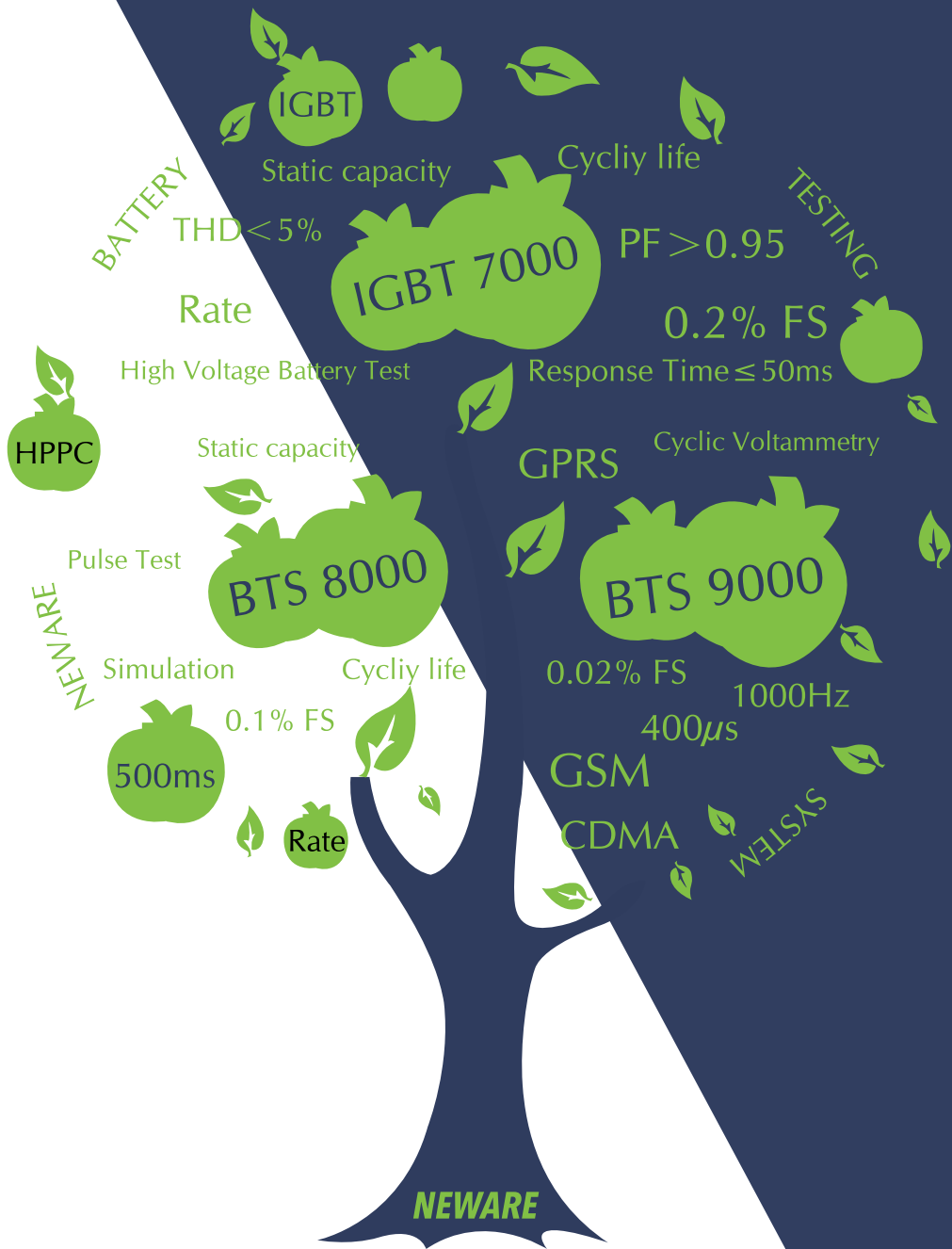


NEWARE

www.newarelab.com

Since 1998

20 years of innovation



About Neware

Since 1998, Neware has been committed to providing world-class testing solutions for the batteries and capacitors. We adopt SAP as our ERP system and comply with ISO9000 quality management standard. Our factory spans over 8,000 square meters in industrial park, Shenzhen office spans over 2,000 square meters, housing all R&D, Engineering, Sales and CRM personnel. To explore international market, we launched Hong Kong and France offices in 2011.

1999 <small>CIBF 4th</small>	The first-generation tester came out, based on RS232.
2001 <small>CIBF 5th</small>	BFGS (Battery Formation and Grading System) went into mass production.
2003	The 2nd-generation tester BTS-2000 came out.
2004 <small>CIBF 6th</small>	ISO9000 certified, and adopted the SAP system.
2006 <small>CIBF 7th</small>	The 3rd-generation tester BTS-3000 was developed successfully, with max power up to 21kVA.
2007	Adopted AMEBA business model, and we have also enlarged our office and factory.
2008 <small>CIBF 8th</small>	The 4th-generation tester BTS-4000 was developed successfully, it provides pulse DCIR test.
2009	EVTS-6000 and auxiliary channel have been developed successfully, which provide EV battery testing. Growing into one of the main suppliers of EV battery testers in China.
2010 <small>CIBF 9th, EVS-25</small>	The 5th-generation tester BTS-8000 was developed, providing simulation of driving. Our company was awarded the "Harmonious Labor Relations Enterprise" and the "Top 500 Growing Enterprise" by the government.
2012 <small>CIBF 10th</small>	The 6th-generation tester BTS-9000 was developed, providing the high-performance test solution to battery material research.
2013 <small>EVS 27</small>	LIMS was launched for laboratory information management. It complies with ISO17025 and focuses on testing process and result management. And we were awarded the Top 100 Independent S&M Innovation Company. New instrument utilizing energy saving technology successfully launched.
2014 <small>Battery Japan, Battery Show, CIBF 11th</small>	We attended Battery Japan 2014 and Battery Show 2014 as an exhibitor.
2015 <small>Battery Japan, Battery Show, EVS28 Korea, Intersolar Europe 2015</small>	More BTS9000 models launched successfully. The market share of Neware reached new heights.
2016 <small>CIBF 11th</small>	More BTS9000 models launched successfully. The market share of Neware reached new heights.
2017	Sales increased 1.5 times comparing with year 2016. Joined in more than 40 conferences and exhibitions domestic and overseas.

