KFA310 Relay Test Set

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Item	KFA310	Remark
Voltage	4x300V	
Accuracy	<±0.02%rd+0.03%rg	
Voltage Power	22.5VA Max	
Current range	0-10A,LN 0-20A,LL-N 0-30A,LLL-N	Optional upgrade current range to 3x0~20A LN Max 0~50A LLL-N
Current Power	130VA Max	
Phase	0°~360°	
Frequency	10-1000Hz	
Harmonic	2~60th	
GPS,IRIG-B	Support	
Binary IN/OUT	4 Binary IN/OUT	
USB Port	1*USB3.0	
WIFI, Blue Tooth	Support	
Low-Level Output	Support	
Energy Meter	Support	

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Total Function

Special Points

B5 paper size,built-in battery design,for on-site maintenance and testing of non-electric environment ,protection relay testing, secondary circuit inspect and secondary voltage and current testing.

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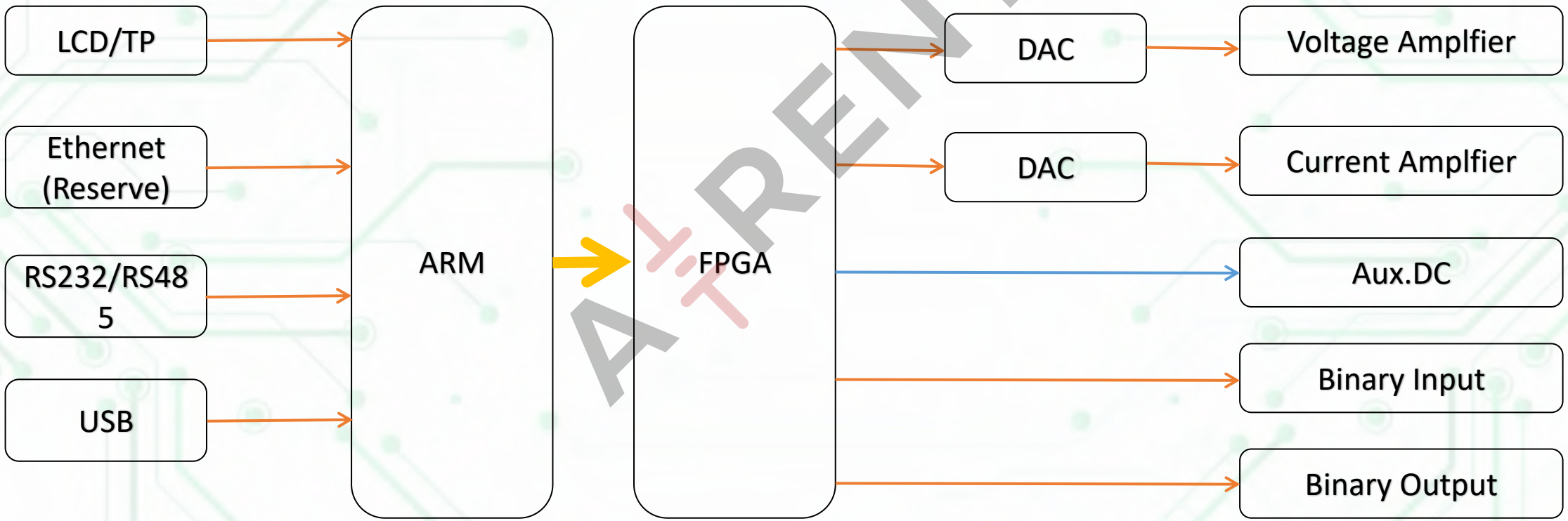
Total Function

Technical Benifit

- Device Size： IPAD size, aluminum alloy case,Very small and light.
- Device Weight： 3.7kg ,Beautiful and light, easy to carry and use。
- Operational performance:high-performance FPGA,32-bit ARM microprocessor 1000MHz, smooth operation, 7.0-inch LED capacitive touch screen, full touch operation, mobile phone operation habits, display light transmission, non-reflective contrast, clear display for outdoor
- Equipment self-protection function: voltage output short-circuit, current output open-circuit, temperature overheat protection.

Hardware design Diagram



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Hardware Introduce

AC Voltage Outputs		
Output Range & Power	4×300 V ac (L-N)	22.5 VA max each@300V
		21 VA max each@200V
		12.5 VA max each@100V
		7 VA max each@63.5V
		6.65 VA max each@57.7V
		1.1 VA max each@10V
Accuracy	<0.015%Rd+0.005%Rg Typ.<0.02%Rd+0.03%Rg Guar.	
Resolution	0.001V	
DC Offset	<5mV Typ.<60mV Guar	
Distortion	<0.05%Typ. / <0.1% Guar.	
Ascends/Descent response	<100us	
DC Voltage Outputs		
Source Channels	4	
DC voltage output range	0~300 V (L-N)	
DC voltage output power	22.5W Max	
DC voltage accuracy	<0.03%Rd+0.01Rg Typ.<0.04%Rd+0.06Rg Guar.	
Ascends/Descent response	<100us	
Resolution	1mV	

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Hardware Introduce

AC current outputs	
Source Channels	3
AC current output range	0~10A, L-N / (Can be optional as 0~20A)
	0~20A, LL-N / (Can be optional as 0~40A)
	0~30A, LLL-N / (Can be optional as 0~50A)
AC current output power(Max)	75VA Max for 10A L-N130VA Max for 20A L-N/LLL-N
AC current output accuracy	<0.015%Rd+0.01%Rg Typ.<0.02%Rd+0.03%Rg Guar.
DC Offset	<1mA Typ.<2mA Guar
Distortion	<0.05%Typ. / <0.1% Guar.
Ascends/Descent response	<100us
Resolution	1mA
DC current outputs	
Source Channels	1
DC current output range	0~10A, L-N
DC current output power	138W
DC current accuracy	<0.03%Rd+0.01Rg Typ.<0.04%Rd+0.06Rg Guar.
Resolution	1mA

