FIND THE ONE

We provide the following products based on different applications and their critical battery testing requirements :

ESS | Starting Batteries For Vehicles

Energy Recycle

- MCE S P. 40
- MCIF P. 48
- MCIF Plus P. 46

Electric Vehicles

Energy Recycle

Dynamic waveform simulation

Charge / Discharge Rapid Switch

BMS Control

High Power

Multiple Current Ranges

SOH Evaluation

Pulse Charge / Discharge

- BT 2000 P. 20
- PBT P. 22
- MCL2 P. 24
- MCB P. 30
- SBT 1000 P. 32
- MCE A P. 38
- MCP Plus P. 38
- PFT 1100 P. 44

Mobile Phone | Tablet | Laptop

Multiple Current Ranges

High Precision

Rapid Data Recording

Pulse Charge / Discharge

BMS Control

Temp/ Humidity Control

- BT 2000 P. 20
- MCL2 P. 24
- MCL2 Mini P. 26
- ABT 1000 P. 28
- MCB P. 30
- MCF Lite P. 36
- MCP Plus P. 38
- BPT 1100E Plus P. 42

Wearable Device

Output/ Control

Multiple Current Ranges

High Precision

Temp/ Humidity Control

- BT 2000 P. 20
- ABT 1000 P. 28
- MCF Lite P. 36

Materials

Output/ Control

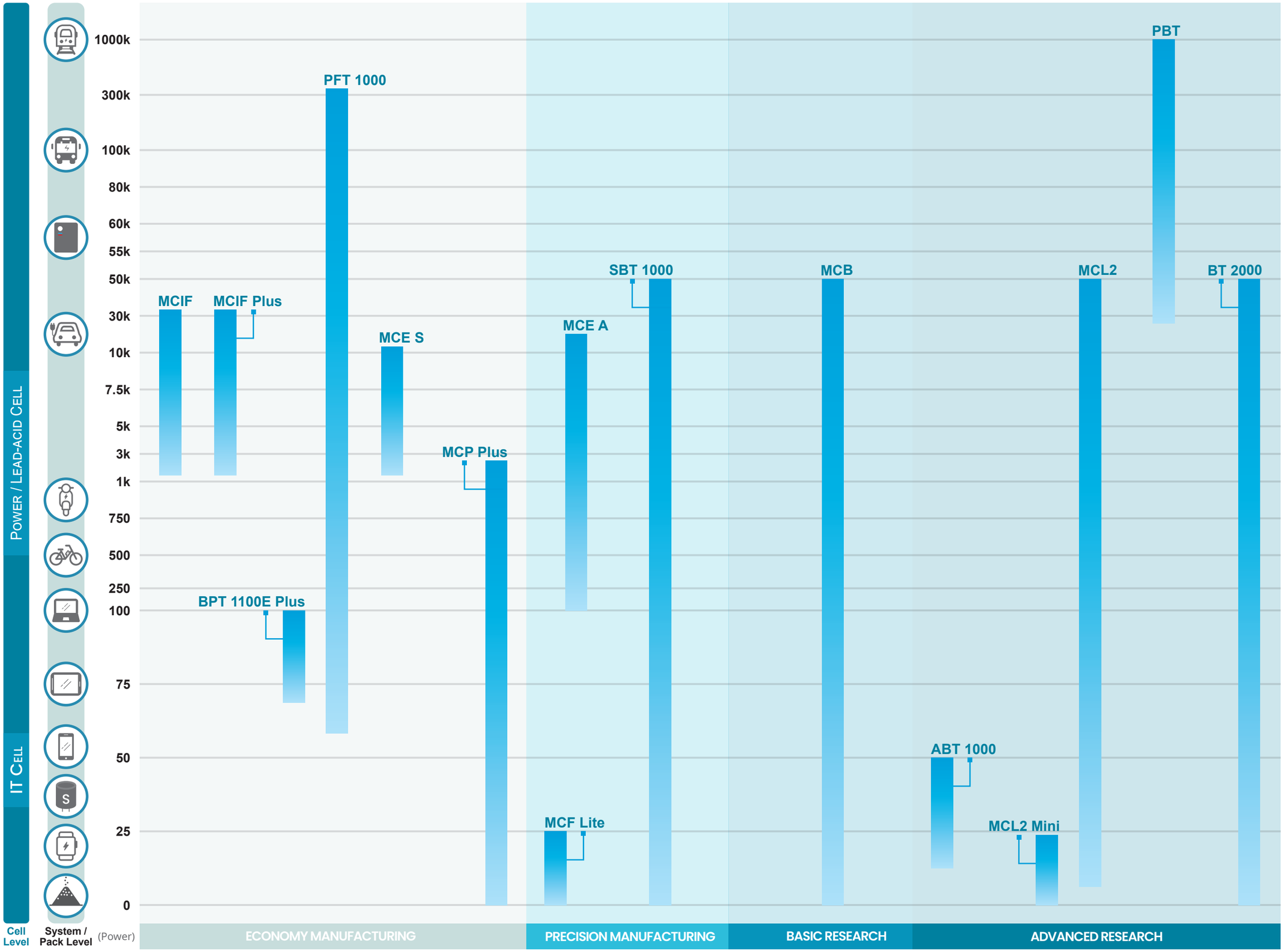
Multiple Current Ranges

0V Discharge

Rapid Data Recording

High Precision

- BT 2000 P. 20
- MCL2 Mini P. 26
- MCF Lite P. 36



iBest SOFTWARE

DATA ANALYZER

AUTO CALIBRATOR

CUSTOMIZED FIXTURE

BMS DATA COLLECTOR
CNB-1011B
GDA-300
iBox-G

AUXILIARY VOLTAGE
ET-100B

AUXILIARY TEMPERATURE
ET-100CH

*Accept customized hardware and software development

● Standard ○ Option

		LITHIUM BATTERY ADVANCED RESEARCH			
		BT 2000	PBT 2000	MCL2	MCL2 Mini
ACCURACY	Voltage	±0.02% F.S.	±0.1% F.S.	±0.02% F.S.	±0.02% F.S.
	Current	±0.02% F.S.	±0.1% F.S.	±0.02% F.S.	±0.02% F.S.
DATA RECORDING TIME	Standard	0.1s	0.1s	0.1s	0.1s
	Option	10ms, 1ms	10ms	10ms, 1ms	10ms
CHARGE/ DISCHARGE MODE	CC	●	●	●	●
	CC-CV	●	●	●	●
	CP	●	●	●	●
	CR	○	○	○	
	Waveform	○	●	○	
	Pulse (100Hz)	○	● (50Hz)	○	○
	ACIR	○	○	○	○
	DCIR	○	○	○	○
	Current Ramp	○	●		
	Voltage Ramp	○	●		
ACCESSORY	BMS & GaugeData Collector	○	○	○	
	Auxiliary Voltage	○	○	○	
	Auxiliary Temperature	○	○	○	
	Chamber	○	○	○	○
	Auto-Calibrator	○		○	○
	Barcode Scanner				
	Alarm Buzzer	○	●	○	
TEST AUTO-START MODE	By Detecting Battery				
	By Gas Gauge				
	By Bar Code				
OTHER FUNCTIONS	Discharge to 0V (5V Model)	●		○	●
	Multiple Current Ranges	● (2~4 Ranges)	○		
	Data Analysis	○	○	○	●
	Charge and Discharge Rapidly Switch	●	●	○	
	BMS & Gas Gauge Data Collection	○	○	○	
	SoC Control	○	○	○	○
	Ni-MH Battery Testing	●		●	●
	Parallel Connections among Channels	○	○	○	○
	Third-party Chamber Integration	○	○	○	○
	Energy Recycle		●		
		P.20	P.22	P.24	P.26

		LITHIUM BATTERY BASIC RESEARCH/ PRODUCTION					LEAD-ACID BATTERY PRODUCTION		
		ABT 1000	MCB	MCE A	MCF Lite	MCP Plus	MCE S	MCIF Plus	MCIF
ACCURACY	Voltage	±0.04% F.S.	±0.04% F.S.	±0.05% F.S.	±0.075% F.S.	±0.1% F.S.	±0.5% F.S.	±0.5% F.S.	±0.5% F.S.
	Current	±0.03% F.S.	±0.03% F.S.	±0.05% F.S.	±0.06% F.S.	±0.1% F.S.	±0.5% F.S.	±0.5% F.S.	±0.5% F.S.
DATA RECORDING TIME	Standard	0.1s	0.1s	1s	1s	2s	1s	1s	1s
	Option			100ms					
CHARGE/ DISCHARGE MODE	CC	●	●	●	●	●	●	●	●
	CC-CV	●	●	●	●	●		●	● (Charge Only)
	CP	●	●	●	●	●		●	
	CR			○					
	Waveform			○					
	Pulse (100Hz)								
	ACIR		○	○	○	○			
	DCIR	○	○	○	○	○			
	Current Ramp								
	Voltage Ramp								
ACCESSORY	BMS & GaugeData Collector		○	○					
	Auxiliary Voltage		○	○			○	● (Built-in)	○
	Auxiliary Temperature		○	○			○		○
	Chamber	● (Built-in)	○	○	○	○			
	Auto-Calibrator	○	○	○	○	○			
	Barcode Scanner		○	○	○	○			
	Alarm Buzzer	○	○	○	○	○	●	●	●
TEST AUTO-START MODE	By Detecting Battery		○	○	○	○			
	By Gas Gauge		○	○					
	By Bar Code		○	○	○	○			
OTHER FUNCTIONS	Discharge to 0V (5V Model)		○		●				
	Multiple Current Ranges				● (1~2 Ranges)				
	Data Analysis	○	○	○	○	○			
	Charge and Discharge Rapidly Switch								
	BMS & Gas Gauge Data Collection		○	○					
	SoC Control	○	○	○	○	○			
	Ni-MH Battery Testing	●	●	●	●	○			
	Parallel Connections among Channels		○			○			
	Third-party Chamber Integration		○	○	○	○			
	Energy Recycle			●			●		
		P.28	P.30	P.34	P.36	P.38	P.40	P.46	P.48

PBT Series

- High flexibility of parallel and series function supports electric vehicle (EV) and energy storage system (ESS) multiple test application.
- Up to 650KW/1500V/1000A in series mode.
- Up to 650KW/1000V/4000A in parallel mode.
- More than 95% high efficiency bidirectional discharge energy recycling.
- 2ms rapidly current response time to simulate electric vehicle (EV) driving pattern precisely .
- Possesses the dual functionality for performing battery testing and battery simulations.

