

# Specifications

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# 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)



🕻 Setup - KaiPu Energy Meter Test System 📃 🗖 🔀
Select Destination Location Where should KaiPu Energy Meter Test System be installed?
Setup wil install KaiPu Energy Meter Test System into the following folder.
C:\Program Files\KaiPu Test         Browse
At least 32.4 MB of free disk space is required.
< Back Next > Cancel

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)

Setup - KaiPu Energy Meter Test S	ystem	
Select Start Menu Folder Where should Setup place the program's	s shortcuts?	<u> </u>
Setup will create the program's	; shortcuts in the followi	ing Start Menu folder.
To continue, click Next. If you would like	to select a different fo	older, click Browse.
KaiPu Test		Browse
Don't create a Start Menu folder		
	< Back	Next > Cancel

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



🖌 Setup - KaiPu Energy Meter Test System
Select Additional Tasks Which additional tasks should be performed?
Select the additional tasks you would like Setup to perform while instaling KaiPu Energy Meter Test System, then click Next.
Additional icons:
Create a desktop icon
Create a Quick Launch icon
< Back Next > Cancel

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

🔏 Setup - KaiPu Energy Meter Test System 📃 🗖 🔀
Ready to Install Setup is now ready to begin installing KaiPu Energy Meter Test System on your computer.
Click Install to continue with the installation, or click Back if you want to review or change any settings.
Destination loca:ion: C:\Program Files\KaiPu Test Start Menu folder: KaiPu Test Additional tasks Additional icons: Create a cesktop icon Create a Quick Launch icon

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

Notice	
<b>i</b>	Welcome, the first to enter the please go to the system settings!
	ОК

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.

2	KaiPu Energy 🛙	eter	Test S	yst en	1				
Setu	np[S] Test[C] Data	Manag	e[M] To	ols[T]	Option	[0] Hei	1p[H]		
ð.	System Setup		Ŷ	⊳	$\mathbb{D}\mathbb{D}$	ÞI		8	8
$\bigcirc$	Scheme Setup	Test	Voltage	Point	Step	Auto	Stop	Save	Close
₫.	Vsers	-							
۹,	System Password	14.							
	Demo	$\sim$							
•	Exit[X]	1.1							

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



🛃 System Setup	
🕞 Common data	Oevice
🛄 Device Settings	Model KP-S3000
🗐 Comm Port	Meters Count 24 -
💭 Test Parameter	S/N 1122 Class 0.1
🔄 Other Settings	
📆 Advanced Settings	
	Standard Meter
	Model KP-1100
	Class 0.1
Company <mark>Cap</mark>	e electronic technology limited liability company

System	Setun	interface	<b>ב</b>
System	Setup	meriace	-

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.



Common data	Comm Port	
Device Settings	СОМ1	
D Comm Port	RS485 Port	
) Test Parameter	_ Muti Port	
Other Settings	No. CommPort StartUnit EndUnit	
🛱 Advanced Settings	2         COMS         2         2           3         COM9         3         3           4         COM10         4         4	
	S         COM11         S         S           6         COM12         6         6           7         COM13         7         7	
	8 COM14 8 8	