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Hardware Introduce

Binary input and time accuracy	
Binary input logarithm	4 pairs
Trigger mode	Try/Wet contact
Input voltage range	0 V ~ 300Vdc
Timing accuracy	< ±1ms @ 0.001~1s， < ±0.1% @ >1s
Timing resolution	36us
Max time limit	infinity

Binary output(Relay Contacts)	
Binary output pairs	2pairs(DO-1 and DO-2)
Type	Potential free relay contacts, software controlled
Break capacity AC	Vmax：380V（AC）/ Imax：8A/ Pmax: 2000VA
Break capacity DC	Vmax：240V（DC）/ Imax：5A/ Pmax: 150W
Responce time	≤ 10ms
Binary output(Fast eSSR)	
Binary output pairs	2pairs(DO-3 and DO-4)
Circuit Breaker Simulate	Can be define as Open or Close status
Break capacity AC	Vmax：250V（AC）/ Imax：0.5A
Break capacity DC	Vmax：250V（DC）/ Imax：0.5A
Responce time	<100us
Contact performance	Open the dry contact output using opto-coupler relay, the max on-resistance is ≤6Ω (Typically ≤1Ω), and the shut-off withstand voltage is ≥DC300V

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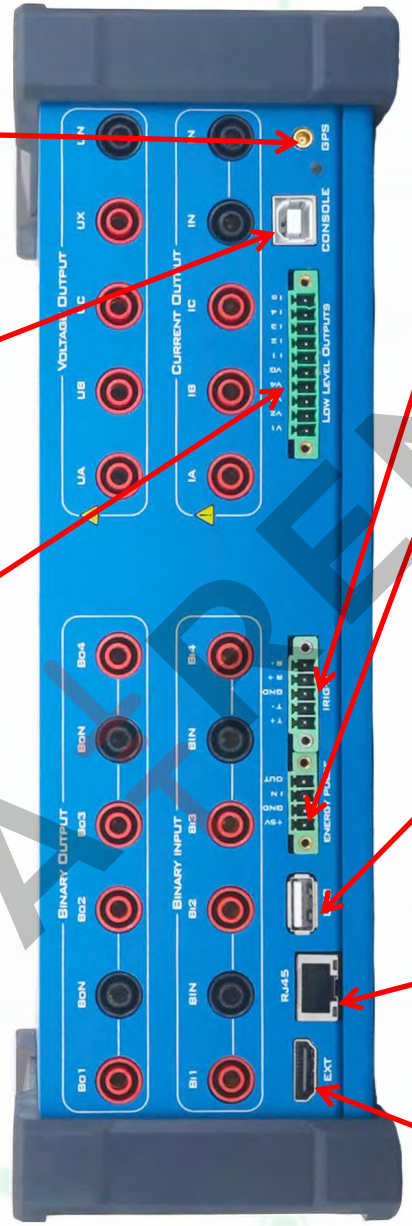
Hardware Introduce

GPS Port
Can connect to external antenna, for end-to-end test on line differential or other synchronize testing. When GPS synchronize works, LED beside port will light up.

USB
USB Port 2.0, use for report upload and software update.

Low level outputs	
Number of outputs	8
Setting range	0~8Vrms
Max. output current	Rating 2mA, 10mA transient max.
Accuracy	(0.01~0.8 Vrms):<0.05% Typ. / <0.1% Guar. (0.8~8 Vrms): <0.02% Typ. / <0.05% Guar.
Resolution	250 μV
Distortion (THD+N)	< 0.05% Typ. / <0.1% Guar.
Connection interface	Phoenix terminal



IRIG-B Synchronization Port	
Port define	Use for IRIG-B synchronize, or can be set as time clock source.
Time accuracy	5us

Enery Pulse Port	
Sensor Usage	Mechanical meters / Electronic meters
Sensor Output	High lever:>4.5V, Low level:<0.2V
Pulse Input	1 pulse input port, 5Vdc high level valid only.
Pulse Range	500KHz pulse input Max.
Pulse Output	1 Transistor output, Open-collector, 5Vdc/5mA

USB
USB Port 3.0, use for report upload and software update.

Communication	
RJ45 (Reserve)	Ethernet port, TCP/IP protocol, use for communication with PC for operation control

Ext	
Data bus	Use for hardware function extension, such as Binary input/output numbers, external measurement, LVPT, LPCT testing.

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Hardware Introduce

Power switch
Power on or power off device

Aux.DC	
Use for power supply of under test device.	
Output range	12~350V
Output power	40W max
Accuracy	<1%

Grounding port
Use for grounding

AC/DC Charger	
Input	100~240Vac，50/60Hz，Max2.5A
Output	33.6Vdc，5.0A（168W）

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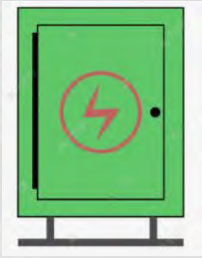
Hardware Introduce

Dimensions(W x D x H):288x185x95 (mm)

Extremely light



Distribution test

Oil and Gas Platforms

Substations

Industry

Photovoltaic plants

Rail and Metro

Wind Farm

Standard source

Because the output signal of KFA310 has high precision and high stability, it can be used as a 3-phase standard and a calibration signal source for instruments.