MCEA Series

- Multiple range of current design supports various power battery development.
- With high accuracy of ±0.05%F.S. to raises the consistency of the product.
- More than 80% high efficiency discharge energy recycling, optimizing power usage.
- Module replacement design keeps availability while the module is failed.
- Multiple protection design enhances safety level.

System Expandability

Software with high expandability, with integrated control of BMS data collection unit, HIOKI Memory HiLOGGER 8423, voltage/temperature measurement modules, chambers, fire fighting system, MES or WMS etc., to raise the flexibility of testing application.

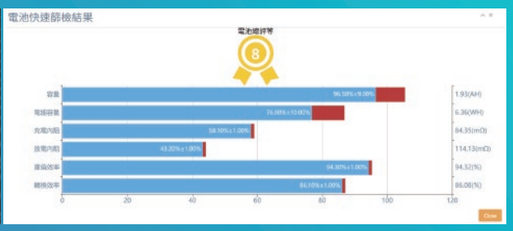
HIGHLIGHTS

Battery Status of Health (SoH) rapidly testing solution iSorting

Compares with traditional IQC method, iSorting provides comprehensive indicators to rapidly evaluate the battery SOH for battery end product provider. (Indicators: discharge capacity, energy capacity, internal charge resistance, internal discharge resistance, transfer efficiency, coulombic efficiency)

Takes merely 60 seconds to evaluate the battery SOH . With 95% high accuracy technology and customizable grading function to solves the issue of capacity inconsistency and increase product compatibility.

Testing result is saved in the cloud, easy to track test result without any location restriction, rise the data utilization.

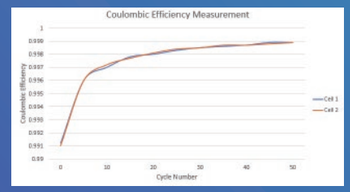


Analysis Plus

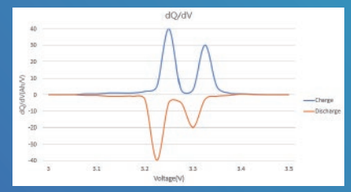
Multiple advanced analytics tools are introduced to assist battery researchers learn battery characteristics in an efficient way

Coulombic Efficiency
The effective charge/discharge efficiency is obtained through a complete charge and discharge process. The coulombic efficiency curve is obtained based on statistics of numerous cycles, and used to evaluate the battery life.

dQ/dV
The differential capacity curve is drawn with dQ (capacity change)/dV (voltage change) as the vertical axis and voltage as the horizontal axis, and is used to analyze battery characteristics and state of health



Coulombic Efficiency



dQ/dV

CULTIVATING A GREENER FUTURE FOR THE BATTERY INDUSTRY

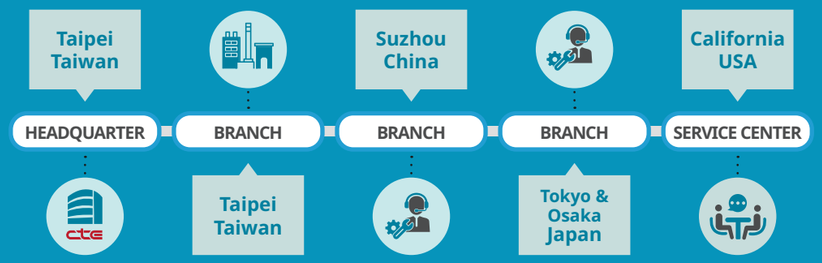
As a member of the global village, Chen Tech is committed to developing advanced testing technologies and integrating information technologies, providing our clients eco-friendly battery production and testing solutions.

World Wide Battery Test Expert

Chen Tech Electric Mfg. Co., LTd.

1984 Established

Locations



http://www.chentech.com.tw

COMPANY HISTORY & FUTURE PROSPECTS

1984

Chen Tech Electric is established followed by the opening of our first factory.

Produced high power DC control equipment.

1989

Began producing large leadacid battery and sealed battery testing/ production equipment.

1996

Our large-scale lead-acid and VRLA battery testing/ production equipment becomes the market leader in Taiwan.

Opened second factory, located in Erchong, Taiwan, and incorporated R&D for NiMH battery related products

Awarded ISO 9001 Quality Management Systems Certification.

2000

Opened service branch office in China

Opened sales and client service branch office in Guangzhou, China.

2003

Initiated R&D for producing testing/ production equipment for lithium-ion battery cells and battery packs to meet next - generation technology developments and established a new production platform.

2004

Initiated R&D for producing testing/ production equipment for lithium-ion battery cells and battery packs to meet next-generation technology developments and established a new production platform.

2005

Expanded our R&D department.

Utilized our abundance of expertise and experience in the field of electric vehicle applications to participate in a BES operation of first generation of electricity-powered motorcycles in Suzhou, China.

2006

Established a sales and client service branch office in Suzhou, China

Increasing market share in lithium-ion battery equipment.

2007

Began developing testing equipment for lithium-ion battery, LiFePO4 battery, and power battery packs in response to growing demand for electric vehicles.

2009

Our laptop battery pack prodcution/testing equipment becomes market leader in the world.

Began exploring the fields of power battery smart chargers, charging and exchange stations, and charging and exchange applications for hybrid and light electric vehicles.

2010

Started developing singlecell high precision charging/discharging equipment MCL/ MCP.

2011

Established a sales and client service branch office in Tokyo, Japan

We organized a software and system integration team to develop a scalable cloud-based BES battery exchange platform and advanced data analytics software for cell testing.

2012

Established distribution center in Korea

Enhance gas gauge products to support multi-communication protocols; established and integrated solution for battery production information management system.

2013

Development of advanced PWM controls and energy recycleing techology, proposing the intelligent energy management solution SEMTest.

Introduced the CRM system and established a service database that integrated prior experience from providing services to clients.

2014

Became the exclusive sales representative of Japan's SoftEnergy Controls Inc., to sell automated energy efficient battery formation line, effectively reducing the labor and electricity costs needed for large-scale production of power battery

2015

Established sales representative in the United States and Thailand

Developed premium portable battery testing equipment, MCL2 Mini.

2016

Collaborated with Germany's power supply company to developan energy-eddicient power battery testing system, PBT 1000, which can perfectly simulate the performance of power battery in actual vehicle operation.

The first in the industry to invest in the field of secondlife batteries as well as the research on state of health (SoH) of batteries. A battery SoH evaluation system was developed, which can determine the SoH of a second-life battery as well as its remaining life span within 30 seconds at 92% accuracy.

2017

The BT 1000 Responsive Multi-range Battery Test Equipment and the PBT 1000 Power Battery Pack Test Equipment are selected for the Best Products category during the 14th National Brand Yushan Award.

2019

Established a sales and client service branch office in Osaka, Japan

Lithiem Battery State of Health (SoH) Rapid Evaluation Solution SBT 1000 won the 2020 Taiwan Excellent Award for productivity and energy industry.

2020

Demo room formally opened

Launches latest Power Battery Pack Test Equipment for core pack/ hard pack PFT 1000 series. Supports one-stop testing solution and improves production yield.

2022

Release upgraded advance battery Status of Health(SOH) rapidly testing solution-iSorting.

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Worldwide Battery Test Expert

SERVICE GUARANTEE

Cost Efficient

- Auto-Calibrator rental
- Remote and online collaboration support

LINE

ID : +886-933-072-5119

ID : chentech_cs

Timely

- Online system operations and troubleshooting guidelines
- Rapidly response to repair requests
- Real-time remote troubleshooting

Effective

- High-efficiency circuit design
- High performance components selection
- Module replacement design
- Rapid response for high cusomter satisfaction

BT 2000 Series

Compact Multi-range Battery Test Equipment

Applied test

- Life cycle test
- Capacity test
- Dynamic waveform simulation
- Pulse Charge/ Discharge
- DCIR measurement
- ACIR measurement

Applied technology

- Charge and discharge rapid switch
- Dynamic waveform simulation
- BMS data collection
- Rapid data recording
- High Precision
- Discharge to Negative Voltage
- Multiple Current Ranges
- Microampere level current output/ control

CE

Main Features

- Innovative mechanicl design; the smallest in the industry.
- Module replacement design.
- Output and measurement accuracy is within ±0.02% F.S.
- 4 ranges of current precision, customizable based on customer requirements.
- A data recording frequency of 1ms.
- Unlimited phase of pulse charging/discharging; the minimum width is 10ms.
- Capable of discharging batteries to negative voltage.

The best solution for the following needs

- During new battery development cycles, e.g., from materials research to full battery test, precise test results are required.
- To accurately and rapidly record battery parameter changes during test processes.
- To test various types of batteries using the same equipment, improving asset utilization ratesperational environment.