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

👗 Input	Parameters									-	
-Meter Para	ameters										
Type E	Electric 👻	Voltage 22	20V	• C	lassP 1.0	•	Double	e Circuit Meter			
Phase 1	D2W/	Current 1	5/6\4		, lass0 2.0	Pulse char	nel (Default)		•		
1 11030 []	F200	ourent[].	3(0)A	~	2.0		[[Deladit]				
Freq 5	i0.0Hz 🗾 🗖	escription S	ngle-P	hase Meter		<ul> <li>Test Sche</li> </ul>	me Default 9	Scheme	▼ R		
Input Optio	ins										
Select A	All 🔽 Same Informati	ion 🗖 Asset	s No.=1	Meter No.				8	Notice:Right clic	k to more fea	tures
Se. No.	A/N	M/N	Sta.	Const	Model	Manu.	Prod. Date	Manu. Std.	Applicant	Start Count	Com
1 KP	00011	9393		3200	DT862	Kaipu Eric	2008-8	GB/T15283	Kaipu Eric		000
🗌 2 KP	00012	9394		3200	DT862	Kaipu Eric	2008-8	GB/T15283	Kaipu Eric		000
🗌 3 KP	00013	9395		3200	DT862	Kaipu Eric	2008-8	GB/T15283	Kaipu Eric		000
🗌 4 KP	00014	9396		3200	DT862	Kaipu Eric	2008-8	GB/T15283	Kaipu Eric		000
□ 5 KP	00015	9397		3200	DT862	Kaipu Eric	2008-8	GB/T15283	Kaipu Eric		000
🗌 6 KP	00016	9398		3200	DT862	Kaipu Eric	2008-8	GB/T15283	Kaipu Eric		000
□ 7 KP	00017	9399		3200	DT862	Kaipu Eric	2008-8	GB/T15283	Kaipu Eric		000
🗌 8 KP	00018	9400		3200	DT862	Kaipu Eric	2008-8	GB/T15283	Kaipu Eric		000
🗌 9 KP	00019	9401		3200	DT862	Kaipu Eric	2008-8	GB/T15283	Kaipu Eric		000
🗌 10 KP	00020	9402		3200	DT862	Kaipu Eric	2008-8	GB/T15283	Kaipu Eric		000
🔲 11 KP	00021	9403		3200	DT862	Kaipu Eric	2008-8	GB/T15283	Kaipu Eric		000
🗌 12 KP	00022	9404		3200	DT862	Kaipu Eric	2008-8	GB/T15283	Kaipu Eric		00C
🗌 13 KP	00023	9405		3200	DT862	Kaipu Eric	2008-8	GB/T15283	Kaipu Eric		000
🗌 14 KP	00024	9406		3200	DT862	Kaipu Eric	2008-8	GB/T15283	Kaipu Eric		000
🗌 15 KP	00025	9407		3200	DT862	Kaipu Eric	2008-8	GB/T15283	Kaipu Eric		000
🔲 16 KP	00026	9408		3200	DT862	Kaipu Eric	2008-8	GB/T15283	Kaipu Eric		000
										la di	>
						Continue	Test 🔽 Ente	r the test interfa	ace Test[V]	Can	cel[C]

Click [Test]  $\rightarrow$  [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.].



Meter Parameters						-				
Type Electric	✓ Voltage	220V	- C	lassP 1.0	-	L Double	e Circuit Meter			
Phase 1P2W	✓ Current	1.5(6)A	- C	assQ 2.0	🖵 Pulse char	nel [Default]		<b>•</b>		
5 50 011					Trates					
Fred 50.0Hz	- Description	Single-P	'nase meter		- Test Sche	errie  Default S	cneme	▼ R		
nput Options										
🗸 Select All 🔽 Same Infi	ormation 🗖 Ass	ets No.=	Meter No.					Notice:Right clic	k to more fea	tures
	M/N	Sta	Const	Model	Manu	Prod Date	Manu Std	Applicant	Start Count	Corr
✓ 1 KP00011	9393	Y	3200	DT862	Kaipu Eric	2008-8	GB/T15283	Kaipu Eric		000
2 KP00012	9394	Y	3200	DT862	Kaipu Eric	2008-8	GB/T15283	Kaipu Eric		000
✓ 3 KP00013	9395	Y	3200	DT862	Kaipu Eric	2008-8	GB/T15283	Kaipu Eric		000
✓ 4 KP00014	9396					1		Kaipu Eric		000
✓ 5 KP00015	9397		Co	ntacting the d	evice,please wa	ait		Kaipu Eric		000
✓ 6 KP00016	9398	T.	3200	D1862	кари епс	2008-8	68/115283	Kaipu Eric		000
7 KP00017	9399	Y	3200	DT862	Kaipu Eric	2008-8	GB/T15283	Kaipu Eric		000
✓ 8 KP00018	9400	Y	3200	DT862	Kaipu Eric	2008-8	GB/T15283	Kaipu Eric		000
🗹 9 KP00019	9401	Y	3200	DT862	Kaipu Eric	2008-8	GB/T15283	Kaipu Eric		000
☑ 10 KP00020	9402	Y	3200	DT862	Kaipu Eric	2008-8	GB/T15283	Kaipu Eric		000
🛃 11 KP00021	9403	Y	3200	DT862	Kaipu Eric	2008-8	GB/T15283	Kaipu Eric		000
✓ 12 KP00022	9404	Y	3200	DT862	Kaipu Eric	2008-8	GB/T15283	Kaipu Eric		000
🛃 13 KP00023	9405	Y	3200	DT862	Kaipu Eric	2008-8	GB/T15283	Kaipu Eric		000
☑ 14 KP00024	9406	Y	3200	DT862	Kaipu Eric	2008-8	GB/T15283	Kaipu Eric		000
15 KP00025	9407	Y	3200	DT862	Kaipu Eric	2008-8	GB/T15283	Kaipu Eric		000
✓ 16 KP00026	9408	Y	3200	DT862	Kaipu Eric	2008-8	GB/T15283	Kaipu Eric		000

