

PBT 2000 Series

Eco Series - Power Battery Pack Test Equipment

▪ The Largest Power Ever ▪

1000V
/1000A



Highlight Features

A high-powered testing machine

With technical specifications up to 500kW/1000V/1000A. Everything from electric vehicles to railway systems are supported. It is the ultimate choice for testing high power batteries.

With almost zero delay in current response (1.5ms) and charging/discharging switching (2ms)

Elevate the overall testing flexibility with the responsive switching speeds.

Brand new battery simulation function

Allows one equipment to be used for battery and motor testing, providing a jump start to your R&D efficiency.

Equipped with the discharging energy recycling function with up to 97% effectiveness

Fulfilling all of your green energy, energy conservation, and environmental protection demands all at once.

The upgraded touch interface

Makes it easy to operate and adjust test settings

Two current ranges combined with industry-leading precision

Voltage selection can reach up to 0.05%F.S. to fully satisfy the stringent professional testing requirements.

Product Applications

Energy
Storage System



Electric Vehicle



Electric Bus



Railway System



Starting Batteries
for Vehicles



AGE

Life Cycle Test



Capacity Test



HPPC

DCIR

DCIR
Measurement

• ISO 12405
• IEC 61960

ACIR

ACIR
Measurement



Ongoing
Reliability Test



Drive
Simulation

• FUDS
• DST



Pulse
Charge/Discharge

Technical Features

Advanced Specifications

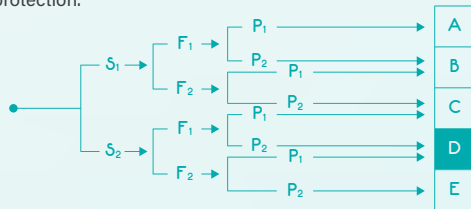
Highest rated power 500kW, charging and discharging specifications 1000V/1000A (can be connected in parallel to increase current output), max. voltage accuracy up to 0.05%F.S., two current ranges with accuracy 0.1%F.S., combined with a data recording frequency of 10ms, the specifications of the PBT 2000 have reached a new height in the next era of professional-grade high power battery testers.

Discharged Energy Recycle

Energy which was wasted during discharging can be recycled and returned to the factory's power network at an efficiency level of up to 97%. Renewable energy is produced with the least amount of energy depletion, and the power factor can reach 99% or higher. Recycling energy also does not affect the quality of the factory's power quality. Thus, the energy consumed by the air conditioning system as well as the environmental burden of the factory can all be reduced. The discharging process is no longer a mandatory cost of testing, but the perfect realization of green energy and protecting the environment.

Safety

The PBT 2000 has passed the EN ISO 13849-1 international standards and satisfies the requirements of Safety Performance Level D. Three different colors of warning lights are built-in for the user to configure his/her own protective/reminder mechanisms (such as: overcharge and overdischarge) to prevent accidents caused by human errors. In addition, an emergency stop dry-contact switch, which can be installed anywhere inside the factory, has also been provided to act as a remote control mechanism for added protection.



S: Severity of injury **F:** Frequency and/or exposure to hazard

P: Possibility of avoiding hazard or limiting harm

S1: Slight **S2:** Serious (such as irreversible injuries and death)

F1: Seldom-to-less-often and/or exposure time is short

F2: Frequent-to-continuous and/or exposure time is long

P1: Possible under specific conditions **P2:** Scarcely possible

DCIR Measurement*

Equipped with ISO12405 and IEC61960 DC resistance measurement standards. Customized measurement methods set up by the user is also supported. The internal resistance experienced by the battery during charge/ discharge process can be measured to significantly enhance the efficiency of the battery's quality screening process.

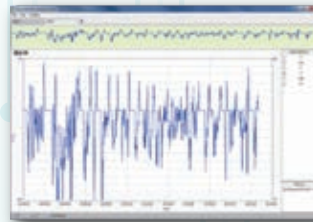
BMS Communication*

Supports a wide range of popular battery pack BMS interfaces including CAN, ModBus, and RS485. Importing CAN Bus DBC files is also supported. The user is free to configure battery test equipment behavior and BMS parameters to be recorded during the test. Confidential BMS parameter data will not be leaked and the client do not have to wait for software development. The overall user experience is safe and unrestricted.

