ITECH

High Performance Product Catalog

ITECH-Your Power Testing Solution

ITECH ELECTRONICS

www.itechate.com

About ITECH

ITECH ELECTRONICS
Your Power Testing Solution

As a professional global power electronic instruments manufacturer, "Customer oriented" is the principle of all ITECH's activities. We have been devoted into research and development on “Power Electronics” for decades. By continuously understanding the testing needs of various industries, ITECH continues to provide users with competitive testing solutions. ITECH has become a fairly large scale "power electronics" test solution and equipment supplier with a wide range of product lines. ITECH is committed to product innovation, is the hope that innovative products not only meet the user's general test needs, but also allow users to have new experience through unique test technology and convenient software applications.

ITECH always focus on innovation and R&D since established, ITECH has always held the leading position in some cutting-edge testing technologies, and we do our best to launch comprehensive test solutions and high performance products. At present, ITECH owns independent R & D institutes in both China and Taiwan and maintains close technical exchanges and cooperation with internationally renowned companies for a long time. While creating high quality products and services, we are devoted into updating and expanding test solutions for new industries and products.

Product Support

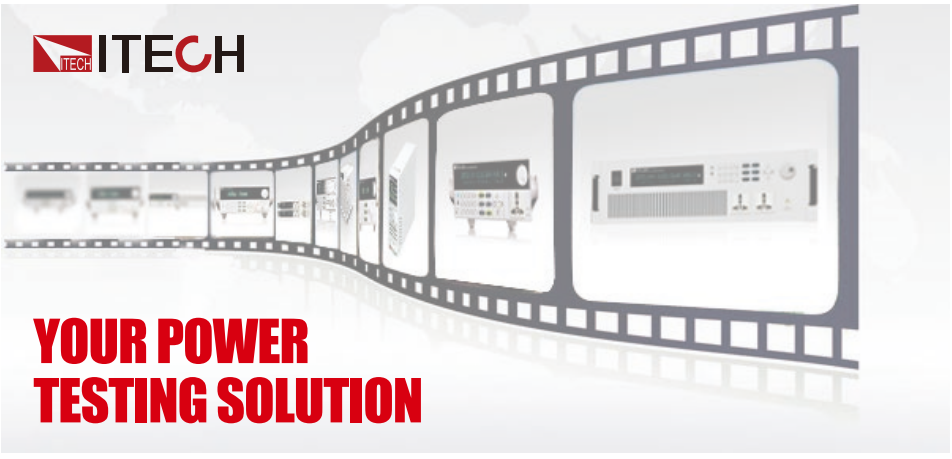
ITECH has professional technical support engineer’s team and complete technical service system to support product repair, maintenance, calibration, hardware and software upgrade, and other product support services to global customers.

Technical Training

ITECH customized technology training courses according to customers’ actual requirements to help customers easily grasp the instrument features and operating skills.

Service

ITECH provides customers with professional multi-lingual technical consulting services, wherever you are, as long as a phone call or an email, technical support engineers will quickly and accurately answer your questions, and can be customized professional service solutions for you according to your demands.
Hotline: 86-25-52415098
E-mail: fae@itech.sh info@itechate.com



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ITECH

YOUR POWER TESTING SOLUTION

ITECH has excellent agents and service locations around the world, if you need local services, please go to www.itechate.com or contact us directly.

There are other language versions of the manual, welcomed the request

For English version catalog please contact us.
Kontaktieren Sie uns bitte fur den Katalog--in Deutsch Sprache
기타 언어버전 설명서는 한국어를--참조하세요

Product Index

ITECH ELECTRONICS
Your Power Testing Solution

Electronic Load

Most greatly improve your R & D, design and production test efficiency

IT8600 AC/DC Electronic Load

P05~08

IT8600 is with adjustable frequency 45 Hz ~ 450 Hz. The unique oscilloscope waveform display function of IT8600's can display input voltage & current as waveform. It is equipped with measurement modes for different parameters such as inrush current, peak value, effective value, PF (power factor). Voltage harmonics measurement capacity is up to 50th. The built-in RS232, GPIB, LAN and USB communication interfaces are for reliable and fast control.

IT8300 Regenerative DC Electronic Load

P09~17

IT8300 Regenerative DC Electronic Load not only can simulate various load characteristics, but also can feed power back to grid without pollution. This eliminates the usual heat dissipation to a minimum and saves energy costs, adapts requirements of global energy-saving and emission reduction at the same time. IT8300 adopts high power density design, e.g. for 3 U size, it can absorb power up to 10.5 kW. IT8300 supports master-slave paralleling and current equalized distribution, which can expand the power up to 105KW or more.

IT8700 Multi-channel Programmable DC Electronic Load

P18~21

IT8700 series programmable DC electronic load adopts removable modules design, single frame up to 8 channels, supports up to 16 channels with mainframe extension. Users can freely choose in the 8 load modules according to the number of channels and power requirements, controlled by mainframe control panel, or controlled by host computer software via built-in LAN / RS232 / USB / GPIB interface.

IT8900 High Performance High Power Programmable DC Electronic Load

P22~27

IT8900 series provide three voltage ranges 150V/600V/1200V. The power expands to 600kW by master-slave paralleling, and maintains stand-alone functions. 50kHz high speed measurement, six working modes, transient over-power loading capability, CV loop speed adjustment, Measurement function, 25kHz dynamic test and other multiple accurate testing functions make IT8900 series well-suited for types of high power applications.

IT8800 High Power DC Electronic Load

P28~37

IT8800 series has wide power range 150W~55KW, voltage and current measurement speed up to 50KHZ, resolution up to 0.1mV/0.01mA, adjustable measurement current rising speed 0.0001A/us~2.5A/us, built-in RS232/GBIP/USB interface.

IT8912E LED High Accuracy DC Electronic Load

P38~40

IT8912E series high accuracy LED testing electronic loads can simulate the real output of LED lights with different characteristics. Their specific circuit can realize CR-LED mode, adjustable frequency, duty ratio PWM dimming output port (frequency: 20HZ-2KHZ). I-pp/I-max measurement function can test current ripple and start up surge current of LED constant flow source. Voltage and current testing speed can reach 50KHZ.

IT8600 AC/DC Electronic Load

Applications

UPS, Inverter, Frequency converter, Generator, AC power supply, Electronic component

IT8600 is ITECH latest series of AC/DC electronic loads with power range 0~14.4kVA, power can be expanded to 43.2kVA after paralleling, and adjustable frequency 45 Hz ~ 450 Hz. The unique oscilloscope waveform display function of IT8600's can display input voltage & current as waveform. It is equipped with measurement modes for different parameters such as inrush current, peak value, effective value, PF (power factor). Voltage harmonics measurement capacity is up to 50th. The built-in GPIB, LAN and USB communication interfaces are for reliable and fast control. IT8600 is the perfect solution for testing UPS, inverters, AC power supplies and relevant AC electronic components etc.

Feature

- Frequency range: 45 Hz~450 Hz
- Power range: 0~14.4 kVA
- Voltage range: 50~420 Vrms, 15~260 Vrms
- Current range: 0~160 Arms
- Parallel connection/ three-phase control *1 ,Power can be expanded to 43.2kVA *1
- 7'LCD screen
- Oscilloscope function supporting display of voltage and current waveform
- High-speed AD sampling, real-time capture waveform
- Measure Vrms, Vpk, Vdc, Irms, Ipk, Idc, W, VA, VAR, CF, PF and FREQ
- Measures THD (V) up to 50th Harmonic
- AC electronic load: CC/CR/CP mode
  DC electronic load: CC/CR/CP/CV mode *2
- External 0~10 V analog control input, voltage and current analog monitoring function
- OTP, OCP, OVP, UVP and OPP protection function
- GPIB, LAN and USB communication interfaces and external USB flash disk interface

* 1 Only IT8615 and IT8615L are with the function
*2 Only IT8615 and IT8615L have CV mode

Application

- UPS
- Inverter
- Frequency converter
- Generator
- AC power supply
- Electronic component

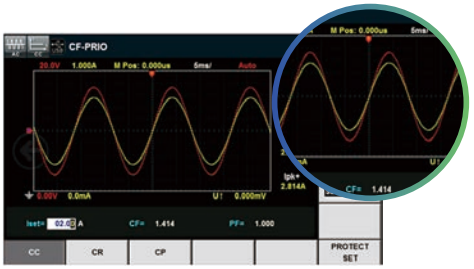
Model	Voltage	Current	Power	Output
IT8615	50~420Vrms	20Arms	1800VA	1φ
IT8615L	15~260Vrms	20Arms	1800VA	1φ
IT8616	50~420Vrms	40Arms	3600VA	1φ
IT8617	50~420Vrms	60Arms	5400VA	1φ or 3φ
IT8624	50~420Vrms	80Arms	7200VA	1φ
IT8625	50~420Vrms	100Arms	9000VA	1φ
IT8626	50~420Vrms	120Arms	10.8kVA	1φ
IT8627	50~420Vrms	140Arms	12.6kVA	1φ
IT8628	50~420Vrms	160Arms	14.4kVA	1φ

Display Multiple Parameters Simultaneously

IT8600 provides 7 inch LCD display screen, easy user interface. Give full consideration to engineers' requirements in different tests, IT8600 not only can display multiple parameters simultaneously,but also has diversified display modes for choice, such as waveform, histogram and list etc.

Oscilloscope Function

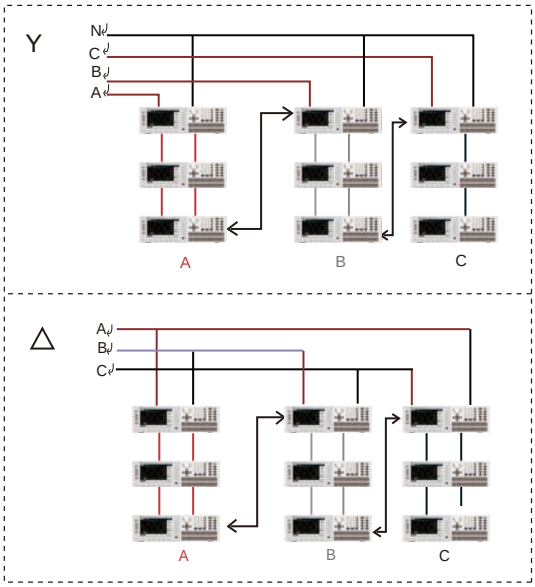
The most unique highlight of IT8600 lies in the oscilloscope display function,which can display the input voltage and current waveform of the device under test measured. Through the screenshot function key to save the current screen picture to peripheral storage disk by the front USB interface, easy for the second analysis.



Parallel/3-Phase Control

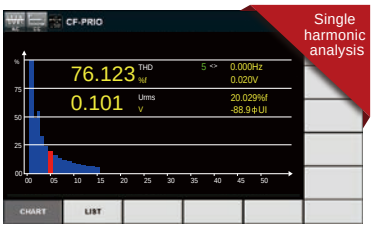
IT8600 provides parallel and 3-phase functions for three-phase and high-power applications,power can be expanded to 43.2kVA after paralleling In 3-phase applications, users can make Y or △ connection according to their specific requirements. IT8600 is available for AC 380V input to meet diverse test requirements.

(*IT8617 supports single/three-phase switch output)



Harmonic Measuring And Analysis Function

IT8600 provides powerful data measurement function, which can not only support measurement of conventional parameters such as Vrms, Vpk, Vdc, Irms, Ipk, Idc, W, VA, VAR, CF, PF and Freq, but also provide unique voltage harmonic analysis function to verify object (UPS, generators, etc.). The harmonic measurement function supports analysis up to the 50th voltage harmonic and it
can display the percentage of each harmonic analysis results in different forms.

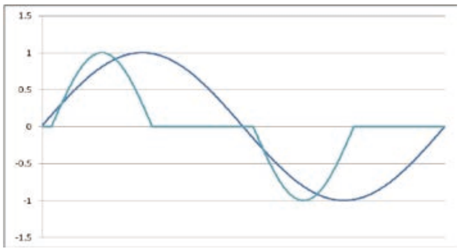


BAR

LIST

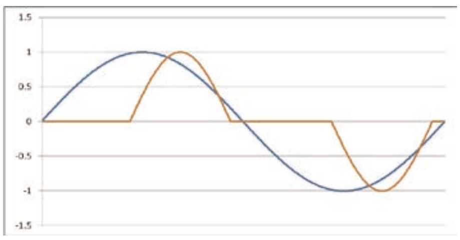
Adjustable CF/PF Value

IT8600 has CC, CR and CP operation modes. In CC and CP operation modes, PF or CF or both are available for programming. Power factor range is 0~1 lead or lag, CF setting range is 1.414~5, besides CF and PF, IT8600 also has various settings modes for choice to realize actual current simulation.