Others

- Independent control and output of each channel.
- Able to make parallel connections among multiple channels in any configuration to increase current output.
- Operating modes: constant current, constant voltage, constant power, dynamic waveform simulation, pulse charge/discharge, current ramp, voltage ramp, DCIR, ACIR, constant resistance charge/discharge.
- Software with high expandability, with integrated control of voltage measurement modules, temperature measurement modules, BMS data collection units, chambers, and other externally connected modules.
- Advanced data analysis functionality.
- BMS CAN signal analysis.
- Mechanical designs can be adjusted according to customer specifications.
- Various types of international testing standards for dynamic waveform simulation, DCIR, pulse charging/ discharging already built in.

AC Power	Customized According To Client Needs						
Loading Range	Charge	0~100V*	Discharge	0~100V*(Option: Discharge to Negative Voltage)			
Output	Constant Voltage	Maximum Voltage	Depend on Spec*	**Measurement**	Voltage	Range	0~Maximum Voltage*1.1
		Resolution	16 bit			Resolution	24 bit
		Accuracy	±0.02% F.S.			Accuracy	±0.02% F.S.
	Constant Current	Maximum Charge/ Discharge Current	Depend on Spec*		Current	Range	0~Maximum Charge/ Discharge Current*1.1
		Range	2~4 (Option)			Resolution	24 bit
		Resolution	16 bit			Accuracy	±0.02% F.S.
		Accuracy	±0.02% F.S.				
	Constant Power	Maximum Power	Depend on Spec				
		Resolution	16 bit				
		Accuracy	±0.04% F.S.				
Data Recording Time	100ms (Option:10ms, 1ms)						
Switch Time between Charge and Discharge	<5ms						
Communication Interface	CANBus (Ethernet to PC)						
Ambient	23°C±2°C ; 20~90HR						
Optional Features	CR Charge/ Discharge, Dynamic waveform simulation, Pulse Charge/Discharge, DCIR Measurement, DCIR measurement, ACIR measurement, Voltage Ramp, Current Ramp, Parallel Connections among Channels, BMS & Gas Gauge Data Collection, Chamber Integration, Data Analyzer						
Accessory	BMS & Gas Gauge Data Collector, Auxiliary Voltage, Auxiliary Temperature, Chamber, Customized Fixture, Auto-Calibrator, Alarm Buzzer						

***Accept Customized Request**

Model	Voltage(V)	Current(A)			
		Range 1	Range 2	Range 3	Range 4
BT2000 5V1A	5	1	0.1	0.01	0.001
BT2000 5V5A	5	5	0.5	0.05	0.005
BT2000 5A10A	5	10	1	0.1	0.01
BT2000 5V20A	5	20	2	0.2	0.02
BT2000 5V30A	5	30	3	0.3	0.03
BT2000 5V60A	5	60	6	0.6	0.06
BT2000 5V100A	5	100	10	1	0.1
BT2000 5V180A	5	180	18	1.8	0.18
BT2000 5V200A	5	200	20	2	0.2
BT2000 5V250A	5	250	25	2.5	0.25
BT2000 5V300A	5	300	30	3	0.3
BT2000 5V350A	5	350	35	3.5	0.35
BT2000 5V400A	5	400	40	4	0.4
BT2000 5V450A	5	450	45	4.5	0.45
BT2000 5V500A	5	500	50	5	0.5

Model	Voltage(V)	Current(A)			
		Range 1	Range 2	Range 3	Range 4
BT2000 20V10A	20	10	3	0.5	0.01
BT2000 20V20A	20	20	2	0.2	0.02
BT2000 20V30A	20	30	3	0.3	0.03
BT2000 20V60A	20	60	6	0.6	0.06
BT2000 20V100A	20	100	10	1	0.1
BT2000 20V180A	20	180	18	1.8	0.18
BT2000 20V200A	20	200	20	2	0.2
BT2000 60V40A	60	40	4	0.4	0.04
BT2000 60V60A	60	60	6	0.6	0.06
BT2000 60V100A	60	100	10	1	0.1
BT2000 60V200A	60	200	20	2	0.2
BT2000 100V100A	100	100	10	1	0.1
BT2000 100V200A	100	200	20	2	0.2

PBT Series

Eco Series-Power Battery Pack Test Equipment

Applied test

- Life cycle test
- Capacity test
- Dynamic waveform simulation
- Pulse Charge/ Discharge
- DCIR measurement
- ACIR measurement
- Battery simulation

Applied technology

- Charge and discharge rapid switch
- Dynamic waveform simulation
- BMS data collection
- High power output
- Dual control modes
- Touch operation
- Multiple Current Ranges
- Energy Recycle

The best solution for the following needs

- To test large-capacity batteries or DC motors.
- With green factories as the target, aiming to reduce carbon emissions and energy costs.
- To evaluate the performance of batteries under a real operational environment.
- To test various types of batteries using the same equipment, improving asset utilization rates.
- Need customizable electric vehicle battery test patterns and communication protocols support.
- Comprehensive battery test data collection and analysis.

Main Features

- Max. output is 650kW/1500V/1000A.
- Supports channel parallel and series function to raise testing range.
  Up to 650KW/1000V/4000A in parallel mode.
  Up to 650kW/1500V/1000A in series mode.
- The discharged energy recycling efficiency is able to reach up
  to 95%.
- With built-in FUDS, DST, and many other international drive simulation testing standards, also supports custom drive cycles profile.
- Possesses the dual functionality for performing battery testing and battery simulations
- Supports 2 ranges of current output and measurements.
- PC control and panel control dual-mode operations, touch controls are supported by panel operation.
- Meets EN ISO 13849-1 performance level D.

Others

- Independent control and output of each channel.
- Supports series and parallel channels to increase voltage and current output.
- Operating modes: constant current, constant voltage, constant power, dynamic waveform simulation, pulse charge/discharge, current ramp, voltage ramp, DCIR, ACIR, constant resistance charge/discharge.
- Software with high expandability, with integrated control of voltage measurement modules, temperature measurement modules, BMS data collection units, chambers, and other externally connected modules.◦
- Advanced data analysis functionality.
- BMS CAN signal analysis.
- Various types of international testing standards for dynamic waveform simulation, DCIR, pulse charging/ discharging already built in.

AC Power			Customized According To Client Needs				
Power Factor			>0.99				
Output	Constant Voltage	Maximum Voltage	Depend on Spec	**Measurement**	Voltage	Range	Depend on Spec
		Resolution	16 bit			Resolution	16 bit
		Accuracy	±0.01% F.S.			Accuracy	±0.1% F.S.
	Constant Current	Maximum Charge/ Discharge Current	Depend on Spec		Current	Range	Depend on Spec
		Range	2(Option)			Resolution	16 bit
		Resolution	16 bit			Accuracy	±0.1% F.S.
		Accuracy	±0.01% F.S.				
Data Recording Time	100ms (Option:10ms, 1ms)						
Switch Time between Charge and Discharge	<2ms						
Dynamic waveform simulation	FUDS, DST ,HPPC, Custom Patterns						
Maximum Charge/ Discharge Current	23°C±2°C ; 20~90HR						
Communication Interface	CANBus (Ethernet to PC)						
Optional Features	CR Charge/ Discharge, DCIR measurement, ACIR measurement, BMS & Gas Gauge Data Collection, Chamber Integration, Data Analyzer, Parallel Connections among Channels						
Accessory	BMS & Gas Gauge Data Collector, Auxiliary Voltage, Auxiliary Temperature, Chamber, Battery Connecting Cable, Parallel Connection Module, Power Distribution Switch Box, Power Distribution Unit						

Model	Power (kW)	Voltage (V)	Current (A)
PBT 2000-300-60-200	60	300	200
PBT 2000-300-60-600	60	300	600
PBT 2000-300-60-1000	60	300	1000
PBT 2000-600-60-200	60	600	200
PBT 2000-600-60-600	60	600	600
PBT 2000-1000-60-200	60	1000	200
PBT 2000-600-100-200	100	600	200
PBT 2000-600-100-600	100	600	600
PBT 2000-600-100-1000	100	600	1000
PBT 2000-800-100-200	100	800	200
PBT 2000-800-100-600	100	800	600
PBT 2000-800-100-1000	100	800	1000
PBT 2000-1000-100-200	100	1000	200
PBT 2000-1000-100-600	100	1000	600
PBT 2000-1000-100-1000	100	1000	1000
PBT 2000-300-120-600	120	300	600
PBT 2000-300-120-1000	120	300	1000
PBT 2000-300-160-1000	160	300	1000
PBT 2000-600-160-600	160	600	600
PBT 2000-600-160-1000	160	600	1000
PBT 2000-800-160-200	160	800	200
PBT 2000-800-160-600	160	800	600
PBT 2000-800-160-1000	160	800	1000
PBT 2000-1000-160-200	160	1000	200
PBT 2000-1000-160-600	160	1000	600

Model	Power (kW)	Voltage (V)	Current (A)
PBT 2000-1000-160-1000	160	1000	1000
PBT 2000-600-250-600	250	600	600
PBT 2000-600-250-1000	250	600	1000
PBT 2000-800-250-600	250	800	600
PBT 2000-800-250-1000	250	800	1000
PBT 2000-1000-250-600	250	1000	600
PBT 2000-1000-250-1000	250	1000	1000
PBT 2000-600-320-600	320	600	600
PBT 2000-600-320-1000	320	600	1000
PBT 2000-800-320-600	320	800	600
PBT 2000-800-320-1000	320	800	1000
PBT 2000-1000-320-600	320	1000	600
PBT 2000-1000-320-1000	320	1000	1000
PBT 2000-600-400-1000	400	600	1000
PBT 2000-800-400-1000	400	800	1000
PBT 2000-1000-400-600	400	1000	600
PBT 2000-1000-400-1000	400	1000	1000
PBT 2000-600-500-1000	500	600	1000
PBT 2000-800-500-1000	500	800	1000
PBT 2000-1000-500-600	500	1000	600
PBT 2000-1000-500-1000	500	1000	1000
PBT 2000-1000-650-1000	650	1000	1000
PBT 3000-1500-320-1000	320	1500	1000
PBT 3000-1500-650-1000	650	1500	1000

*** Please contact us for more information.**

MCL2 Series

New Generation Advanced Battery Test Equipment

Applied test

- Life cycle test
- Capacity test
- Dynamic waveform simulation
- Pulse Charge/ Discharge
- DCIR measurement
- ACIR measurement

Applied technology

- Charge and discharge rapid switch
- Dynamic waveform simulation
- BMS data collection
- Rapid data recording
- High Precision
- 0V Discharge

Main Features

- Output and measurement accuracy is within ±0.02% F.S.
- A data recording frequency of 1ms.
- 2 phases of pulse charging/discharging; the minimum width is 10ms.

