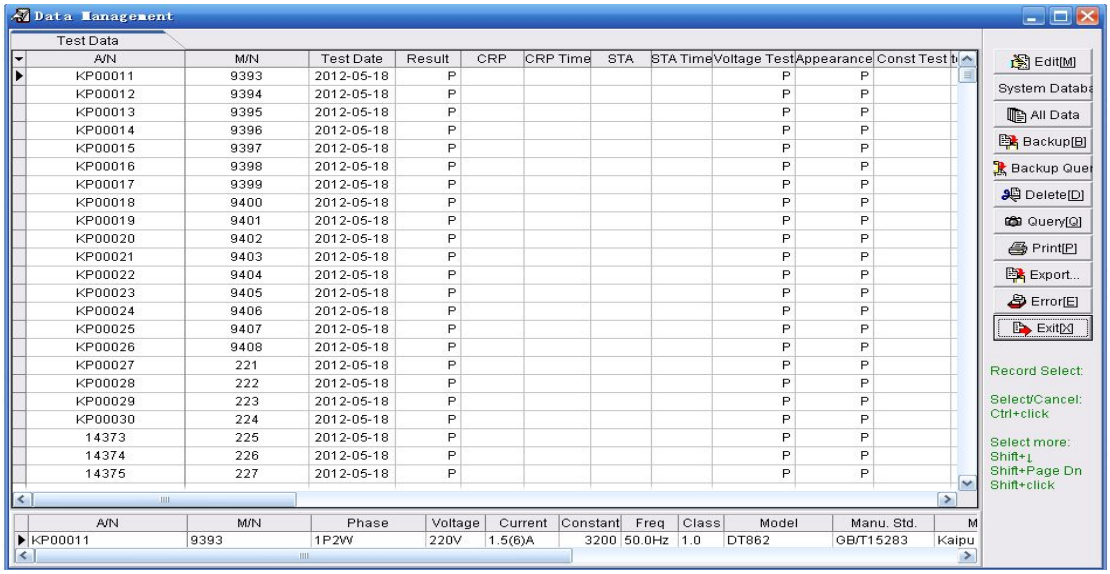
In the dial test, the program designs two test modes: Pulse (test according to the pulse number). That is to provide the standard meter with a certain voltage and current to produce pulses. The type of standard meter must be set correctly. The standard meter will produce pulses in certain energy. The system will get the pulse number from tested meters, and compare them with the pulse number from standard meter, then give the conclusion of error. The other mode is Start Stop Count (test according to the starting values). Increase the voltage to power the tested meters. The operator gets the meter reading, provides the standard meter with a certain voltage and current to produce pulses. And the type of standard meter must be set correctly. In certain energy, the standard meter will stop running at a certain power, so will the tested meter. The operator gets the current meter reading for the second time, then click [calc error] to get the conclusion.

8.Repeatable Test



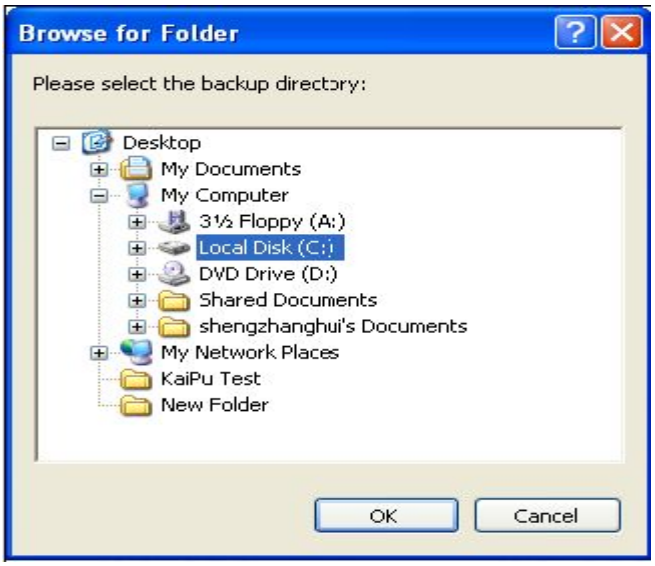
Specific operation is set please see Appendix 2

9. Data Query



In the display window of main interface, click [Query1] to pop up the window above. Users can check the data of one or some meters, and output printing or copy. There are some function

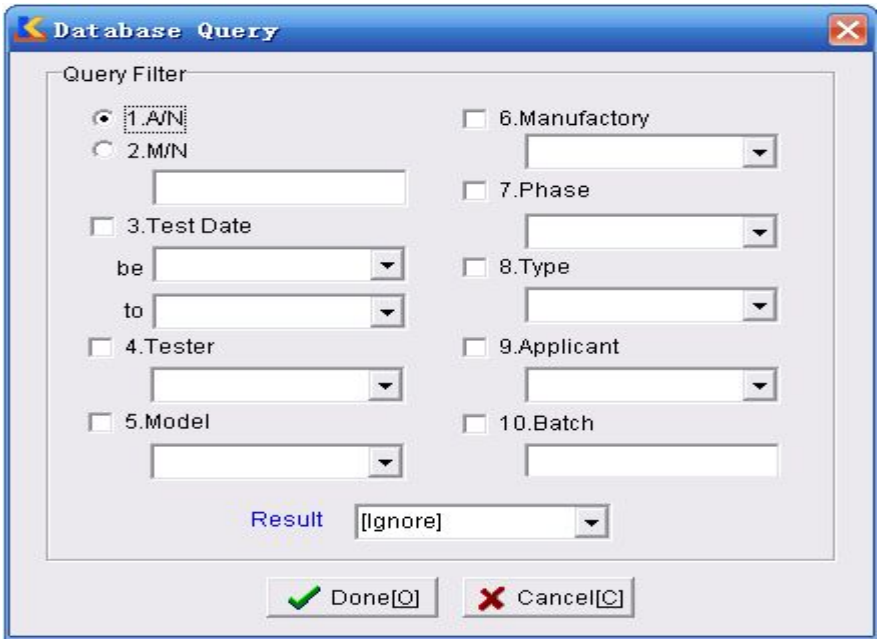
keys in the right of the query window: [Edit] is to edit the data, users can change the parameters but not the errors. [System database] is to query the current database. [All data] is to display all the data. [Backup] is to copy the verification data to other files, it is recommended to backup data periodically. [Backup query] is to check the backup data and the mobile data. Click it to show a dialogue box below: choose the backup directory and click [OK], the system data will be automatically imported to the software to realize data query and printing.



[Delete] is to delete one meter or some meters, deleted data cannot be restored.

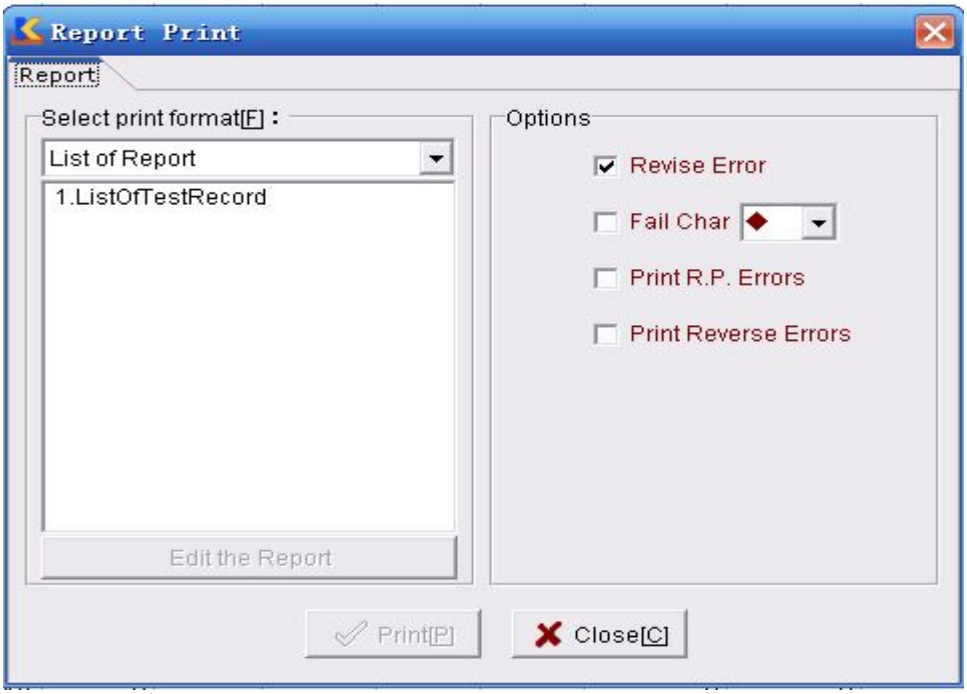
[Query] is to query the verification record of meters. The dialogue box is shown as below. Users can query the meter data according to the conditions, check and print the data.