CF=2

PF=0.68



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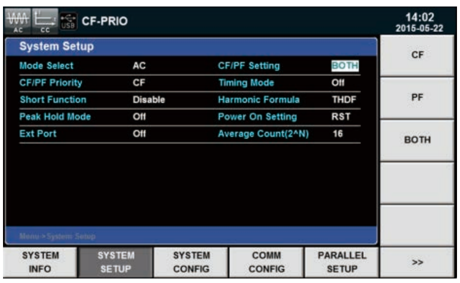
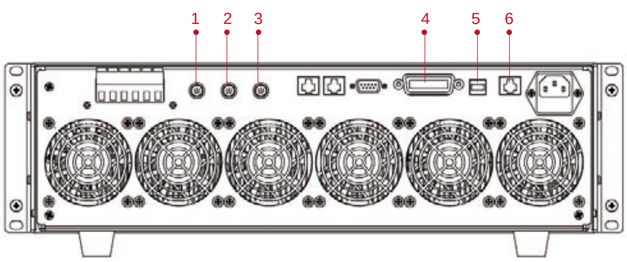


Abundant communication interface



1. Analog input terminal
2. Current monitor terminal
3. Voltage monitor terminal
4. GPIB interface
5. USB interface
6. LAN interface

Short circuit simulation function

IT8600 AC/DC electronic load can simulate short circuit under DC load mode.
The actual current value consumed under the short circuit state depends on the operating mode and current range of the current load. Users can press [Short] soft key to switch short circuit state. The max short circuit current is 120% current range under CC, CP and CR mode.
Under the CV mode, the short circuit corresponds to the rated voltage value of 0V. *1

*1 Only IT8615 and IT8615L are with CV mode

Data logging function

IT8600 series AC/DC electronic load can record all the data in the measurement process, users can press Log key to set the time interval for recording, and press the start key to start recording data, the current measured data is recorded from time to time, the data is saved to the external device storage disk. e.g. IT8615.csv

● Application: Battery discharge test

Test battery pack performance, draw voltage curve for single battery, plug the U disk before the test, press start key to record data, pull out the U disk after the test.

Date&time	Idc	Irms	Imax	Ipk+	Ipk-	Udc	Urms	Umax	P	S	Q	Pmax	R	Freq	CF	PF	Uthd	Time	Temp
2000-01-13 07	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000-01-13 07	0	0	0	0	0	0	0	0	40695	0	0	0	0	26752	0	0	22039	0	0
2000-01-13 07	0	0	0	0	0	0	0	0	40695	0	0	0	0	26752	0	0	22039	0	0
2000-01-13 07	0	0	0	0	0	0	0	0	40695	0	0	0	0	26752	0	0	22039	0	0
2000-01-13 07	0	0	0	0	0	0	0	0	40695	0	0	0	0	26752	0	0	22039	0	0
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2000-01-13 07	0	0	0	0	0	0	0	0	40695	0	0	0	0	26752	0	0	22039	0	0
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2000-01-13 07	0	0	0	0	0	0	0	0	40695	0	0	0	0	26752	0	0	22039	0	0
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2000-01-13 07	0	0	0	0	0	0	0	0	40695	0	0	0	0	26752	0	0	22039	0	0
2000-01-13 07	0	0	0	0	0	0	0	0	40695	0	0	0	0	26752	0	0	22039	0	0
2000-01-13 07	0	0	0	0	0	0	0	0	40695	0	0	0	0	26752	0	0	22039	0	0
2000-01-13 07	0	0	0	0	0	0	0	0	40695	0	0	0	0	26752	0	0	22039	0	0

I/V Monitor

IT8600 AC/DC electronic load is with I/V monitor and allow users to observe current and DUT output voltage through connecting to oscilloscope of BNC. The function is very useful for users to monitor the change of voltage and current by waveforms. Not only simplify the wiring, improve the measurement accuracy, but also save test cost without oscilloscope current probe.

IT8600 Specification

Model		IT8615	IT8615L	IT8616	IT8617 (Single-Phase Mode / Three-Phase Mode *4)
Rated input	Voltage	50~420 Vrms , 600 V peak	15~260 Vrms , 360 V peak	50~420Vrms , 600V peak	50~420Vrms , 600V peak
	Current	0~20 Arms ,60 Apeak	0~20 Arms ,60 A peak	0~40Arms ,120Apeak	0~60Arms ,180Apeak
	Power	0~1800 VA	0~1800 VA	0-3600VA	0-5400W
	Frequency	45~450 Hz	45~450 Hz	45~450Hz	45~450Hz
CC Mode *1	Range	0.1~20 Arms	0.1~20 Arms	0.1~40Arms	0.1~60Arms
	Resolution	2 mA	2 mA	2mA	2mA
	Accuracy	±(0.1%+0.2%FS)	±(0.1%+0.2%FS)	±(0.1%+0.2%FS)	±(0.1%+0.2%FS)
CR Mode *2	Range	3 Ω~2.5 KΩ	3Ω~2.5 KΩ	1.5Ω~1.25KΩ	1Ω~833KΩ
	Resolution	16 bit	16 bit	16bit	16bit
	Accuracy	0.2% +0.01 S	0.2% +0.01 S	0.2% +0.01S	0.2% +0.01S
CP Mode	Range	1800 W	1800 W	3600W	5400W
	Resolution	0.4 W	0.4 W	0.4W	0.4W
	Accuracy	0.5%+0.5% FS	0.5%+0.5% FS	0.5%+0.5%FS	0.5%+0.5%FS
Crest factor (CP,CC mode)	Range	1.414~5.0	1.414~5.0	1.414~5.0	1.414~5.0
	Resolution	0.005	0.005	0.005	0.005
	Accuracy	(0.5% / Irms) + 1% FS	(0.5% / Irms) + 1% FS	(0.5%*(1+2/9) / Irms) + 1% FS	(0.5%*(1+1/3) / Irms) + 1% FS
Power factor	Range	0~1 phase lead or lag	0~1 phase lead or lag	0~1 phase lead or lag	0~1 phase lead or lag
	Resolution	0.001	0.001	0.001	0.001
DC Section					
Input rating	Voltage	10~ 600 V	10~ 360 V	10~ 600V	10~ 600V
	Current	0.1~20 A	0.1~20 A	0.1~40A	0.1~60A
	Power	0~1800 W	0~1800 W	0~3600 W	0~5400W
Operation modes		CC, CV, CR, CP	CC, CV, CR, CP	CC、CR、CP	CC、CR、CP
Short-circuit simulation		Use the CC mode under the maximum power or maximum working current			
Meter					
Current	Range	0~60 A	0~60 A	0~120A	0~180A
	Resolution	1 mA	1 mA	1 mA	1 mA
	Accuracy	0.1%+0.2%FS+0.1%*CF^2*KHZ	0.1%+0.2%FS+0.1%*CF^2*KHZ	0.2%+0.2%FS+0.2%*CF^2*KHZ	0.2%+0.2%FS+0.2%*CF^2*KHZ
Voltage	Range	0~600 V	0~360 V	0~600V	0~600V
	Resolution	10 mV	10 mV	10 mV	10 mV
	Accuracy	0.1%+0.1%FS	0.1%+0.1%FS	0.1%+0.1%FS	0.1%+0.1%FS
Meter (continue)					
Others		S(VA), Q(VAR), P(W), Ip+, Ip-, Freq, THDv, CF, PF, R, FFT			
Other					
Voltage Monitor		±600 V/±10 V(Isolated)	±360 V±10 V(Isolated)	±600 V/±10 V(Isolated)	±600v/±10V(Isolated)
Current Monitor		±60 A/±10 V(Isolated)	±60 A±10 V(Isolated)	±120 A/±10 V(Isolated)	±180A/±10V(Isolated)
Protection		OCP、OVP、OPP、OTP	OCP、OVP、OPP、OTP	OCP、OVP、OPP、OTP	OCP、OVP、OPP、OTP
Interfaces		GPIB、USB、LAN	GPIB、USB、LAN	GPIB、USB、LAN	GPIB、USB、LAN
Dimension		3U	3U	6U	15U

*1 Typical value at 45 Hz-100 Hz
*2 Resistance accuracy: (1/(1/R+(1/R)*0.2%+0.01),1/(1/R-(1/R)*0.2%-0.01)
Test conditions: Voltage>10%FS, Current>10%FS
*3 Operating temperature: 0-40℃, Temperature coefficient: 100ppm/℃
*4 Delta or Star connection type are supported of IT8617.The connection depends on user's testing requirement. The specifications for three-Phase Modeare the same as IT8615.

IT8300 Regenerative DC Electronic Load

Applications

UPS, Inverter, Frequency converter, Generator, AC power supply, Electronic component

Feature

- Voltage range: 80V/800V
- Stand-alone input current up to 3570A
- Stand-alone input power up to 73.5KW
- Support master-slave paralleling, current equalized distribution, maximum output power up to 105 kW or more *1
- Energy-regenerative efficiency Max. 95% *2 *3
- 3U size, high power density up to 10.5 kW
- On-grid electricity accumulation function
- Automatic grid-state detection, achieve reliable on-grid function, anti-islanding protection
- 4 testing modes: CC/CV/CR/CP
- Dynamic loading mode
- Battery test function, automatic test function, short circuit test function
- Multiple parameters measurement & display: Vdc、Idc、Pdc、Vac、Pac、Fac、Wac
- With pre-charging function, prevent dc loading current overshoot
- Full protection: OVP/OCP/OPP/OTP and power grid fault protection, fault storage
- Built-in standard LAN/USB/RS232/RS485/CAN communication interface
- Support SCPI protocol, LabVIEW

*1 Please consult with ITECH for higher power requirement
*2 Efficiency up to about 95% for 800V, efficiency up to about 94% for 80V
*3 The regenerative power is for in-plant reuse, not for feeding back to public grid

ITECH newly launched IT8300 Regenerative DC Electronic Load, it not only can simulate various load characteristics, but also can feed power back to grid without pollution. IT8300 series unique regenerative function can convert the absorbed DC power into AC power and feed it back to local grid. This eliminates the usual heat dissipation to a minimum and saves energy costs, adapts requirements of global energy-saving and emission reduction at the same time. IT8300 adopts high power density design, e.g. for 3U size, it can absorb power up to 10.5 kW. IT8300 supports master-slave paralleling and current equalized distribution, which can expand the power up to 105KW or more. Moreover IT8300 has multiple functions such as the automatic grid-state detection, on-grid electricity accumulation, anti-islanding protection, battery-test function, dynamic mode, LIST function, etc. The built-in interfaces include LAN/USB/RS232/RS485/CAN interfaces. The various functions make IT8300 series suitable for high-power power supply, storage battery, photovoltaic battery, electric vehicle, energy storage system, etc.

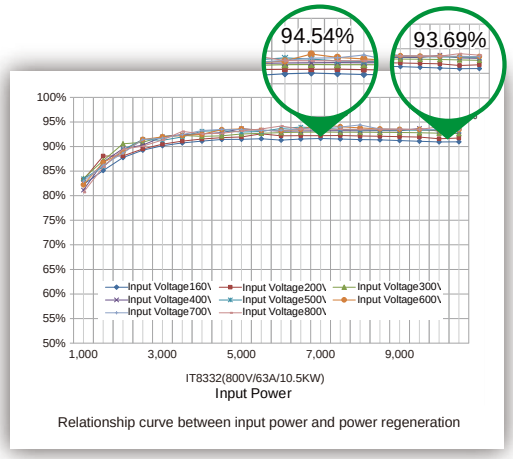
Model	Voltage	Current	Power	Size
IT8311	80V	170A	3.5kW	3U
IT8321	80V	340A	7kW	3U
IT8331	80V	510A	10.5kW	3U
IT8341	80V	1020A	21kW	6U
IT8351	80V	1530A	31.5kW	15U
IT8361	80V	2040A	42kW	24U
IT8371	80V	2550A	52.5kW	24U
IT8381	80V	3060A	63kW	24U
IT8391	80V	3570A	73.5kW	24U
IT8312	800V	20A	3.5kW	3U
IT8322	800V	40A	7kW	3U
IT8332	800V	60A	10.5kW	3U
IT8342	800V	120A	21kW	6U
IT8352	800V	180A	31.5kW	15U
IT8362	800V	240A	42kW	24U
IT8372	800V	300A	52.5kW	24U
IT8382	800V	360A	63kW	24U
IT8392	800V	420A	73.5kW	24U

Power accumulation function

IT8300 series regenerative DC electronic load uses the power electronic transformation technology on the premise of completing test power experiment to make output energy of measured power supply regenerative recycled and reused. Through the inside fast sampling of voltage and current, the regenerative power value can be observed on the front panel of IT8300 series, including voltage, frequency and power of each phase, as well as total power, total current regenerative and total historical regenerative power, which makes the energy saving effect much easier. Re-open after power failure, IT8300 series will continue to accumulate the regenerative power value based on the last power off value.

Ultra high power regeneration efficiency up to about 95%

IT8300 series regenerative DC electronic load is different from other conventional consumed loads, regenerative function is the most important feature of IT8300 series. It can regenerate power to grid and provides low heat dissipation, which will be converted with an efficiency of approximately 95%. This way of energy regeneration helps to lower energy costs and avoids expensive cooling systems, and also reduces the noise.