The best solution for the following needs

- Requires highly-precise testing results.
- To accurately and rapidly record battery parameter changes during test processes.
- The diversity of the battery specs to be tested is limited.

Others

- Independent control and output of each channel.
- Able to make parallel connections among multiple channels in any configuration to increase current output.
- Operating modes: constant current, constant voltage, constant power, dynamic waveform simulation, pulse charge/discharge, DCIR, ACIR, constant resistance charge/discharge.
- Software with high expandability, with integrated control of voltage measurement modules, temperature measurement modules, BMS data collection units, chambers, and other externally connected modules.◦
- Advanced data analysis functionality.
- BMS CAN signal analysis.
- Mechanical designs can be adjusted according to customer specifications.
- Various types of international testing standards for dynamic waveform simulation, DCIR, pulse charging/ discharging already built in.

AC Power			Customized According To Client Needs				
Loading Range			Charge	0~100V*	Discharge	2~100V* (Option:0V Discharge)	
Output	Constant Voltage	Maximum Voltage	Depend on Spec*	**Measurement**	Voltage	Range	0~Maximum Voltage*1.1
		Resolution	16 bit			Resolution	24 bit
		Accuracy	±0.02% F.S.			Accuracy	±0.02% F.S.
	Constant Current	Maximum Voltage	Depend on Spec*		Current	Range	0~Maximum Charge/ Discharge Current*1.1
		Resolution	16 bit			Resolution	24 bit
		Accuracy	±0.02% F.S.			Accuracy	±0.02% F.S.
	Constant Power	Maximum	Depend on Spec				
		Resolution	16 bit				
		Accuracy	±0.04% F.S.				
Data Recording Time	100ms (Option:10ms, 1ms)						
Communication Interface	CANBus (Ethernet to PC)						
Ambient	23°C±2°C ; 20~90HR						
Optional Features	CR Charge/ Discharge, Dynamic waveform simulation, Pulse Charge/Discharge, DCIR Measurement, DCIR measurement, ACIR measurement, Parallel Connections among Channels, BMS & Gas Gauge Data Collection, Chamber Integration, Data Analyzer						
Accessory	BMS & Gas Gauge Data Collector, Auxiliary Voltage, Auxiliary Temperature, Chamber, Customized Fixture, Auto-Calibrator, Alarm Buzzer						

***Accept Customized Request**

Model	Voltage(V)	Current(A)
MCL2 5V / 3A	5	3
MCL2 5V / 5A	5	5
MCL2 5V / 10A	5	10
MCL2 5V / 20A	5	20
MCL2 5V / 30A	5	30
MCL2 5V / 50A	5	50
MCL2 5V / 100A	5	100
MCL2 5V / 200A	5	200
MCL2 5V / 300A	5	300
MCL2 5V / 400A	5	400
MCL2 5V / 500A	5	500
MCL2 5V / 1000A	5	1000
MCL2 20V / 5A	20	5
MCL2 20V / 10A	20	10
MCL2 20V / 20A	20	20

Model	Voltage(V)	Current(A)
MCL2 20V / 30A	20	30
MCL2 60V / 10A	60	10
MCL2 60V / 15A	60	15
MCL2 60V / 20A	60	20
MCL2 60V / 30A	60	30
MCL2 60V / 60A	60	60
MCL2 60V / 80A	60	80
MCL2 60V / 100A	60	100
MCL2 60V / 200A	60	200
MCL2 60V / 500A	60	500
MCL2 100V / 100A	100	100
MCL2 100V / 200A	100	200
MCL2 100V / 300A	100	300
MCL2 100V / 500A	100	500

MCL2 Mini Series

New Generation Portable Battery Test Equipment

Applied test

- Life cycle test
- Capacity test
- Pulse Charge/ Discharge
- DCIR measurement
- ACIR measurement

Applied technology

- Microampere level current output/ control
- High Precision
- 0V Discharge

Main Features

- Portable equipment with a size and weight which can be hand-carried or placed inside a suitcase.
- Output and measurement accuracy is within ±0.02% F.S.
- A data recording frequency of 10ms.

The best solution for the following needs

- Requires the use of the same equipment in multiple locations to perform battery testing, so that reliable test results can be obtained by testing under an environment with minimal equipment variations.
- Requires highly-precise testing results.
- To accurately and rapidly record battery parameter changes during test processes.

Others

- Independent control and output of each channel.
- Able to make parallel connections among multiple channels in any configuration to increase current output.
- Operating modes: constant current, constant voltage, constant power, pulse charge/discharge, ACIR, DCIR
- Integrated control with external chambers.
- Advanced data analysis functionality.
- With various types of international testing standards for DCIR already built in.

AC Power			Customized According To Client Needs				
Channels			4				
Loading Range			Charge	0~5V	Discharge	0~5V	
Output	Constant Voltage	Maximum Voltage	5V		Measurement	Voltage	Range 0~5.5V
		Resolution	16 bit				Resolution 24 bit
		Accuracy	±0.02% F.S.				Accuracy ±0.02% F.S.
	Constant Current	Maximum Charge/ Discharge Current	Depend on Spec			Current	Range 0~Maximum Charge/ Discharge Current*1.1
		Resolution	16 bit				Resolution 24 bit
		Accuracy	±0.02% F.S.				Accuracy ±0.02% F.S.
	Constant Power	Maximum	Depend on Spec				
		Resolution	16 bit				
		Accuracy	±0.04% F.S.				
Data Recording Time			100ms (Option:10ms, 1ms)				
Communication Interface			CANBus (Ethernet to PC)				
Ambient			23°C±2°C ; 20~90HR				
Optional Features			Pulse Charge/Discharge, DCIR Measurement, DCIR measurement, ACIR measurement, Parallel Connections among Channels, Chamber Integration				
Accessory			Chamber, Customized Fixture, Auto-Calibrator				

Model	Voltage(V)	Current(A)
MCL2 Mini 5V / 5A	5	5
MCL2 Mini 5V / 10mA	5	0.01

ABT 1000 Series

Chamber Integrated Battery Test Equipment

Applied test

- Life cycle test
- Capacity test
- Environmental test
- DCIR measurement

Applied technology

- 0V Discharge
- Temp/ Humidity Control

Main Features

- Through the integration of the battery testing system and the chamber into one equipment, a single software application can be used to control the entire unit. In addition, space utilization can be improved by 20 to 50%.
- Customization is possible based on different power and precision specifications required by the customer.
- Customized fixtures can be made for the batteries to be tested.

Others

- Independent control and output of each channel.
- Able to make parallel connections among multiple channels in any configuration to increase current output.
- Operating modes: constant current constant voltage, constant power DCIR.
- Advanced data analysis functionality.
- Mechanical designs can be adjusted according to customer specifications.
- With various types of international testing standards for DCIR already built in.

The best solution for the following needs

- To optimize the use of space inside the laboratory.
- To gain an understanding of how different environmental variables (temperature and humidity) can impact a battery's performance.
- To provide integration functionalities through hardware in order to lessen the operational burden for related personnel.
- With requirements for long-term testing.

AC Power	Customized According To Client Needs						
Loading Range	Charge	0~5V	Discharge	0~5V			
Output	Constant Voltage	Maximum Voltage	5V	**Measurement**	Voltage	Range	0~5.5V
		Resolution	16 bit			Resolution	24 bit
		Accuracy	±0.04% F.S.			Accuracy	±0.04% F.S.
	Constant Current	Maximum Charge/ Discharge Current	Depend on Spec*		Current	Range	0~Maximum Charge/ Discharge Current*1.1
		Resolution	16 bit			Resolution	24 bit
		Accuracy	±0.03% F.S.			Accuracy	±0.03% F.S.
	Constant Power	Maximum	Depend on Spec*				
		Resolution	16 bit				
		Accuracy	±0.07% F.S.				
Data Recording Time	100ms (Option:10ms, 1ms)						
Communication Interface	CANBus (Ethernet to PC)						
Ambient	23°C±2°C ; 20~90HR						
Optional Features	DCIR measurement, Data Analyzer						
Accessory	Customized Fixture, Auto-Calibrator, Alarm Buzzer						

***Accept Customized Request**

Model	Voltage(V)	Current(A)
ABT 1000 5V / 10A	5	10
ABT 1000 5V / 15A	5	15
ABT 1000 5V / 20A	5	20
ABT 1000 5V / 30A	5	30
ABT 1000 5V / 50A	5	50
ABT 1000 5V / 100A	5	100

MCB Series

Economy Battery Test Equipment

Applied test

- Life cycle test
- Capacity test
- Formation
- Grading
- On-going reliability test (ORT)
- DCIR measurement
- ACIR measurement

Applied technology

- BMS data collection
- 0V Discharge

Main Features

- ±0.04% voltage measurement accuracy；±0.03% current measurement accuracy.
- A data recording frequency of 100ms.