1 Neware Market

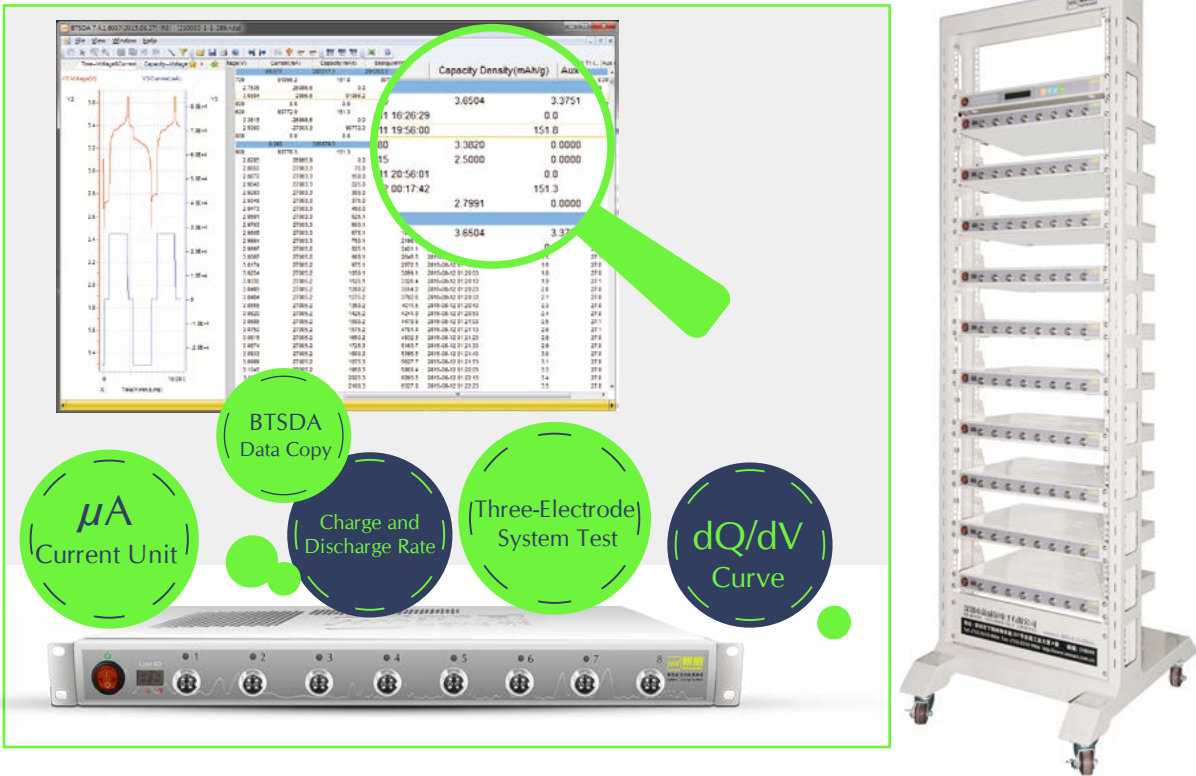


2 Neware Profile



BTS 4000 (Power)

BTS 4000 entered into market in the year of 2008. Now it is one of the most successful and most popular battery testing system in China. Thousands of battery manufacturers, battery research institutes and laboratories use it as their primary testing partner for their various testing activities.



Applications

DCIR / Pulse Test / HPPC;
Rate, Static capacity, cycle life and etc.