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

KaiPu Energy	Leter Test System	- T1	[leter	Testin	g] 1				_		_	_		
Set. Pro. Para.	Test Voltage Point	St	ep Auto	Stop	Save (	8 Close	Query1 Que	y2 Assets	o Mon.	Creater Contraction Contractio				
Phase:1P2W V	oltage:220V Curre	ent:1	.5(6)A	Class	:1.0 Freq	:50.0H	z	Test Sche	ne:Defai	ult Schem	e			4
General Test A.P.(+) A.P.(-) - Constant Test Dial Test Repeatable Test	Position           AIN           -2~+2,4           IV           IV           CRP 80%Un           IV           CRP 110%Un           IV           1.0 0.5lb           IV           IV           1.0 0.2lb           IV           IV           IV		No.1 KP00011	No.2 KP00012	No.3 KP00013	No. KPOO	4 No.5 014KP00015	No.6 KPOOD16	No.7 KP00017	No.8 KP00018	No.9 KP00019	No.10 KP00020	No.11 KP00021	No.12 KP00022
	▼ 0.5L 0.5lb ▼ 0.5L 0.1lb ▼ 0.5L 0.05lb ▼ 1.0 0.03lb		No.13 KP00023	No.14 KP00024	No.15 4KP00025	No.' KPOO	16 No.17 026KP00027	No.18 /KP00028	No.19 KP00029	No.20 KP00030	No.21 14373	No.22 14374	No.23 14375	No.24 14376
00:00:00	Capture				x 🔹	Test S	ettings					\Mer <u>c</u>	le (Page1	/Page2/
Waiting test														1



🕻 KaiPu Energy Me	ter Test System - [Met	ter Te	sting]											
Setup[5] Test[C]	Data Manage[M] Tools[T]	Optic N t Ste	in[O] Help[i P Auto	H) Stop Sa	Ve Close	Query1 Que	ny2 Assets	Mon. Exi	t Displ	ay actual (	Display ti / grror Be c: indi	he average ; ancelled an; vidual epit;	error d restore th opes	Le C
Phase:1P2W	Voltage:220V Cu	rrent:1	.5(6)A	Class:1.0	Freq:50.0Hz	I	Test Scher	me:Default So	cheme				1	X
HGeneral Test	Position		No.1	No.2	No.3	No.4	No.5	No.6	No.7	No. <mark>8</mark>	No.9	No.10	No.11	No.12
- A.P.(+)	A/N		KP00011	KP00012	KP00013	KP00014	KP00015	KP00016	KP00017	KP00018	KP00019	KP00020	KP00021	KP0002
A.P.(-)	-2~+2;1			0				*						
Constant Test	Varm-up			-						1		3		
Dial Test	STA 5‰lb			-	-			-		1				-
Repeatable Test	CRP 80%Un	_								/				
100.0**********************************	CRP 110% Un	_								0.0544				
	1.0 Imax	_	-0.0953	-0.5221	0.3543	0.2459	0.4329	-0.3844	0.3509	0.0511	-0.2822	-0.5958	0.0323	-0.3290
	IN 1.0 0.510	_	-0.1719	0.2288	-0.0491	-0.8199	0.2695	-0.3197	0.3/61	-0.4344	0.4261	-0.0604	0.3629	0.3258
	I 1.0 0.2lb	-	0.5/81	-0.2952	0.2521	0.7139	0.1354	0.28/4	0.1531	0.6687	-0.1628	-0.4697	0.3223	0.0181
		-	0.6584	-0.4817	0.5026	-0.1663	0.1394	0.6813	0.1629	-0.0422	0.1514	0.0827	0.5637	-0.3873
		-	No.13	No.14	No.15	No.16	No. Me	ter Testing	X	No.20	No.21	No.22	No.23	No.24
		- 0	KP00023	KP00024	KP00025	KP00026	KPOO			KP00030	14373	14374	14375	14376
							6	i) Sten T	ect Finichedl		1			
	one check point							OK						
			0.8369	0.6101	-0.3663	0.3706	-0.0721	0.0243	0.3642	0.1563	-0.1512	0.6826	0.3854	-0.1078
			0.8777	-0.0715	-0.7829	0.2874	-0.1275	0.8175	-0.7781	0.2827	0.4652	0.4957	-0.3705	-0.5121
			-0.1161	0.2597	0.3694	-0.0179	0.1736	0.1857	0.3321	0.1618	0.4240	-0.0358	0.8735	0.1459
		-	-0.1684	-0.1468	0.7703	0.5599	0.4735	0.3646	-0.7055	-0.4529	0.5954	0.3590	-0.0572	0.4828
00:00:00	Capture				Test Se	ettings	0.000	Can operate functions	more	Multiple of	epitope disp	olay	Merge (Pag	ie1 (Page
ing test													User:admin	

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.