The best solution for the following needs

- To test large quantities of batteries over an extended period.
- In pursuit of affordable battery testing solutions.
- Suitable for battery production requirements.

Others

- Independent control and output of each channel.
- Able to make parallel connections among multiple channels in any configuration to increase current output.
- Operating modes: constant current constant voltage, constant power, DCIR, ACIR
- Software with high expandability, with integrated control of voltage measurement modules, temperature measurement modules, BMS data collection units, chambers, and other externally connected modules.
- Advanced data analysis functionality.
- BMS CAN signal analysis.
- Mechanical designs can be adjusted according to customer specifications.
- With various types of international testing standards for DCIR already built in.

AC Power			Customized According To Client Needs				
Loading Range			Charge	0~100V*	Discharge	2~100V* (Option:0V Discharge)	
Output	Constant Voltage	Maximum Voltage	Depend on Spec*		**Measurement**	Voltage	Range: 0~Maximum Voltage*1.1
		Resolution	16 bit				Resolution: 24 bit
		Accuracy	±0.04% F.S.				Accuracy: ±0.04% F.S.
	Constant Current	Maximum Charge/ Discharge Current	Depend on Spec*			Current	Range: 0~Maximum Charge/ Discharge Current*1.1
		Resolution	16 bit				Resolution: 24 bit
		Accuracy	±0.03% F.S.				Accuracy: ±0.03% F.S.
	Constant Power	Maximum	Depend on Spec*				
		Resolution	16 bit				
		Accuracy	±0.07% F.S.				
Data Recording Time	100ms						
Communication Interface	CANBus (Ethernet to PC)						
Ambient	23°C±2°C ; 20~90HR						
Optional Features	DCIR measurement, ACIR measurement, Parallel Connections among Channels, BMS & Gas Gauge Data Collection, Chamber Integration, Data Analyzer, Automated/semi-automated activation						
Accessory	BMS & Gas Gauge Data Collector, Auxiliary Voltage, Auxiliary Temperature, Chamber, Customized Fixture, Auto-Calibrator, Barcode Scanner, Alarm Buzzer						

***Accept Customized Request**

Model	Voltage(V)	Current(A)
MCB 5V / 3A	5	3
MCB 5V / 5A	5	5
MCB 5V / 10A	5	10
MCB 5V / 20A	5	20
MCB 5V / 30A	5	30
MCB 5V / 50A	5	50
MCB 5V / 100A	5	100
MCB 5V / 200A	5	200
MCB 5V / 300A	5	300
MCB 5V / 400A	5	400
MCB 5V / 500A	5	500
MCB 5V / 1000A	5	1000
MCB 20V / 5A	20	5
MCB 20V / 10A	20	10
MCB 20V / 20A	20	20

Model	Voltage(V)	Current(A)
MCB 20V / 30A	20	30
MCB 60V / 10A	60	10
MCB 60V / 15A	60	15
MCB 60V / 20A	60	20
MCB 60V / 30A	60	30
MCB 60V / 60A	60	60
MCB 60V / 80A	60	80
MCB 60V / 100A	60	100
MCB 60V / 200A	60	200
MCB 60V / 300A	60	300
MCB 60V / 500A	60	500
MCB 100V / 100A	100	100
MCB 100V / 200A	100	200
MCB 100V / 300A	100	300
MCB 100V / 500A	100	500

SBT 1000 Series

Lithium Battery State of Health Rapid Evaluation Solution

Applied test

State of health monitoring

Grading

Applied technology

Comprehensive indicators

Rapid evaluation

High Precision

Handheld

Big Data Analysis

Artificial intelligence

Main Features

- Takes only 60 seconds to test a battery set, significantly increasing production capability.
- Patented technology incorporated in battery SOH model achieves an accuracy of 92% and above.
- Applies big data analysis and continuous learning by AI on model refinement, accuracy will continue to improve after each test.
- Won the 2020 Taiwan Excellent Award for productivity and energy industry.

The best solution for the following needs

- Rapid evaluation of electric vehicle used battery health status.
- Rapid batch testing of batteries.

Others

- Supports mobile device operation to increase convenience of operations.
- Customized measurement parameters based on customer requirements.
- Supports barcode start up to increase testing efficiency.
- Supports barcode print out for more convenient follow-up on test results.

AC Power	Customized According To Client Needs				
Applicable Battery	Voltage	60Vand less	Capacity	200Ahand less	
Test Time/ per Battery	<60s		**Cell Voltage Measurement**	Max Voltage	8V
Daily Capacity*1	720 pcs / CH			Accuracy	±0.02% F.S.(±1.6mV)
Modeling Time	12~25Days			Resolution	1mV
Max. Charge/ Discharge Spec	Depend on Spec				
Voltage	Accuracy	±0.02% F.S.			
	Resolution	Depend on Spec			
Current	Accuracy	±0.02% F.S.			
	Resolution	Depend on Spec			
Ambient	23°C±2°C ; 20~90HR				
Communication Interface	CANBus (Ethernet to PC)				
Accessory	Barcode Scanner, Barcode Printer				

***1 Calculated with 60 seconds used for testing, 60 seconds for battery replacement, and 24 hours a day**
***2 Optional**

Model	Voltage(V)	Current(A)
SBT 1000 5V / 5A	5	5
SBT 1000 5V / 10A	5	10
SBT 1000 30V / 50A	30	50
SBT 1000 30V / 100A	30	100
SBT 1000 30V / 150A	30	150
SBT 1000 30V / 200A	30	200
SBT 1000 60V / 50A	60	50
SBT 1000 60V / 100A	60	100
SBT 1000 60V / 150A	60	150
SBT 1000 60V / 200A	60	200

MCE A Series

Eco Series-Battery Production Equipment

Applied test

Life cycle test
Capacity test
Formation
Grading
DCIR measurement
ACIR measurement

Applied technology

Energy Recycle
BMS data collection

Main Features

- ±0.05% F.S.Accuracy
- The discharged energy recycling rate is able to reach up to 60%.
- Innovative mechanical design reduces equipment footprint by 50%.
- Module replacement design.
- Automated production line integration.
- Each computer is capable of controlling more than 2,000 channels simultaneously.
- With the introduction of the middle layer controller, once the production process has begun, it is no longer necessary for the equipment to remain connected to a PC.

The best solution for the following needs

- Large-scale production of power batteries.
- With green factories as the target, aiming to reduce carbon emissions and energy costs.
- Factory space is limited and space utilization must be enhanced.
- Requires the introduction of automated manufacturing to reduce the number of personnel deployed inside the factory.

Others

- Independent control and output of each channel.
- Operating modes: constant current, constant voltage, constant power, dynamic waveform simulation, DCIR, ACIR.
- Software with high expandability, with integrated control of voltage measurement modules, temperature measurement modules, BMS data collection units, chambers, and other externally connected modules.
- Advanced data analysis functionality.
- BMS CAN signal analysis.
- Mechanical designs can be adjusted according to customer specifications.
- With various types of international testing standards for DCIR already built in.

AC Power			Customized According To Client Needs				
Loading Range			Charge	0~100V*	Discharge	6-60V*;8-100V*	
Output	Constant Voltage	Maximum Voltage	Depend on Spec*		**Measurement**	Voltage	Range	0~Maximum Voltage*1.1
		Resolution	16 bit				Resolution	24 bit
		Accuracy	±0.05 F.S.				Accuracy	±0.05 F.S.
	Constant Current	Maximum Charge/ Discharge Current	Depend on Spec*			Current	Range	0~Maximum Charge/ Discharge Current*1.1
		Resolution	16 bit				Resolution	24 bit
		Accuracy	±0.05 F.S.				Accuracy	±0.05 F.S.
	Constant Power	Maximum Power	Depend on Spec					
		Resolution	16 bit					
		Accuracy	±0.1% F.S.					
Data Recording Time	1s (Option:100ms)							
Maximum Charge/ Discharge Current	80%							
Communication Interface	TCP / IP							
Ambient	23°C±2°C ; 20~90HR							
Optional Features	Dynamic waveform simulation, DCIR measurement, ACIR measurement, BMS & Gas Gauge Data Collection, Chamber Integration, Automated/semi-automated activation, Data Analyzer							
Accessory	BMS & Gas Gauge Data Collector, Auxiliary Voltage, Auxiliary Temperature, Chamber, Customized Fixture, Auto-Calibrator, Barcode Scanner, Alarm Buzzer							

***Accept Customized Request**

Model	Power	Voltage(V)	Current(A)
MCE A 5V / 20A	100W	5	20
MCE A 5V / 30A	150W	5	30
MCE A 5V / 60A	300W	5	60
MCE A 5V / 100A	500W	5	100
MCE A 5V / 200A	1kW	5	200
MCE A 60-3-50	3kW	60	50
MCE A 60-3.5-80	3.5kW	60	80
MCE A 60-6-120	6kW	60	120
MCE A 60-10-240	10kW	60	240
MCE A 60-20-480	20kW	60	480
MCE A 100-3-30	3kW	100	30
MCE A 100-3.5-50	3.5kW	100	50
MCE A 100-6-120	6kW	100	120
MCE A 100-10-240	10kW	100	240
MCE A 100-20-480	20kW	100	480

MCF Lite Series

Consumer Electronics and Wearable Device Battery Test Equipment

Applied test

- Life cycle test
- Capacity test
- On-going reliability test (ORT)
- Failure analysis
- DCIR measurement
- ACIR measurement

Applied technology

- Multiple Current Ranges
- 0V Discharge
- Microampere level current output/ control

Main Features

- ±0.075% F.S.VoltageAccuracy；
  ±0.06% F.S. Current Accuracy.
- Supports 2 ranges of current output and measurements.
- Standard models support 0V discharging.
- Optional battery fixture connects to the equipment directly, battery installation/removal instantly becomes easy and convenient without having to deal with tangled wires.