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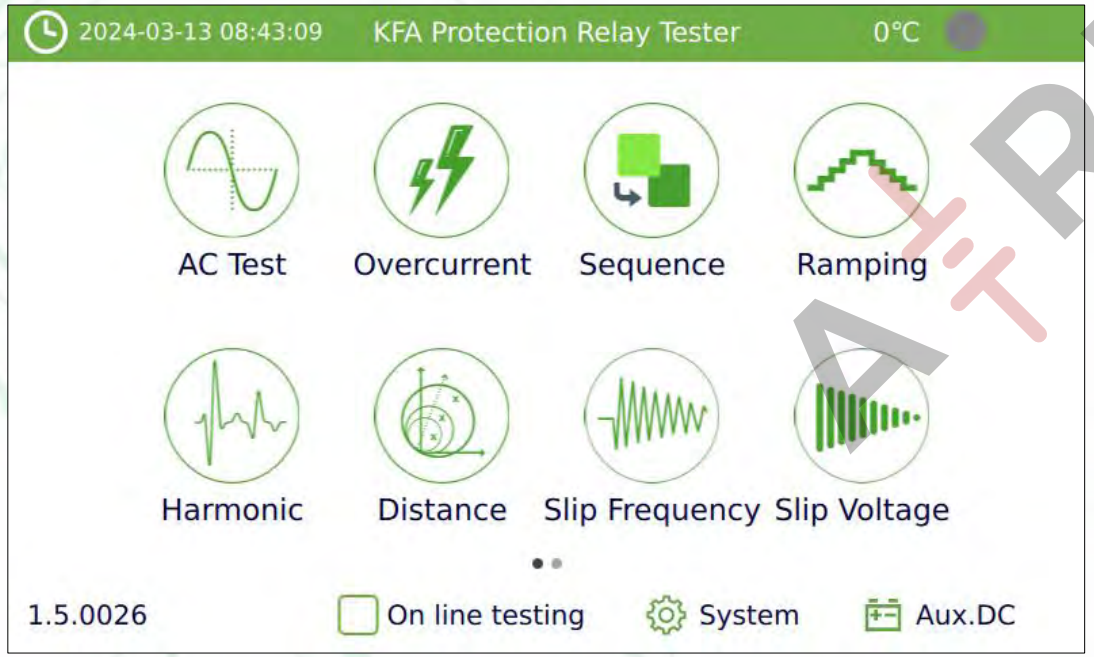
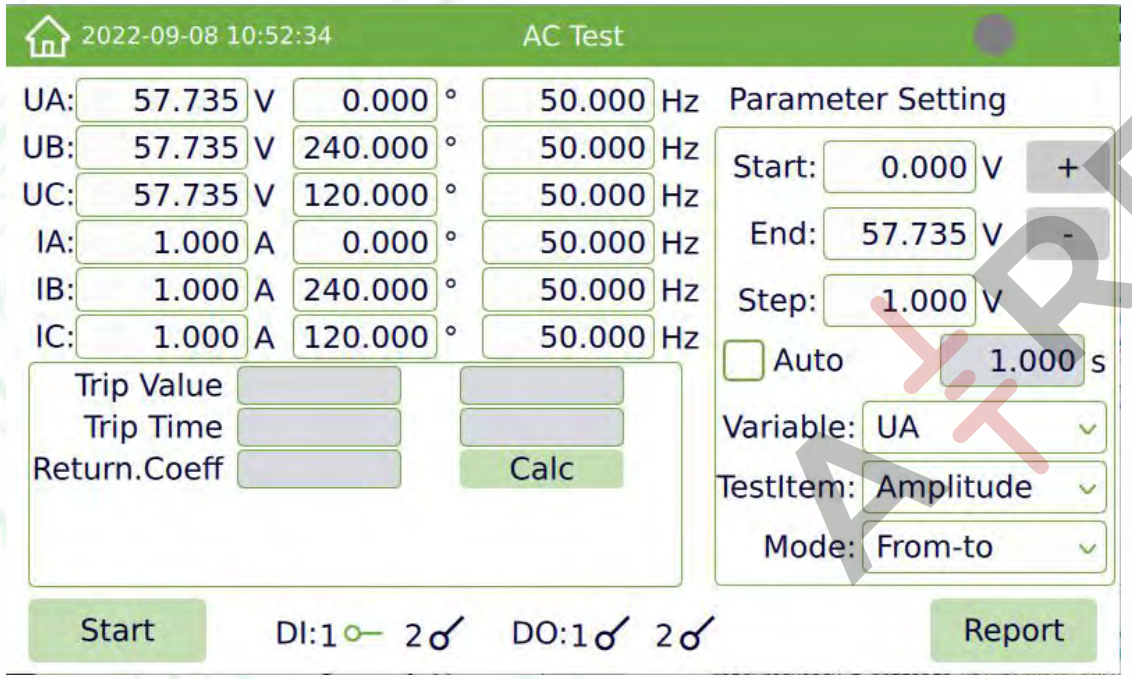
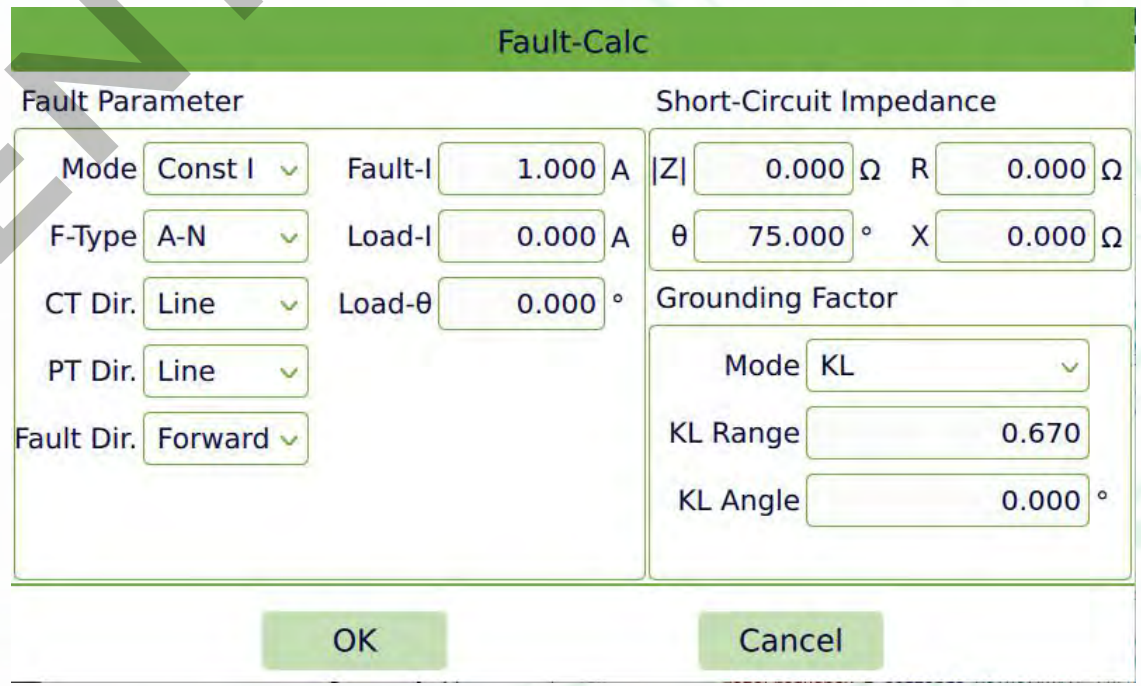
Software Introduce