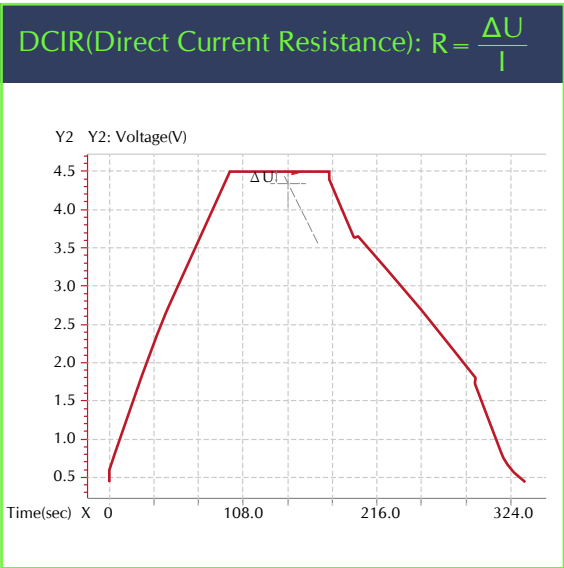
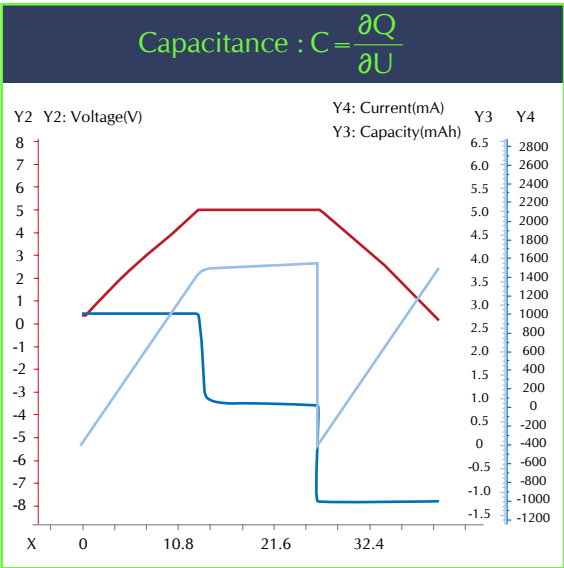
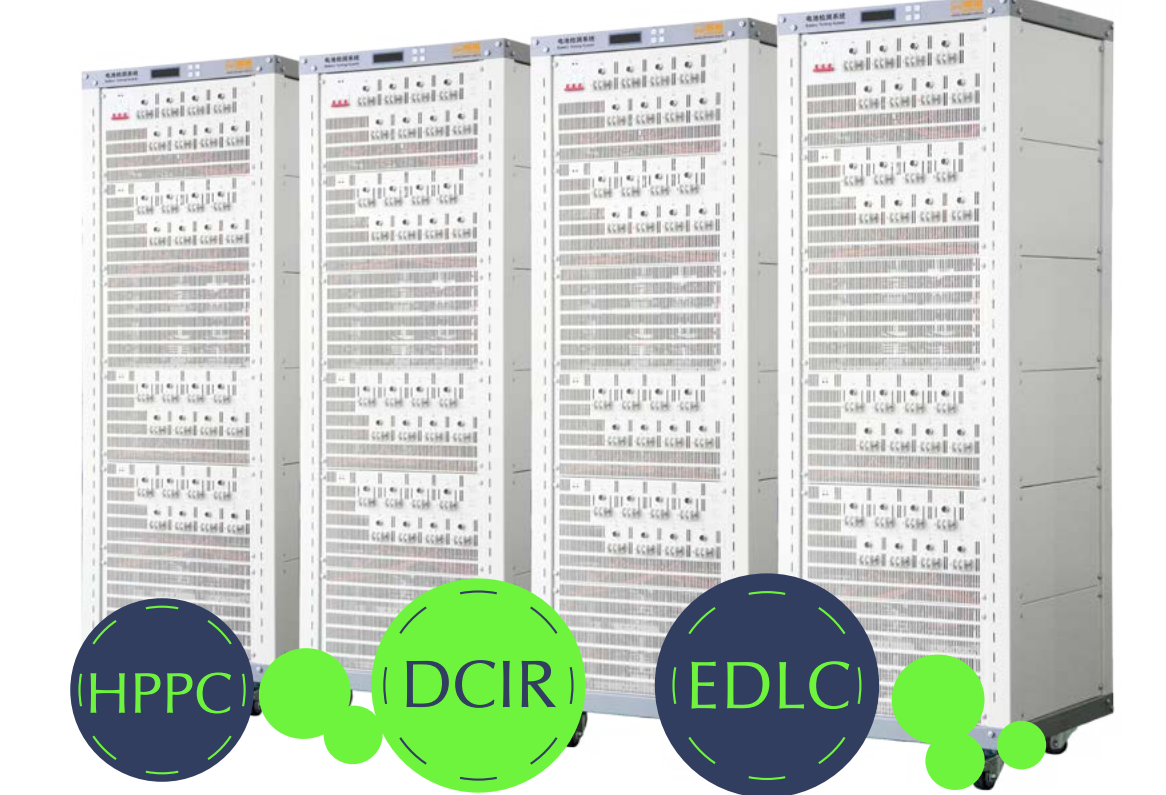
Feature

Resolution:	AD: 16bit; DA: 16bit;
Accuracy:	0.05% FS;
Response Time:	≤ 10ms (Current in the range 10% ~ 90% FS);
Max. Output Power:	21kVA;
Data Acquisition Frequency:	10Hz/100Hz Optional;
Minimum Pulse Width:	500ms.

*For testers power range ≤ 30VA, the accuracy is 0.05%FS
For testers power range > 30VA, the accuracy is 0.1%FS

BTS 4000 (Power)

Due to the rapid data acquisition frequency, BTS 4000 could also be applied for super capacitor or EDLC (Electronic Double Layer Capacitor) tests. Through our advanced software, the capacitance, DCIR(Direct Current Internal Resistance) and LC(Leakage Current) could be easily calculated.