Others

- Independent control and output of each channel.
- Operating modes: constant current constant voltage, constant power, DCIR, ACIR
- Integrated control with external chambers.
- Advanced data analysis functionality.
- With various types of international testing standards for DCIR already built in.

The best solution for the following needs

- To test micro batteries.
- In pursuit of affordable battery testing solutions.
- To test large quantities of batteries over an extended period.
- To test various types of batteries using the same equipment, improving asset utilization ratesperational environment.

AC Power			Customized According To Client Needs				
Loading Range			Charge	0~7V	Discharge	0~7V	
Output	Constant Voltage	Maximum Voltage	Depend on Spec*	**Measurement**	Voltage	Range	0~Maximum Voltage*1.1
		Resolution	16 bit			Resolution	24 bit
		Accuracy	±0.075% F.S.			Accuracy	±0.075% F.S.
	Constant Current	Maximum Charge/ Discharge Current	Depend on Spec*		Current	Range	0~Maximum Charge/ Discharge Current*1.1
		CurrentRange	2 (Dual Model)				
		Resolution	16 bit			Resolution	24 bit
		Accuracy	±0.06% F.S.			Accuracy	±0.06% F.S.
	Constant Power	Maximum	Depend on Spec				
		Resolution	16 bit				
		Accuracy	±0.14% F.S.				
Data Recording Time			1s				
Communication Interface			CANBus (Ethernet to PC)				
Ambient			23°C±2°C ; 20~90HR				
Optional Features			DCIR measurement, ACIR measurement, Chamber Integration, Data Analyzer, Automated/semi-automated activation				
Accessory			Chamber, Customized Fixture, Alarm Buzzer, Auto-Calibrator, Barcode Scanner				

***Accept Customized Request**

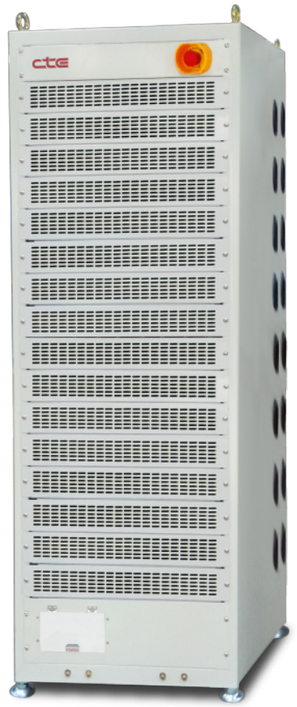
Model	Voltage(V)	Current(A)	
		Range 1	Range 2
MCF Lite Single 2V / 0.05A	2	0.05	X
MCF Lite Single 2V / 0.3A	2	0.3	X
MCF Lite Single 2V / 0.5A	2	0.5	X
MCF Lite Single 2V / 3A	2	3	X
MCF Lite Single 5V / 0.05A	5	0.05	X
MCF Lite Single 5V / 0.3A	5	0.3	X
MCF Lite Single 5V / 0.5A	5	0.5	X
MCF Lite Single 5V / 3A	5	3	X
MCF Lite Single 7V / 0.05A	7	0.05	X
MCF Lite Single 7V / 0.3A	7	0.3	X
MCF Lite Single 7V / 0.5A	7	0.5	X
MCF Lite Single 7V / 3A	7	3	X
MCF Lite Dual 2V / 0.5A	2	0.5	0.05
MCF Lite Dual 2V / 3A	2	3	0.3
MCF Lite Dual 5V / 0.5A	5	0.5	0.05
MCF Lite Dual 5V / 3A	5	3	0.3
MCF Lite Dual 7V / 0.5A	7	0.5	0.05
MCF Lite Dual 7V / 3A	7	3	0.3

MCP Plus Series

Economical Battery Cell Production Equipment

Applied test

- Life cycle test
- Capacity test
- Formation
- Grading
- DCIR measurement
- ACIR measurement



Main Features

- Innovative mechanical design reduces equipment size by 50%.
- Able to integrate automated production lines to increase production capacity.
- Moduli zed design and hot swapping capability increase equipment uptime.

The best solution for the following needs

- Large-scale production of battery cells.
- Factory space is limited and space utilization and productivity must be enhanced.

Others

- Independent control and output of each channel.
- Able to make parallel connections among multiple channels in any configuration to increase current output.
- Operating modes: constant current, constant voltage, constant power, DCIR, ACIR.
- Software with high expandability, with integrated control of voltage measurement modules, temperature measurement modules, BMS data collection units, chambers, and other externally connected modules.
- Advanced data analysis functionality.

AC Power	Customized According To Client Needs						
Loading Range	Charge	0~5V	Discharge	2~5V			
Output	Constant Voltage	Maximum Voltage	5V	**Measurement**	Voltage	Range	0~5.5V
		Resolution	16 bit			Resolution	24 bit
		Accuracy	±0.1% F.S.			Accuracy	±0.1% F.S.
	Constant Current	Maximum Charge/ Discharge Current	Depend on Spec*		Current	Range	0~Maximum Charge/ Discharge Current*1.1
		Resolution	16 bit			Resolution	24 bit
		Accuracy	±0.1% F.S.			Accuracy	±0.1% F.S.
	Constant Power	Maximum	Depend on Spec				
		Resolution	16 bit				
		Accuracy	±0.2% F.S.				
Data Recording Time	1s						
Communication Interface	CANBus (Ethernet to PC)						
Ambient	23°C±2°C ; 20~90HR						
Optional Features	ACIR measurement, DCIR measurement, Chamber Integration, Automated/semi-automated activation, Data Analyzer, Parallel Connections among Channels						
Accessory	Chamber, Customized Fixture, Auto-Calibrator, Barcode Scanner, Alarm Buzzer						

***Accept Customized Request**

Model	Voltage(V)	Current(A)
MCP Plus 5V / 1A	5	1
MCP Plus 5V / 5A	5	5
MCP Plus 5V / 10A	5	10
MCP Plus 5V / 20A	5	20
MCP Plus 5V / 30A	5	30
MCP Plus 5V / 50A	5	50
MCP Plus 5V / 100A	5	100
MCP Plus 5V / 150A	5	150
MCP Plus 5V / 200A	5	200
MCP Plus 5V / 250A	5	250
MCP Plus 5V / 300A	5	300
MCP Plus 5V / 350A	5	350
MCP Plus 5V / 400A	5	400
MCP Plus 5V / 450A	5	450
MCP Plus 5V / 500A	5	500

MCE S Series

Eco Series-Lead-acid Battery Formation Equipment

Applied test

Life cycle test

Capacity test

Formation

Applied technology

Energy Recycle

Main Features

- Supports DC-DC and DC-AC energy recycling, with an efficiency rating of up to 97%.
- Once the system reaches a full load, its power factor is greater than 99%.
- When the system load is greater than 30%, the total harmonic distortion is less than 3%.
- Data visualization on the central display dashboard.
- Comprehensive software capability.
- Smart scheduling functionality.

Others

- Independent control and output of each channel.
- Operating modes: constant current.
- Software with high expandability, with integrated control of voltage measurement modules and temperature measurement modules.
- Provides customized software packages.

The best solution for the following needs

- Required for lead-acid battery formation and research.
- With green factories as the target, aiming to reduce carbon emissions and energy costs.
- The quality of the plant's power supply is not stable.
- Requires obtaining real-time data related to the current production progress as well as the plant's power consumption status.
- Manufacturing with a certain degree of flexibility; hoping to arrange the production schedule according to the most energy efficient method.

AC Power			Customized According To Client Needs				
Loading Range			Charge	100~300V	Discharge	100~300V	
Output	Constant Voltage	Maximum Voltage	300V		**Measurement** Voltage	Range	0~330V
		Resolution	0.1V			Resolution	0.1V
		Accuracy	±0.5% F.S.			Accuracy	±0.5% F.S.
	Constant Current	Maximum Charge/ Discharge Current	Depend on Spec*		Current	Range	0~Maximum Charge/ Discharge Current*1.1
		Resolution	Depend on Spec			Resolution	Depend on Spec
		Accuracy	±0.5% F.S.			Accuracy	±0.5% F.S.
Data Recording Time		1s					
Communication Interface		CANBus (Ethernet to PC)					
Ambient		23°C±2°C ; 20~90HR					
Optional Features		Smart Energy Management System					
Accessory		Auxiliary Voltage, Auxiliary Temperature					

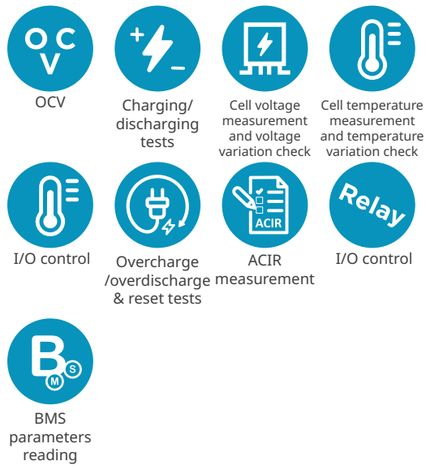
***Accept Customized Request**

Model	Voltage(V)	Current(A)
MCE S 300V / 0304A	300	+3/-4
MCE S 300V / 0507A	300	+5/-7
MCE S 300V / 0608A	300	+6/-8
MCE S 300V / 1014A	300	+10/-14

BPT 1100E Plus Series

Battery Pack Test Equipment for Core Pack/ Hard Pack

Applied test



AC Power			Customized According To Client Needs				
Loading Range			Charge	2~18V*	Discharge	2~18V*	
Output	Constant Voltage	Maximum Voltage	18V*		**Measurement**	Voltage	Range	0~19.8V*
		Resolution	16 bit				Resolution	24 bit
		Accuracy	±0.02% F.S.				Accuracy	±0.02% F.S.
	Constant Current	Maximum Charge/ Discharge Current	±12A*			Current	Range	0~13.2A*
		Resolution	16 bit				Resolution	24 bit
		Accuracy	±0.02% F.S.				Accuracy	±0.02% F.S.
Ambient		23°C±2°C ; 20~90HR						

***Accept Customized Request**

Model	Voltage(V)	Current(A)
BPT 1100E Plus 18V / 12A	18	12

Main Features

- Able to connect with the customer's MES system to achieve seamless data transmission.
- Supports multiple gas gauge IC tests, including all major models provided by suppliers such as TI, Maxim, and Renesas.
- Test items: wake up, OCV test, charging/discharging tests, cell voltage measurement and voltage variation check, cell temperature measurement and temperature variation check, overcharge/over discharge & reset tests, ACIR measurement, DCIR measurement, I/O control, and BMS parameters reading.

