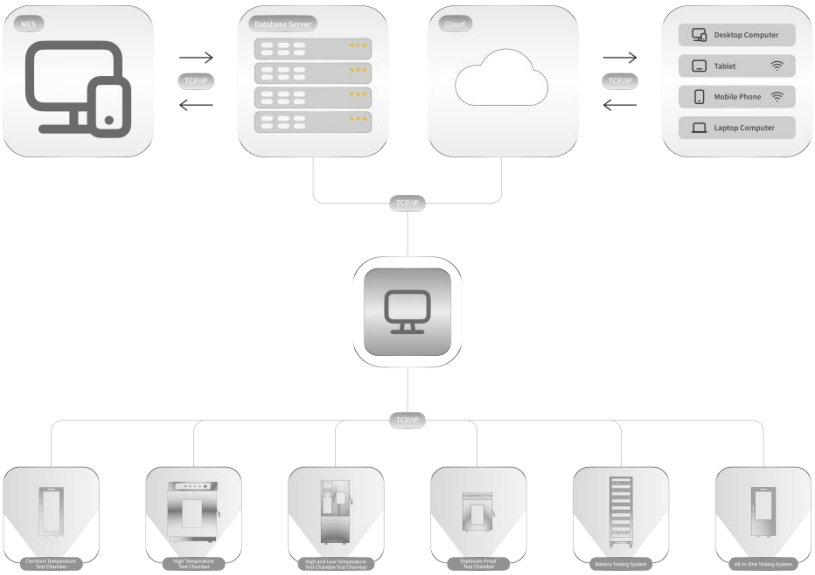
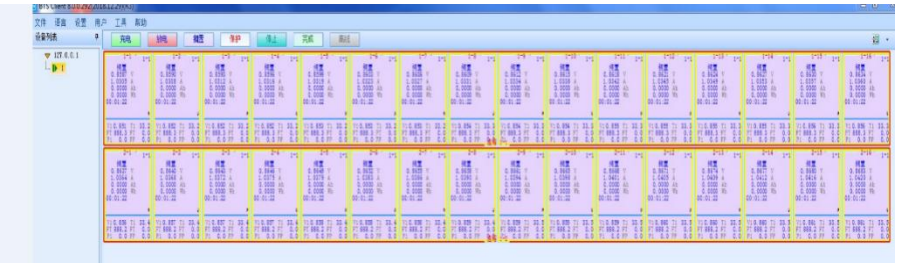
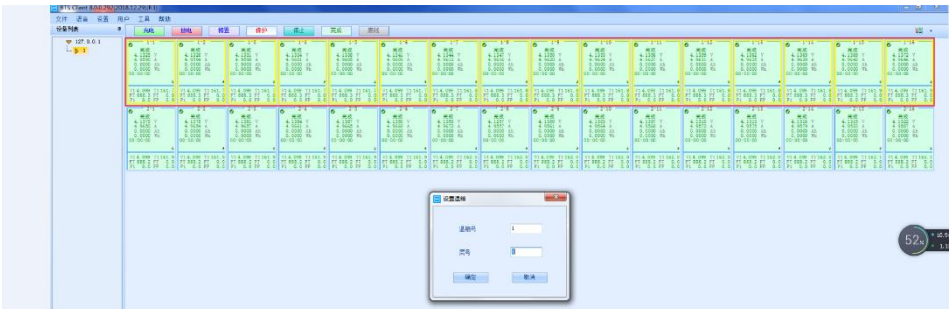
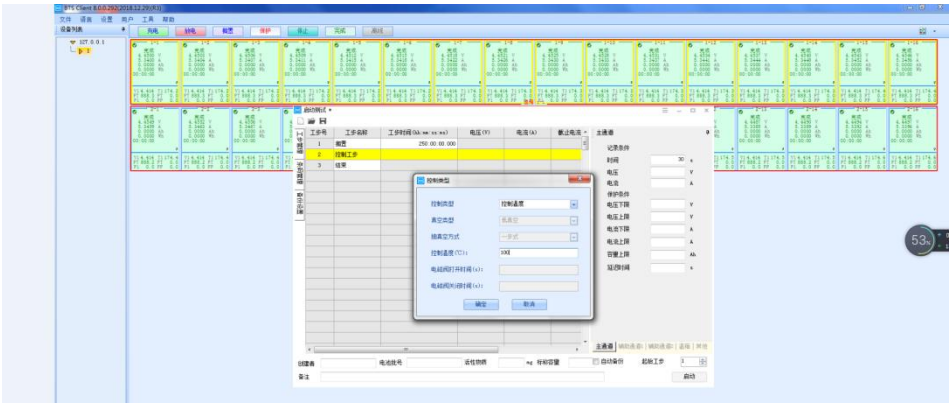
Desktop High and Low Temperature All-in-One Testing System