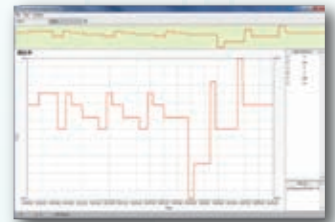
Drive Simulation

With a current rise time of 1.5ms (10 to 90%) and a charging/-discharging switch time of 2ms (-90 to 90%), international drive simulation standards such as FUDS, and DST can be fully realized with the PBT 2000. Supports customized drive simulation test modes, and the import of Excel files to create customized testing processes. Each simulation is the reproduction of a real scenario.

--- FUDS ---



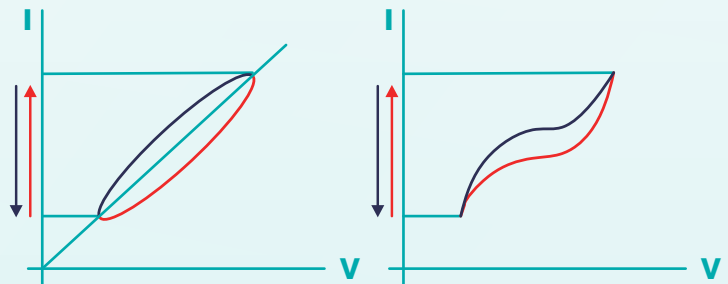
--- DST ---



Current Ramping

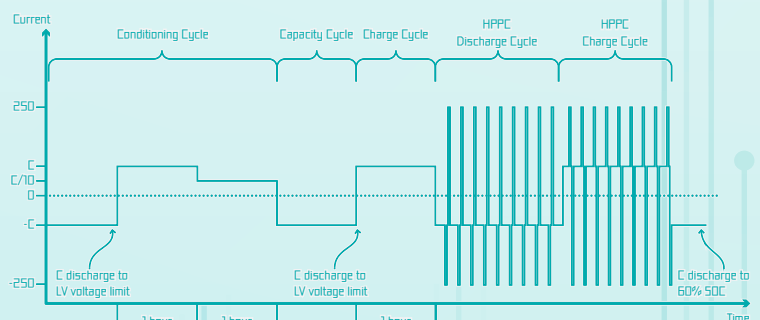
Automatic scanning function within a given current range, which is extremely convenient during linear system identification; can be combined with the Lissajous Plot to confirm the system's linearity under specific operating conditions. As the track of the Lissajous Plot comes closer to the curve, it means that the system is closer to becoming a linear system.

--- Lissajous Plot ---



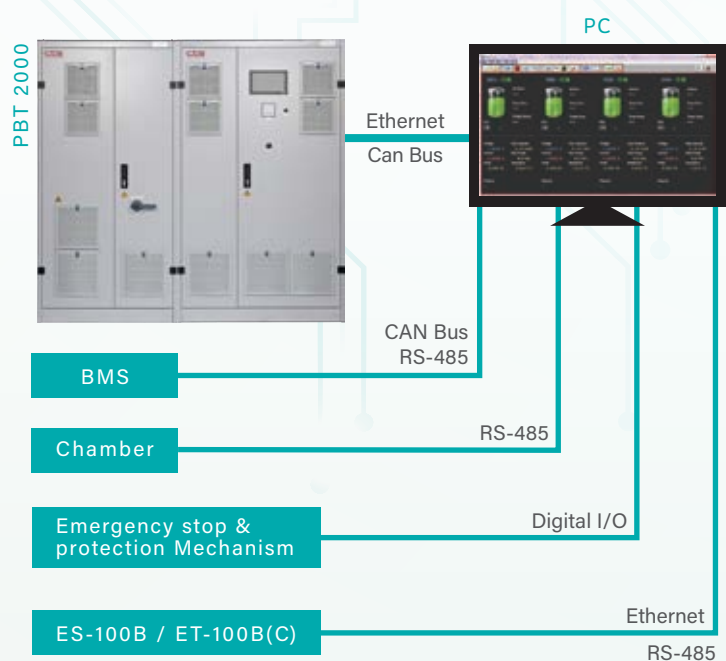
The Hybrid Pulse Power Characteristic (HPPC)

The Hybrid Pulse Power Characteristic (HPPC) is mainly used for testing characteristics of power batteries such as the power during charging and discharging cycles, open circuit voltage, and DC resistance. In addition to ensuring that all assembled batteries meet specifications, these parameters can also be used as battery BoL (Beginning of Life) test benchmarks to guarantee product quality. Chen Tech Electric provides appropriate equipment, combined with software functions to perform automatic calculations and record of key test parameters, to produce reports/tables that meet customer requirements as well as save configuration time for customers.