No. 1 No. 2	P00011		would	Result	ICRP lest	STA LEST	lollade les	kppearance	unstant re	Mariu, Stu.	mar 🖍
No. 2	NI 00011	9393	DT862	P			P	P		GB/T15283	Kai
	KP00012	9394	DT862	P			P	P		GB/T15283	Kai
No. 3	KP00013	9395	DT862	P			P	P		GB/T15283	Kai
No. 4	KP00014	9396	DT862	P			P	P		GB/T15283	Kai
No. 5	KP00015	9397	DT862	P			P	P		GB/T15283	Kai
No. 6	KP00016	9398	DT862	P	12		P	P		GB/T15283	Kai
No. 7	KP00017	9399	DT862	P			P	P	() ()	GB/T15283	Kai
No. 8	KP00018	9400	DT862	P	0		P	P		GB/T15283	Kai
No. 9	KP00019	9401	DT862	P			P	P -		GB/T15283	Kai
No. 10	KP00020	9402	DT862	P			P	Р		GB/T15283	Kai
No. 11	KP00021	9403	DT862	P			Р	P		GB/T15283	Kai
No. 12	KP00022	9404	DT862	P			P	Р		GB/T15283	Kai
No. 13	KP00023	9405	DT862	P	1.		P	P		GB/T15283	Kai
No. 14	KP00024	9406	DT862	P			P	P		GB/T15283	Kai
No. 15	KP00025	9407	DT862	P			P	P		GB/T15283	Kai
No. 16	KP00026	9408	DT862	P	0		P	P./		GB/T15283	Kai
No. 17	KP00027	221	DT862	P			P	P		GB/T15283	Kai
No. 18	KP00028	222	DT862	P	12		P	P		GB/T15283	Kai
No. 19	KP00029	223	DT862	P	-		P	P		GB/T15283	Kai
No. 20	KP00030	224	DT862	P			P	P		GB/T15283	Kai
est Result											
	-	· · · · · ·	Ir			Same					
Tester AA	-	Temp 25	C I			Janno					
_			F	Auto count							
Checker BB	+	R.H. 85	%	lotob: 142							
				atch.  142							

#### **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

<u>K</u> KaiPu En	lergy l	leter	Test S	ystem -	[llet er	Testin	g]								[	_ 🗆 🔀
👗 Setup[S] T	est[C]	Data Ma	nage[M]	Tools[T]	Option[0]	] Help[H	]				-					- 8 ×
T 😨 Set. Pro.	📰 Para.	Test	<b>†</b> Voltage	Point St	ep Auto	Stop	📳 Save	8 Close	Query1 Que	eny2 Assets	o Mon.	Exit				
Phase:1P2W	V	oltage:22	20V	Current:	1.5(6)A	Class	:1.0 Fred	I:50.0⊢	z	Test Sche	eme:Defa	ult Schem	ne			4
🖃 General Tes	t		No.1	No.2	No.3	No.4	No.5	No.8	No.7	No.8	No.9	No.10	No.11	No.12	No.13	No.14
- A.P.(+)		Start														
A.P.(-)		End											-			
Constant Te	st	Differer	nc	_											-	
- Dial Test Renestable	Toet	Error(%	)								-					
Repeatable	reat	Pulse	-			-	-	-							-	
		Energy		-	-								16			
		Error/%	<u></u>		22					1			2			
		Result	2	-						-			-			
		Result														
		<														>
00:00:	00	Te	st Mode:	KWh Test	k///h[0.1 k/	Vh]	Voltage: 1	00%U	n Syster	n Error: 0.0	0 L	Jpper Limi	t: +2.0 L	ower Limi	t:-2.0 J	udgment Ba
Waiting test					1.1			-								