When users click [Query2], there will be a dialogue showing the result of counting test. The details refer to the basic operation of [Query1].

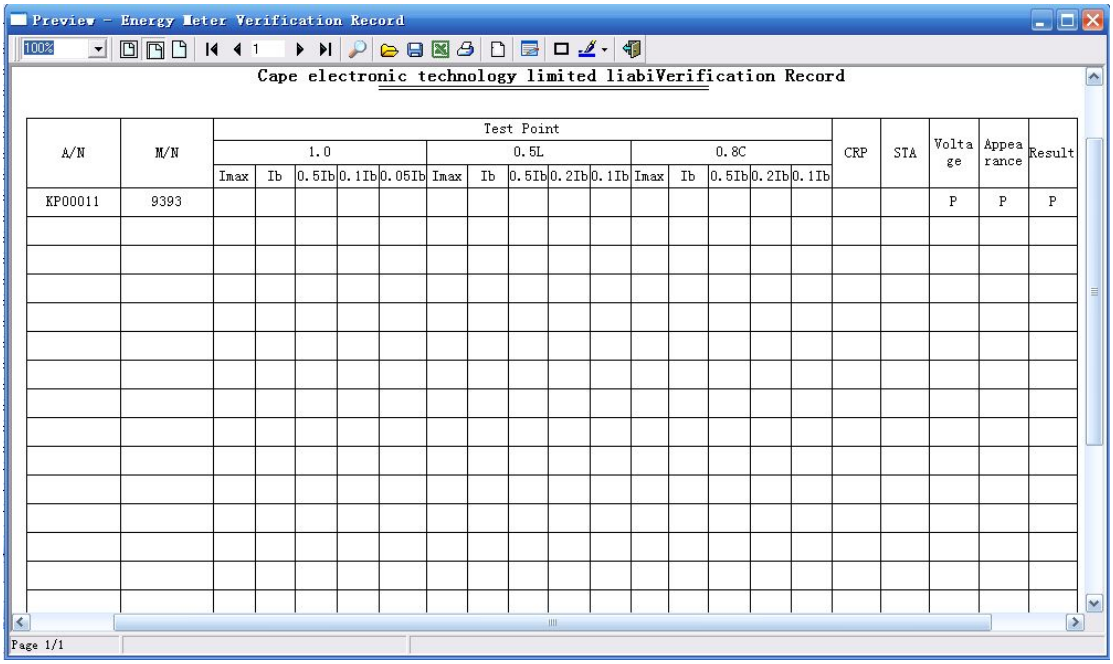


10. Data Print

In the window of [Query 1], users can click [Print] to show the dialogue box below after selecting the meters.

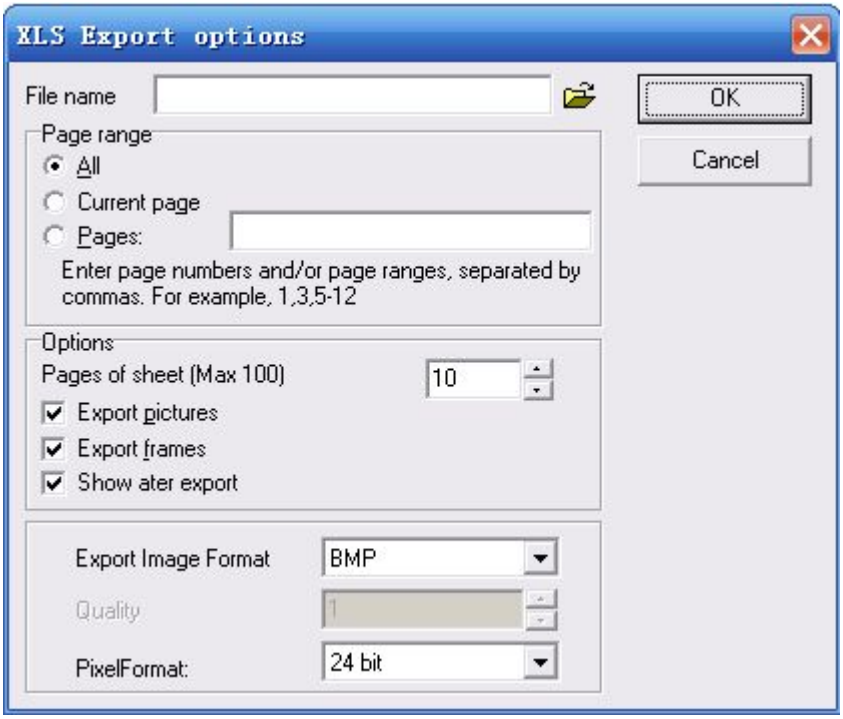


Users can choose the printing format, and the additional options also can be printed. For example, “meters verification record ”. Users select the meters, then click [Print] to switch to Print Preview:

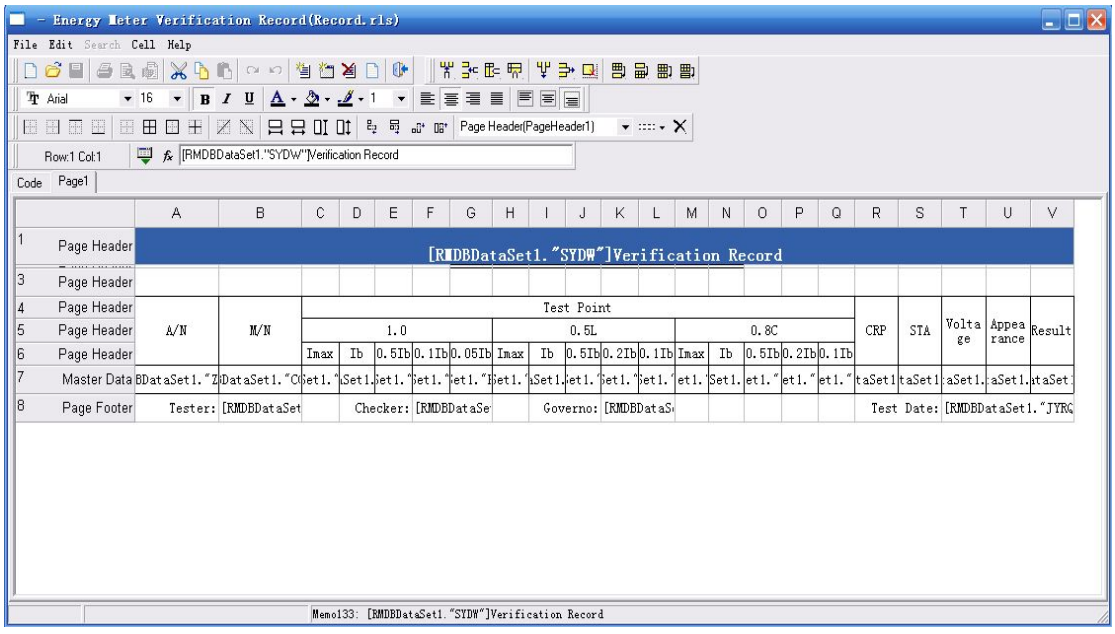


A/N	M/N	Test Point															CRP	STA	Voltage	Appearance	Result
		1.0					0.5L					0.8C									
		Imax	Ib	0.5Ib	0.1Ib	0.05Ib	Imax	Ib	0.5Ib	0.2Ib	0.1Ib	Imax	Ib	0.5Ib	0.2Ib	0.1Ib					
KP00011	9393																		P	P	P