Software interface

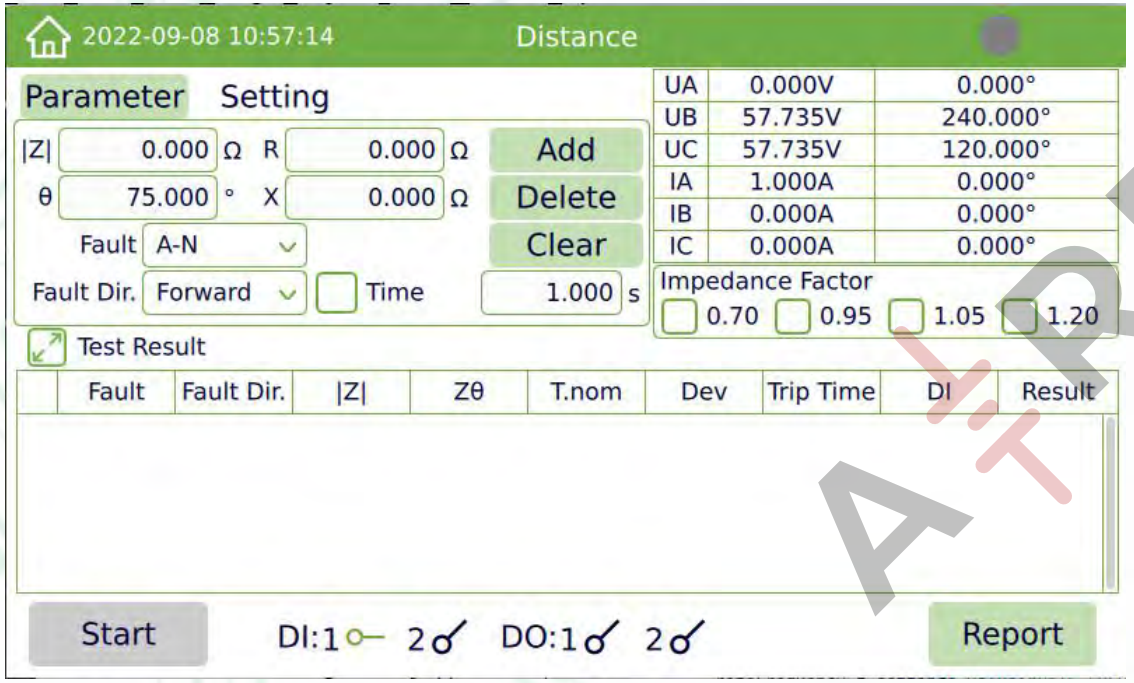


AC test module interface





Distance module interface