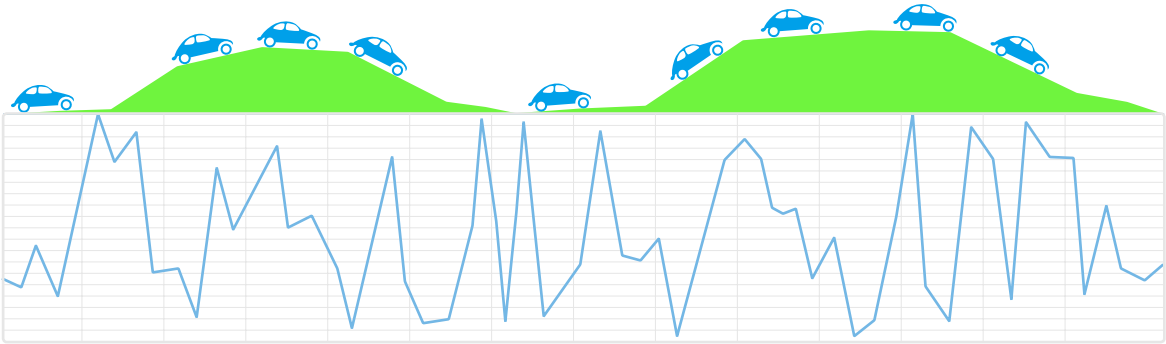
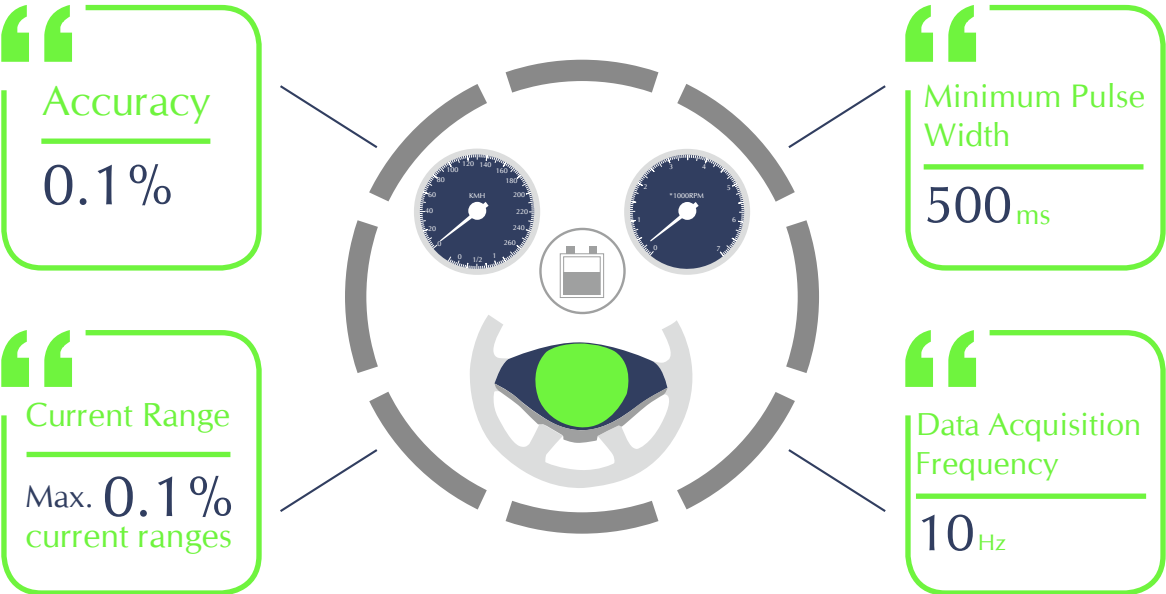


BTS 8000 (Driving Cycle Simulation)

Application



Features

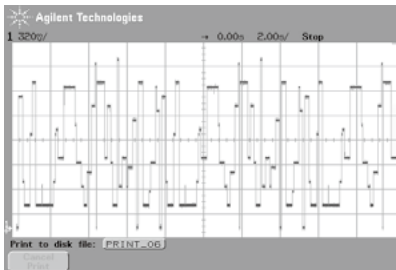
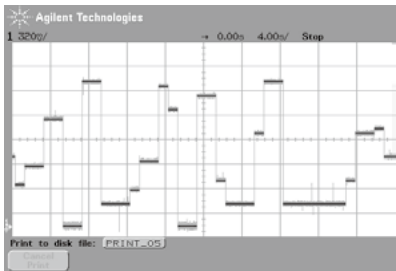
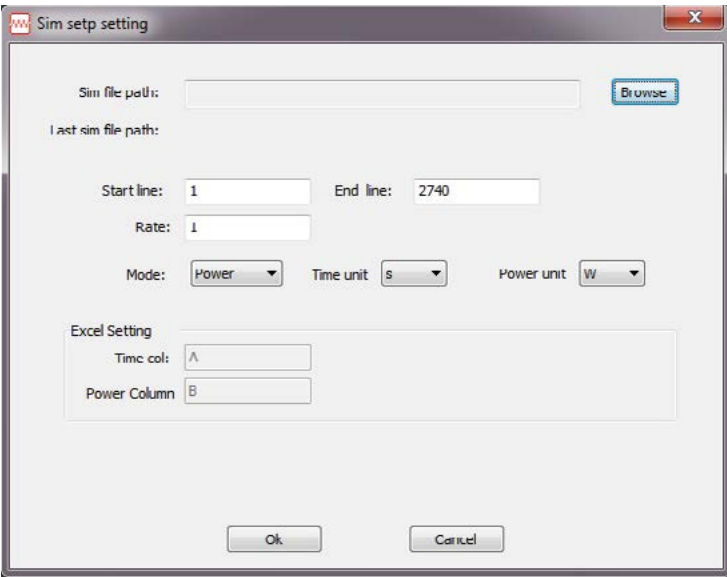


Applications

Driving Cycle Simulation;
Pulse Test / HPPC;
Rate, Static capacity, cycle life and etc.

Feature

Resolution:	AD: 16bit; DA: 16bit;
Accuracy:	0.1% FS;
Response Time:	≤ 20ms (Current in the range 10% ~ 90% FS);
Max. Output Power:	21kVA;
Data Acquisition Frequency:	10Hz;
Current Ranges:	Max. 4 current ranges;
Minimum Pulse Width:	500ms.