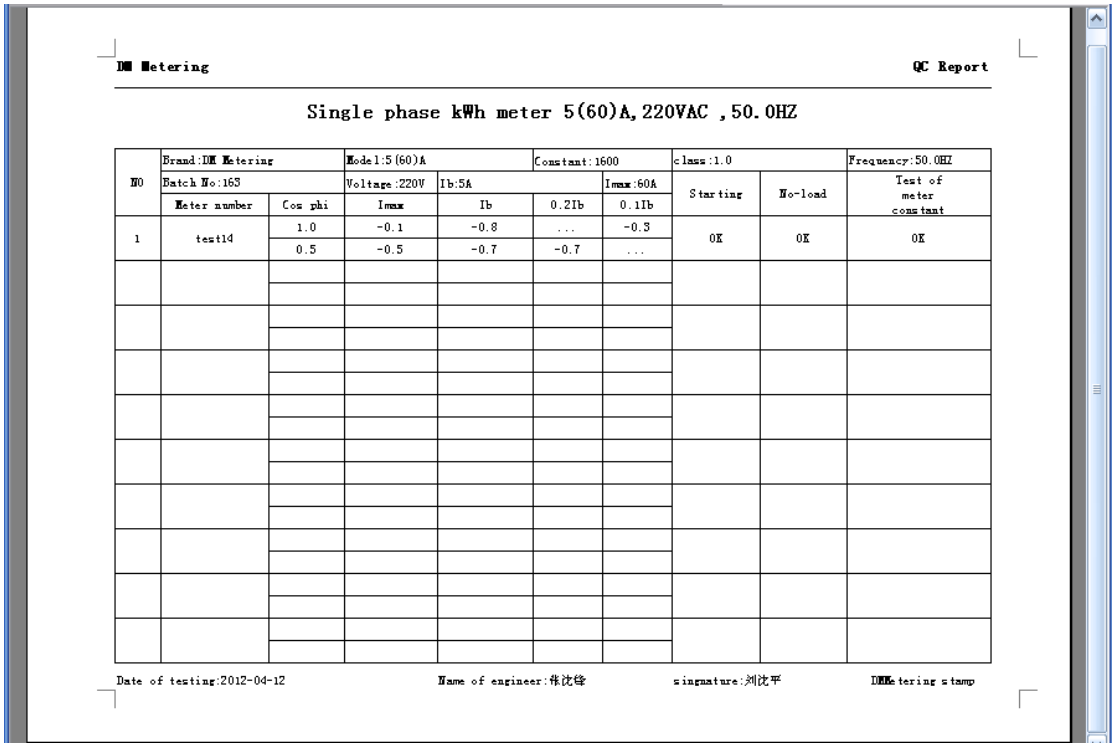
Users can change the print format and the title can be preset in the software. Click [EXCEL] to show the dialogue box below, users can enter the file name which needs to be exported.



In the window of preview, users can click [Modify Report], there will be a dialogue box as follows, it is a script file of report output.



Users can click the section which needs modifying. It can be modified in the box of [fx], and users also can double-click it to modify. Pay attention to the content of [Object viewer], which must correspond to the running script file, or the script will run error.

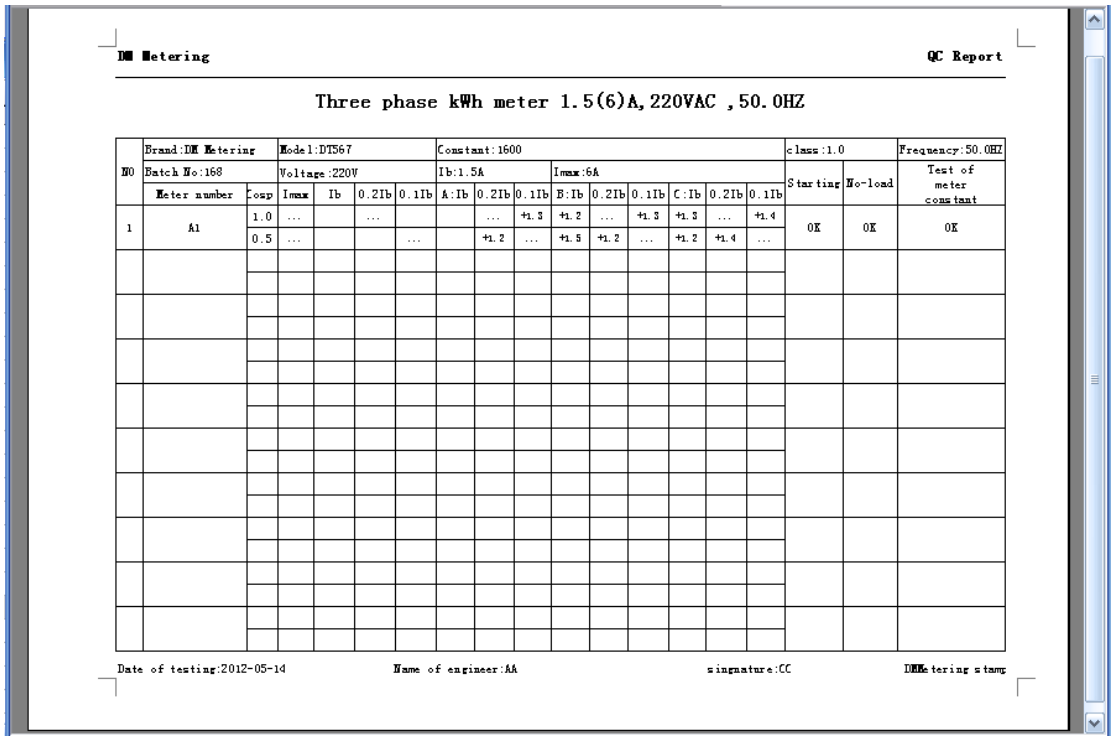


DM Metering QC Report

Single phase kWh meter 5(60)A,220VAC ,50.0HZ

NO	Brand:DM Metering		Model:5(60)A		Constant:1600		class:1.0		Frequency:50.0HZ
	Batch No:163		Voltage:220V	Ib:5A		Imax:60A	Starting	No-load	Test of meter constant
	Meter number	Cos phi	Imax	Ib	0.2Ib	0.1Ib			
1	test14	1.0	-0.1	-0.8	...	-0.3	OK	OK	OK
		0.5	-0.5	-0.7	-0.7	...			