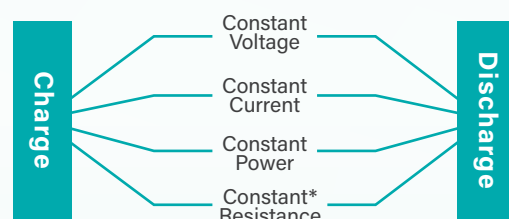


*Optional

System Architecture



Operating Mode



- Drive Simulation •
- ACIR* • • DCIR* •
- Current Ramping •
- Voltage Ramping •
- 50Hz Pulse Charge/Discharge •

*Option

Specifications

Model		PBT 2000-200-60-600	PBT 2000-800-100-600	PBT 2000-800V-1000-1000	PBT 2000-1000V-100-600	PBT 2000-1000V-1000-1000
Number of Channels Per Unit		1				
Charge/ Discharge Spec (Capacity, Voltage, Current)		60kW/200V/600A	100kW/800V/600A	100kW/800V/1000A	100kW/1000V/600A	100kW/1000V/1000A
Output	Constant Voltage	Range	5~200V	5~800V	5~800V	5~1000V
		Accuracy	±0.2V (±0.1% F.S.)	±0.8V (±0.1% F.S.)	±0.8V (±0.1% F.S.)	±1V (±0.1% F.S.)
	Constant Current	Range	0~±600A	0~±600A	0~±1000A	0~±600A
		Multiple Ranges (Option)	2 (100%, 10%)			
Measurement	Voltage	Accuracy	±0.6A (±0.1% F.S.)	±0.6A (±0.1% F.S.)	±1A (±0.1% F.S.)	±0.6A (±0.1% F.S.)
		Accuracy	±0.6A (±0.1% F.S.)	±0.6A (±0.1% F.S.)	±1A (±0.1% F.S.)	±1A (±0.1% F.S.)
		Resolution	16 bit			
	Current	Range	0~200V	0~800V	0~800V	0~1000V
		Resolution	0~200V	0~800V	0~800V	0~1000V
		Accuracy	±0.2V (±0.1% F.S.)	±0.8V (±0.1% F.S.)	±0.8V (±0.1% F.S.)	±1V (±0.1% F.S.)
Time	Data Recording Time	Range	0~±600A	0~±600A	0~±1000A	0~±600A
		Multiple Ranges (Option)	2 (100%, 10%)			
Ambient Conditions	Temperature	Resolution	16 bit (15bit + pre-sign)			
		Accuracy	±0.6A (±0.1% F.S.)	±0.6A (±0.1% F.S.)	±1A (±0.1% F.S.)	±0.6A (±0.1% F.S.)
AC Power	Frequency	Accuracy	±0.6A (±0.1% F.S.)	±0.6A (±0.1% F.S.)	±1A (±0.1% F.S.)	±1A (±0.1% F.S.)
		Resolution	16 bit (15bit + pre-sign)			
Power Factor	Current	Resolution	16 bit (15bit + pre-sign)			
		Accuracy	±0.6A (±0.1% F.S.)	±0.6A (±0.1% F.S.)	±1A (±0.1% F.S.)	±1A (±0.1% F.S.)
Max. Energy Recycling Efficiency	Current Rise Time (10%~90%)	Resolution	16 bit (15bit + pre-sign)			
		Accuracy	±0.6A (±0.1% F.S.)	±0.6A (±0.1% F.S.)	±1A (±0.1% F.S.)	±1A (±0.1% F.S.)
Communication Protocol	Temperature	Resolution	16 bit (15bit + pre-sign)			
		Accuracy	±0.6A (±0.1% F.S.)	±0.6A (±0.1% F.S.)	±1A (±0.1% F.S.)	±1A (±0.1% F.S.)
Dimension (W*D*H)	Humidity	Resolution	16 bit (15bit + pre-sign)			
		Accuracy	±0.6A (±0.1% F.S.)	±0.6A (±0.1% F.S.)	±1A (±0.1% F.S.)	±1A (±0.1% F.S.)
Weight	Voltage	Resolution	16 bit (15bit + pre-sign)			
		Accuracy	±0.6A (±0.1% F.S.)	±0.6A (±0.1% F.S.)	±1A (±0.1% F.S.)	±1A (±0.1% F.S.)
Optional Feature	Frequency	Resolution	16 bit (15bit + pre-sign)			
		Accuracy	±0.6A (±0.1% F.S.)	±0.6A (±0.1% F.S.)	±1A (±0.1% F.S.)	±1A (±0.1% F.S.)
Optional Accessory	Current	Resolution	16 bit (15bit + pre-sign)			
		Accuracy	±0.6A (±0.1% F.S.)	±0.6A (±0.1% F.S.)	±1A (±0.1% F.S.)	±1A (±0.1% F.S.)