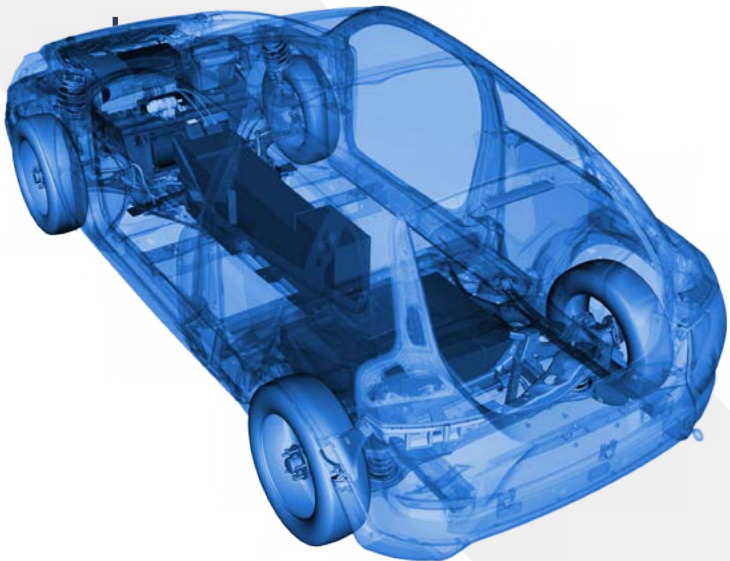
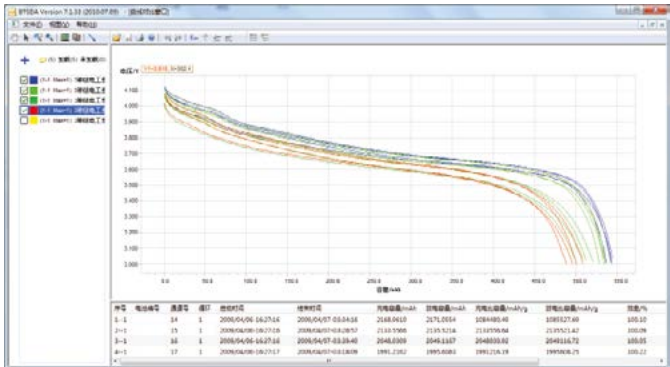


IGBT 7000 (Electric Vehicle Testing System)

Characterized with IGBT, reversible AC/DC converter and CAN supported, our EVTS 7000 brings you higher energy efficiency, smaller space and much convenient to utilize the existing gauge integrated in BMS/BMU.



CAN Bus



Applications

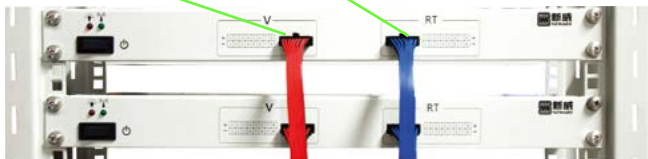
DCIR / Pulse Test / HPPC;
Rate, Static capacity, cycle life and etc.

Feature

Resolution:	AD: 16bit; DA: 16bit;
Accuracy:	0.1% FS;
Response Time:	≤10ms (Current in the range 10% ~ 90% FS);
Max. Output Power:	21kVA;
Data Acquisition Frequency:	10Hz;
Channels Parallel:	Up to 4 channels;
Minimum Pulse Width:	500ms.

For some battery packs without BMS, our auxiliary voltage and temperature sensors will help you to detect the voltage and temperature of every single cell in battery packs.

Voltage and temperature of cells in battery packs.



BTS 9000

Applications

GSM / CDMA / GPRS and other pulses tests;
Rate, Static capacity, cycle life and etc.

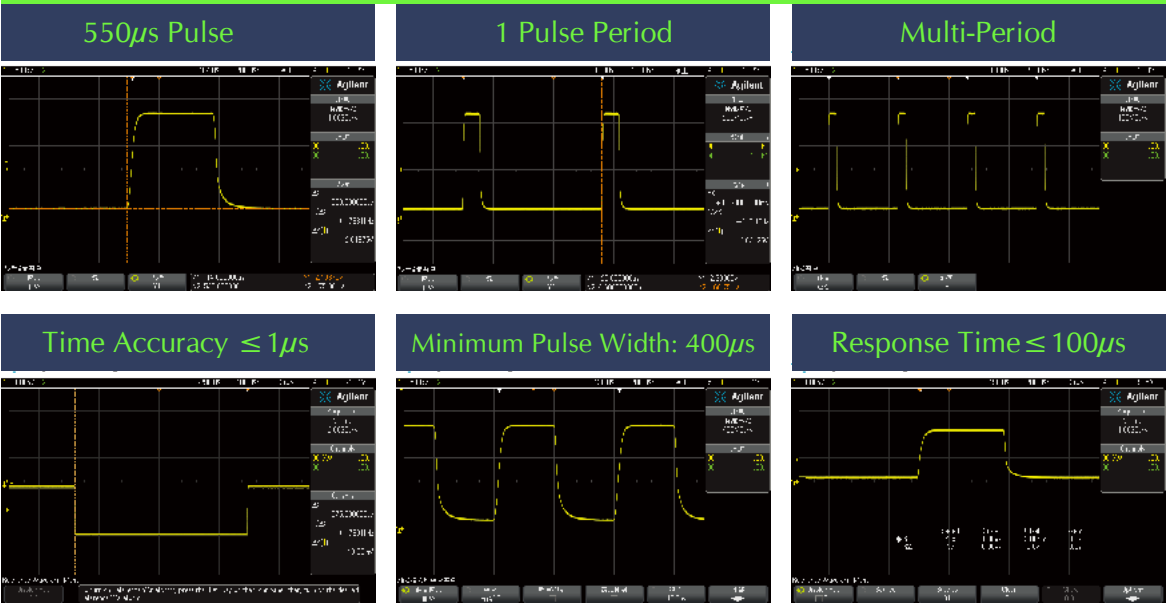
Feature

Resolution:	AD: 16bit; DA: 16bit;
Accuracy:	0.02% FS;
Response Time:	≤100ms (Current in the range 10% ~ 90% FS);
Minimum Pulse Width:	400μs;
Data Acquisition Frequency:	1000Hz;
Voltage Range:	5V;
Current Ranges:	Range 1: 160uA ± 32nA Range 2: 5mA ± 1uA Range 3: 160mA ± 32uA Range 4: 5000mA ± 1mA



Cutting-edge Technology for Battery Material Research

GSM Curves Output by BTS 9000, Captured by Agilent Oscilloscope



Hardware response time
≤ 100 μs

Min pulse width
400 μs

Accuracy
0.02%

4 ranges

Data acquisition frequency
1000Hz

Offline mode data protection
16GB



BTS ES (Energy Saving)



Applications

Bulk Testing / Mass Production Testing;
Rate, Static capacity, cycle life and etc.