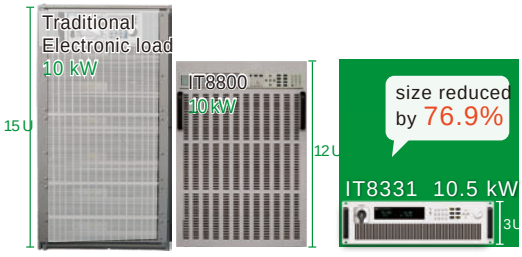
Relationship curve between input power and power regeneration

Energy-saving and emission-reduction

Conventional type electronic load is mostly energy consumption type load. In addition to the high cost of electricity, power generation process will also produce a lot of carbon dioxide, sulfur dioxide, nitrogen oxides and other greenhouse gases or harmful gases, causing harm to the environment. Using IT8300 series can reduce power consumption, not only save money, but also reduce greenhouse gas and harmful gas emissions. According to preliminary estimates, each 10.5KW IT8331 can reduce about 80 tons of CO2 emissions per year, in line with global environmental protection and emission reduction requirements.

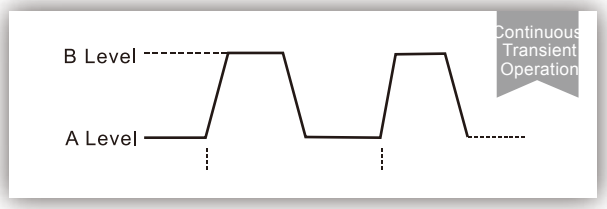
High Power Density Design

Conventional electronic loads are not only with high energy consumption, its own size and weight is also very large. Energy consumption electronic load with 10KW load is at least 12U, not only difficult to transport, the higher the cost. IT8300 series regenerative DC electronic load adopts high power density design, e.g. for 3 U size, it can absorb power up to 10.5 kW. Compared to traditional electronic loads, the size for IT8300 series will be able to decrease by 76.9% under the same output power.



Dynamic test function

IT8300 series regenerative DC electronic load provides dynamic test function under CC mode. Electronic load switches between two settable parameters according to set rule, it is for testing dynamic characteristics of power supply and checking the stability of power supply during step change of loading current. Dynamic testing mode can be divided into continuous mode, pulse mode and reverse mode.



Full protection function

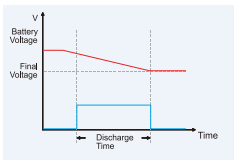
IT8300 series regenerative DC electronic load can detect the grid state automatically. When grid connection is suddenly disconnected or power down, products will be turned off. IT8300 series can achieve reliable on-grid function and anti-islanding protection function. IT8300 also provide monitor on DC input voltage and frequency, and support OCP, OVP, OTP, OPP.

Support master-slave paralleling, current equalized distribution

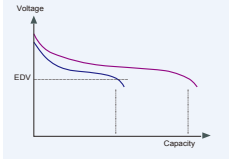
IT8300 series regenerative DC electronic load supports master-slave paralleling and current equalized distribution function. Under the premise of three-phase power balanced, output power can be extended up to 105kW or higher via multiple loads paralleling, so as to meet the customers' higher power test requirements.

Battery test function

IT8300 series regenerative DC electronic load simulate battery discharge test under CC mode, and support settable discharge cut-off conditions, such as cut-off voltage, cut-off capacity and cut-off time. When any of the three conditions are met, the discharge test will be stopped. Moreover, the battery voltage, discharge time and the discharged capacity can be observed during the test, which reflects the reliability of the battery and its remaining life.



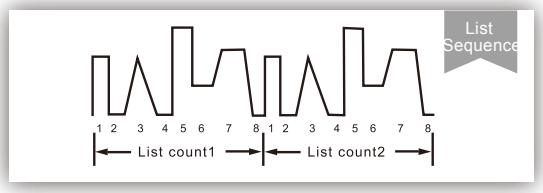
discharge test



Capacity test

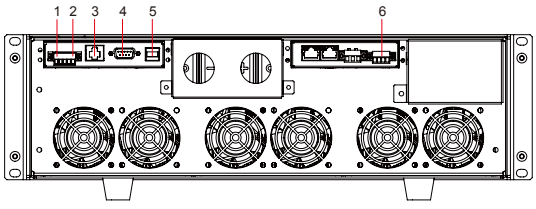
List function

IT8300 series regenerative DC electronic load provides list mode, it can complete the complex arbitrary current change mode accurately and fast, and can synchronize with internal or external signals to complete multi-level loading precision test, which greatly save cost for customers. By editing the step value, pulse width and the slope of each step, IT8300 can generate a variety of complex sequences and help users to complete various loading waveforms test. In the CC mode, IT8300 series can set rising and falling speed.



Built-in multiple interfaces

IT8300 series regenerative DC electronic load provides 5 types built-in interfaces: RS232, USB, LAN, CAN and RS485, supports SCPI protocol, facilitates power extending, computer or PLC remote control and system setting up etc.
IT8300 series is also equipped with functions of remote measurement, current monitoring and external analog control, making it easy for users to conduct comprehensive and accurate measurement.



1. RS485 interface
2. CAN interface
3. LAN interface
4. RS232 interface
5. USB interface
6. Analog interface

Specification

Model		IT8311	IT8321	IT8331
Input parameters				
Input rating (0~40 ℃)	Input voltage	0~80V	0~80V	0~80V
	Input current	0~170A	0~340A	0~510A
	Input power	0~3.5kW	0~7kW	0~10.5kW
CC mode	Range	0~170A	0~340A	0~510A
	Resolution	100mA	100mA	100mA
	Accuracy	<0.4% Imax	<0.4% Imax	<0.4% Imax
CV mode	Range	0~80V	0~80V	0~80V
	Resolution	10mV	10mV	10mV
	Accuracy	<0.3% Umax	<0.3% Umax	<0.3% Umax
CR mode	Range	0.01~1200Ω	0.005~500Ω	0.003~400Ω
	Resolution	0.001Ω	0.001Ω	0.001Ω
	Accuracy	Rmax*2%：（0.01~80Ω）； Rmax*5%：（80~1200Ω）	Rmax *2%：（0.005~60Ω）； Rmax *5%：（60~600Ω）	Rmax *2%：（0.003~40Ω）； Rmax *5%：（40~400Ω）
CP mode	Range	0~3.5kW	0~7kW	0~10.5kW
	Resolution	1W	1W	1W
	Accuracy	<1.3% Pmax	<1.3% Pmax	<1.3% Pmax
Input readback				
Current Readback	Range	0~170A	0~340A	0~510A
	Resolution	100mA	100mA	100mA
	Accuracy	<0.4% Imax	<0.4% Imax	<0.4% Imax
Voltage Readback	Range	0~80V	0~80V	0~80V
	Resolution	10mV	10mV	10mV
	Accuracy	<0.3% Umax	<0.3% Umax	<0.3% Umax
Power Readback	Range	0~3.5kW	0~7kW	0~10.5kW
	Resolution	1W	1W	1W
	Accuracy	<1.3% Pmax	<1.3% Pmax	<1.3% Pmax
Output parameters				
Output voltage range		190VAC~260VAC	190VAC~260VAC	190VAC~260VAC
OVP		260VAC	260VAC	260VAC
UVP		190VAC	190VAC	190VAC
Output frequency range		45Hz~65Hz	45Hz~65Hz	45Hz~65Hz
Maximum output current(rms)		17Aac	17Aac	17Aac
Power Factor		>0.99（Leg or lag））	>0.99（Leg or lag）	>0.99（Leg or lag）
DC component		-0.5A~+0.5A	-0.5A~+0.5A	-0.5A~+0.5A
Harmonic THDI		<3%	<3%	<3%
Anti-islanding protection		active anti-islanding protection	active anti-islanding protection	active anti-islanding protection
Efficiency				
Max. input voltage full load efficiency		92.5%	92.5%	92.5%
Other				
Interfaces		RS232/USB/RS485/CAN/LAN	RS232/USB/RS485/CAN/LAN	RS232/USB/RS485/CAN/LAN
Dimension		766.6mm*483mm*132.8mm	766.6mm*483mm*132.8mm	766.6mm*483mm*132.8mm
Net weight		26kg	33kg	40kg

Note：Resistance readback range

IT8311	IT8321	IT8331
0.01~80Ω	0.005~60Ω	0.003~40Ω
Lower limit value：1/(1/R+(1/R)*0.02+0.002)； Upper limit value：1/(1/R-(1/R)*0.02-0.002)		

IT8311	IT8321	IT8331
80~1200Ω	60~600Ω	40~400Ω
Lower limit value：1/(1/R+(1/R)*0.05+0.002)； Upper limit value：1/(1/R-(1/R)*0.05-0.002)		

Specification

Model		IT8341	IT8351	IT8361
Input parameters				
Input rating (0~40 °C)	Input voltage	0~80V	0~80V	0~80V
	Input current	0~1020A	0~1530A	0~2040A
	Input power	0~21kW	0~31.5kW	0~42kW
CC mode	Range	0~1020A	0~1530A	0~2040A
	Resolution	100mA	100mA	100mA
	Accuracy	<0.4% Imax	<0.4% Imax	<0.4% Imax
CV mode	Range	0~80V	0~80V	0~80V
	Resolution	10mV	10mV	10mV
	Accuracy	<0.3% Umax	<0.3% Umax	<0.3% Umax
CR mode	Range	0.002~200Ω	0.002~133Ω	0.001~0.1kΩ
	Resolution	0.001Ω	0.001Ω	0.001Ω
	Accuracy	Rmax *2%: (0.002~2Ω); Rmax *5%: (2~200Ω)	Rmax *2%: (0.002~2Ω); Rmax *5%: (2~133Ω)	Rmax *2%: (0.001~2Ω); Rmax *5%: (2~100Ω)
CP mode	Range	0~21kW	0~31.5kW	0~42kW
	Resolution	1W	1W	1W
	Accuracy	<1.3% Pmax	<1.3% Pmax	<1.3% Pmax
Input readback				
Current Readback	Range	0~1020A	0~1530A	0~2040A
	Resolution	100mA	100mA	100mA
	Accuracy	<0.4% Imax	<0.4% Imax	<0.4% Imax
Voltage Readback	Range	0~80V	0~80V	0~80V
	Resolution	10mV	10mV	10mV
	Accuracy	<0.3% Umax	<0.3% Umax	<0.3% Umax
Power Readback	Range	0~21kW	0~31.5kW	0~42kW
	Resolution	1W	1W	1W
	Accuracy	<1.3% Pmax	<1.3% Pmax	<1.3% Pmax
Output parameters				
Output voltage range		190VAC~260VAC	190VAC~260VAC	190VAC~260VAC
OVP		260VAC	260VAC	260VAC
UVP		190VAC	190VAC	190VAC
Output frequency range		45Hz~65Hz	45Hz~65Hz	45Hz~65Hz
Maximum output current (rms)		34Aac	51Aac	68Aac
Power Factor		>0.99 (Leg or lag)	>0.99 (Leg or lag)	>0.99 (Leg or lag)
DC component		-0.5A~+0.5A	-0.5A~+0.5A	-0.5A~+0.5A
Harmonic THDI		<3%	<3%	<3%
Anti-islanding protection		active anti-islanding protection	active anti-islanding protection	active anti-islanding protection
Efficiency				
Max. input voltage full load efficiency		92.5%	92.5%	92.5%
Other				
Interfaces		RS232/USB/RS485/CAN/LAN	RS232/USB/RS485/CAN/LAN	RS232/USB/RS485/CAN/LAN
Dimension		766.6mm*483mm*265.6mm	800mm*550mm*907.64mm	800mm*550mm*1291.24mm
Net weight		80kg	175kg	284kg

Note: Resistance readback range

IT8341	IT8351	IT8361
0.002~2Ω	0.001~2Ω	0.001~2Ω
Lower limit value: 1/(1/R+(1/R)*0.02+0.002); Upper limit value: 1/(1/R-(1/R)*0.02-0.002)		

IT8341	IT8351	IT8361
2~200Ω	2~133Ω	2~100Ω
Lower limit value: 1/(1/R+(1/R)*0.05+0.002); Upper limit value: 1/(1/R-(1/R)*0.05-0.002)		