Specific operation is set please see Appendix 2

## 7. Dail Test

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

👗 KaiPu Er	lergy l	leter	Test	i Syster	1 - D	leter	Testi	ng]									[	X
👗 Setup[S] – T	est[C]	Data Ma	anage [	[M] Tools	[T] 0]	ption[O	] Help	[н]										_ 8 ×
Set. Pro.	🛄 Para.	Test	<b>t</b> Volta	ige Point	► Step	Auto	Stop	Save	8 Close	Query	1 Query2 #	Assets	o Mon	. Exit				
Phase:1P2W	Ve	oltage:2	20V	Cur	rent:1.5	i(6)A	Clas	s:1.0 Fr	eq:50.0H	Ηz	Tes	st Scher	ne:De	efault Schi	eme			4
😑 General Tes	t			A/N	ulse	Coul	k/\/h	Start(+	·) Er	nd(+)	Error(+)	Run(	+)	Start(-)	End(-)	Error(-)	Run(-)	Moi
- A.P.(+)		No. 1		KP00011														DT8
- A.P.(-)		No. 2	2	KP00012														DT8
- Constant Te	st	No. 3	3	KP00013														DT8
- Dial Test		No. 4		KP00014									_					DTS
Repeatable	Test	No. 5		KPU0015	_			5	_									DIS
		No. C		KP00017														DIO
		No. 8	3	KP00018														DTS
		No. 9	9	KP00019														DTS
		No. 1	0	KP00020														DTS
		No. 1	1	KP00021														DT8
		<	0	100000														nTo
		No.Vo	Itage	Current	PF	Qua	ntity	Edit	Tes	st Mode	Pulse		- 1	🗌 Dial st	op time	2012年 4月	23日 👻	19:00:00
		1	100	400	1.0	0	.1	Edit	Di	rection	Forward		=	Register	Povice 1	100	Limitree	ictor 0.5
		2	100	200	1.0	00:0	0:30	Done		nection	Forwaru	1.2.0	-	Register	I	2	- Linnereg	13ter 0.5
		3	100	100	1.0	00:0	0:20	Cancol	Limit F	orward	-2.0	+2.0		Syste	m Error ju			emp. 25
		-						Sance	Limit R	everse	-2.0	+2.0		Lim	hit Temp  2	25		
00:00:	:00	Read	der1		• F	Reader2		•	Tester	[	-	A	erag	ет				
Waiting test																		//.



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 conclusion.

#### 8. Repeatable Test

👗 KaiPu Energ	y Neter	Test S	ystem -	[leter	Testin	gl								[		×
Setup[S] Test[(	[] Data Me	unage[M]	Tools[T]	Option[0	)] Help[}	(]				-					- 8	×
🕆 🤉 📼		<b></b>	Þ	<b>H</b>			8			0	0					
Set. Pro. Par	a. Test	Voltage	Point S	tep Aut	Stop	Save	Close	Query1 Que	ery2 Assets	Mon.	Exit					
Phase:1P2W	Voltage:2	20V	Current	:1.5(6)A	Class	:1.0 Fre	q:50.0H	z	Test Sche	eme:Def	ault Schen	ne			4	
🖃 General Test	Count	No.1	No.2	No.3	No.4	No.5	No.6	No.7	No.8	No.9	No.10	No.11	No.12	No.13	No.14	
- A.P.(+)	1															
- A.P.(-)	2															
Dial Tact	3															
Repeatable Test	4															
	5															
	6															
	7															
	8															
	9		1													
	10															1
	11															
	12															
	13															
	14														_	-
						V-1		260	- 00 - 200				55		>	
00:00:00	Po <sup>r</sup>	wer Type	A.P.(+)	▼ Volta	age 100 -	- Curre	ent 100	• • P	F C Angle	0.25L	▼ Cour	nt 20	Time	s 3	limit	-2.0
Waiting test																1