Feature

Resolution:	AD: 16bit; DA: 16bit;
Accuracy:	0.1% FS;
Response Time:	≤20ms (Current in the range 10% ~ 90% FS);
Max. Output Power:	10kVA (user-definable);
Data Acquisition Frequency:	1Hz;
TDK(Total Harmonic Distortion):	5%;
PF:	≥0.98.

For a battery manufacture, it manufactures 25Ah batteries with LFP cathode, and have below similar testing process:
Formation(Fully Charged) ➡ Fully Discharged ➡ Fully Charged ➡ Fully Discharged ➡ 50% SOC

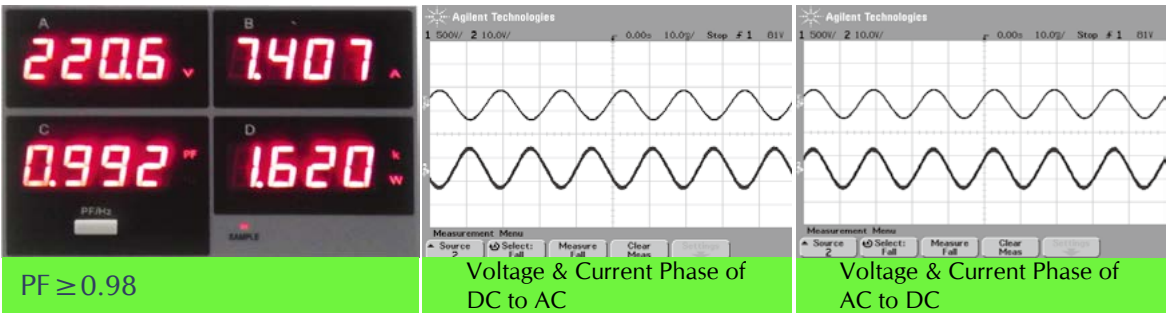
Coulombic Efficiency	100%	Energy Saving Conventional	Discharge	Charge
Daily Input	1,000pcs		54%	67%
Electricity Price	0.18US\$/kWh			45%
Internal Consumption (for charge/discharge per channel)	8Wh			

	Energy Required for Charge	Energy Required for Discharge	Energy Consumption
Energy Saving	$2.5 \times (25 \times 3.2 \times 1,000) / 67\%$	$-2 \times (25 \times 3.2 \times 1,000) / 54\%$	$4.5 \times 8 \times 1,000$
Conventional	$2.5 \times (25 \times 3.2 \times 1,000) / 45\%$	0	$4.5 \times 8 \times 1,000$



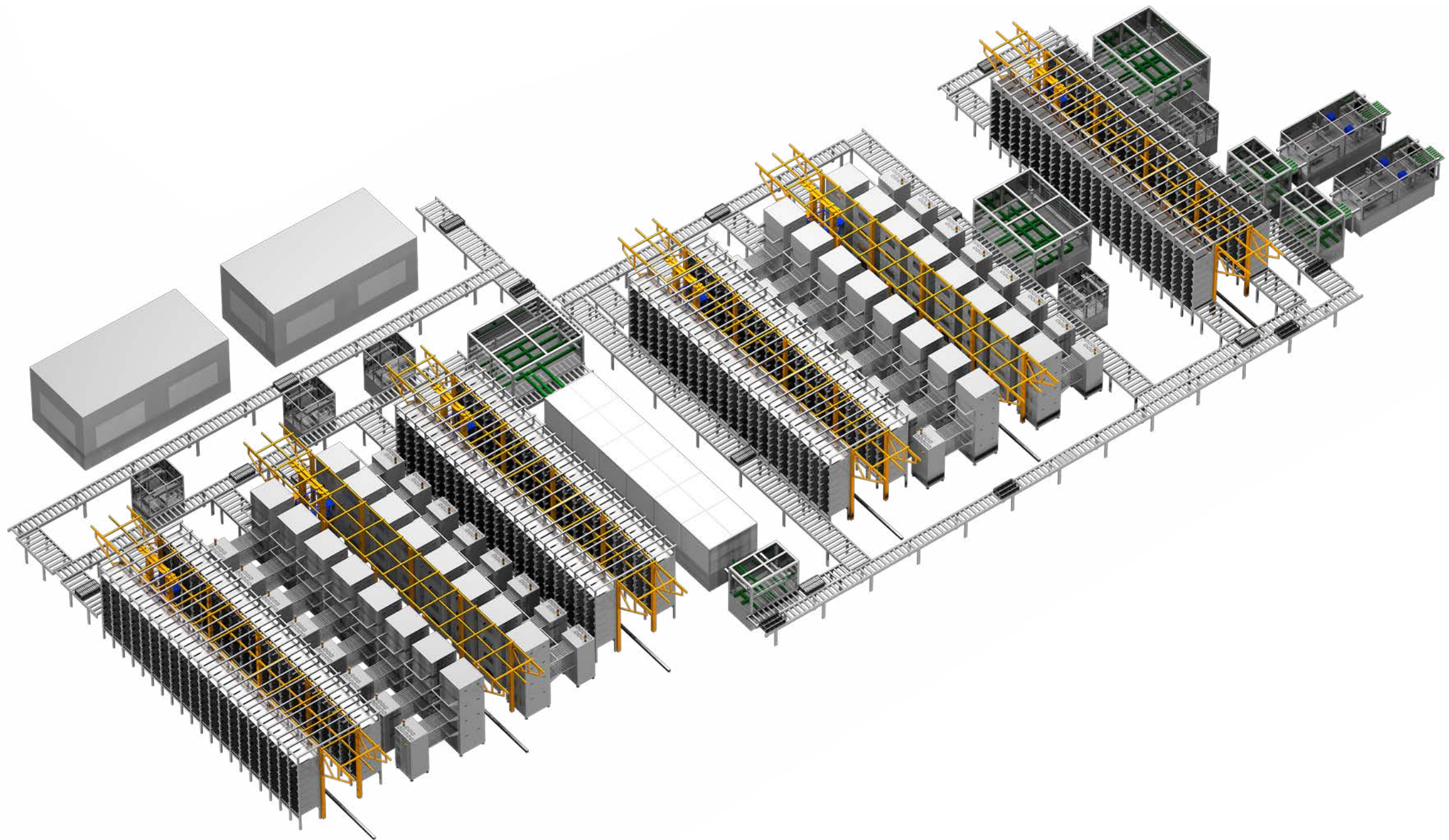
Total Daily Electricity Consumption	Annual Electricity Consumption
248.1kWh	64,506kWh
480.4kWh	124,915kWh