Specification

Model		IT8371	IT8381	IT8391
Input parameters				
Input rating (0~40 ℃)	Input voltage	0~80V	0~80V	0~80V
	Input current	0~2550A	0~3060A	0~3570A
	Input power	0~52.5kW	0~63kW	0~73.5kW
CC mode	Range	0~2550A	0~3060A	0~3570A
	Resolution	100mA	100mA	100mA
	Accuracy	<0.4% Imax	<0.4% Imax	<0.4% Imax
CV mode	Range	0~80V	0~80V	0~80V
	Resolution	10mV	10mV	10mV
	Accuracy	<0.3% Umax	<0.3% Umax	<0.3% Umax
CR mode	Range	0.001~80Ω	0.001~50Ω	0.001~50Ω
	Resolution	0.001Ω	0.001Ω	0.001Ω
	Accuracy	Rmax *2%: （0.001~1Ω）; Rmax *5%: （1~80Ω）	Rmax *2%: （0.001~1Ω）; Rmax *5%: （1~50Ω）	Rmax *2%: （0.001~1Ω）; Rmax *5%: （1~50Ω）
CP mode	Range	0~52.5kW	0~63kW	0~73.5kW
	Resolution	1W	1W	1W
	Accuracy	<1.3% Pmax	<1.3% Pmax	<1.3% Pmax
Input readback				
Current Readback	Range	0~2550A	0~3060A	0~3570A
	Resolution	100mA	100mA	100mA
	Accuracy	<0.4% Imax	<0.4% Imax	<0.4% Imax
Voltage Readback	Range	0~80V	0~80V	0~80V
	Resolution	10mV	10mV	10mV
	Accuracy	<0.3% Umax	<0.3% Umax	<0.3% Umax
Power Readback	Range	0~52.5kW	0~63kW	0~73.5kW
	Resolution	1W	1W	1W
	Accuracy	<1.3% Pmax	<1.3% Pmax	<1.3% Pmax
Output parameters				
Output voltage range		190VAC~260VAC	190VAC~260VAC	190VAC~260VAC
OVP		260VAC	260VAC	260VAC
UVP		190VAC	190VAC	190VAC
Output frequency range		45Hz~65Hz	45Hz~65Hz	45Hz~65Hz
Maximum output current (rms)		85Aac	102Aac	119Aac
Power Factor		>0.99（Leg or lag）	>0.99（Leg or lag）	>0.99（Leg or lag）
DC component		-0.5A~+0.5A	-0.5A~+0.5A	-0.5A~+0.5A
Harmonic THDI		<3%	<3%	<3%
Anti-islanding protection		active anti-islanding protection	active anti-islanding protection	active anti-islanding protection
Efficiency				
Max. input voltage full load efficiency		92.5%	92.5%	92.5%
Other				
Interfaces		RS232/USB/RS485/CAN/LAN	RS232/USB/RS485/CAN/LAN	RS232/USB/RS485/CAN/LAN
Dimension		800mm*550mm*1291.24mm	800mm*550mm*1291.24mm	800mm*550mm*1291.24mm
Net weight		324kg	364kg	404kg

Note: Resistance readback range

IT8371	IT8381	IT8391
0.001~1Ω	0.001~1Ω	0.001~1Ω
Lower limit value: 1/(1/R+(1/R)*0.02+0.002); Upper limit value: 1/(1/R-(1/R)*0.02-0.002)		

IT8371	IT8381	IT8391
1~80Ω	1~50Ω	1~50Ω
Lower limit value: 1/(1/R+(1/R)*0.05+0.002); Upper limit value: 1/(1/R-(1/R)*0.05-0.002)		

Specification

		IT8312	IT8322	IT8332
Input parameters				
Input rating	Input voltage	0~800V	0~800V	0~800V
	Input current	0~20A	0~40A	0~60A
	Input power	0~3.5kW	0~7kW	0~10.5kW
CC mode	Range	0~20A	0~40A	0~60A
	Resolution	10mA	10mA	10mA
	Accuracy	<0.4% Imax	<0.4% Imax	<0.4% Imax
CV mode	Range	0~800V	0~800V	0~800V
	Resolution	100mV	100mV	100mV
	Accuracy	<0.3% Umax	<0.3% Umax	<0.3% Umax
CR mode	Range	0.9~3000Ω	0.6~2000Ω	0.3~1000Ω
	Resolution	0.001Ω（R＜10Ω）；0.01Ω（10Ω≤R<100Ω） 0.1Ω（100Ω≥R<1000Ω）；1Ω（R≥1000Ω）	0.001Ω（R＜10Ω）；0.01Ω（10Ω≤R<100Ω） 0.1Ω（100Ω≥R<1000Ω）；1Ω（R≥1000Ω）	0.001Ω（R ＜10Ω）；0.01Ω（10Ω≤R<100Ω） 0.1Ω（100Ω≥R<1000Ω）；1Ω（R≥1000Ω）
	Accuracy	Rmax *2%：（0.9~1000Ω） Rmax *5%：（1000~3000Ω）	Rmax *2%：（0.6~600Ω） Rmax *5%：（600~2000Ω）	Rmax *2%：（0.3~300Ω） Rmax *5%：（300~1000Ω）
CP mode	Range	0~3.5kW	0~7kW	0~10.5kW
	Resolution	1W	1W	1W
	Accuracy	<1.3% Pmax	<1.3% Pmax	<1.3% Pmax
Input readback				
Current Readback	Range	0~20A	0~40A	0~60A
	Resolution	10mA	10mA	10mA
	Accuracy	<0.4% Imax	<0.4% Imax	<0.4% Imax
Voltage Readback	Range	0~800V	0~800V	0~800V
	Resolution	100mV	100mV	100mV
	Accuracy	<0.3% Umax	<0.3% Umax	<0.3% Umax
Power Readback	Range	0~3.5kW	0~7kW	0~10.5kW
	Resolution	1W	1W	1W
	Accuracy	<1.3% Pmax	<1.3% Pmax	<1.3% Pmax
Output parameters				
Output voltage range		190VAC~260VAC	190VAC~260VAC	190VAC~260VAC
OVP		260VAC	260VAC	260VAC
UVP		190VAC	190VAC	190VAC
Output frequency range		45Hz~65Hz	45Hz~65Hz	45Hz~65Hz
Maximum output current (rms)		17Aac	17Aac	17Aac
Power Factor		>0.99（Leg or lag）	>0.99（Leg or lag）	>0.99（Leg or lag）
DC component		-0.5A~+0.5A	-0.5A~+0.5A	-0.5A~+0.5A
Harmonic THDI		＜5%	＜5%	＜5%
Anti-islanding protection		active anti-islanding protection	active anti-islanding protection	active anti-islanding protection
Efficiency				
Max. input voltage full load efficiency		94.5%	94.5%	94.5%
Other				
Interfaces		RS232/USB/RS485/CAN/LAN	RS232/USB/RS485/CAN/LAN	RS232/USB/RS485/CAN/LAN
Dimension		766.6mm*483mm*132.8mm	766.6mm*483mm*132.8mm	766.6mm*483mm*132.8mm
Net weight		26kg	33kg	40kg

Note：Resistance readback range

IT8371	IT8381	IT8391
0.001~1Ω	0.001~1Ω	0.001~1Ω
Lower limit value：1/(1/R+(1/R)*0.02+0.002) Upper limit value：1/(1/R-(1/R)*0.02-0.002)		

IT8371	IT8381	IT8391
1~80Ω	1~50Ω	1~50Ω
Lower limit value：1/(1/R+(1/R)*0.05+0.002) Upper limit value：1/(1/R-(1/R)*0.05-0.002)		

Specification

Model		IT8342	IT8352	IT8362
Input parameters				
Input rating (0~40 °C)	Input voltage	0~800V	0~800V	0~800V
	Input current	0~120A	0~180A	0~240A
	Input power	0~21kW	0~31.5kW	0~42kW
CC mode	Range	0~120A	0~180A	0~252A
	Resolution	10mA	10mA	10mA
	Accuracy	<0.4% Imax	<0.4% Imax	<0.4% Imax
CV mode	Range	0~800V	0~800V	0~800V
	Resolution	100mV	100mV	100mV
	Accuracy	<0.3% Umax	<0.3% Umax	<0.3% Umax
CR mode	Range	0.15~500Ω	0.1~333Ω	0.08~250Ω
	Resolution	0.001Ω（R＜10Ω）；0.01Ω（10Ω≤R<100Ω） 0.1Ω（100Ω≥R<1000Ω）；1Ω（R≥1000Ω）	0.001Ω（R＜10Ω）；0.01Ω（10Ω≤R<100Ω） 0.1Ω（100Ω≥R<1000Ω）；1Ω（R≥1000Ω）	0.001Ω（R＜10Ω）；0.01Ω（10Ω≤R<100Ω） 0.1Ω（100Ω≥R<1000Ω）；1Ω（R≥1000Ω）
	Accuracy	Rmax *2%：（0.15~100Ω）； Rmax *5%：（100~500Ω）	Rmax *2%：（0.1~80Ω）； Rmax *5%：（80~333Ω）	Rmax *2%：（0.08~60Ω）； Rmax *5%：（60~250Ω）；
CP mode	Range	0~21kW	0~31.5kW	0~42kW
	Resolution	1W	1W	1W
	Accuracy	<1.3% Pmax	<1.3% Pmax	<1.3% Pmax
Input readback				
Current Readback	Range	0~120A	0~180A	0~240A
	Resolution	10mA	10mA	10mA
	Accuracy	<0.4% Imax	<0.4% Imax	<0.4% Imax
Voltage Readback	Range	0~800V	0~800V	0~800V
	Resolution	100mV	100mV	100mV
	Accuracy	<0.3% Umax	<0.3% Umax	<0.3% Umax
Power Readback	Range	0~21kW	0~31.5kW	0~42kW
	Resolution	1W	1W	1W
	Accuracy	<1.3% Pmax	<1.3% Pmax	<1.3% Pmax
Output parameters				
Output voltage range		190VAC~260VAC	190VAC~260VAC	190VAC~260VAC
OVP		260VAC	260VAC	260VAC
UVP		190VAC	190VAC	190VAC
Output frequency range		45Hz~65Hz	45Hz~65Hz	45Hz~65Hz
Maximum output current (rms)		34Aac	51Aac	68Aac
Power Factor		>0.99（Leg or lag）	>0.99（Leg or lag）	>0.99（Leg or lag）
DC component		-0.5A~+0.5A	-0.5A~+0.5A	-1A~+1A
Harmonic THDI		<5%	<5%	<5%
Anti-islanding protection		active anti-islanding protection	active anti-islanding protection	active anti-islanding protection
Efficiency				
Max. input voltage full load efficiency		94.5%	94.5%	94.5%
Other				
Interfaces		RS232/USB/RS485/CAN/LAN	RS232/USB/RS485/CAN/LAN	RS232/USB/RS485/CAN/LAN
Dimension		766.6mm*483mm*265.6mm	800mm*550mm*907.64mm	800mm*550mm*1291.24mm
Net weight		80kg	175kg	284kg

Note：Resistance readback range

IT8342	IT8352	IT8362
0.15~100Ω	0.1~80Ω	0.08~60Ω
Lower limit value：1/(1/R+(1/R)*0.02+0.002) Upper limit value：1/(1/R-(1/R)*0.02-0.002)		

IT8342	IT8352	IT8362
100~500Ω	80~333Ω	60~250Ω
Lower limit value：1/(1/R+(1/R)*0.05+0.002) Upper limit value：1/(1/R-(1/R)*0.05-0.002)		

Specification

		IT8372	IT8382	IT8392
		Input parameters		
Input rating	Input voltage	0~800V	0~800V	0~800V
	Input current	0~300A	0~360A	0~420A
	Input power	0~52.5kW	0~63kW	0~73.5kW
CC mode	Range	0~300A	0~360A	0~420A
	Resolution	10mA	10mA	10mA
	Accuracy	<0.4% Imax	<0.4% Imax	<0.4% Imax
CV mode	Range	0~800V	0~800V	0~800V
	Resolution	100mV	100mV	100mV
	Accuracy	<0.3% Umax	<0.3% Umax	<0.3% Umax
CR mode	Range	0.06~200Ω	0.05~160Ω	0.045~140Ω
	Resolution	0.001Ω（R〈10Ω）；0.01Ω（10Ω≤R<100Ω）；0.1Ω（100Ω≥R<1000Ω）；1Ω（R≥1000Ω）	0.001Ω（R〈10Ω）；0.01Ω（10Ω≤R<100Ω）；0.1Ω（100Ω≥R<1000Ω）；1Ω（R≥1000Ω）	0.001Ω（R〈10Ω）；0.01Ω（10Ω≤R<100Ω）；0.1Ω（100Ω≥R<1000Ω）；1Ω（R≥1000Ω）
	Accuracy	Rmax *2%：（0.06~40Ω）；Rmax *5%：（40~200Ω）	Rmax *2%：（0.05~20Ω）；Rmax *5%：（20~160Ω）	Rmax *2%：（0.045~10Ω）；Rmax *5%：（10~140Ω）
CP mode	Range	0~52.5kW	0~63kW	0~73.5kW
	Resolution	1W	1W	1W
	Accuracy	<1.3% Pmax	<1.3% Pmax	<1.3% Pmax
		Input readback		
Current Readback	Range	0~300A	0~360A	0~420A
	Resolution	10mA	10mA	10mA
	Accuracy	<0.4% Imax	<0.4% Imax	<0.4% Imax
Voltage Readback	Range	0~800V	0~800V	0~800V
	Resolution	100mV	100mV	100mV
	Accuracy	<0.3% Umax	<0.3% Umax	<0.3% Umax
Power Readback	Range	0~52.5kW	0~63kW	0~73.5kW
	Resolution	1W	1W	1W
	Accuracy	<1.3% Pmax	<1.3% Pmax	<1.3% Pmax
		Output parameters		
Output voltage range		190VAC~260VAC	190VAC~260VAC	190VAC~260VAC
OVP		260VAC	260VAC	260VAC
UVP		190VAC	190VAC	190VAC
Output frequency range		45Hz~65Hz	45Hz~65Hz	45Hz~65Hz
Maximum output current (rms)		85Aac	102Aac	119Aac
Power Factor		>0.99（Leg or lag）	>0.99（Leg or lag）	>0.99（Leg or lag）
DC component		-1A~+1A	-1A~+1A	-1A~+1A
Harmonic THDI		<5%	<5%	<5%
Anti-islanding protection		active anti-islanding protection	active anti-islanding protection	active anti-islanding protection
		efficiency		
Max. input voltage full load efficiency		94.5%	94.5%	94.5%
		other		
Interfaces		RS232/USB/RS485/CAN/LAN	RS232/USB/RS485/CAN/LAN	RS232/USB/RS485/CAN/LAN
Dimension		800mm*550mm*1291.24mm	800mm*550mm*1291.24mm	800mm*550mm*1291.24mm
Net weight		324kg	364kg	404kg