Model			PBT 2000-200-120-600	PBT 2000-800-160-600	PBT 2000-800-160-1000	PBT 2000-1000-160-600	PBT 2000-1000-160-1000
Number of Channels Per Unit			1				
Charge/Discharge Spec (Capacity, Voltage, Current)			120kW/200V/600A	160kW/800V/600A	160kW/800V/1000A	160kW/1000V/600A	160kW/1000V/1000A
Output	Constant Voltage	Range	5~200V	5~800V	5~800V	5~1000V	5~1000V
		Accuracy	±0.2V (±0.1% F.S.)	±0.8V (±0.1% F.S.)	±0.8V (±0.1% F.S.)	±1V (±0.1% F.S.)	±1V (±0.1% F.S.)
	Constant Current	Range	0~±600A	0~±600A	0~±1000A	0~±600A	0~±1000A
		Multiple Ranges (Option)	2 (100%, 10%)				
		Accuracy	±0.6A (±0.1% F.S.)	±0.6A (±0.1% F.S.)	±1A (±0.1% F.S.)	±0.6A (±0.1% F.S.)	±1A (±0.1% F.S.)
Measurement	Voltage	Range	0~200V	0~800V	0~800V	0~1000V	0~1000V
		Resolution	16 bit				
		Accuracy	±0.2V (±0.1% F.S.)	±0.8V (±0.1% F.S.)	±0.8V (±0.1% F.S.)	±1V (±0.1% F.S.)	±1V (±0.1% F.S.)
	Current	Range	0~±600A	0~±600A	0~±1000A	0~±600A	0~±1000A
		Multiple Ranges (Option)	2 (100%, 10%)				
		Resolution	16 bit (15bit + pre-sign)				
		Accuracy	±0.6A (±0.1% F.S.)	±0.6A (±0.1% F.S.)	±1A (±0.1% F.S.)	±0.6A (±0.1% F.S.)	±1A (±0.1% F.S.)
Time	Data Recording Time	100ms (Option:10ms)					
	Current Rise Time (10%~90%)	<1ms				<1.3ms	
Ambient Conditions	Temperature	0~40℃					
	Humidity	5~85 HR					
AC Power	Voltage	400V/480V, 3Φ					
	Frequency	50Hz/60Hz					
	Current	210A @ 400V	272A @ 400V	276A @ 400V	278A @ 400V	283A @ 400V	
Power Factor		>0.99					
Max. Energy Recycling Efficiency		92.4%	96.9%	96.3%	95.3%	94.8%	
Communication Protocol		CANBus (USB to PC)					
Dimension (W*D*H)		(1000+1000)*800*2000 mm	(1200+1000)*800*2000 mm	(1200+1200)*800*2000mm	(1200+1200)*800*2000 mm	(1200+1200)*800*2000 mm	
Weight		800+560 kg	1000+560 kg	1000+1040 kg	1000+760 kg	1000+900 kg	
Optional Feature		Constant Resistance, DCIR Measurement, ACIR Measurement,BMS Data Collection, Chamber Integration, Data Analyzer.					
Optional Accessory		BMS Data Collector, Auxiliary Voltage, Auxiliary Temperature, Chamber, Battery Connecting Cable, Parallel Connection Module, Power Distribution Switch Box, Power Distribution Unit.					