Date of testing:2012-04-12 Name of engineer:张沈锋 singnature:刘沈平 DMMetering stamp



DM Metering QC Report

Three phase kWh meter 1.5(6)A,220VAC ,50.0HZ

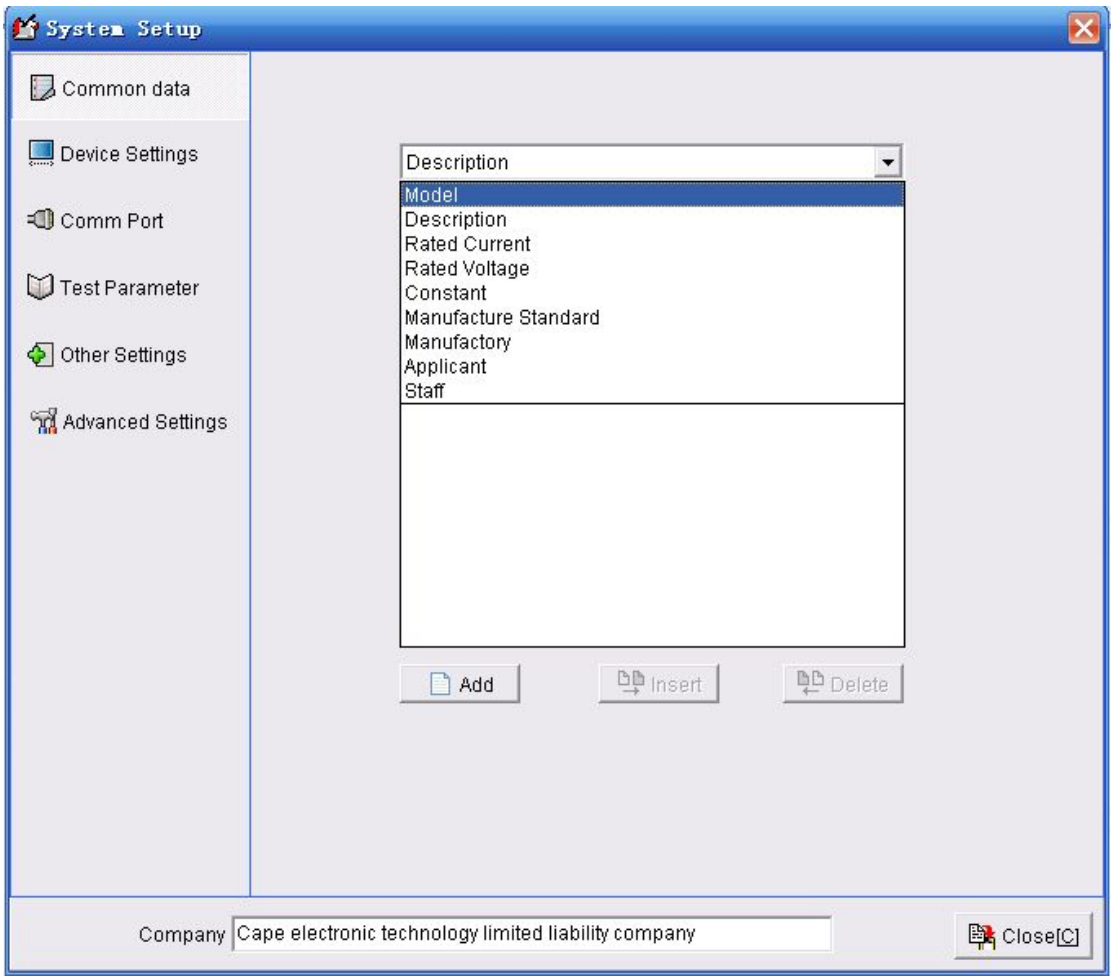
NO	Brand:DM Metering		Model:DT567				Constant:1600									class:1.0		Frequency:50.0HZ
	Batch No:168		Voltage:220V				Ib:1.5A			Imax:6A						Starting	No-load	Test of meter constant
	Meter number	Cosp	Imax	Ib	0.2Ib	0.1Ib	A:Ib	0.2Ib	0.1Ib	B:Ib	0.2Ib	0.1Ib	C:Ib	0.2Ib	0.1Ib			
1	A1	1.0	...		...			...	+1.3	+1.2	...	+1.3	+1.3	...	+1.4	OK	OK	OK
		0.5	...			...		+1.2	...	+1.5	+1.2	...	+1.2	+1.4	...			

Date of testing:2012-05-14 Name of engineer:AA singnature:CC DMMetering stamp

Appendix 1

Common Data Entry

In the main interface of software, click [Set] in the top left corner, and there will be a dialogue box as below, choose the items which need entering.



When users choose an item, the box under it will display the relevant names, and users can enter the words into it. Users can click [Add] if the log is full, click [Insert] if users want to sequence, and click [Delete] to delete some items. When the data entry is completed, click [Close] and the data will be saved automatically.

Appendix 2

Test Scheme Setup

Click [Pro.] in the main interface, and there will be a dialogue box as follows.