Total Energy Saved	60,407.62kWh
Total Money Saved	US\$ 10,873.37
Total Carbon Dioxide Reduced	42.62Metric Ton

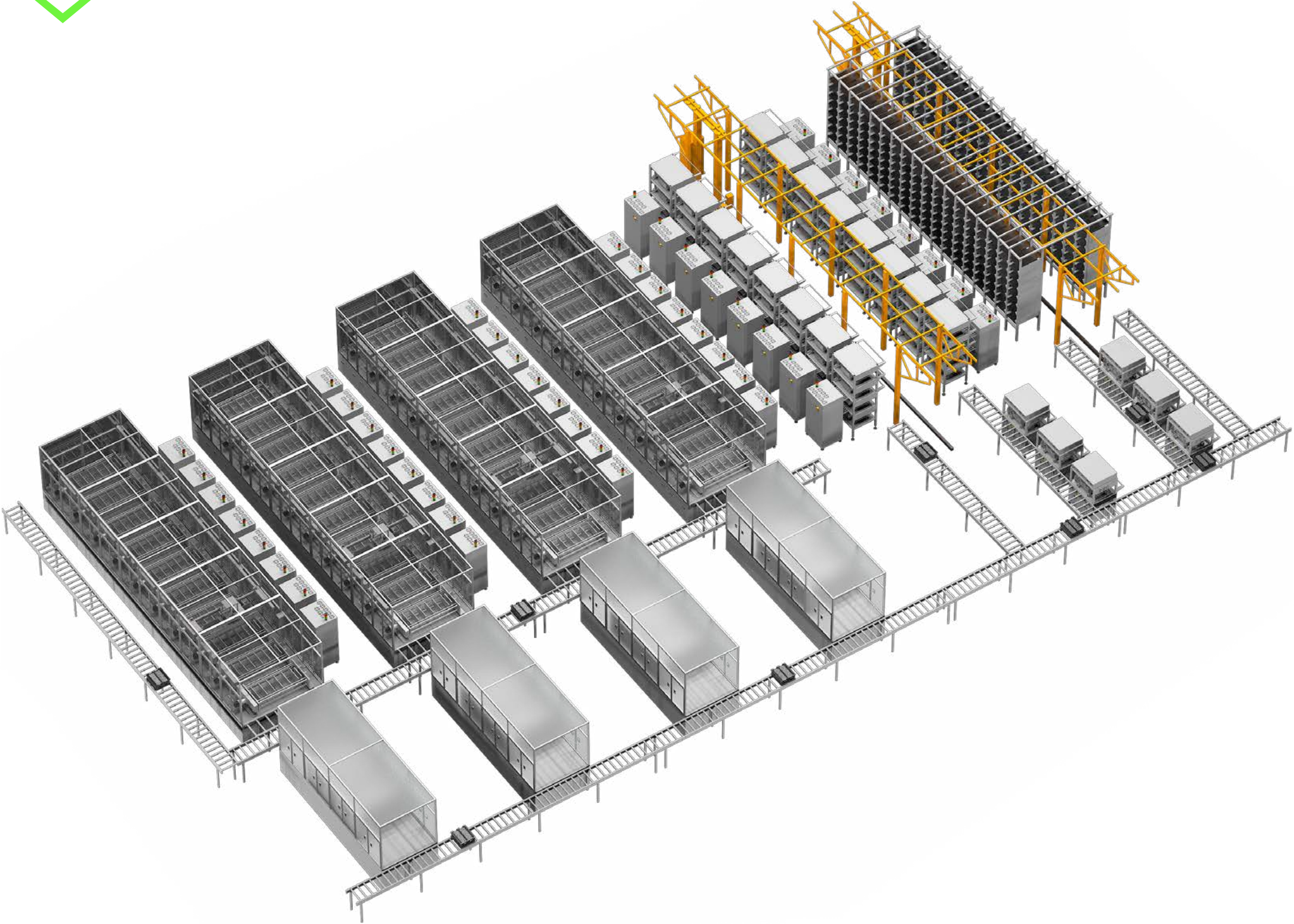


Greenhouse Gas Equivalencies Calculator: <http://www.epa.gov/cleanenergy/energy-resources/calculator.html>