Model			PBT 2000-800-250-600	PBT 2000-800-250-1000	PBT 2000-1000-250-600	PBT 2000-1000-250-1000	PBT 2000-800-320-600
Number of Channels Per Unit			1				
Charge/Discharge Spec (Capacity, Voltage, Current)			250kW/800V/600A	250kW/800V/1000A	250kW/1000V/600A	250kW/1000V/1000A	320kW/800V/600A
Output	Constant Voltage	Range	5~800V	5~800V	5~1000V	5~1000V	5~800V
		Accuracy	±0.8V (±0.1% F.S.)	±0.8V (±0.1% F.S.)	±1V (±0.1% F.S.)	±1V (±0.1% F.S.)	±0.8V (±0.1% F.S.)
	Constant Current	Range	0~±600A	0~±1000A	0~±600A	0~±1000A	0~±600A
		Multiple Ranges (Option)	2 (100%, 10%)				
		Accuracy	±0.6A (±0.1% F.S.)	±1A (±0.1% F.S.)	±0.6A (±0.1% F.S.)	±1A (±0.1% F.S.)	±0.6A (±0.1% F.S.)
Measurement	Voltage	Range	0~800V	0~800V	0~1000V	0~1000V	0~800V
		Resolution	16 bit				
		Accuracy	±0.8V (±0.1% F.S.)	±0.8V (±0.1% F.S.)	±1V (±0.1% F.S.)	±1V (±0.1% F.S.)	±0.8V (±0.1% F.S.)
	Current	Range	0~±600A	0~±1000A	0~±600A	0~±1000A	0~±600A
		Multiple Ranges (Option)	2 (100%, 10%)				
		Resolution	16 bit (15bit + pre-sign)				
		Accuracy	±0.6A (±0.1% F.S.)	±1A (±0.1% F.S.)	±0.6A (±0.1% F.S.)	±1A (±0.1% F.S.)	±0.6A (±0.1% F.S.)
Time	Data Recording Time	100ms(Option:10ms)					
	Current Rise Time (10%~90%)	<1ms			<1.3ms		<1ms
Ambient Conditions	Temperature	0~40℃					
	Humidity	5~85 HR					
AC Power	Voltage	400V/480V, 3Φ					
	Frequency	50Hz/60Hz					
	Current	420A @ 400V	427A @ 400V	424A @ 400V	436A @ 400V	538A @ 400V	
Power Factor		>0.99					
Max. Energy Recycling Efficiency		97.1%	96.5%	96.6%	95.8%	97.1%	
Communication Protocol		CANBus (USB to PC)					
Dimension (W*D*H)		(1400+1000)*800*2000 mm	(1400+1200)*800*2000mm	(1400+1200)*800*2000 mm	(1400+1200)*800*2000 mm	(1400+1000)*800*2000 mm	
Weight		1500+545 kg	1500+1040 kg	1550+760 kg	1500+900 kg	1600+560 kg	
Optional Feature		Constant Resistance, DCIR Measurement, ACIR Measurement,BMS Data Collection, Chamber Integration, Data Analyzer.					
Optional Accessory		BMS Data Collector, Auxiliary Voltage, Auxiliary Temperature, Chamber, Battery Connecting Cable, Parallel Connection Module, Power Distribution Switch Box, Power Distribution Unit.					