Note：Resistance readback range

IT8371	IT8381	IT8391
0.001~1Ω	0.001~1Ω	0.001~1Ω
Lower limit value：1/(1/R+(1/R)*0.02+0.002)；Upper limit value：1/(1/R-(1/R)*0.02-0.002)		

IT8371	IT8381	IT8391
1~80Ω	1~50Ω	1~50Ω
Lower limit value：1/(1/R+(1/R)*0.05+0.002)；Upper limit value：1/(1/R-(1/R)*0.05-0.002)		

IT8700 Multi-channel Programmable DC Electronic Load

Applications

Multiple or single output AC / DC, DC / DC power converters, chargers and other power supply electronic components performance test, ATE test system, solar cells, LED, communications testing, aerospace and other fields.

Feature

- Removable modules for easy system cofigurability
- Dual-channel module can display each channel information simultaneously without switching
- Single frame up to 8 channels, extended frame up to 16 channels
- Dynamic power distribution function for dual channels,save your cost
- Measurement resolution: 0.1mV/0.01mA
- Measure short-circuit peak current value and peak voltage value
- Measurement speed for voltage, current Up to 50KHZ
- Adjustable current rising / falling slope
- Auto-test function, with automatic judgement whether the test result exceeds the set specification
- Simulate various waveforms with load under List mode
- Up to 25KHz dynamic mode
- Automatic test function can automatically determine whether the test results have exceeded the set specifications
- Simultaneously perform multiple sets of electronic load modules
- OVP / OCP / OPP / OTP / anti-reverse protection function
- Built-in Ether Net / GPIB / USB / RS232 communication interface
- Support anti-reverse alarm function

IT8700 series programmable DC electronic load adopts removable modules design, single frame up to 8 channels, supports up to 16 channels with mainframe extension transient mode up to 25 kHz , which improves your test efficiency, with high resolution and accuracy. Users can freely choose in the 8 load modules according to the number of channels and power requirements, controlled by mainframe control panel, or controlled by host computer software via built-in LAN / RS232 / USB / GPIB interface.

IT8700 is with adjustable slope, list function, automatic test and other functions, automatic test function can be set to work under CC / CV / CR / CP and other different mode,easy to test fast and accuratly for R&D and production line.

IT8700 has self-diagnosis and comprehensive OVP, OCP, OPP, OTP, etc., preventing instrument or personal injury caused by misuse or the environment factors.

Model	Specification	Size
IT8731	80V/40A/200W	573*183*82mm
IT8732	80V/60A/400W	573*183*82mm
IT8732B	500V/20A/300W	573*183*82mm
IT8733	80V/120A/600W	573*183*82mm
IT8733B	500V/30A/500W	573*183*82mm
IT8722	80V/20A/250W*2CH	573*183*82mm
IT8722B	500V/15A/250W*2CH	573*183*82mm
IT8723	80V/45A/300W*2CH	573*183*82mm

Matching frame

IT8702	Four-load module main control unit (including four interfaces)
IT8703	Four-load module expansion unit

*1：The total power of dual channel for IT8722/IT8722B is 300W, if the two channel of IT8722/IT8722B work at the same time, need to meet:50W≤PCH1/PCH2≤250W；PCH1+PCH2≤300W

*2：IT8700 modules should be equipped with IT8702 maninframe

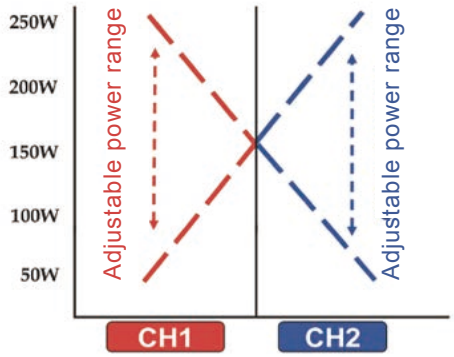
*3: Interface of mainframe：RS232、USB、GPIB、Ether Net

Freely configurable modular system architecture

IT8700 programmable DC electgronic load adopts modular design, there is a high-performance microprocessor in every module and mainframe. It has high measurement speed because of parallel architecture. The system controls modules synchronously, and also test multi-output batteries synchronously.

Dynamic power distribution function

Usually, one module require high power while another require low power in battery testing. IT8722/IT8722B has dynamic power distribution function,that means within 300W,any channel which power over 50W and less than 250W,the power can be distributed freely,one module can be used as multiple standard modules.



With ITECH test system

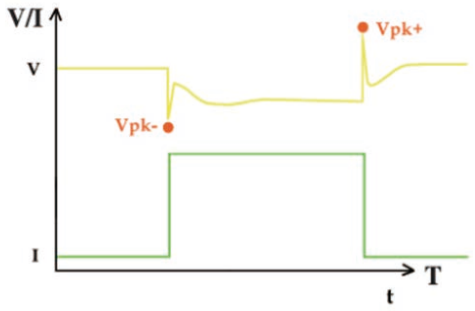
ITS5300 battery test system can be formed by IT8700, ITECH power supply, battery resistance tester and temperature data logger,which makes hundreds of channels run at the same time, recorde voltage and current waveforms in real-time. Test data can be exported to EXCEL.

IT8700 can also equip with ITECH AC and DC power supply, relay card, I / O Card, DSO card to set up ITS9500 power supply test system, which achieves multi-supply modules simultaneously test or multiplex output AC / DC or DC / DC power supply module test.

IT8700 with IT9380 software can achieve multi-channel solar cell test, the test interface can be switched freely, support the sampling time settings, export test data, and with up to 50KHz I-V sampling rate, achieving high efficient and fully automated testing for solar panel.

Peak voltage, peak current measurement function

Dynamic current testing of switching power supply often requires oscilloscope to capture instantaneous voltage and current waveforms to obtain the valve of the peak voltage Vpk and the peak current Ipk. IT8700 is with digital data acquisition function, users can easily get the values of Vpk and Ipk without oscilloscope.



High resolution and accuracy

IT8700 has the best product features with 0.1mV / 0.01mA resolution and 50kHz measurement speed, so that your test is fast and accurate.

High power density

Maximum power density - 600W single module with ITECH advanced cooling technology, making IT8700 has ultra-high power density, 4u height up to 2400W.

Auto test

This function can be applied in the automated production test, users can set measurement mode and pull load value of each step for panel or PC software, and the upper and lower limits of test parameters, and display whether the test results have exceeded the set specifications.

PC communication Interface

IT8700 series of electronic load provide IT9000 PC software, users can easily set and monitor voltage & current waveform of each channel and operation of test, simplify automatic test and battery charge & discharge test. IT8700 has built-in GPIB / Ethernet / USB / RS232 interface, support SCPI communication protocol, provide Labview bottom Layer driver to help customers achieve system structures and remote control.

IT8722/22B/23 Specification

		IT8722 *8		IT8722B *8		IT8723 *8	
Rated parameter（0~40℃）	Input voltage	0~80V		0~500V		0~80V	
	Input current	0~20A		0~15A		0~45A	
	Input power	250W *1		250W *1		300W	
	Min operating voltage	0.15V/3A	1.0V/20A	0.8V/3A	4.0V/15A	0.14V/4.5A	1.4V/45A
CV mode	Range	L: 0~18V; H: 0~80V		0.1~50V	0.1~500V	L: 0~18V; H: 0~80V	
	Resolution	L: 1mV; H: 10mV					
	Accuracy	±(0.05%+0.025%FS)		±(0.05%+0.05%FS)		±(0.05%+0.025%FS)	
CC mode	Range	0~3A	0~20A	0~3A	0~15A	0~4.5A	0~45A
	Resolution	L: 0.1mA; H: 1mA					
	Accuracy	±(0.05%+0.05%FS)					
CR mode*2	Range	L: 0.05Ω~10Ω; H: 10Ω~7.5KΩ		0.3Ω~10Ω	10Ω~7.5KΩ	L: 0.05Ω~10Ω; H: 10Ω~7.5KΩ	
	Resolution	16bit					
	Accuracy	0.01%+0.08S *3; H: 0.01%+0.0008S					
CP mode*5	Range	250W *4		250W *4		300W	
	Resolution	10mW					
	Accuracy	±(0.2%+0.2%FS)					
Dynamic mode		CC mode					
	T1&T2	20μS~3600S / Res: 1μS					
	Accuracy	5μS±100ppm					
	Rise / fall slope*6	0.0001~0.2A/μS	0.001~1.6A/μS	0.0001~0.1A/μS	0.001~0.5A/μS	0.0001~0.25A/μS	0.001~2.5A/μS
	Min rise time *7	≒10μS		≒20μS		≒12μS	
Voltage readback value	Range	Measuring range					
	Resolution	0~18V	0~80V	0~50V	0~500V	0~18V	0~80V
	Accuracy	L: 0.1 mV; H: 1mV		L: 1 mV; H: 10mV		L: 0.1 mV; H: 1mV	
Current readback value	Range	±(0.025%+0.025%FS)					
	Resolution	0~3A	0~20A	0~3A	0~15A	0~4.5A	0~45A
	Accuracy	L: 0.01mA; H: 0.1mA		L: 0.01mA; H: 0.1mA		L: 0. 1mA; H: 1mA	
Power readback value	Range	±(0.05%+0.05%FS)					
	Resolution	250W		250W		300W	
	Accuracy	10mW					
		±(0.2%+0.2%FS)					
Protected range							
Over power protection		≒250W		≒260W		≒310W	
Overcurrent protection		≒3.3A	≒22A	≒3.3A	≒16.5A	≒5A	≒50A
Over voltage protection		≒82V		≒530V		≒82V	
Over temperature protection		≒85°C					
Specification							
Short circuit	Current	≒3.3/3A	≒22/20A	≒3.3/3A	≒16.5/15A	≒5/4.5A	≒50/45A
	Voltage	0V					
	Resistance	≒50mΩ		≒260mΩ		≒30mΩ	
Input terminal impedance		300KΩ		≒1MΩ		300KΩ	
Size(mm)		82*183*573					
Weight		5KG					

*1 Support dynamic distribution power, single way can reach max 250W, two ways total power is no more than 300W, single way average power is 150w.
*2 Voltage/current input value is not less than 10% FS (FS is full scale).
*3 Resistance read-back value range: ((1/(1/R+(1/R)*0.01%+0.08),1/(1/R-(1/R)*0.01%-0.08))
*4 Support dynamic distribution power, single channel can reach max 250W, two way total power is no more than 300W
*5 Voltage/current input values are not less than 10% FS
*6 Up/down slope: 10% ~ 90% current rising slope when from 0 to maximum current
*7 The minimum rise time: 10% ~ 90% current rise time
*8 IT8722 / IT8722B are dual channel dynamic power allocation module, 2 channels' specification is the same.