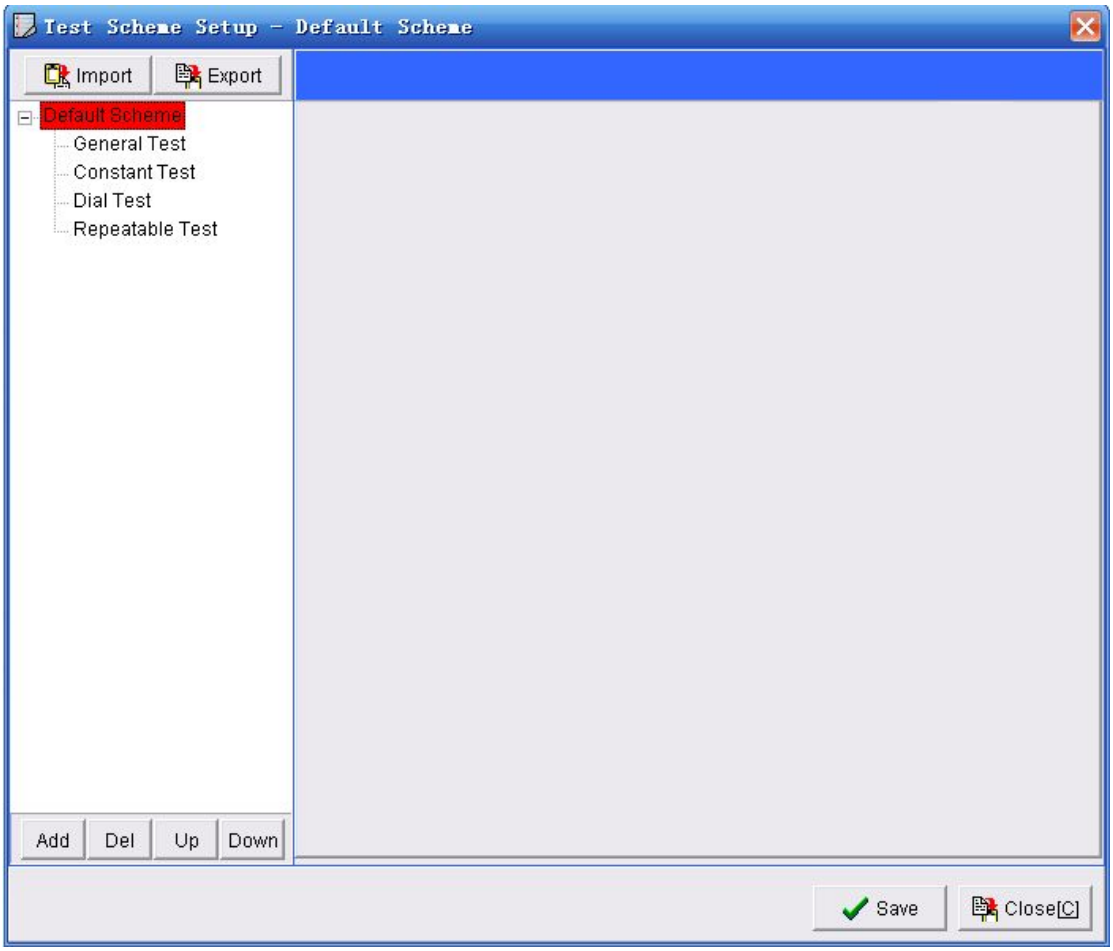


Figure A2-1

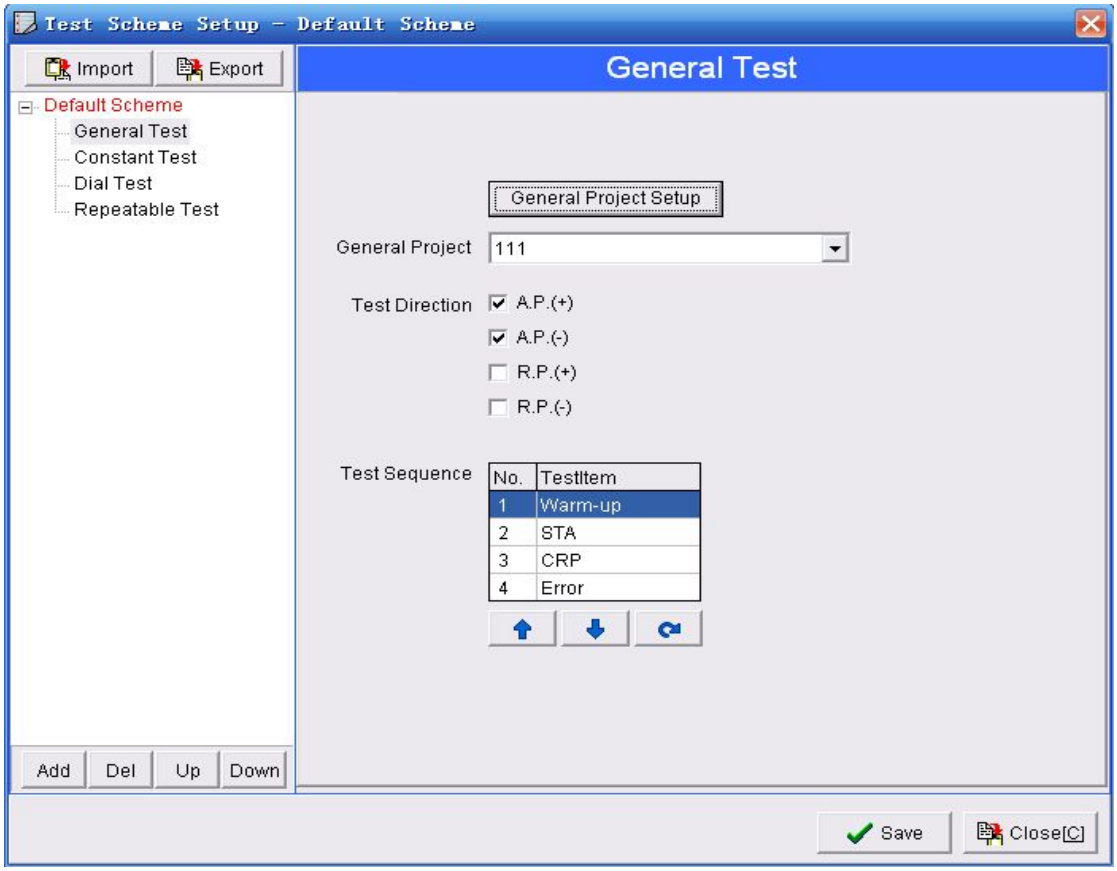
Click [Add] to select [New test scheme], then enter the scheme name and click [OK]. For example: enter “single phase meter”, then click [OK], and it will appear in the function tree in the left of the dialogue box. Select “single phase meter” and click [Add] to add General Test, Constant Test, Dial Test and Repeatable Test.

1. General Test(As shown in figure A2-2)

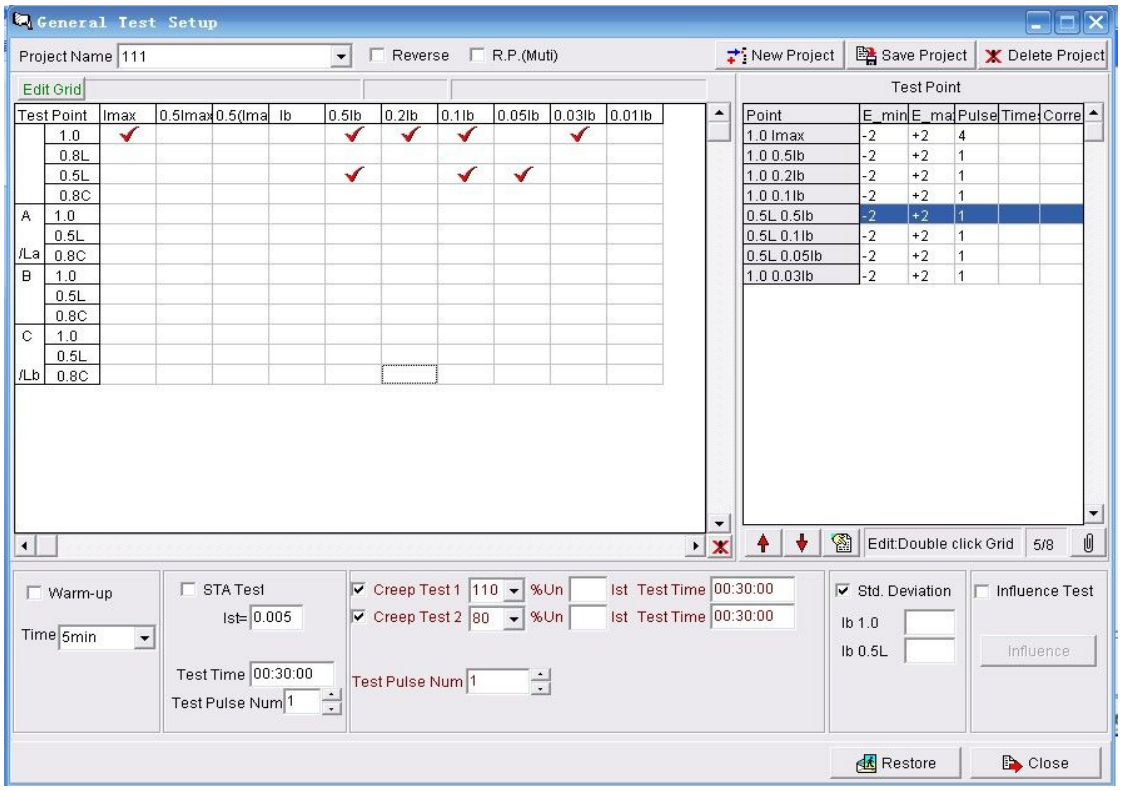
Click single phase meter and click [General Test], there will be a dialogue as follows.

There are two methods in General Test: one is according to the verification regulations, the other is defined by users (customization). Here is the introduction of customization.

Click [General Test], there will be a dialogue as follows. Then click [New Project] to enter the project name and click [OK] to save. For example: “single phase DDZY105”. Select the Test Point: Double click to select and double click the same place to cancel. In the right, users can set upper and lower limits of error and pulses.