Specific operation is set please see Appendix 2

🖉 Data IIanagemen	ut.										
Test Data											
<ul> <li>A/N</li> </ul>	M/N	Test Date	Result	CRP	CRP Time	STA	STA Tim	eVoltage Test App	pearance Const T	est ti 📩	😤 Edit[M]
KP00011	9393	2012-05-18	P					Р	P		
KP00012	9394	2012-05-18	Р					Р	P		System Datab
KP00013	9395	2012-05-18	P					P	P		All Data
KP00014	9396	2012-05-18	P					Р	P		
KP00015	9397	2012-05-18	P					Р	P		E
KP00016	9398	2012-05-18	Р					P	P		🖹 Backup Que
KP00017	9399	2012-05-18	Р					Р	P		
KP00018	9400	2012-05-18	P					P	P		
KP00019	9401	2012-05-18	P					Р	P		🛱 Query[Q]
KP00020	9402	2012-05-18	P					Р	P		(FL Duint D)
KP00021	9403	2012-05-18	P					Р	P		e Print[P]
KP00022	9404	2012-05-18	P					Р	P		📴 Export
KP00023	9405	2012-05-18	P					P	P		Ph. Consult21
KP00024	9406	2012-05-18	P					P	P		- EnorEl
KP00025	9407	2012-05-18	P					P	P		🕒 Exit
KP00026	9408	2012-05-18	P					P	P		
KP00027	221	2012-05-18	P					P	P		Record Select
KP00028	222	2012-05-18	P					P	P		riccord ociect.
KP00029	223	2012-05-18	P					P	P		Select/Cancel:
KP00030	224	2012-05-18	P					P	P		Ctrl+click
14373	225	2012-05-18	P					P	P		Select more:
14374	226	2012-05-18	P					P	P		Shift+1
14375	227	2012-05-18	Р					P	P		Shift+Page Dn
()	101		12.							>	Shift+click
A/N	M/N	Phase	Voltage	e Cur	rent Cons	stant Fr	req Cla	ss Model	Manu. Std.	M	
KP00011	9393	1P2W	220V	1.5(6)	)A 3	200 50.0	DHz 1.0	DT862	GB/T15283	Kaipu	
<		.00								>	

# 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].

uery Filter	
• 1.A/N	6.Manufactory
© 2.M/N	<b>_</b>
	7.Phase
🔲 3.Test Date	-
be	▼ 8.Type
to	•
T 4.Tester	9.Applicant
	•
5.Model	10.Batch
	•
Result	[Ignore]
rtesdir	



### **10. Data Print**

elect print format[E] : ist of Report	Options Revise Error Fail Char • • Print R.P. Errors Print Reverse Errors
Edit the Report	

selecting the meters.

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

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:

	Preview -	Energy Le	ter Ve	rifi	catio	n Rec	ord				0												
]1			14 4	1	▶ ▶	$\left  \right\rangle$		8	3 0			<b>/</b> - 4											
				Сар	e ele	ctro	nic t	echn	olog	y li	mite	d li:	abiV	erif	icat	ion I	Recor	d					^
Г									Tes	t Poi	nt												ĩ
	A/N	M/N	3		1.0					0.5L					0.8C			CRP	STA	Volta	Appea	Result	
			Imax	Ib	0.5Ib	0.1IE	0.05IL	Imax	Ib	0.5Ib	0.2Ib	0.1Ib	Imax	Ib	0.5Ib	0.2Ib	0.1Ib			60	1 unioo	-	
	KP00011	9393																		Р	Р	P	
									-														
			_		_										_							_	=
													6										
													-	_									-
					a 8																		
		-						-							-								-
			-					-														-	-
										_					-								-
					a - 65					-			Q										-
-					-		-	-					-		-								-
<	(	I.					1 1			ł	1111				1	1			1	1			>
Pag	e 1/1						Ţ																

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.



ile name		🗳 🛛 ОК
Page range All  Current page  C Brasse		Cancel
Enter page numbers and commas. For example, 1, Options Pages of sheet (Max 100)	/or page ranges, separated b 3,5-12 10	у
<ul> <li>Export frames</li> <li>Show ater export</li> </ul>		

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.

File Edit Search Cell Halp     Ta Ariad
Image: Section of the section of th
The Avial       I
Row1 Col1       Image: A B C D E F G H I J K L M N O P Q R S T U V         Page Header       Image: RIDBDataSet1."SYDW"]Verification Record         Image: Record Set I."SYDW"]Verification Record Set I."
Row:1 Col1       Image: Frequencies of the second sec
Code         Page         Page         A         B         C         D         E         F         G         H         I         J         K         L         M         N         O         P         Q         R         S         T         U         V           1         Page Header         Image Im
A       B       C       D       E       F       G       H       I       J       K       L       M       N       O       P       Q       R       S       T       U       V         1       Page Header       [RIDBDataSet1. "SYD#"]Verification Record         3       Page Header       Image: Colspan="5">Image: Colspan="5">Image: Colspan="5">Image: Colspan="5">Image: Colspan="5">Image: Colspan="5">Image: Colspan="5">Image: Colspan="5">Image: Colspan="5">Image: Colspan=55         4       Page Header       Image: Colspan=55       Image: Colspa=55       Image: Colspa=55
Page Header     [RIDBDataSet1. "SYDW"]Verification Record       3     Page Header
3 Page Header 4 Page Header 5 Test Point
4 Page Header Test Point
5 Page Header A/N N/N 1.0 0.5L 0.8C CRP STA Volta Appea kesult
6 Page Header Inax Ib 0.51b[0.11b]0.051b Inax Ib 0.51b[0.21b]0.11b Inax Ib 0.51b[0.21b]0.11b
7 Master Data BDataSet 1. "ZDataSet 1. "Obet 1. "Set Liet 1. "bet 1. "
B Page Footer Tester: [RMDEDataSet Checker: [RMDEDataSe Governo: [RMDEDataSe] Test Date: [RMDEDataSet1."]YRC
Mapol 33: [EMIRIDat sSat1 "CYNW"]Vari firstion Report