*This information is subject to change without notice notice

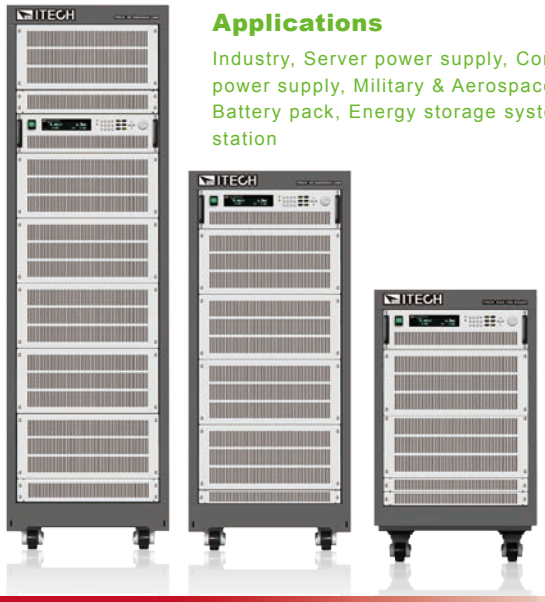
IT8731/32/32B/33B/33 Specification

		IT8731		IT8732		IT8732B		IT8733B		IT8733	
Rated parameter (0~40℃)	Input voltage	0~80V				0~500V				0~80V	
	Input current	0~40A		0~60A		0~20A		0~30A		0~120A	
	Input power	200W		400W		300W		500W		600W	
	Min operating voltage	0.12V/4A	1.2V/40A	0.15V/6A	1.5V/60A	0.72V/3A	4.8V/20A	0.54V/3A	5.4V/30A	0.24V/12A	2.4V/120A
CV mode	Range	L: 0~18V; H: 0~80V				L: 0~18V; H: 0~500V				L: 0~18V; H: 0~80V	
	Resolution	L: 1mV; H: 10mV									
	Accuracy	±(0.05%+0.025%FS)									
CC mode	Range	0~4A	0~40A	0~6A	0~60A	0~3A	0~20A	0~3A	0~30A	0~12A	0~120A
	Resolution	L: 0.1mA; H: 1mA								1mA	10mA
	Accuracy	±(0.05%+0.05%FS)								±(0.05%+0.05%FS)	±(0.1%+0.05%FS)
CR mode*1	Range	L: 0.05Ω~10Ω; H: 10Ω~7.5KΩ				0.25Ω~10Ω	10Ω~7.5KΩ	0.2Ω~10Ω	10Ω~7.5KΩ	L: 0.05Ω~10Ω; H: 10Ω~7.5KΩ	
	Resolution	16bit									
	Accuracy	L: 0.01%+0.08S; H: 0.01%+0.0008S									
CP mode*2	Range	200W		400W		300W		500W		600W	
	Resolution	10mW									
	Accuracy	±(0.2%+0.2%FS)									
CC mode											
Dynamic mode	T1&T2	20μs~3600s / Res: 1μs									
	Accuracy	5μs±100ppm									
	Rise / fall slope	0.0001 ~0.2A/μs	0.001 ~2A/μs	0.0001 ~0.25A/μs	0.001 ~2.5A/μs	0.0001 ~0.1A/μs	0.001 ~0.8A/μs	0.0001 ~0.08A/μs	0.001 ~0.8A/μs	0.001 ~0.25A/μs	0.01 ~2.5A/μs
	Min rise time	≒15μS				≒20μS		≒25μS		≒35μS	
Voltage readback value	Range	0~18V	0~80V	0~18V	0~80V	0~18V	0~500V	0~18V	0~500V	0~18V	0~80V
	Resolution	L: 0.1 mV; H: 1mV				L: 1 mV; H: 10mV				L: 0.1 mV; H: 1mV	
	Accuracy	±(0.025%+0.025%FS)									
Current readback value	Range	0~4A	0~40A	0~6A	0~60A	0~3A	0~20A	0~3A	0~30A	0~12A	0~120A
	Resolution	L: 0.1mA; H: 1mA				L: 0.01mA; H: 0.1mA				L: 0.1mA; H: 1mA	
	Accuracy	±(0.05%+0.05%FS)									
Power readback value	Range	200W		400W		300W		500W		600W	
	Resolution	10mW									
	Accuracy	±(0.2%+0.2%FS)									
Protected range											
Over power protection		≒210W		≒410W		≒310W		≒510W		≒610W	
Overcurrent protection		≒4.4A	≒44A	≒6.6A	≒66A	≒3.3A	≒22A	≒3.3A	≒33A	≒13.2A	≒132A
Over voltage protection		≒82V				≒530V				≒82V	
Over temperature protection		≒85°C									
Specification											
Short circuit	Current	≒4.4/4A	≒44/40A	≒6.6/6A	≒66/60A	≒3.3/3A	≒22/20A	≒3.3/3A	≒33/30A	≒13.2/12A	≒132/120A
	Voltage	0V									
	Resistance	≒30mΩ		≒25mΩ		≒240mΩ		≒180mΩ		≒20mΩ	
Input terminal impedance		300KΩ				1MΩ				300KΩ	
Size(mm)		82*183*573									
Weight		5KG									

*1：Accuracy refers to specifications is %+n%FS (Full Scale) of set value
*2：When input voltage and current value＞＝10% of FS

*This information is subject to change without notice notice

IT8900 High Performance High Power Programmable DC Electronic Load



Applications

Industry, Server power supply, Communication power supply, Military & Aerospace, Car Charger, Battery pack, Energy storage system, Charging station

IT8900 series of high performance high power dc electronic loads provide three voltage ranges 150V/600V/1200V. The power expands to 600kW by master-slave paralleling, and maintains stand-alone functions. 50kHz high speed measurement, six working modes, transient over-power loading capability, CV loop speed adjustment, Measurement function, 25kHz dynamic test and other multiple accurate testing functions make IT8900 series well-suited for types of high power applications.
Built-in LAN/USB/RS232/GPIB interfaces are designed for many fields such as power supply, power battery, DC charging station, generators, military and aerospace etc.

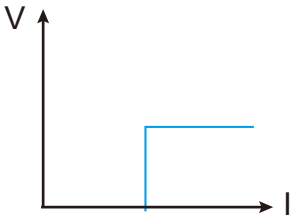
Feature

- High resolution for voltage / current: 1mV/1mA
- Supports master-slave paralleling, maintains stand-alone functions
- Provides six working modes: CC/CV/CR/CW/CC+CV/CR-LED
- Adjustable CV loop speed, well-suited for multiple power supplies
- Transient over-power loading capability
- Ultrafast loop response, available for 18Bits high speed test with up to 50kHz voltage/current measuring speed
- Unique Measure function, designed for rise/fall time measurement of voltage or current
- Overall modular design, convenient for maintenance and service
- Full protection: OVP/OCP/OPP/overheat protection/anti-reverse protection/current limit protection/power limit protection
- Built-in LAN/USB/RS232/GPIB interfaces
- Supports VISA/USBTMC/SCPI
- 25kHz dynamic mode
- Short circuit function
- Battery test function
  OCP/OPP test function
- Remote sense
- I-monitor
- External analog control
- Up to 100 groups memories, with power off memory function
- Control via software by computer

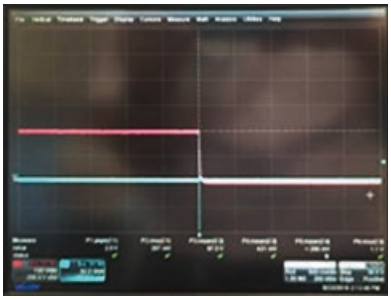
Model	Voltage	Current	Power	Size
IT8912-600-480	600V	480A	12kW	15U
IT8912-1200-240	1200V	240A	12kW	15U
IT8915-150-960	150V	960A	15kW	15U
IT8918-600-720	600V	720A	18kW	24U
IT8918-1200-360	1200V	360A	18kW	24U
IT8922-150-1440	150V	1440A	22.5kW	24U
IT8924-600-960	600V	960A	24kW	24U
IT8924-1200-480	1200V	480A	24kW	24U
IT8930-150-1920	150V	1920A	30kW	24U
IT8930-600-1200	600V	1200A	30kW	37U
IT8930-1200-600	1200V	600A	30kW	37U
IT8936-600-1440	600V	1440A	36kW	37U
IT8936-1200-720	1200V	720A	36kW	37U
IT8945-150-2500	150V	2500A	45kW	37U
IT8948-600-1920	600V	1920A	48KW	24U*2
IT8948-1200-960	1200V	960A	48KW	24U*2
IT8960-150-2500	150V	2500A	60KW	24U*2
IT8960-600-2400	600V	2400A	60KW	37U*2
IT8960-1200-1200	1200V	1200A	60KW	37U*2
IT8972-600-2500	600V	2500A	72KW	37U*2
IT8972-1200-1440	1200V	1440A	72KW	37U*2
IT8990-150-2500	150V	2500A	90KW	37U*2
IT89108-600-2500	600V	2500A	108KW	37U*3
IT89108-1200-2160	1200V	2160A	108KW	37U*3

CV+CC compound operation mode

CV+CC mode is a new increased mode for operation, it can help engineer to solve the transient surge current problem and avoid DUT trigger or DUT burned problem in application testing. For example, in charging station testing, under CV working mode, electronic load need to rise up to 700V in a fast speed, current value will suddenly rise up quickly, the result is that charging station will OCP so that no output from charging station. In order to avoid the similar problem, we can use CV+CC mode to set CC(I-Limit) value, setting interior current value will no more than OCP value in charging station, it can effectively avoid the current surge and solve the OCP problem.

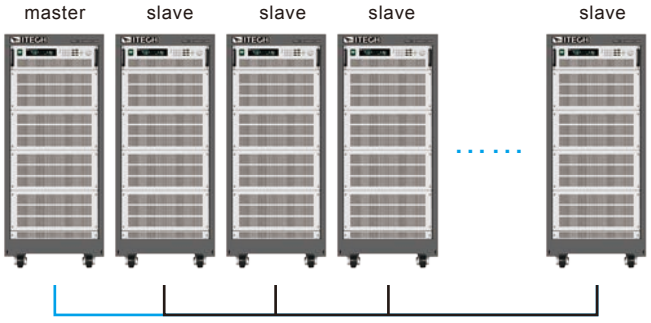


CV+CC mode


Oscilloscope testing example

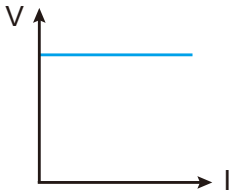
Master-slave paralleling, maintains stand-alone functions

IT8900 series support master-slave paralleling for same models, to expand power up to 600kW. The user operates on master panel and the slave unit will be distributed automatically, simple to use. Master-slave paralleling can achieve stand-alone functions, traditional paralleling is not workable under CV mode. However IT8900 series can parallel under CC/CV modes innovatively. IT8900 series are mainly applicable in the fields of DC charging station, power battery, high voltage UPS and military high power DC motor tests.

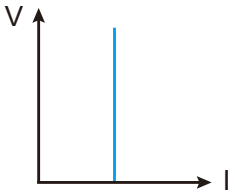


4 basic load operation modes

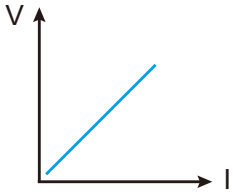
IT8900 series provide constant voltage, constant current, constant resistance and constant power modes, to meet the test needs from customers.



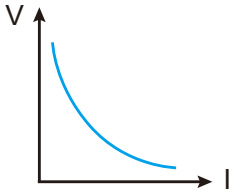
CV mode



CC mode



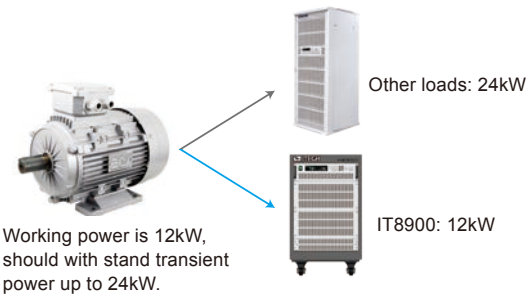
CR mode



CP mode

Transient over power loading capability

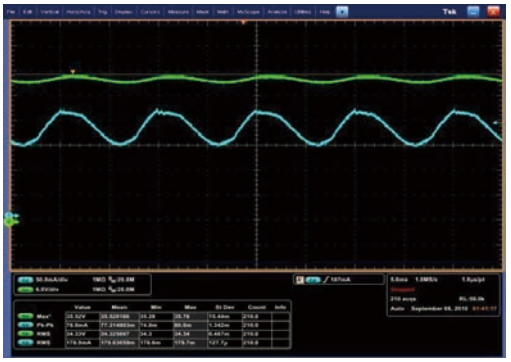
Transient over power loading capability, it will make load to take over power loading capability in short time, users no need to select types as maximum power value, it can extremely save cost. This function can be widely used in the DUT transient peak power
supply ability test. Such as DC motor start-up simulation, start transient power will be several times of common working power, or else, it can simulate power supply's
transient over load features, application in discharging for high power battery in transient time.



Working power is 12kW, should with stand transient power up to 24kW.

CR-LED (CC+CR) operation mode

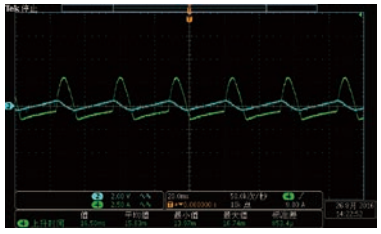
IT8900 series CR-LED (CC+CR) mode can supply LED power drive testing and be applied in led current simulation, to simulate the ripple in real testing, CR-LED can improve speed and stability for control loop, it can solve the voltage and current jitter problem in LED driver testing, furthermore, IT8900 can increase frequency width, it can help users to achieve PWM dimmer testing.