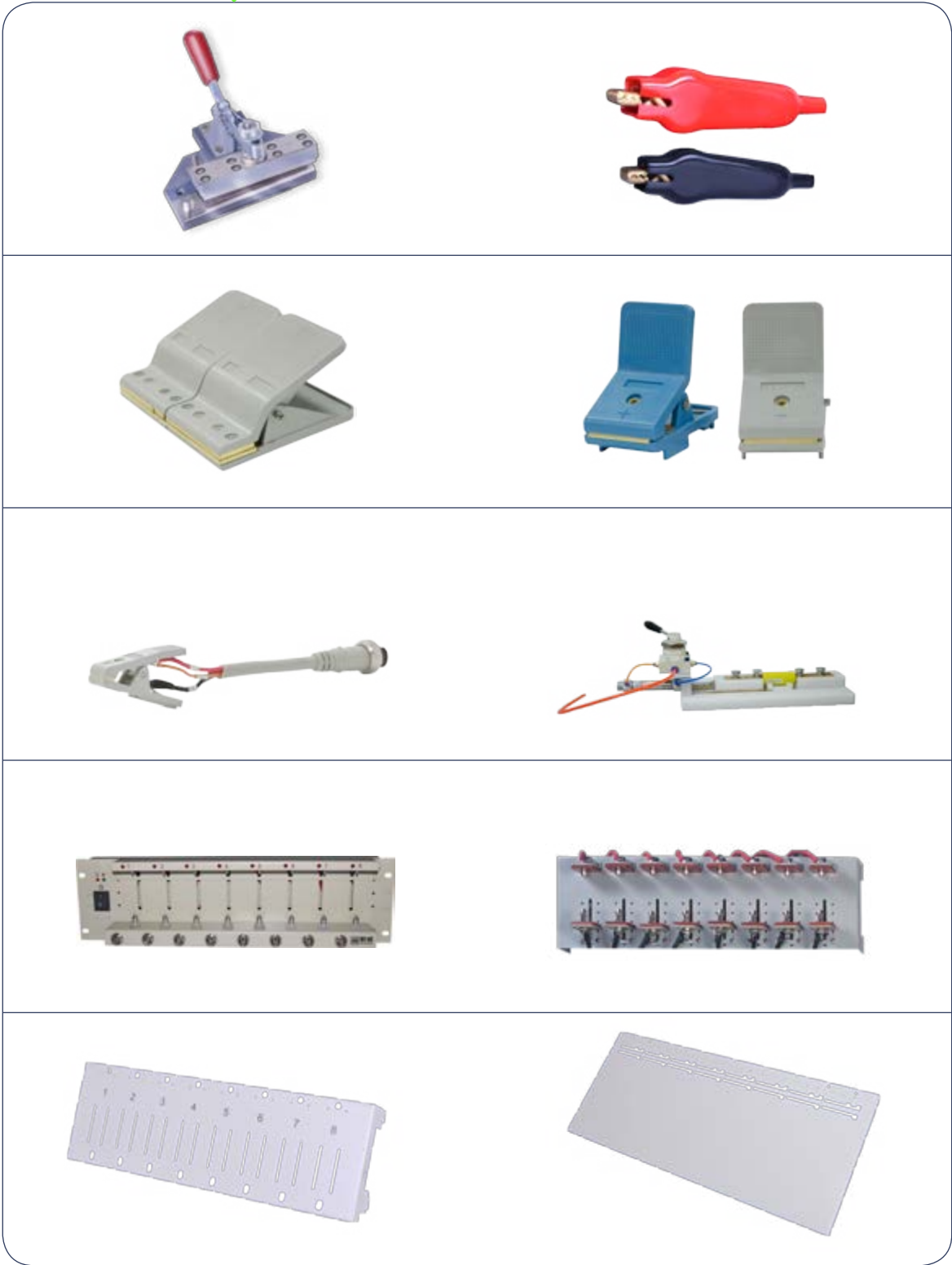
Solution of The Prismatic Cell



Solution of The Polymer Cell



Accessories



Products Sheet

		≤18KW	≤18KW	≤18KW	≤10KW	≤800KW	≤225KW
Category	Application and specs	BTS 3000	BTS 4000	BTS 8000	BTS 9000	EVT 6000	EVT 7000
Formation and Grading	Cell	√	√				
	Super Capacitor	√	√				
Capacity、Power、Energy、SOC Testing, Cycle	Battery(cell、 module、 pack)	√	√	√	√	√	√
	Super Capacitor	√	√	√	√	√	√
	BMS CAN bus Supported	√	√	√	√		
	UPS	√	√	√	√		
Simulation	Battery(cell、 module、 pack)			√	√		
	Super Capacitor			√	√		
	Power Supply			√	√		
DCIR	Battery(cell、 module、 pack)		√	√	√		
EV/HEV Testing	Battery、 Super Capacitor	√	√	√	√	√	√
	Production Testing	√	√	√	√	√	√
Pulse and HPPC Testing	Battery(cell、 module、 pack)		√	√	√		
	Super Capacitor		√	√	√		
Sampling Rate(Max)	1Hz	√				√	√
	10Hz		√			√	√
	1000Hz				√		
Rising Time (10%-90% Load)	100μs				√		
	20ms	√	√	√			
	100ms						√
	1s					√	
Voltage Range	5V	√	√	√	√		
	10V/20V	√	√	√	√		
	48V/60V/110V	√	√	√	√		
	200V/500V/800V					√	√
Current Range	160μA/1mA/50mA/3A/6A	√	√		√		
	10A/20A/50A/100A/200A	√	√	√	√		
	300A/500A/1000A	√	√	√	√	√	√
	3000A	√	√				
Number of Channels	1CH/2CH/4CH	√	√	√	√	√	√
	8CH/16CH/32CH	√	√		√		
	64CH/80CH/128CH	√	√				
	256CH/512CH	√					
Technology	THY					√	
	IGBT		√				√

NEWARE

www.newarelab.com

Since 1998

One of the best battery testing system researcher and maker from China.



Shenzhen Office:



15/F, Tower 3, Excellence City, No.128, Zhongkang Rd., Shenzhen, CHINA



Latitude : 22.5632 | Longitude : 114.0455

Hong Kong Office:



Office C, 22nd Floor, YHC Tower, No.1 Sheung Yuet Road, Kowloon, Hong Kong



Latitude : 22.2991 | Longitude : 114.1772