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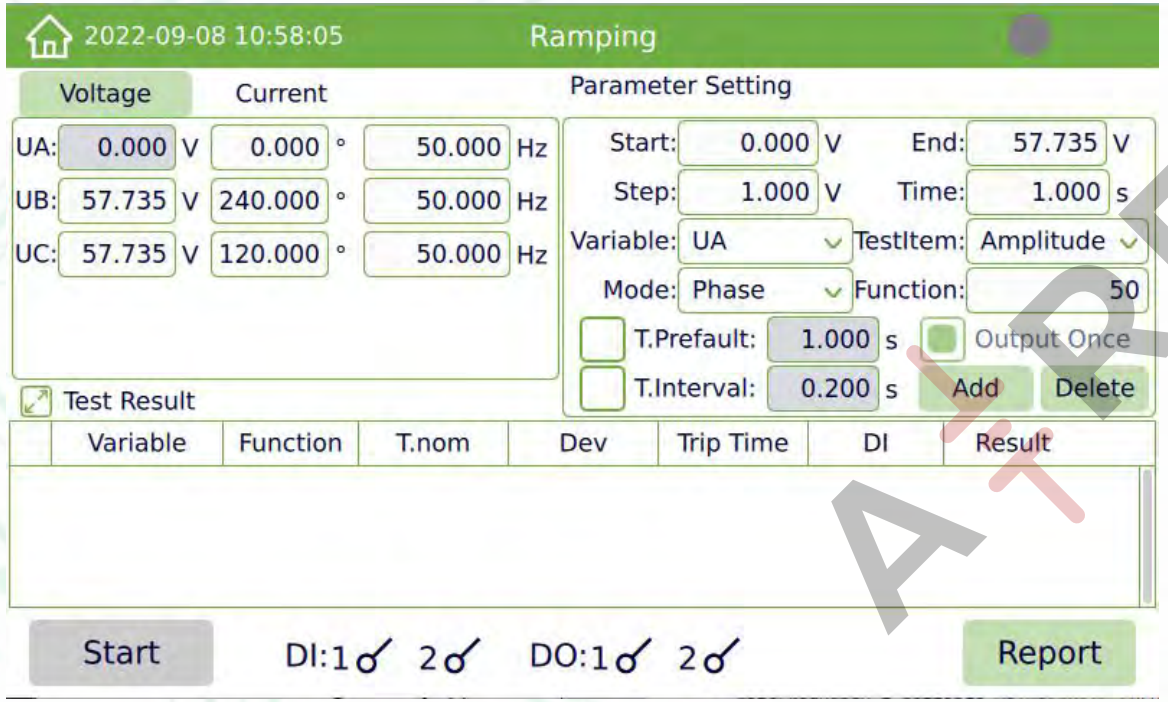
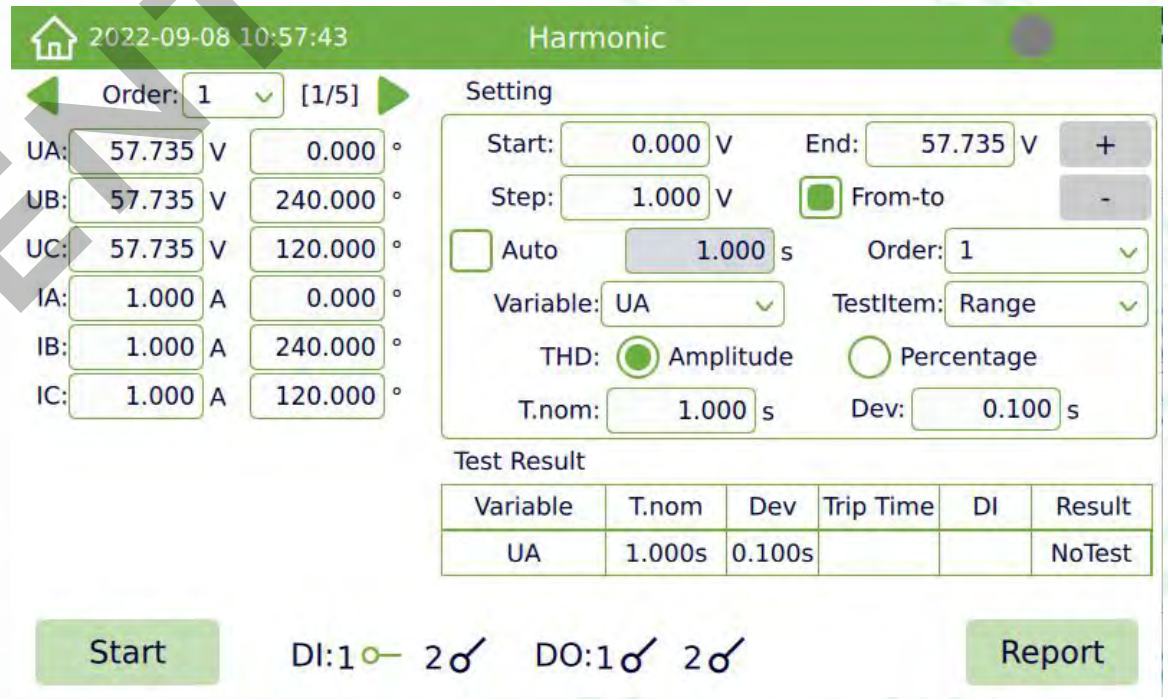
Software Introduce