Model			PBT 2000-800-320-1000	PBT 2000-1000-320-600	PBT 2000-1000-320-1000	PBT 2000-800-400-1000	PBT 2000-1000-400-600
Number of Channels Per Unit			1				
Charge/ Discharge Spec (Capacity, Voltage, Current)			320kW/800V/1000A	320kW/1000V/600A	320kW/1000V/1000A	400kW/800V/1000A	400kW/1000V/600A
Output	Constant Voltage	Range	5~800V	5~1000V	5~1000V	5~800V	5~1000V
		Accuracy	±0.8V (±0.1% F.S.)	±1V (±0.1% F.S.)	±1V (±0.1% F.S.)	±0.8V (±0.1% F.S.)	±1V (±0.1% F.S.)
	Constant Current	Range	0~±1000A	0~±600A	0~±1000A	0~±1000A	0~±600A
		Multiple Ranges (Option)	2 (100%, 10%)				
Measurement	Voltage	Accuracy	±1A (±0.1% F.S.)	±0.6A (±0.1% F.S.)	±1A (±0.1% F.S.)	±1A (±0.1% F.S.)	±0.6A (±0.1% F.S.)
		Range	0~800V	0~1000V	0~1000V	0~800V	0~1000V
		Resolution	16 bit				
	Current	Accuracy	±0.8V (±0.1% F.S.)	±1V (±0.1% F.S.)	±1V (±0.1% F.S.)	±0.8V (±0.1% F.S.)	±1V (±0.1% F.S.)
		Range	0~±1000A	0~±600A	0~±1000A	0~±1000A	0~±600A
		Multiple Ranges (Option)	2 (100%, 10%)				
		Resolution	16 bit (15bit + pre-sign)				
	Accuracy	±1A (±0.1% F.S.)	±0.6A (±0.1% F.S.)	±1A (±0.1% F.S.)	±1A (±0.1% F.S.)	±0.6A (±0.1% F.S.)	
Time	Data Recording Time	100ms (Option:10ms)					
	Current Rise Time (10%~90%)	<1ms	<1.3ms			<1ms	<1.3ms
Ambient Conditions	Temperature	0~40℃					
	Humidity	5~85 HR					
AC Power	Voltage	400V/480V, 3Φ					
	Frequency	50Hz/60Hz					
	Current	546A @ 400V	541A @ 400V	551A @ 400V	681A @ 400V	674A @ 400V	
Power Factor		>0.99					
Max. Energy Recycling Efficiency		96.5%	96.7%	96.6%	96%	96.7%	
Communication Protocol		CANBus (USB to PC)					
Dimension (W*D*H)		(1400+1200)*800*2000 mm			(1200+1200+1200)*800*2000mm		
Weight		1600+1040 kg	1600+760 kg	1600+900 kg	1800+550+1040 kg	1800+550+760 kg	
Optional Feature		Constant Resistance, DCIR Measurement, ACIR Measurement,BMS Data Collection, Chamber Integration, Data Analyzer.					
Optional Accessory		BMS Data Collector, Auxiliary Voltage, Auxiliary Temperature, Chamber, Battery Connecting Cable, Parallel Connection Module, Power Distribution Switch Box, Power Distribution Unit.					

Model			PBT 2000-1000-400-1000	PBT 2000-800-500-1000	PBT 2000-1000-500-600	PBT 2000-1000-500-1000
Number of Channels Per Unit			1			
Charge/Discharge Spec (Capacity, Voltage, Current)			400kW/1000V/1000A	500kW/800V/1000A	500kW/1000V/600A	500kW/1000V/1000A
Output	Constant Voltage	Range	5~1000V	5~800V	5~1000V	5~1000V
		Accuracy	±1V (±0.1% F.S.)	±0.8V (±0.1% F.S.)	±1V (±0.1% F.S.)	±1V (±0.1% F.S.)
	Constant Current	Range	0~±1000A	0~±1000A	0~±600A	0~±1000A
		Multiple Ranges (Option)	2 (100%, 10%)			
		Accuracy	±1A (±0.1% F.S.)	±1A (±0.1% F.S.)	±0.6A (±0.1% F.S.)	±1A (±0.1% F.S.)
Measurement	Voltage	Range	0~1000V	0~800V	0~1000V	0~1000V
		Resolution	16 bit			
		Accuracy	±1V (±0.1% F.S.)	±0.8V (±0.1% F.S.)	±1V (±0.1% F.S.)	±1V (±0.1% F.S.)
	Current	Range	0~±1000A	0~±1000A	0~±600A	0~±1000A
		Multiple Ranges (Option)	2 (100%, 10%)			
		Resolution	16 bit (15bit + pre-sign)			
		Accuracy	±1A (±0.1% F.S.)	±1A (±0.1% F.S.)	±0.6A (±0.1% F.S.)	±1A (±0.1% F.S.)
Time	Data Recording Time	100ms(Option:10ms)				
	Current Rise Time (10%~90%)	<1.3ms	<1ms	<1.3ms		
Ambient Conditions	Temperature	0~40℃				
	Humidity	5~85 HR				
AC Power	Voltage	400V/480V, 3Φ				
	Frequency	50Hz/60Hz				
	Current	684A @ 400V	851A @ 400V	839A @ 400V	850A @ 400V	
Power Factor		>0.99				
Max. Energy Recycling Efficiency		96.6%	95.8%	96.7%	96.6%	
Communication Protocol		CANBus (USB to PC)				
Dimension (W*D*H)		(1200+1200+1200)*800*2000 mm				
Weight		1800+550+900 kg	1900+650+1040 kg	1900+650+760 kg	1900+650+900 kg	
Optional Feature		Constant Resistance, DCIR Measurement, ACIR Measurement,BMS Data Collection, Chamber Integration, Data Analyzer.				
Optional Accessory		BMS Data Collector, Auxiliary Voltage, Auxiliary Temperature, Chamber, Battery Connecting Cable, Parallel Connection Module, Power Distribution Switch Box, Power Distribution Unit.				