CV loop speed is adjustable

We believe that many engineers will meet the below similar situation, load loop speed is too fast or too slow to match some slow or high speed power supply features, result is testing value will vibrated. This problem can be well solved with IT8900 series, when appear mismatch situation, users can adjust interior CV loop speed with “High-rate” or “Low-rate” to achieve the best matching point.

This function can conveniently help customers to solve the different matching problems. Even it can save the cost and improve testing efficiency, after a simply setting up, one electronic load will meet the multiple complex DUT testing,
CV high-low rate testing: power supply: IT6015 setting up: 60V/1A
Blue is voltage waveform, green is current waveform



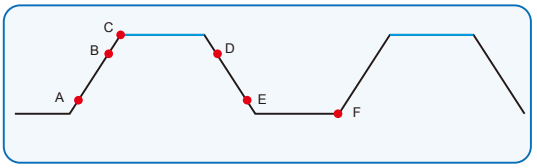
CV 50V low speed mode: it’s obvious to find vibration phenomenon

CV 50V high speed mode: CV stability, no vibration phenomenon

Measure function

IT8900 series provide measure function, mainly used for measuring the rising and falling time of voltage or current within a specified range.

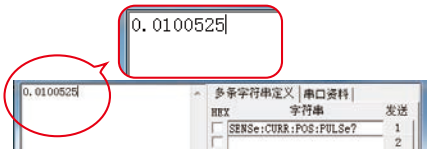
Measurable period of time as follows:
(1) The rising time period from A point to B point.
(2) The falling time period from D point to E point.
(3) The falling time period from C point to E point. (Positive pulse width time)
(4) The rising time period from D point to F point (Negative pulse width time)



Remarks: from above graph, A and B are arbitrary points of the rising stage, C is one point on the green stage, D and E are arbitrary points of the falling stage.

Application

■ Power module rising and falling time measurement
The Rising time test and Falling time test are one of the necessary power supply test item. The users can directly read the voltage rising/falling time from on the IT8900 display screen by sending instructions, easy operation and high testing accuracy, which is comparable with oscilloscope.



IT8900 testing data

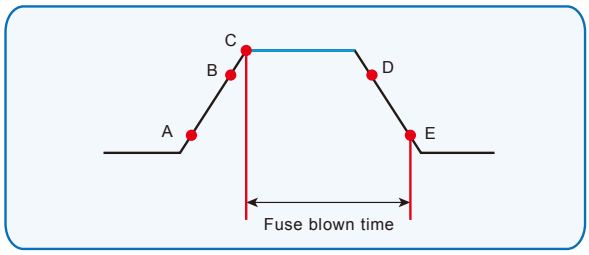
Oscilloscope testing data

Current positive pulse width test

■ Fuse blown time

Combine the CC function and Measure function together, the users can measure the fuse blown time, time measurement accuracy can reach 10μs.

The automotive industry requires to test the fuse blown time in the different magnification conditions. For example, 500A fuse with 6 times magnification, the fusing current will reach 3000A. IT8900 can meet the testing requirements.

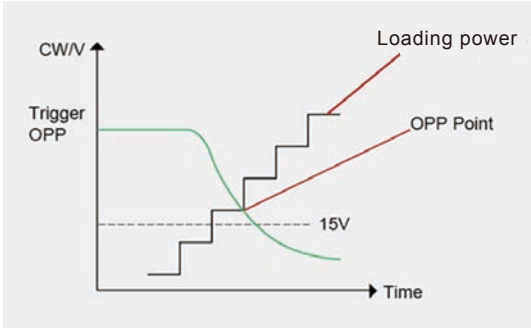


Measurement speed up to 50kHz

IT8900 with high performance characteristics, 1mv/1mA high resolution, 50kHz measurement speed, which increase the testing speed and accuracy. Such as solar battery testing. Because solar battery's IV feature will change with the different environment temperature, illumination radiation, luminous intensity etc. Thus, the solar battery IV feature must be multiple-points tested within short period of time, which request the loads to be able to high speed measure. IT8900 can measure 250 points of the solar battery IV curve within 5ms, using together with IT9380 solar battery test software, the users can set the measurement voltage, and the software will acquire the data within the specified range automatically.

OCP, OPP Tests

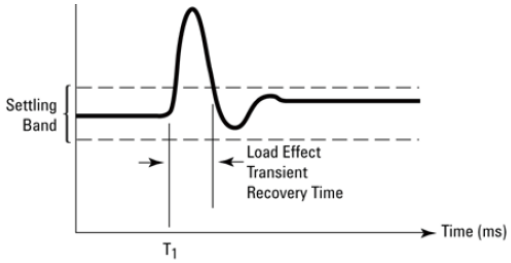
OCP and OPP are mainly applied in over-current and over-power point tests of the lithium-battery protection board and power modules. For power supplies, OCP and OPP are designed to guarantee the user's safety and to reduce damage rate. IT8900 loads can automatically judge the test result according to the set specifications, so the users can save much time in verification of design and production system.



OPP Protection Test

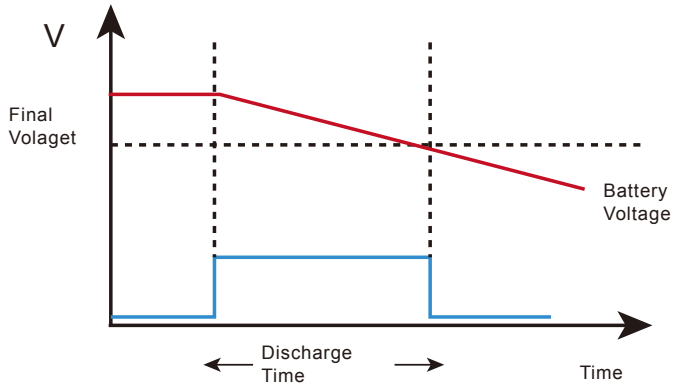
Dynamic mode reach 25kHz

Dynamic mode operation enable the electronic load to switch between the two set parameters according to set regulations, making use of the electronic load dynamic mode to test the power supplies, which can reflect the stability when power supply loading current in step changes. Meanwhile, IT8900 series digital loop circuit design and CV loop speed adjustment increase the loop response speed. For different power supply characteristics, IT8900 series has high and low bandwidth for choice, which is suitable for different power supply test.



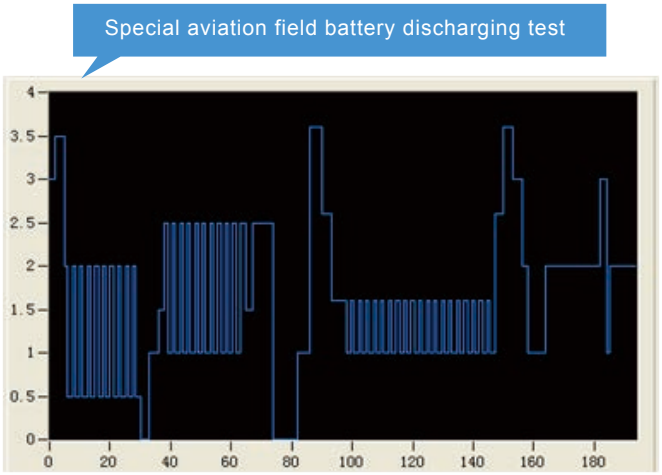
Battery Discharge Test

Through operation panel or software, IT8900 can set 3 battery stop conditions: voltage, capacity and time. Whenever met any condition, it will automatically stop test. During the test, users can observe battery's voltage, time and already-discharged-capacity. The discharging curves can be checked through the software. The discharge test can reflect battery's reliability and residual service life.



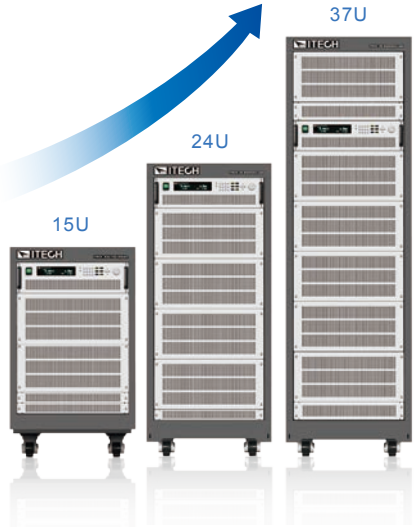
External Analog Test

Analog control interface is to meet industrial control requirements, when there's no need to use PC controlling, user can control through PLC. IT8900 loads can control load voltage or current through the analog interface at the rear panel, to analog 0-full scale input range by connecting to 0-10V adjustable voltages, so as to adjust load's input voltage and current values.



Automatic Test

IT8900 has a very strong automatic test function. The automatic test function is useful for simulating various tests and allows the user to edit up to 10 groups of testing files. It helps engineers to test out all kinds of data of the tested power supply at different loading status. Automatic test function can edit multiple product tests, such as CC, no-load, short-circuit, CV, so it can finish all test by one time. It makes tests convenient and fast, and to ensure high efficiency and testing accuracy.



Power off memory

IT8900 can save 100 groups of frequently testing data in nonvolatile memory device, which makes it convenient for users to recall the data. IT8900 provides power off memory to guarantee that the long-term testing result data can be saved well when there's abnormal power-off or computer crash. Once the system is back to normal, the program can continue staring from the fault point. This function can avoid repeated tests, thus to improve testing efficiency. When it remains under power-off status, IT8900 will automatically stop working, and to make test safe and reliable.

IT8900 Specification

Model		IT8912-600-480		IT8912-1200-240		IT8915-150-960	
Rated input (0~40℃)	Voltage	0~600V		0~1200V		0~150V	
	Current	0~48A	0~480A	0~24A	0~240A	0~96A	0~960A
	Power	12kW		12kW		15kW	
CV mode	Range	0.1~60V	0.1~600V	0.1~120V	0.1~1200V	0.1~18V	0.1~150V
	Resolution	1mV	10mV	10mV	100mV	1mV	
	Accuracy	±(0.05%+0.05%FS)					
CC mode	Range	0~48A	0~480A	0~24A	0~240A	0~96A	
	Resolution	1mA	10mA	1mA	10mA	1mA	10mA
	Accuracy	±(0.05%+0.1%FS)		±(0.05%+0.1%FS)		±(0.1%+0.1%FS)	
CR mode*1	Range	0.01Ω~10Ω	10Ω~7.5kΩ	0.03Ω~10Ω	10Ω~7.5kΩ	0.005Ω~10Ω	10Ω~7.5kΩ
	Resolution	16bit					
	Accuracy	0.01%+0.08S*2	0.01%+0.0008S	0.01%+0.08S*2	0.01%+0.0008S	0.01%+0.08S*2	0.01%+0.0008S
CP mode*3	Range	12kW		12kW		15kW	
	Resolution	1W		1W		1W	
	Accuracy	0.2%+0.3%FS		0.2%+0.3%FS		0.2%+0.3%FS	
Readback Voltage	Range	0~60V	0~600V	0~120V	0~1200V	0~18V	0~150V
	Resolution	1mV	10mV	10mV	100mV	1mV	
	Accuracy	±(0.025%+0.025%FS)		±(0.025%+0.025%FS)		±(0.025%+0.025%FS)	
Readback Current	Range	0~48A	0~480A	0~24A	0~240A	0~96A	
	Resolution	1mA	10mA	1mA	10mV	1mA	10mA
	Accuracy	±(0.05%+0.1%FS)		±(0.05%+0.1%FS)		±(0.1%+0.1%FS)	
Readback Power*2	Range	12kW		12kW		15kW	
	Resolution	1W		1W		1W	
	Accuracy	±(0.2%+0.3%FS)		±(0.2%+0.3%FS)		±(0.2%+0.3%FS)	
Height		15U		15U		15U	

*1 Voltage/Current is not less than 10%FS (FS is full range)
*2 Readback resistance range: (1/(1/R+(1/R)*0.01%+0.08),1/(1/R-(1/R)*0.01%-0.08))
*3 Voltage/Current is not less than 10%FS

* This information is subject to change without notice

IT8800 High Power DC Electronic Load

IT8800 series has wide power range 150W~10kW, voltage and cureent measurement speed up to 50KHZ, resolution up to 0.1mV/0.01mA, adjustable measurement current rising speed 0.0001A/us~2.5A/us, built-in RS232/GBIP/USB interface. IT8800 series has wide application fields because of its high perfromance products, it has been applied to LED lighting, aerospace, automotive electronics and other fields.