Ramping module interface



Harmonic test module interface



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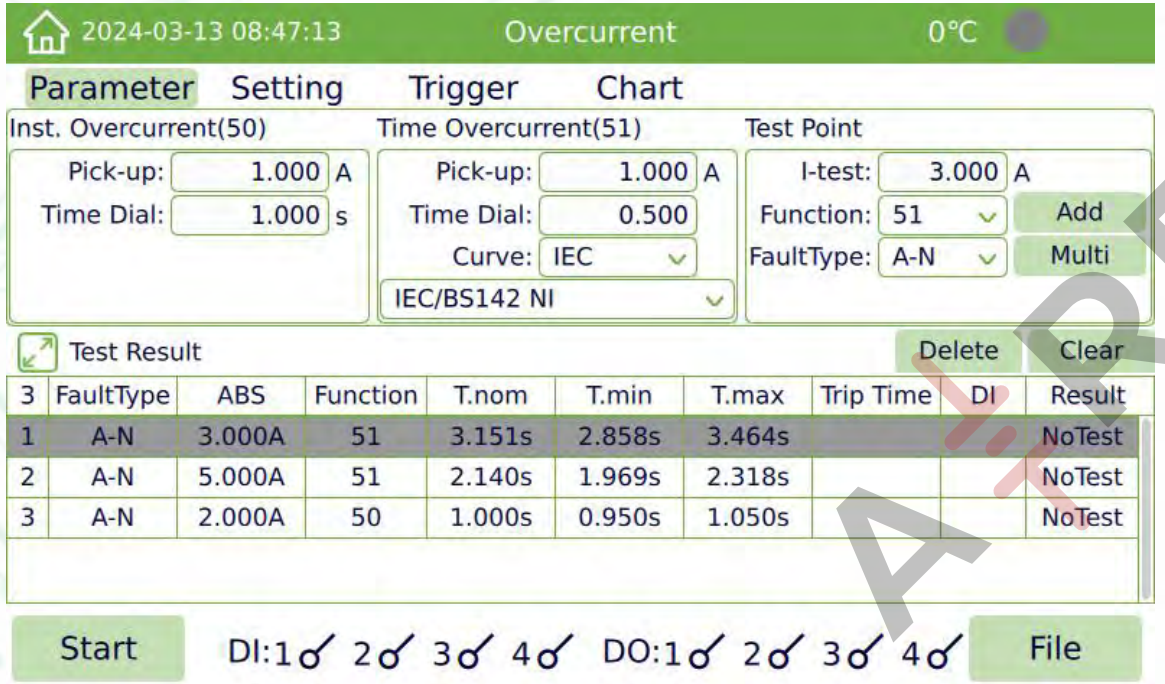
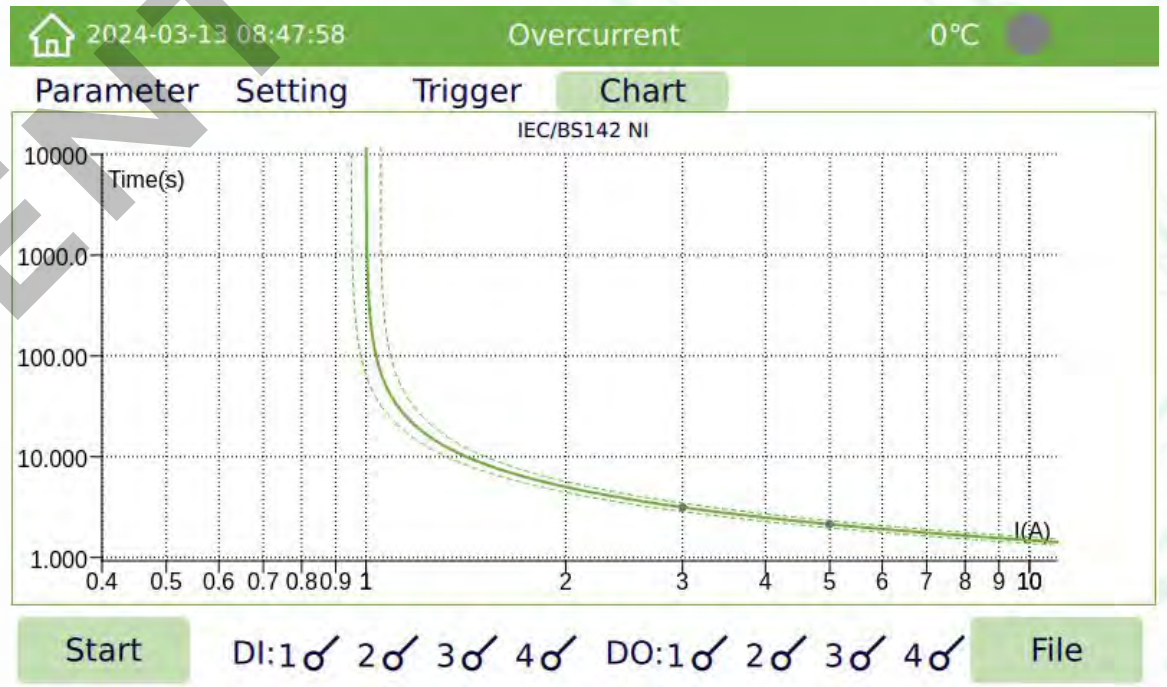
Software Introduce