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.









# 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.

🗳 System Setup		
🕞 Common data		
🛄 Device Settings	Description	
🗐 Comm Port	Model Description Rated Current	
💭 Test Parameter	Rated Voltage Constant	
된 Other Settings	Manufactory Applicant	
ንሺ Advanced Settings	Staff	
	Add Delete	
Company Cape electronic	c technology limited liability company	se[ <u>C]</u>

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.



🗾 Test Sche	ane Setup -	Default Scheme	× • • • • • • • • • • • • • • • • • • •
🚉 Import	📑 Export		General Test
Default Sche     General T     Constant     Dial Test     Repeatak	Up Down	General Project Test Direction Test Sequence	General Project Setup         111         ▼ AP.(+)         ▼ AP.(-)         ■ R.P.(+)         ■ R.P.(+)         ■ R.P.(-)         ■ R.P.(-)
			Save 📴 Close[C]

FigureA2-2

5	enera	l Tes	t Setu	P															
Pro	ject Nar	ne 111				•	Reve	rse 🗆	R.P.(Mu	uti)			7	New Project	📴 Sav	e Projec	t 🗶 C	elete Pr	oject
Ed	it Grid														Te	st Point			
Tes	t Point	Imax	0.5lmax	0.5(lma	lb (	1.5lb	0.2lb	0.1lb	0.05lb	0.03lb	0.01lb			Point	E_min	E_maif	ulse Ti	ne Corr	re 🔺
	1.0	1				-	-	-		-				1.0 Imax	-2	+2 4			
	0.8L													1.0 0.5lb	-2	+2 1		-	
	0.5L					-	-	-	-					1.0.0.2lb	-2	+2 1		1.5	-
-	0.8C										11			1.0 0.1 lb	-2	+2 1			-
A	1.0	-					-			_				0.5L 0.5lb	-2	+2 1			
11 -	0.5L		2											0.5L 0.11b	-2	+2 1			
/La	0.80			-			2	10	-	-				U.5L U.05lb	-2	+2 1			
В	1.0	-					3	-			-	-		0.0310	-2	+2 1			-
	0.5L		- 12				11		-		-	-							
	1.0																		
ľ	0.51				· · · · ·														
/Lb	0.80		- U - D		2 5		1		8		2 C								
																			-
•			11			22						•	×	<b>♦ ♦ </b>	Edit:D	ouble cl	ick Grid	5/8	0
	\&(arm-	un	L E	STA Test		~	Creep T	est 1 1	10 - %	Un	- Ist Tes	st Time	00:3	30:00	Std. De	viation		uence T	est
Tin	1e 5min	чр •	1	Ist= 0.0	005	7	Creep T	est 2 8	0 🗸 %	Un	lst Tes	st Time	00:3	30:00	lb 1.0				
	I		⊐ Test Test F	Time 00 Pulse Nu	:30:00 m 1 🕂	Tes	st Pulse	Num 1	-	3					lb 0.5L		!r	ifluence	
															🛃 Res	tore		Close	

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

□ Default Scheme         □ General Test         □ Dial Test         □ Dial Test         □ Repeatable Test         □ Test<	🚉 Import	🕞 Export		Con	stant Test	
Add Det Up Down	Default Sche     General     Constant     Dial Test     Repeatab	me Fest Test ble Test	Test Mode Test Standard kWh Voltage Current PF Judgment System Error Upper limit Lower limit	KWh 0.1 100 • 100 • 100 • Pulse 0.00 +2.0 -2.0	▼ KWVh %Ue %Ib	

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.

🗾 Test Scheme Setup - Def	ault Scheme	×
🚉 Import 🛛 🛤 Export	Repeatable Test	
<ul> <li>Default Scheme</li> <li>General Test</li> <li>Constant Test</li> <li>Dial Test</li> <li>Repeatable Test</li> </ul> Add Del Up Down	Power Type A.P.(+)	
	Save 📴	Close[C]

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.