The best solution for the following needs

- Requires flexible testing for core packs/hard packs.
- To streamline personnel deployment inside the factory, with automated manufacturing as the goal.
- Requires various communication protocols support.
- Requires the ability to collect, analyze, and discriminate gas gauge/BMS communication data.

Others

- EIA standard chassis, suitable for standard rack assembly.

PFT 1100

Power Battery Pack Test Equipment for Core Pack/ Hard Pack

Applied test

- OCV
- Charging/ discharging tests
- Cell voltage measurement and voltage variation check
- Cell temperature measurement and temperature variation check
- Overcharge /overdischarge & reset tests
- ACIR measurement
- BMS parameters reading
- Pulse Charge/ Discharge
- Dynamic waveform simulation

Main Features

- Able to connect with the customer's MES system to achieve seamless data transmission.
- Supports multiple gas gauge IC tests, including all major models provided by suppliers such as TI, Maxim, and Renesas.
- Test items: OCV test , charging/discharging tests, cell voltage measurement and voltage variation check, cell temperature measurement and temperature variation check, overcharge/over discharge & reset tests, ACIR measurement, DCIR measurement, SOC measurement, pulse testing, dynamic waveform simulation, Gas Gauge/BMS parameter judgement, hipot test, impedance test, short-circuit test.

The best solution for the following needs

- Requires flexible testing for core packs/hard packs.
- To streamline personnel deployment inside the factory, with automated manufacturing as the goal.
- Requires various communication protocols support.
- Requires the ability to collect, analyze, and discriminate gas gauge/BMS communication data.

Others

- EIA standard chassis, suitable for standard rack assembly.

AC Power			Customized According To Client Needs				
Loading Range			Charge	0-100V*	Discharge	20-100V*	
Output	Constant Voltage	Maximum Voltage	Depend on Spec*		**Measurement**	Voltage	Range / Depend on Spec*
		Resolution	16 bit				Resolution / 24 bit
		Accuracy	±0.02% F.S.				Accuracy / ±0.02% F.S.
	Constant Current	Maximum Charge/ Discharge Current	Depend on Spec*			Current	Range / Depend on Spec*
		Resolution	16 bit				Resolution / 24 bit
		Accuracy	±0.02% F.S.				Accuracy / ±0.02% F.S.
Ambient	23°C±2°C ; 20~90HR						

*Accept Customized Request

Model	Voltage(V)	Current(A)
PFT1100 60V / 10A	60	10
PFT1100 60V / 15A	60	15
PFT1100 60V / 20A	60	20
PFT1100 60V / 30A	60	30
PFT1100 60V / 60A	60	60
PFT1100 60V / 80A	60	80
PFT1100 60V / 100A	60	100
PFT1100 60V / 200A	60	200
PFT1100 60V / 300A	60	300
PFT1100 60V / 500A	60	500
PFT1100 100V / 100A	100	100
PFT1100 100V / 200A	100	200
PFT1100 100V / 300A	100	300
PFT1100 100V / 500A	100	500

MCIF Plus Series

Advanced Lead - acid Battery Formation Equipment

Applied test

Formation

Applied technology

×2 Dual control modes

Touch operation

Main Features

- PC control and panel control dual-mode operations.
- With built-in memory modules, each equipment is able to store more than 24 hours of test data without being connected to a PC.
- Intuitive touch-screen operation.
- Information displayed on the screen can be configured.
- Single-cell voltage and temperature measurement features are already built-in.

Others

- Independent control and output of each channel.
- Operating modes: constant current, constant voltage, constant power.
- Provides customized software and hardware packages.

The best solution for the following needs

- Large-scale and economical production of lead-acid batteries.
- When the production line does not have excess controllers, PCs, or relevant electronic connection equipment.
- Manufacturing series and parallel batteries.
- Customized system construction and data analysis.
- Requires high-efficiency energy consumption.
- With software development requirements for large systems.

AC Power			Customized According To Client Needs				
Loading Range			Charge	6~300V	Discharge	6~270V	
Output	Constant Voltage	Maximum Voltage	300V		**Measurement** Voltage	Range	0~330V
		Resolution	0.1V			Resolution	16 bit
		Accuracy	±0.5% F.S.			Accuracy	±0.5% F.S.
	Constant Current	Maximum Charge/ Discharge Current	Depend on Spec*		Current	Range	0~Maximum Charge/ Discharge Current*1.1
		Resolution	16 bit			Resolution	16 bit
		Accuracy	±0.5% F.S.			Accuracy	±0.5% F.S.
Data Recording Time		1s					
Data Storage Method		USB					
Communication Interface		CANBus (Ethernet to PC)					
Ambient		23°C±2°C ; 20~90HR					

***Accept Customized Request**

Model	Voltage(V)	Current(A)
MCIF Plus 300V / 5A	300	5
MCIF Plus 300V / 10A	300	10
MCIF Plus 300V / 30A	300	30
MCIF Plus 300V / 50A	300	50
MCIF Plus 300V / 60A	300	60
MCIF Plus 300V / 100A	300	100

MCIF Series

Lead-acid Battery Formation Equipment

Applied test

Formation

Applied technology

×2

Dual control modes

Main Features

- PC control and panel control dual-mode operations.
- Single-cell voltage and temperature measurement features are already built-in.

The best solution for the following needs

- To mass produce lead-acid batteries.
- Customized system construction and data analysis.
- With software development requirements for large systems.
- When the production line does not have excess controllers, PCs, or relevant electronic connection equipment.
- Requires high-efficiency energy consumption.

Others

- Independent control and output of each channel.
- Operating modes: constant current, constant voltage.
- Software with high expandability, with integrated control of voltage measurement modules and temperature measurement modules.
- Provides customized software and hardware packages.

AC Power			Customized According To Client Needs				
Loading Range			Charge	6~300V	Discharge	6~270V	
Output	Constant Voltage	Maximum Voltage	300V		**Measurement** Voltage	Range	0~330V
		Resolution	0.1V			Resolution	16 bit
		Accuracy	±0.5% F.S.			Accuracy	±0.5% F.S.
	Constant Current	Maximum Charge/ Discharge Current	Depend on Spec*		Current	Range	0~Maximum Charge/ Discharge Current*1.1
		Resolution	16 bit			Resolution	16 bit
		Accuracy	±0.5% F.S.			Accuracy	±0.5% F.S.
Data Recording Time		1s					
Communication Interface		RS-485					
Ambient		23°C±2°C ; 20~90HR					
Optional Features		Auxiliary Voltage, Auxiliary Temperature					

***Accept Customized Request**

Model	Voltage(V)	Current(A)
MCIF 300V / 5A	300	5
MCIF 300V / 10A	300	10
MCIF 300V / 30A	300	30
MCIF 300V / 50A	300	50
MCIF 300V / 60A	300	60
MCIF 300V / 100A	300	100

iBox-G / GDA-400 Series / CNB-1011B

BMS DATA COLLECTOR

Main Features

- Uses CANBus to reduce the number of communication units required.*
- Connects to BMS, and uses its data to control the test program.
- Supports commonly used communication protocols including SMBus, I^2C, HDQ for IT batteries and Modbus and CANBus for power batteries; can be further expanded.
- Supports data flash.
- Multiple activation methods.
- Adopts a platform-based design that can support the data collection of a large variety of BMS ICs.

The best solution for the following needs

- Must obtain various data related to the gas gauge/BMS during the battery module/ pack testing process, followed by integrating the data with other test results.
- Requires the use of gas gauge/BMS data to control testing processes.

*** Only support iBox-G**

Model	iBox-G	GDA-400	CNB-1011B
CH/ per Unit	4CH	4CH	1CH
CH/ per System	128CH	128CH	128CH
Mechanism Design	Rack/ Portable	Rack/ Portable	Rack/ Portable
Communication Protocols (Battery)	SMBus / I^2C / HDQ	SMBus / I^2C / HDQ	CANBus
Communication Protocols (PC)	Ethernet	RS-485	Ethernet
Communication Speed	1Sec / 1CH	5Sec / 16CH	1Mbets
Number of parameters	47	47	unlimited
Temperature Classification	0~60°C	0~60°C	0~60°C
SmartCHarge	YES	YES	YES
SBS Write	YES	YES	YES
Gauge Condition	YES	YES	YES

ACP2 Series

Auto-Calibrator

Main Features

- Adopts the USB interface, plug and play.
- The flexible and scalable design is capable of calibrating up to 8 channels simultaneously, which saves times and human resources by nearly 800%.
- Customizable reports with up to 11 current and voltage calibration points.
- With the built-in detachable shunt and Agilent multimeter, performing calibration and maintenance is easy and convenient.