1. Product model	
1.1 Material code	WGDW-20L-20C-220V-2U
1.2 Equipment appearance	 The picture is for reference only, subject to the actual product
2. Product application	
Application scenarios	Suitable for adaptability tests of electrical, electronic and other products, components and materials in aviation, automotive, scientific research and other fields during storage, transportation and use under high and low temperature environments. It is a reliability test equipment for battery cell performance testing used by new energy manufacturers, scientific research institutes.
3. Sample restrictions	
	Prohibited samples: • Flammable, explosive, volatile substances • Corrosive substances • Biological samples • Strong electromagnetic emission sources • Radioactive substances • Highly toxic substances • Samples that may produce the above substances during test or storage
4. Volume, size and weight	
4.1 Nominal volume	18L
4.2 Inner box size	W360mm×D200mm×H250mm
4.3 External dimensions	W440mm×D550mm×H525mm (including the height of protrusions)
4.4 Weight	About 40kg
5. Performance	
5.1 Test environment conditions	The ambient temperature is +25℃, the relative humidity is less than or equal to 85%, and there is no sample in the test chamber (no load)
5.2 Test method	GB/T 5170.2-2017 Temperature test equipment
5.3 Temperature range	-20℃~85℃

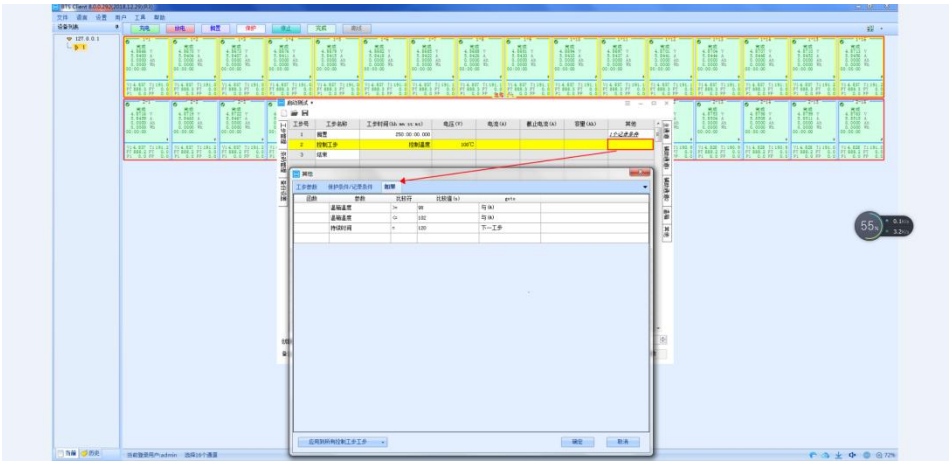
5.4 Temperature fluctuation	≤±0.5℃ (no load, temperature stable)
5.5 Temperature deviation	±2℃ (no load, temperature stable)
5.6 Heating time	+20℃→+85℃≤30min (no load, average nonlinear)
5.7 Cooling time	+20℃→-20℃≤45min (no load, average nonlinear)
5.8 Meet the test method	GB/T 2423.1-2008 Low temperature test method Ab GB/T 2423.2-2008 High temperature test method Bb GJB 150.3A-2009 High temperature test GJB 150.4A-2009 Low temperature test GB/T 10592-2008 Specifications for high and low temperature test chambers
6. Structural characteristics	
6.1 Insulation envelope structure	Exterior wall: High-quality cold-rolled steel plate, plastic spraying and baking finish Inner wall: SUS304 stainless steel plate Chamber insulation: Rigid polyurethane foam (insulation thickness 40mm) Door insulation: Rigid polyurethane foam
6.2 Air conditioning channel	**Circulation fan, heater, etc.**
6.3 Standard configuration of test chamber	Cable ports (internal): 2 pcs Casters: 4 pcs (with adjustable feet)
	Observation window: Multi-layer hollow electric heating anti-fog window (on the door) Visible area: approx. 180×200 mm (W×H), built-in electric defrosting for clear observation Lighting: 1 pc Cell tray: 2 layers of electrically insulated cell trays
6.4 Doors	Single-hinged door (left hinge, right handle), with observation window, lighting, anti-condensation heating device for window/door frame, double-layer silicone rubber seal
6.5 Control panel	Controller display, over temperature protection setter, etc
6.6 Refrigeration unit room	Refrigeration unit, water tray, drainage hole, condensing fan, etc
6.7 Distribution control cabinet	Main power leakage circuit breaker, power distribution board, exhaust fan, 1 Ethernet port Temperature controller, AC contactor, circuit breaker, thermal relay Temperature limiter, solid-state relay, transformer, etc.
6.8 Heater	Stainless steel armored heaterControl mode: Contactless periodic pulse width modulation (SSR)
6.9 Power cable hole and drainage hole	Located on the side or back of the cabinet
7. Refrigeration system	