FigureA2-2

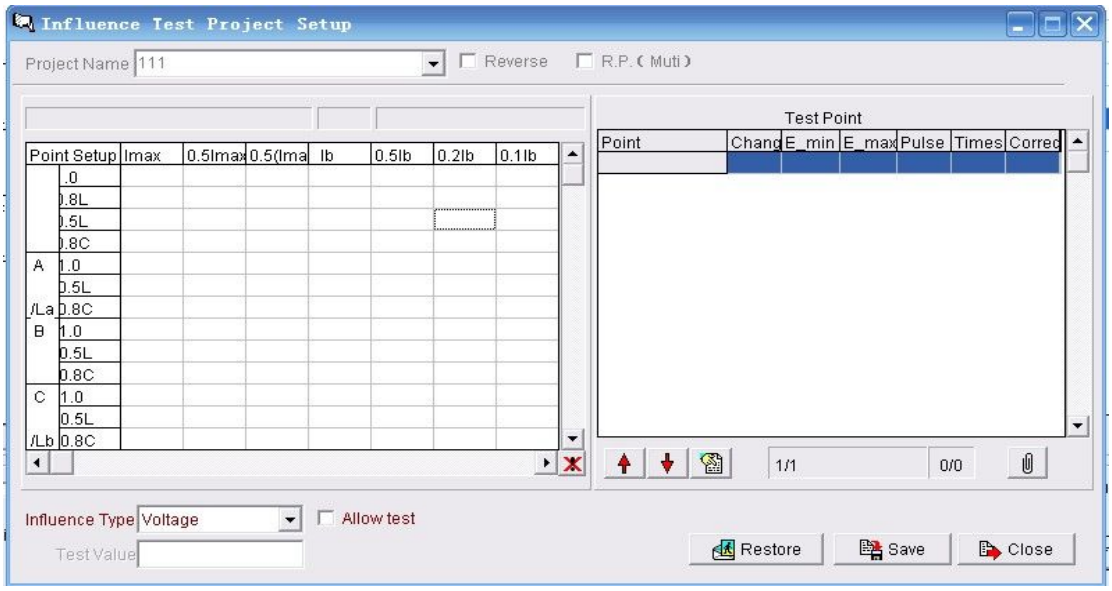


FigureA2-3

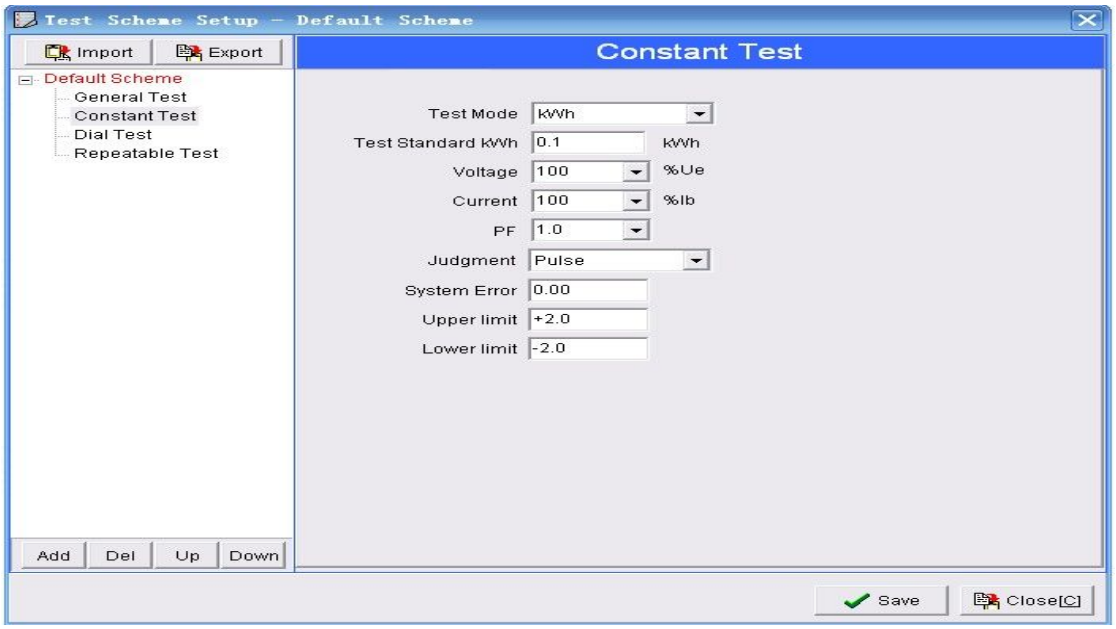
[Warm-up] is for the meters to warm. Generally, the electronic energy meters don't need to warm. Tick [STA Test] if it is needed, and set [Ist](start current) and [Test Time]. The default pulse number is 1. Users can test more pulses if there is enough time, the regulation requires at least 1 pulse. Creep Test is allowed to test two voltages: tick [Creep Test1] and set the voltage, and [Creep Test2] can be ticked at the same time. [Std. Deviation] is for users to do standard deviation test. Tick it and set the deviation values if it is needed.

Tick [Influence Test] if it is needed, and then the [Influence] button is available. Click it to get the dialogue box as follows. Double click to select the test point, and double click again to cancel it. According to the requirement of regulation, select the influence items and times.

Tick [Allow Test] and enter the standard value, then set the test item and points, and click [Save] to save and exit.



FigureA2-4



FigureA2-5

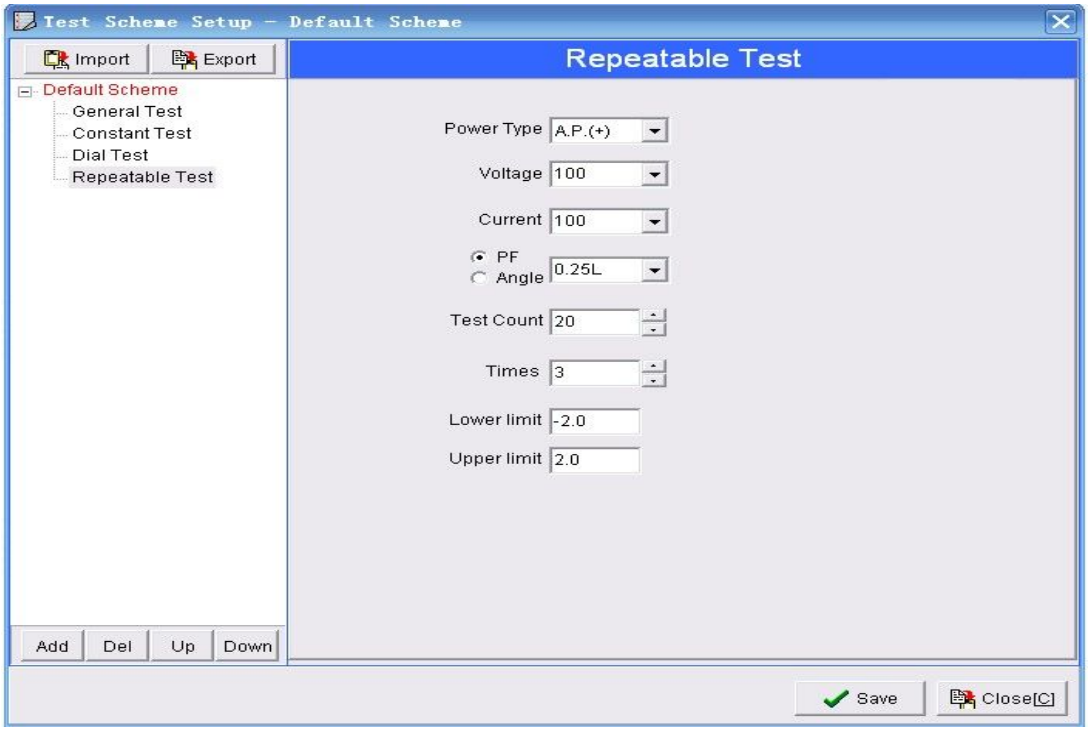
2. Constant Test(FigureA2-5)

Click [Constant Test] to get the dialogue as follows.

According to the requirements of regulation, there are two test modes: KWh mode and time mode. Select the test mode and enter the corresponding reference values.

3. Repeatable Test(FigureA2-6)

This is an additional feature, users can not only test the error of each point, but also stability of the error which cannot be less than 20 times at least. Click [Default Scheme], choose [Repeatable Test] to get a dialogue as follows. Choose the direction of power, choose the percentage of nominal voltage and nominal current. Set the power factor, test times and rounds. Set the limits of errors, then click [Save] to save and exit.