Overcurrent module interface





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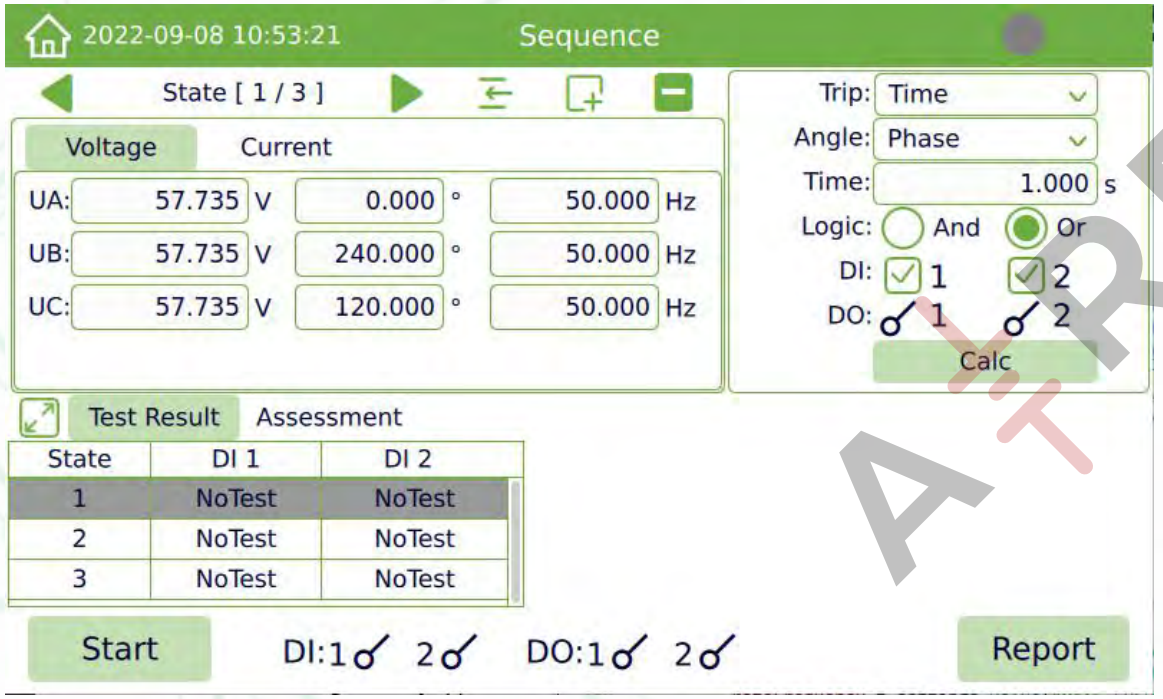
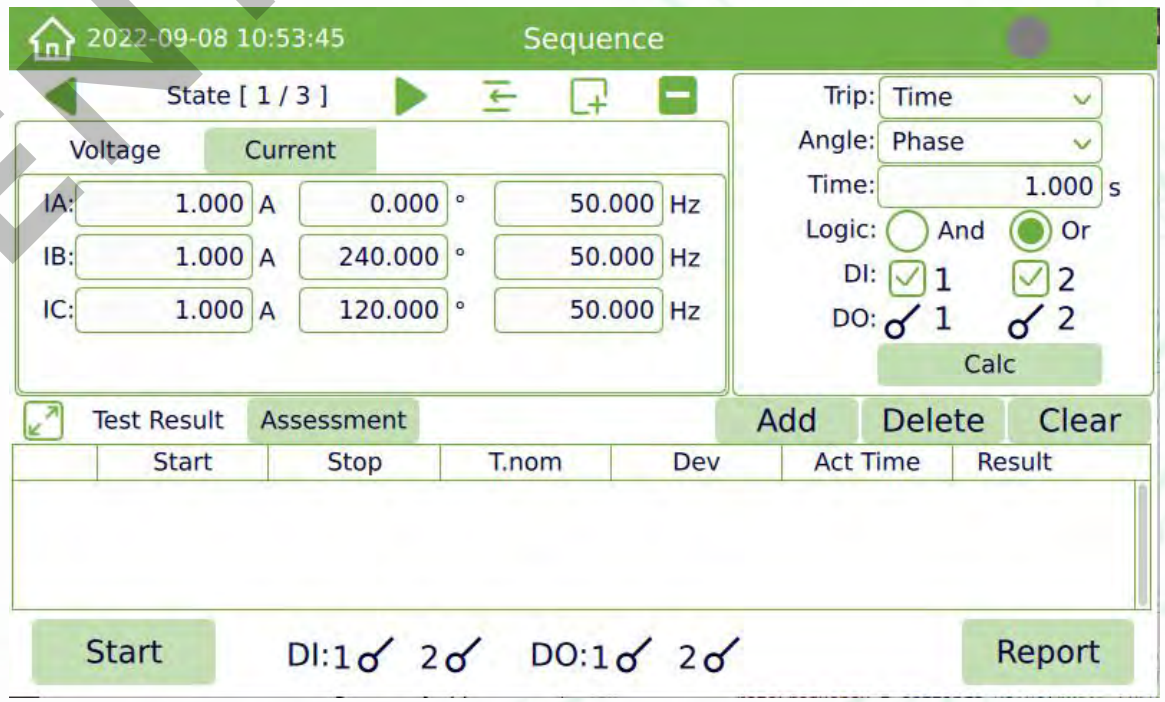
State Sequencer module interface