No.14	No.15	No.16	No.17	No.18					
KP00024	KP00025	KP00026	KP00027	KP00028					
00:30:00	00:30:00	00:30:00	00:30:00	00:30:00					
	Meters No. reEnter								
CRP Test Time Settings									
STA Test Time Settings									
Warm-up Test Settings									
	Voltor	,							
	YUICAR	e rreq sectings							
	Display	y the revise er	rors						
	Stop i	f error is out	of range						
	Ignore	the none error	unit at auto t	est					
	Stop w	hen captured th	e color-mark						
Rell voltage before CRP or STA in no conture									
	Cancel								
🖪 🌆 Test	📧 💼 Test Settings								

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	leters No. reE	nter	
No.	A/N	M/N	
1	KP00011	9393	Start No. 1 Synchro
2	KP00012	9394	. A/N ⊂ M/N
3	KP00013	9395	
4	KP00014	9396	Start Pos Count
5	KP00015	9397	
6	KP00016	9398	
7	KP00017	9399	🖌 Auto Fill
8	KP00018	9400	
9	KP00019	9401	
10	KP00020	9402	
11	KP00021	9403	
12	KP00022	9404	
13	KP00023	9405	
14	KP00024	9406	
15	KP00025	9407	
16	KP00026	9408	
17	KP00027	221	
18	KP00028	222	
19	KP00029	223	Cancel[C]
20	KP00030	224	►

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.



<b>X</b> (	CRP Test Time Settings		🛛
No.	Test Times	~	
1	00:30:00		Same Times
2	00:30:00		
3	00:30:00		
4	00:30:00		
5	00:30:00		
6	00:30:00		
7	00:30:00		
8	00:30:00		
a	00.20.00	~	

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

【 Tarm-up Test Settings 💦 🗖 🔀
Warm-up Time 00:05:00
Voltage[%Un] 100
Current[%lb] 100
Times 4
☑ The Project Times
Done[Y] X Cancel[C

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

👗 Voltage & Freq Settings 💦 💶 🔀
Voltage Load
Type a 0~120 Number
Load: 100.0 % Un
Freq Value
Type a 45~65 Value
Freq: 50 💌 Hz
Cancel[C

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:

Report Buil	der 📃 🗖 🛃									
Page setup Previe	w									
Page header:	Page footer:	Detail band:	Test p	onit:						
Model Voltage Current Class Const Lot No.	Temp R.H. Tester Checker Print Date	1.0 Ima 1.0 Ib 1.0 0.5I 1.0 0.2 1.0 0.2 1.0 0.1 0.5L Im 0.5L 0. 0.5L 0. 0.5L 0. 0.8C 0. 0.8C 0. 0.8C 0.	1.0 Imax         Margin           1.0 Ib         Page he           1.0 0.5lb         Page he           1.0 0.2lb         Font           0.5L Imax         0.5L 1b           0.5L 0.2lb         Numbe           0.5L 0.2lb         Numbe           0.5L 0.2lb         Numbe           0.8C 0.5lb         0.8C 0.5lb           0.8C 0.5lb         0.8C 0.2lb           0.8C 0.5lb         0.8C 0.2lb			Margins Paper Title ge header Page Footer Detail b ont AA Font umber of columns 6				
+ - 4 4	+ - 4 ₹	+ -   ↔   ↔	+ -	44	1p2w			* 😫		
Page header	Model		Voltag	Voltage Curre				ent		
Custom width	189		176	176 188						
[									>	
Detail band	No. A/N 1.0 Imax		1.0 lb 1.0 0.5lb		1.0 0.2lb 1.0 0.1lb		0.5L Imax	0.5L Ib	0.5L	
Custom width	30 97	50	50 50 50 50 50				50	50		
50 🛨 Width								>		
Page footer	Temp		R.H.				Teste	r		
Custom width	200		200	200						
									>	

Click it is get a dialogue for project name enter, "single phase report" for example, then to set the 'title', the default title is <u>1 Phase Meter Verification Record</u>. Users can customize the name. **Fort**... 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 it to save and click to exit.

Page header	Model			Voltage	Voltage				Current			
Custom width	189			176	176				188			
										>		
Detail band	No.	A/N	1.0 Imax	1.0 ІЬ	1.0 0.5Ib	1.0 0.2lb	1.0 0.1	њ   0.5	iL Imax	0.5L Ib	0.5L	
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# Service and Support

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