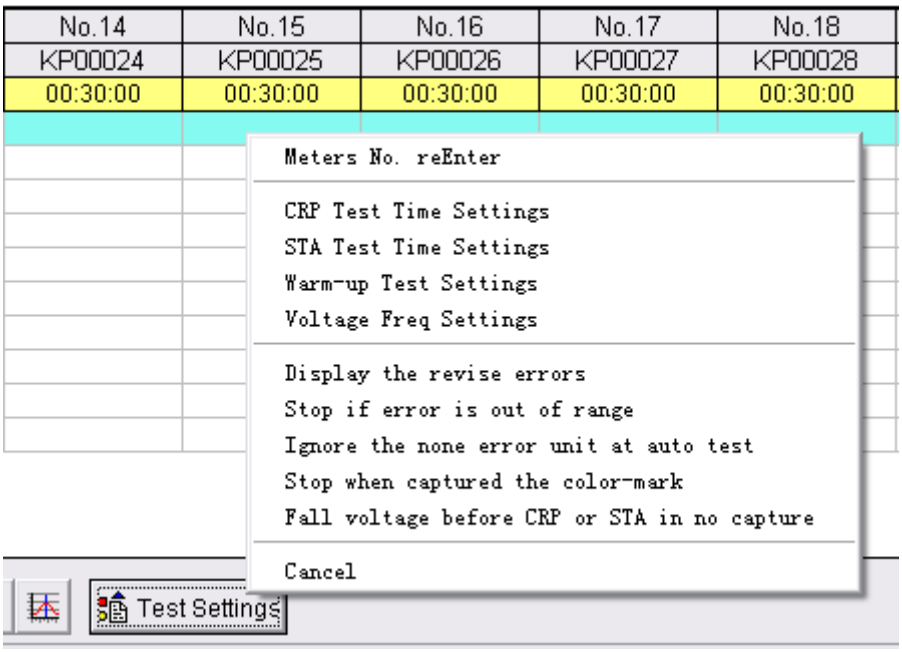


FigureA2-6

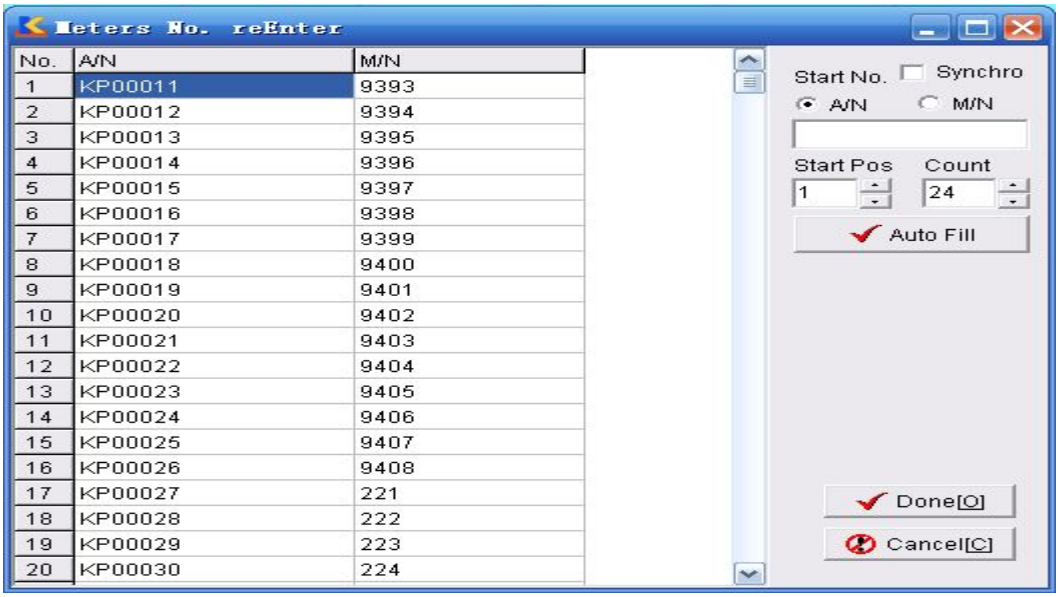
Appendix 3

Test Settings

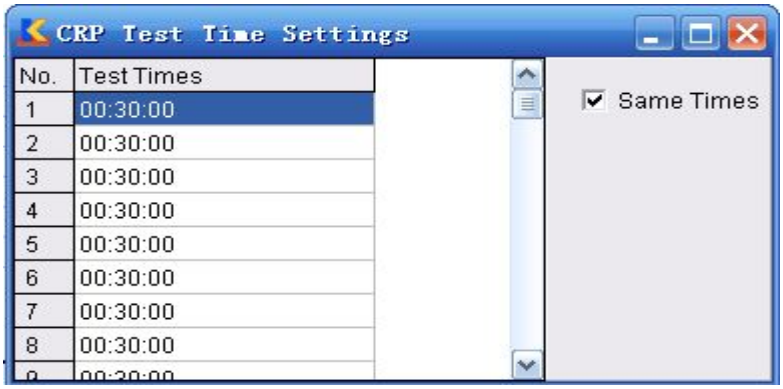
There are a [Test settings] in the test interface below, click [Test settings] to get a menu as fellows.



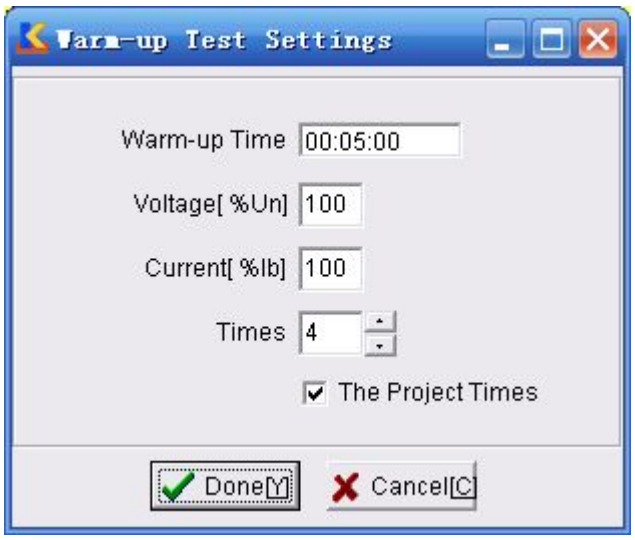
1. Click [Meter No. reEnter] to get a dialogue as follows. It is used to enter A/N (Asset Number) and M/N (Manufacturing Number) in order to save the test time and improve the test efficiency. Users can decide whether to use it based on their demand.



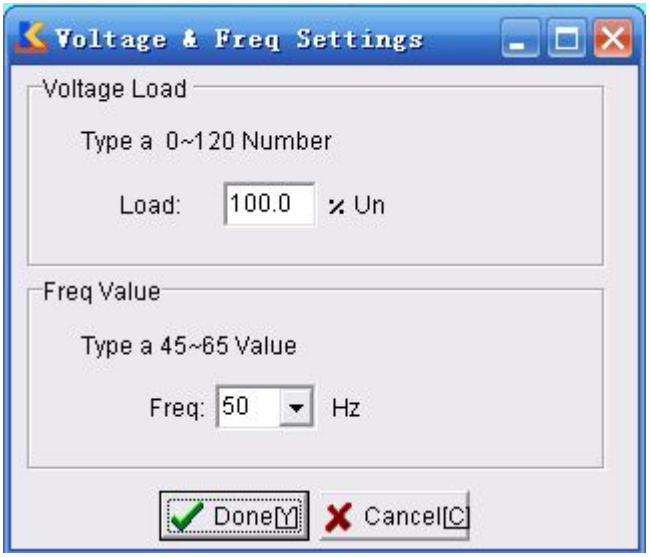
2. [CRP Test Time Settings] or [STA Test Time Settings] is used to change the creep test time. Users can decide whether to use it based on their demand.