Configuration



Execution



Analysis



Within One Click

iBest software + Data analyzer

Program Configuration

Easy

Set up test program with few easy steps.
Can be easily operated.

Comprehensive

- Provide a variety of test program options to meet different kinds of testing needs.

Test modes Constant current (CC), Constant current-Constant voltage (CC-CV), Constant power (CP), Constant resistance (CR)*, Pulse, User defined/Imported Drive Simulation, ACIR*, DCIR*, Current Ramp, Voltage Ramp.

Step Cutoff Conditions Time, EV, EC, mAh, Wh, END mAh, Total mAh, Total Wh, SoC*, END SoC*, BMS conditions*, Chamber conditions*

Protection Mechanism OC, LC, OV, LV, Cerr

- Support a variety of international standardized test patterns. No need to be edited manually.

Pulse HPPC

Drive simulation FUDS, DST

DCIR measurement ISO 12405*, IEC 61960*

Customization

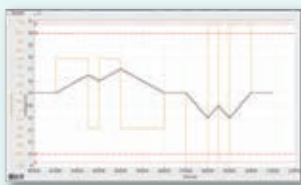
Introduce variable setting functions; supports diverse charging/discharging test patterns and data recording. Test programs can be configured freely.

Integration*

Control a variety of plug-in modules such as chamber, BMS data collector, auxiliary voltage, and auxiliary temperature, eliminating the tedious operation of separate control.

Smart

Multiple convenient current configuration methods such as C-rate, mAh/g, and current ramp are provided to speed up the test program editing phase.



▲ (Fig. 1) Pre-test Simulation

Safety

Test curves can be previewed after completing the test program setting. Set protection criteria for the batteries to avoid any human error that might cause accident. (Fig. 1)

Confidential*

Supports .dbc file import for CANBus communication protocols used for power battery BMS. BMS data can be collected easily during testing without revealing the confidential information to CTE.

Control

Includes account management mechanisms, supports multi-role access restrictions.

*Option

Program Execution

Personalization

Provides multiple displays of channel status as well as color choices, which can be configured based on personal preferences and the execution status of the test program (Fig. 2, 3, 4)

Easy to understand

The main display provides clear information about each testing channel's current status. Additional data can be shown on other display panels based on the personal preference of the operator, no crucial data will be missed.

Real Time

Test data can be viewed in real time. The program can be adjusted dynamically during the test to rectify any unexpected issue. (Fig. 5)

Flexible

Supports prescheduled pause functionality; test program can be halted during specific points in time for personnel inspection and analysis, no more waiting around.

Data Analysis*

Time - saving

A variety of test data presentations that can be adjusted according to the needs of researchers, saving data processing time.

Graphs zoom-in and zoom-out

Text and graphical reports

Self-defined X and Y-axis parameters on graphs

Convenient

- Users will be able to choose from a selection of templates for data tables and curve charts available in the system, or create a brand new template based on their requirements.