The best solution for the following needs

- When the factory has multiple procurement channels and requires efficient calibration on channels in order to save time
- To minimize the inpact of manual calibration due to individual differences with respect to calibration results.

Model	ACP2 L Series	ACP2 N Series	ACP2 M Series	ACP2 B Series
AC Power	AC110 / 220V	AC110 / 220V	AC110 / 220V	AC110 / 220V
Applicable Spec	20V / 1A	20V / 3A~20A	20V / 20A~50A	20V / 50A~100A
Applicable CTE Product Series	MCF Lite Series MCL2 Mini Series BT 2000 Series MCP Plus Series	MCB Series MCL2 Series MCL2 Mini Series ABT 1000 Series BT 2000 Series MCP Plus Series	MCB Series MCL2 Series ABT 1000 Series BT 2000 Series MCP Plus Series	MCB Series MCL2 Series ABT 1000 Series BT 2000 Series MCP Plus Series

ES-100B Series

Auxiliary Voltage

Main Features

- Each module contains 24 measurement points.
- Measurement accuracy ±0.02%F.S.
- A data recording frequency of 100ms
- Measurement data can be used as conditions for controlling the test program.

The best solution for the following needs

- Must monitor single-cell voltage inside the battery module/ pack, or to control the testing process with this data.

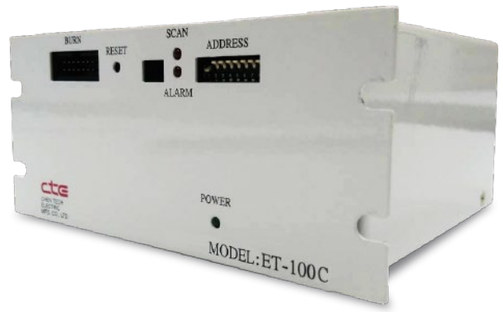
Model	Auxiliary Voltage ES-100B
Channels	24
Measurement Range	±64V,±32V,±8V
Measurement Resolution	16 bit
Accuracy	±0.02% F.S.
Data Recording Time	100ms (24CH)

ET-100CH Series

AuxiliaryTemperature

Main Features

- Each module contains 16 measurement points.
- Measurement accuracy can reach 1℃ .
- Supports various mainstream temperature sensors available on the market, such as: Thermocouple. (can be selected according to customer specifications)



The best solution for the following needs

- Must monitor single-cell temperature inside the battery module/ pack, or to control the testing process with this data.
- Must monitor single-cell temperature inside the battery module/ pack, or to control the testing process with this data.

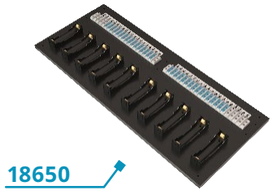
Model	AuxiliaryTemperature ET-100CH
Channels	16CH
Measurement Range	16CH / s
Accuracy	±1°C
Measurement Resolution	±1°C (-40°C~90°C)
Temperature Sensor	Thermocouple
Supported Type	Type J, K, E, N, R, S, T, B
Measurement Range*	-265~800°C

***Depend on chosen thermal sensors**

STANDARD / CUSTOMIZED FIXTURES

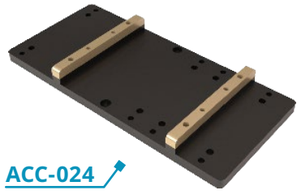
Dedicated fixtures for various cylindrical, polymer, coin cell batteries are available. Customized fixtures, fixture boxes, and fixture racks can also be made according to customer specifications.

FIXTURES

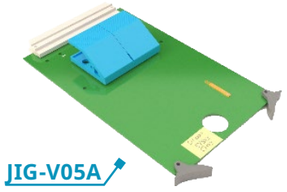


18650

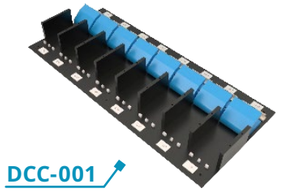
ACC-034



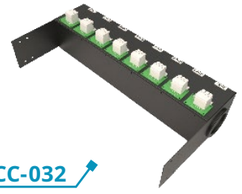
ACC-024



JIG-V05A



DCC-001



ACC-032

ACC-03

ACC-039

Model		18650	ACC-034	ACC-024
Battery type	Cylindrical	v	v	v (with nickel tabs)
	Polymer			v (with battery tabs at both sides)
	Coin Cell			
Battery size(W*D*H, mm)		18650		
Maximum Current		5A	5A	100A
Minimum Channels		1	4	1
Used In Chamber		x	v	v

FIXTURE RACK

FRA-C294F

FFRA-034A

FFRA-042A

JIG-V05A	DCC-001	ACC-032	ACC-03	ACC-039
v	v	v (welding tab with wires)		
			v	v
	Adjustable	40*50*3~5	Adjustable	Adjustable
10A	10A	3A	3A	10A
1	1	8	1	1
v	x	x	x	v

iBest

iBest software +Data analyzer

Upgraded User Experience **SOFTWARE**

AWARD-WINNING TECHNOLOGY / USER-FRIENDLY INTERFACE

Configuration · Execution · Analysis · Within One Click

Program Configuration

Simple

Provides different test program configuration interfaces for beginners and experts to satisfy different needs.
Easy to configure, intuitive operation, and no need for an instruction manual.

Compre-hensive

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 power-Constant voltage (CP-CV), Constant resistance (CR), Pulse, Waveform, ACIR, DCIR, Current Ramp, Voltage Ramp.

Step Cutoff Conditions

Time, EV, EC, ET, mAh, Wh, END mAh , Total mAh, Total Wh, SoC, END SoC, Ni-MH conditions, Gauge conditions, BMS conditions,CHamber conditions, △I, Capacity Decay

Protection Mechanism

OC, LC, OV, LV, OT, Verr, Cerr, CC Time, CV Time, △I, Cell Voltage Unbalance, Temperature Unbalance

Data Recording Interval

△t, △V, △I, △T

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

Pulse	Intel Turbo Boost, GSM, PWM
Dynamic waveform	FUDS (Fig. 1), DST (Fig. 2), HPPC
DCIR measurement	ISO 12405, IEC 61960
Battery performance testing	UL, IEC, SAE International, and GB Standards

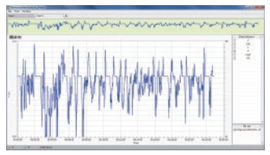


Fig. 1 FUDS Cycle Test

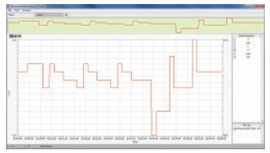


Fig. 2 DST Cycle Test

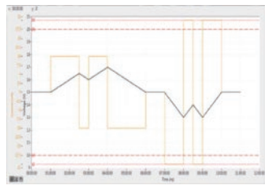


Fig. 3 Pre-test Simulation

Customi-zation

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

Integra-tion

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

Smart

Provides multiple convenient ways to configure test program, such as custom variables, C-rate, and current ramp, are provided to speed up process editing.

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. 3)

Confiden-tial

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.

Program Execution

Personalization

Multiple displays of channel status as well as color choices, parameters displayed can be customized, and can be adjusted based on personal preferences and the execution status of the test program. (Fig. 4, 5, 6)

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.

Immediate

Test data can be viewed in real time. The program can be adjusted dynamically during the test to rectify any unexpected issue.
(Fig. 7)

Flexible

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

Efficient

Throughout the production process, it is not necessary to link the equipment to a PC for data logging, enhancing equipment efficiency.

Assurance

Dual OV and OT detection mechanism; an independent program monitors the voltage and temperature of batteries being tested, and suspends equipment operations when the system is abnormal. Abnormal channel status detection; continuously matches the process and channel status, and issues a warning or suspends equipment if it is inconsistent. Extra and independent monitoring mechanism; uses third party hardware attached to the equipment to monitor battery voltage and temperature at all times, and directly cuts off equipment power when there are any abnormalities. External monitoring of power values; the external smart meter records various power related values, and the data is used for abnormalities tracking and comparison.

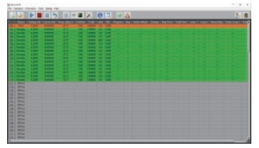


Fig. 4
Default status display panel

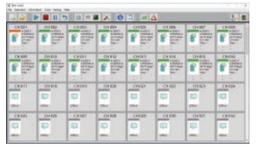


Fig. 5
32 Channels status display panel

Fig. 6
4 Channels status display panel

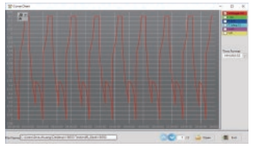


Fig. 7
Real time test curve

Data Analysis

Time-saving

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

Text and graphical reports

Self-defined X and Y-axis parameters on graphs

Graphs zoom-in and zoom-out

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.

Professional

Testing graphics and raw data can be displayed simultaneously, cross-refer-ence data mechanisms are also provided.
(Fig. 8)

Report ▶ **Step Report**

Charts ▶ **Cycle life, Coulombic, Efficiency, ΔQ / ΔV... and more.**
(Fig. 9, 10)

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

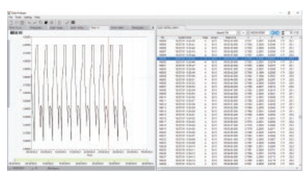


Fig. 8 Test curve and report

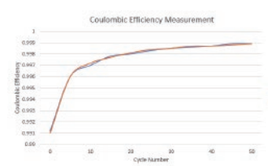


Fig. 9 Coulombic Efficiency

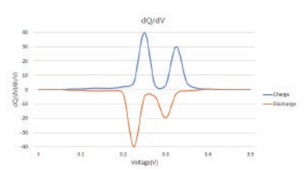


Fig. 10 ΔQ / ΔV