7.1 Working mode	Mechanical compression single-stage refrigeration
7.2 Refrigeration compressor	Inverter compressor
7.3 Main refrigeration components	Throttle capillary, pressure controller, dry filter, refrigeration solenoid valve, etc.
7.4 Condenser	Air-cooled: Fin-and-tube heat exchanger
7.5 Throttle Device	Capillary tube
7.6 Refrigeration Control	The control system automatically adjusts the refrigeration unit according to test conditions Compressor return air cooling circuit
7.7 Refrigerant	R134a
7.8 Welding process	Nitrogen protection welding
8. Control system	
8.1 Controller model	Professional temperature controller
8.2 Display	High color LCD touch screen
8.3 Operation mode	Program mode, set value mode
8.4 Setting method	Color touch human-computer interaction, Chinese/English interface
8.5 Control mode	Anti-integral saturation PID BTC balance temperature control mode
8.6 Temperature measurement method	Grade A armored PT100 sensor
8.7 Display accuracy	Temperature: 0.01℃; Time: 1min
8.8 Over-temperature protection	Independent over-temperature protector; triggers protection shutdown and alarm if chamber temperature exceeds set value
9. Cell testing equipment and test interconnection	
9.1 Testing equipment	5V100mA16CH
9.2 Control unit	1
9.3 Network switch	1

9.4 Network Diagram	
9.4 PC programming control interface (see the equipment random materials for details)	Step 1: Open the software interface  Step 2: Select the test chamber  Step 3: Find the test chamber to be set up  Step 4: Set the control temperature of the test chamber



Step 5: Set the work step control conditions



10.Safety protection device	
10.1 Refrigeration system	Compressor overheating, compressor overload, compressor over-pressure
10.2 Test chamber	Adjustable over-temperature protection, internal circulation fan abnormality protection
10.3 Other	Main power phase sequence & phase loss protection, leakage protection, overload & short-circuit protection, power-off recovery protection
11. Other configurations	
11.1 Power cable	1 pc (Single-phase + protective ground; customized according to contract)
11.2 Total power leakage circuit breaker	Single-phase + protective ground
11.3 Data	Provide English user manual and English technical data
12. Transportation (the test chamber is integral and transported as a whole)	
12.1 Dimensions	Maximum transport size (excluding packaging): "see 4.3 External dimensions"
12.2 Weight	Maximum transport weight (excluding packaging): "see 4.4 weight"
13. Conditions of use: The user shall guarantee the following conditions (the installation of power supply lines for the equipment shall be the responsibility of the user)	
13.1 Installation site	Desktop placement, compliant with GB50209-2002: Flatness ≤5mm/2m Well ventilated

	No strong vibration nearby No strong electromagnetic field nearby No flammable, explosive, corrosive substances or dust nearby Adequate space for operation and maintenance
13.2 Environmental conditions	Temperature: 5℃~35℃; Relative humidity: less than or equal to 85%; Air pressure: 86kPa~106kPa
13.3 Power supply conditions	AC(220±22)V (50±0.5)Hz Single-phase + protective ground Ground resistance <4Ω Independent air circuit breaker required Power supply capacity: 1.5kW Maximum current: 10A
13.4 Others	Frequent door opening causes temperature fluctuation; repeated/long opening or humid samples may cause icing on refrigeration heat exchanger
14. Cell specifications and placement method	
14.1 Cell specification	Coin cell 5V100mA16CH
14.2 Cell placement method	2 layers, 8CH per layer
14.3 Cell tray form and cell fixing method (Imported high-temperature resistant electrically insulated material)	Note: 1. Standard with 2-layer trays; 2. Images not available, subject to physical product.