- Testing graphics and raw data can be displayed simultaneously, cross-reference data mechanisms are also provided (Fig. 6)

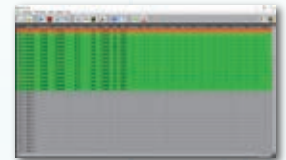
- Data retrieval tools allow users to quickly browse important test data

Professional

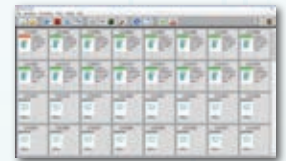
Easily analyze the data from cycle tests. Superimpose the data from each cycle, draw them into charts and produce a lifecycle test report. Help researchers to quickly evaluate the results of lifecycle tests. (Fig. 7, 8)

Compatible

Test data can be exported in .csv format and manipulated in the third-party software that clients are familiar with, improving the data usability.



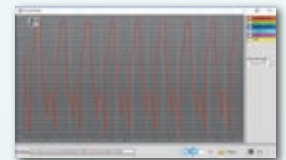
▲ (Fig. 2)
Default status display panel



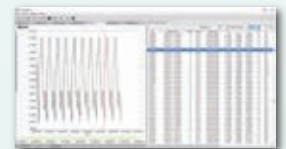
▲ (Fig. 3)
32 Channels status display panel



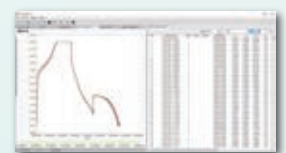
▲ (Fig. 4)
4 Channels status display panel



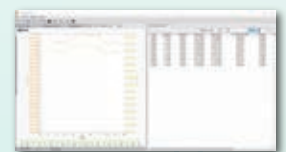
▲ (Fig. 5) Real time test curve



▲ (Fig. 6) Test curve and report



▲ (Fig. 7)
Cycle test curve and report



▲ (Fig. 8)
Life test curve and report

Optional Accessories

Auxiliary Voltage ES 100B

During serial/parallel battery pack testing, the voltage of each cell/module is measured and recorded. The safety of the battery can be monitored, and the data obtained can be used as the condition for program step change or providing protection.

1. Each module contains 24 measurement points. A data recording frequency of 100ms.
2. Measurement range: $\pm 8V$, $\pm 32V$, or $\pm 64V$; accuracy $\pm 0.02\%$ F.S.

Auxiliary Temperature ET 100B

During battery testing, the temperature of each battery is measured and recorded. The safety of batteries can be monitored, and the data obtained can be used as the condition for program step change or providing protection.

1. Each module contains 24 measurement points. A data recording frequency of 100ms.
2. Supports Thermoistor as temperature sensors. Measurement range: $-50^{\circ}\text{C}\sim 150^{\circ}\text{C}$; accuracy $\pm 1^{\circ}\text{C}$ ($-40^{\circ}\text{C}\sim 90^{\circ}\text{C}$).

Auxiliary Temperature ET 100C

During battery testing, the temperature of each battery is measured and recorded. The safety of batteries can be monitored, and the data obtained can be used as the condition for program step change or providing protection.

1. Each module contains up to 16 measurement points. A data recording frequency of 4s.
2. Supports various mainstream temperature sensors available on the market, such as: Thermocouple, Thermistor, RTD, and Diode (can be selected according to customer specifications). Measurement range is vast, and accuracy can reach $\pm 1^{\circ}\text{C}$.

BMS Data Collector

During battery pack testing, the BMS data is retrieved and recorded. The data obtained can be used as the condition for program step change or providing protection.

1. Supports CAN .dbc file editing and import.

Parallel Connection Module

Supports two channles connected in parallel to increase current output.

Power Distribution Switch Box

Allows user to connect/ remove batttery while running test on the other battery, which imprves battery test efficiency.

Power Distribution Unit

Can extend the distance between the equipment and the object to be tested. Space utilization can be improved based on the client's facility requirements.

Chamber/ Third-party Chamber Control

The synchronous control of chambers can be achieved during the testing processes. Temperature and humidity levels can be adjusted to simulate different environments for measuring the battery's performance.

Battery Connecting Cable

Customized battery connection cables can be made according to the requirements of the client's testing environment.

www.chentech.com.tw/eindex for further information



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