3. [Warm-up Test Settings] is used to change the warm-up parameters. Users can decide whether to use it based on their demand.



4. [Voltage & Freq Settings] is used to convert voltage when users need to produce or test foreign meters.



5. [Display the revise errors], the primitive value of errors is displayed when users test the meters. Tick [Display the revise errors] when it is needed, and click it again to cancel it.

6. [Stop if error is out of rang] is used to adjust errors if it is needed at the first time of testing. When it is in [Step] or [Auto], the system will switch to the next point automatically when an error point is complete. But it will stop if there is a meter with unqualified error. And the system will not switch to the next point until the operator revises the error.

7. [Ignore the none error unit at auto test], the system will wait for the error if there is an unqualified meter whose error cannot be obtained. And this function is used for that when the system cannot get the error for several times, it will quit this meter testing and go on to test the next meter.

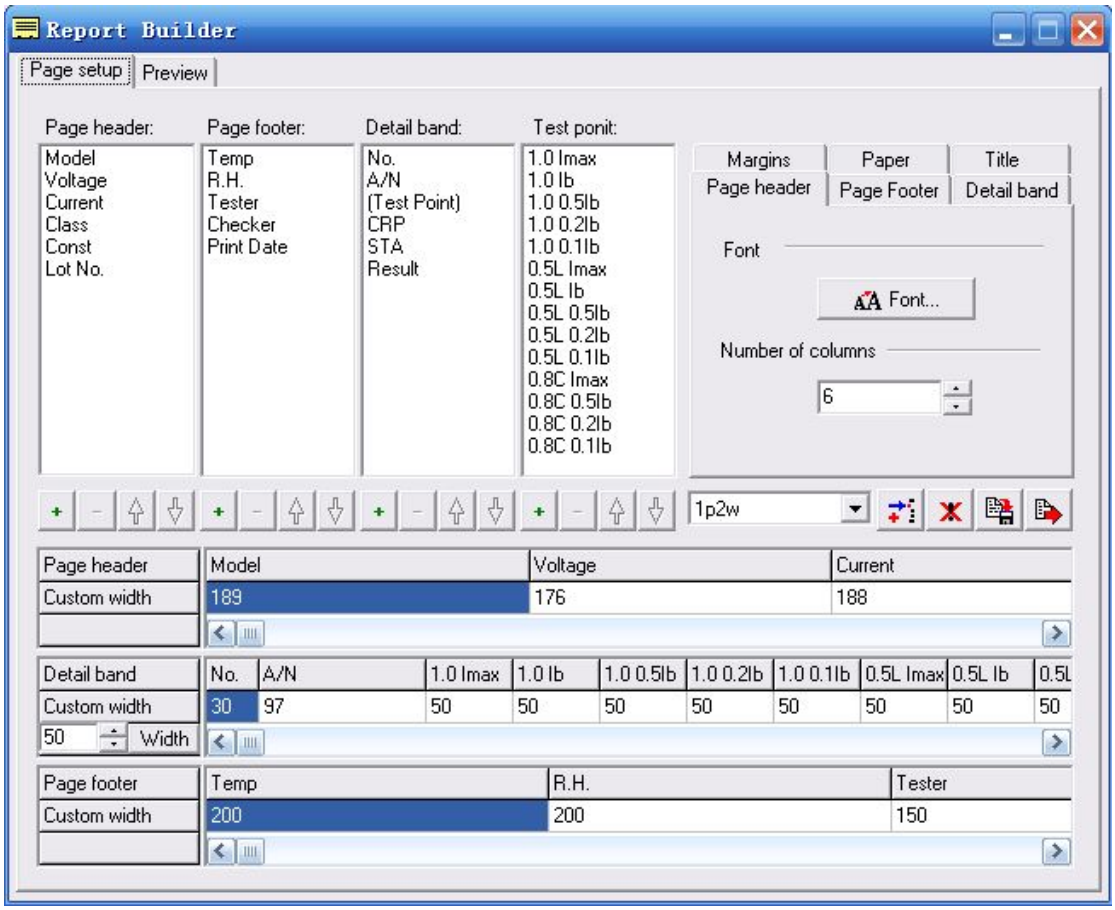
8. [Stop when captured the color-mark] is used for testing mechanical meter. Users need to set the same start point for the meters in the CRP and STA test, and it is also called sign capture. Make the black sign of aluminum dial turn to the front of mechanical meter so as to judge. Sometimes the result is false which caused by the misjudgment of photoelectric sampler, this function is needed. When the capture is complete, there will be a dialogue box for operator to confirm. Click [Reset] to capture the sign again. Click OK to confirm when the result is true. It is shown as follows:

9. [Fall voltage before CRP or STA in no capture], users cannot to observe that if they are on the same start point when testing the electronic meter which have no aluminum dial. Therefore the electronic meter don’t need the function of [Stop when captured the color-mark]. If capture is not set when testing electronic meters, users can select this function to initialize the pulse counter of electronic meters.

Appendix4

Custom Report Settings

Custom report is designed by users and can be printed. Here is some information of print format. Click [Print] to get the dialogue box of Report Print, and select [Custom Report], then click [Edit the Report] to get a dialogue box as follows:

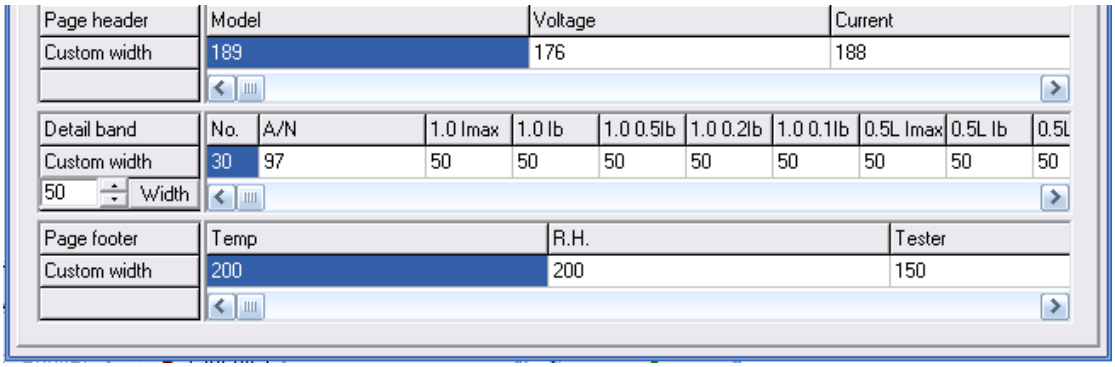


Click  to get a dialogue for project name enter, “single phase report” for example, then to set the 'title' , the default title is 1 Phase Meter Verification Record. Users can customize the name.  this button is used to set fonts. The title can be moved up and down by setting the value, the default value is 2. Click [Detail band] to set the Record. The default number is 24. Users can set the number of meters per page and choose whether to display the grid. It is recommended that set the Number and Height in inverse proportion. Click [Page header] and [Page footer] to set them accordingly. When the setting is completed, users can preview it by clicking the relative button at the top left.

There are some default items in [Page header]. Users can click  to delete and click  to add the items. If some item cannot be added, please check whether it is in other place,

and please delete it first then add it in the right place. Click  to sort the items. [Page footer] is in the same way to set. [Detail band] includes (Test Point) and other items.And the items of [Detail band], [Page header] and [Page footer] are interchangable except (Test Point) which must be in [Detail band]. If the test point is not selected in [Meter Testing], it cannot be printed even if selected in [Print]. Users can also click  to add and click  to delete the point.

The lower part of Report Builder is used for layout. The picture is as follows. There are three parts: Page header, Detail band and Page footer. Users can set the Custom width and preview the layout at any time. When the setting is completed, users can click  to save and click  to exit.



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