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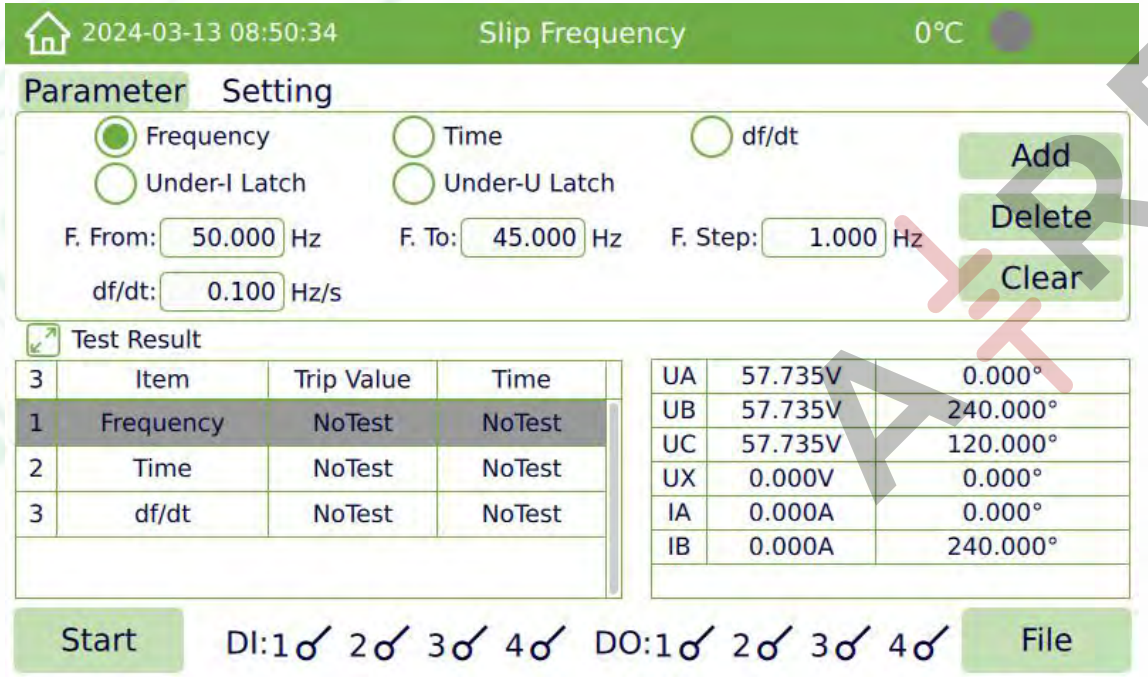
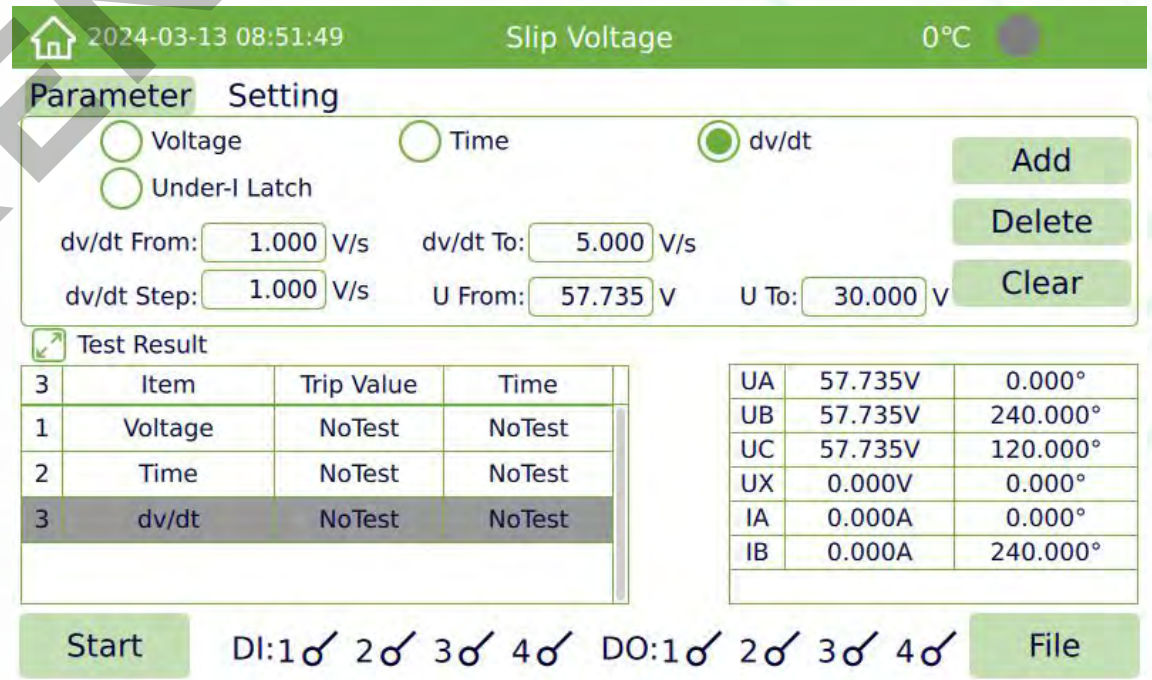
Software Introduce

Slip Frequency



Slip Voltage



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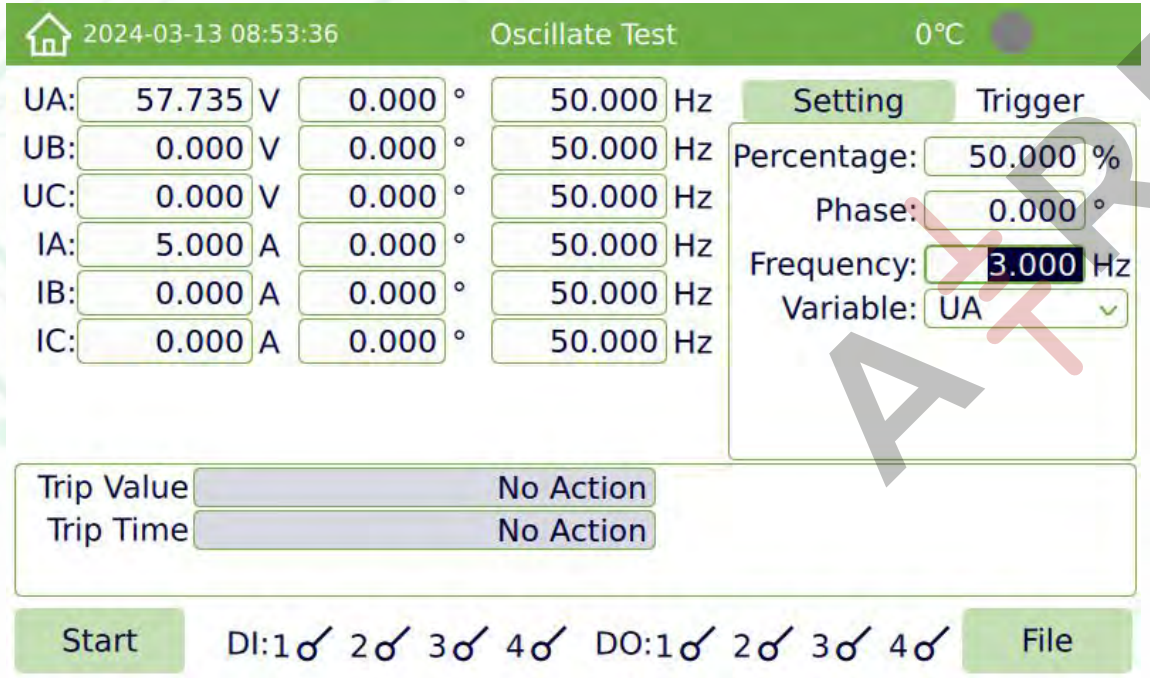
Software Introduce

Oscillate Test



DC Test