Applications

High power testing, battery test, power supply test, aerospace testing

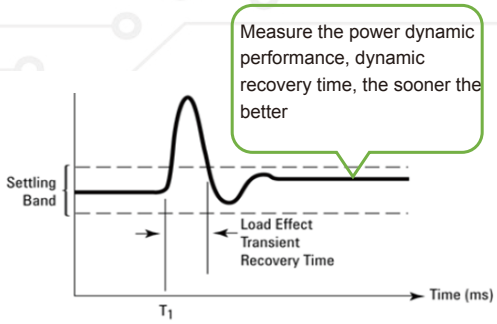
Feature

- 150W-10kW/120-800V/15-500A
- CV/CC/CR/CW mode
- Remote sense
- Measurement resolution:0.1mV,0.01mA
- Dynamic mode: up to 25 KHz
- Adjustable current rising slope: 0.0001A/us~2.5A/us
- Measurement speed: up to 50KHz
- Dynamic test, short-circuit test function
- Rotary knob, making the operation more easier
- CR-LED test
- OCP / OVP / CPP / OTP/ Reverse polarity protection
- 100 groups memory capacity
- Power off memory function
- External analog control
- Support VISA/USBTMC/SCPI communication protocol
- Built-in RS232/USB/GPIB communication interface
- Software monitoring via PC

Model	Voltage	Current	Power	Size
IT8811	150W	120V	30A	1/2 2U
IT8812	250W	120V	30A	1/2 2U
IT8812B	200W	500V	15A	1/2 2U
IT8812C	250W	120V	60A	1/2 2U
IT8813	750W	120V	60A	3U
IT8813B	750W	500V	30A	3U
IT8813C	750W	120V	120A	3U
IT8814	1500W	120V	120A	3U
IT8814B	1200W	500V	60A	3U
IT8816	3KW	120V	240A	3U
IT8816B	2500W	500V	100A	3U
IT8817	4500W	120V	360A	6U
IT8817B	3600W	500V	120A	6U
IT8818	6KW	120V	480A	6U
IT8818B	5KW	500V	150A	6U
IT8819H	7.5KW	800V	80A	12U
IT8830	10KW	120V	500A	12U
IT8830B	10KW	500V	200A	12U
IT8830H	10KW	800V	100A	12U

Dynamic mode up to 25KHz

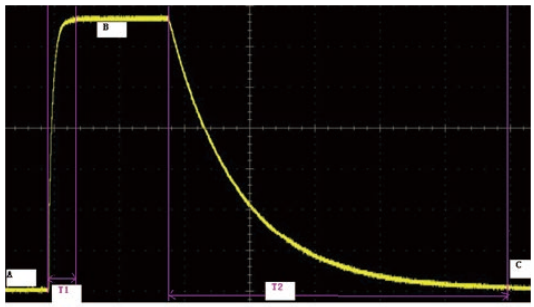
Dynamic mode operation allows the electronic load to be switched between the two setting parameters according to the setting rules. Dynamic mode can be used to test the dynamic nature of the power supply, e.g. when the computer disk drive run or stop, the dynamic load mode can simulate the change of operating current.



Voltage Rising/Falling time test

IT8800 provides unique measurement function to test voltage rising/falling time. Enter the measure menu under config, and set two voltage points. Then turn on display on timer function, and the rising / falling time is displayed on the screen after completing test.

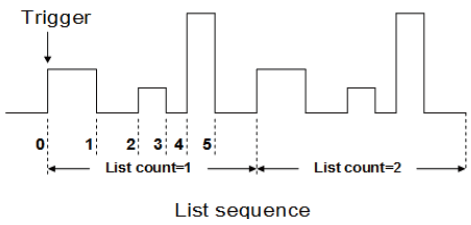
This test is important for switching power supply testing and fuse testing.



Adjustable Rising/Falling speed of current

List mode allows you to generate a complex current sequence. Moreover, the mode change can be synchronized with an internal or external signal, to accomplish dynamic and precise test. A list file includes following parameters: file name, step counts (range 2-84), time width of single step (0.00002s-3600s), step value and slope. The LIST function can make many kinds of complex sequences, to meet complicated test requirements.

IT8800 electronic load supports panel programming and computer software operation, especially for electronic product development, production line product aging, quality inspection and other complex application environment.

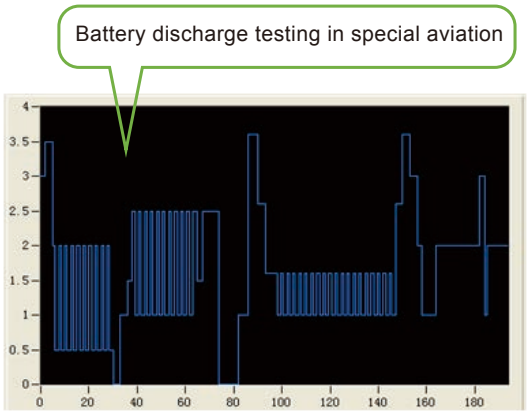


List sequence

External analog test

IT8800 electronic load can control the loading voltage or current through the EXT PRG (positive and negative) analog port on the rear panel, connect 0-10V adjustable voltage to simulate 0- full-scale input in the EXT PRG terminal, so as to adjust the load input voltage and current value.

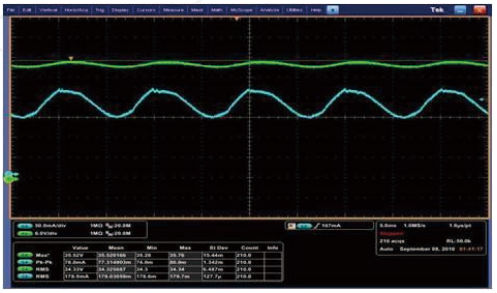
Analog control interface meets the control needs of industrial production, users can achieve output voltage control via PLC without the PC control.



CR-LED test

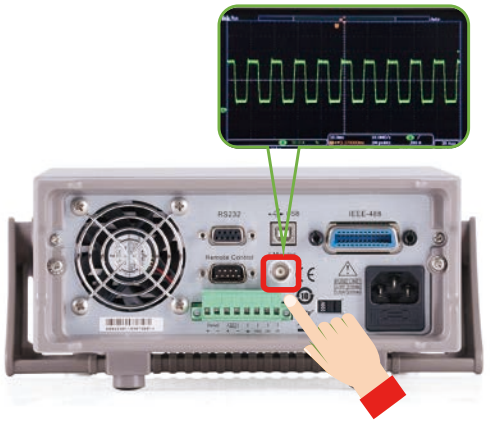
AS we all know the LED constant power supply output waveform usually have large current ripple. This is because the traditional type DC loads can't simulate the actual characteristic of LED driver, its testing current and voltage will shake. Based on traditional CR mode, CR-LED mode of IT8800 series adds the setting item of diode break-over voltage. Only when the input voltage is above the set value, the DC load will start to work. Thus, the IT8800 series can simulate the actual characteristic of LED.

IT8800 unique LED mode can provide LED power drive test, which can be used in LED power simulation.



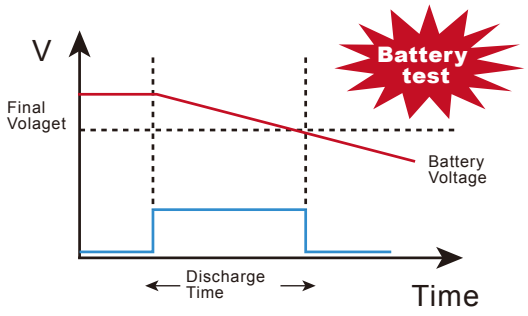
Current monitor

IT8800 series allows the users to monitor actual current through I-monitor terminal. Users could connect an oscilloscope to observe actual current. It will generate at 0-10V analog signal to represent to 0-100% rated current of the front panel.



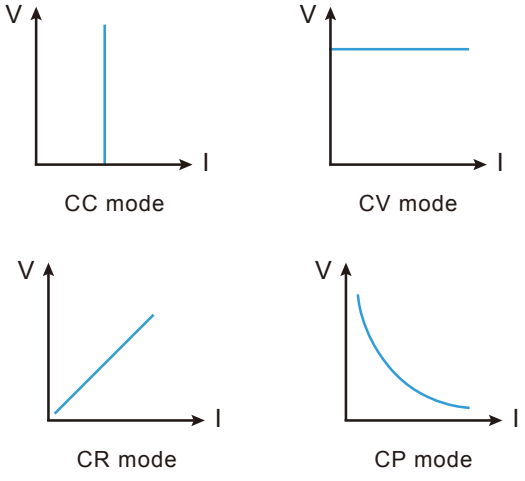
Battery discharge test function

IT8800 series electronic load can respectively set turn off voltage, cut-off capacity, discharge time through the panel and software to be as battery discharge cut-off conditions. The test is automatically stopped when the battery drops to the off voltage or has been discharged to the cut-off capacity or reaches the cut-off time. During the test, you can observe the battery voltage, discharge time and battery discharge capacity.



Working mode

The working mode of IT8800 series has CC, CV, CP, CR, and it will make you easy to simulate various characteristics of load, which can save cost greatly. It support OVP, OCP, OPP, OTP, reverse polarity protection and it can set the protection point of current, voltage, and power. In every condition, it will make auditory alarm and cut off the circuit to ensure the safety during test.

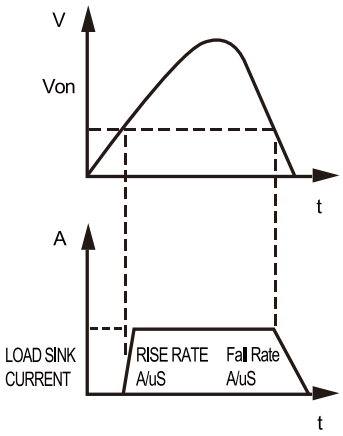


Auto test function

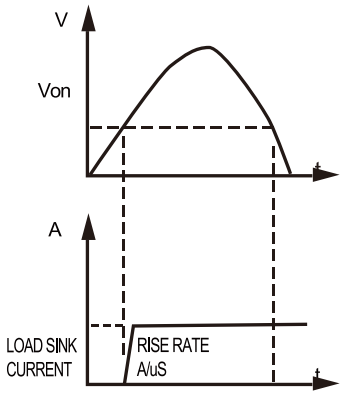
IT8800 auto test function can simulate many kinds of testing. It totally can edit 10 test files, and can make connection between one file and another. Also you can choose the condition to stop the test: stop when testing pass or fail. Its adjustable current speed rate of rising and falling can make auto test to simulate kinds of test waveform.

Supporting two loading modes

IT8800 series supports loading voltage setting, and it provides two kinds of load modes. Choosing Living means working goes after status, when choosing latch, it means work load point latch with loading states. It can meet different test requirements.



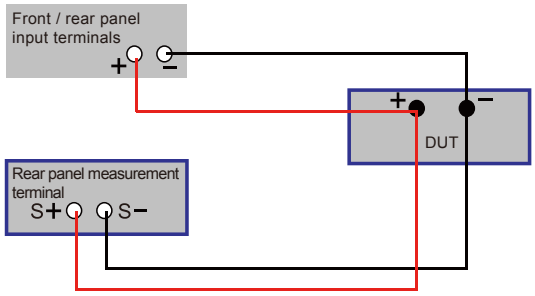
Living Working mode



Latch Working mode

Remote sense function

In CC, CV, CR and CP mode, when load consume high current, it will cause large voltage-drop on the connection wires between tested instrument and terminals of load. Using remote sensing, you can sense the voltage at the power supply's terminals, effectively removing the effect of the voltage drop in the connection wires. In order to avoid the voltage-drop because of too long wires, remote test allows testing on the input terminals to improve the test accuracy.

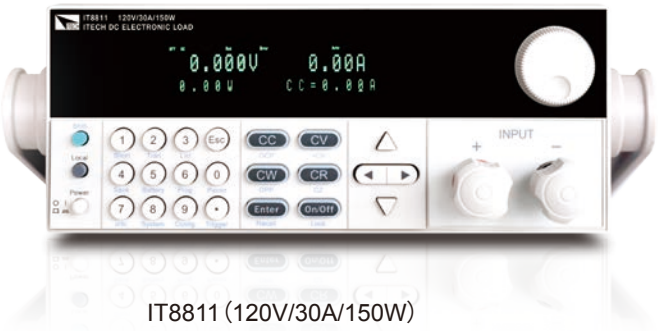


OCP/OPP test

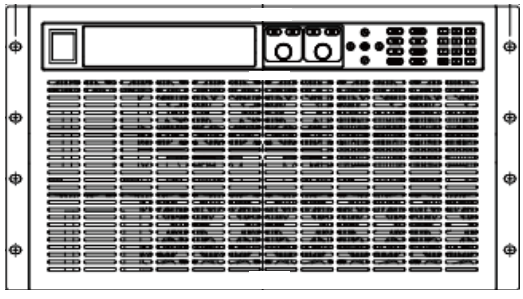
OCP / OPP are mainly used in lithium battery protection board test, power module over current and over power point test. Through the built-in OCP and OPP function, users can test by built-in OCP program start current setting , cut-off current, step current, as well as the duration of each stage current, etc. IT8800 series can automatically capture the OCP point, with the automatic fast function, users can save a lot of verification time when using for design verification and production line system.

Panel operation

It is very convenient to operate the load panel, its shot-cut buttons are as follows: short circuit test, dynamic test, list test, data save, data recall, battery test, auto-test, test stop, test trigger, over current test, over power test.



IT8811 (120V/30A/150W)



IT8818B (500V/150A/5000W)

Field	DUT	Test items
Automotive electronics	Radio, Car heating seats; Car doors and windows switch	Judge the working current
	Auto-car doors and windows switch	Stability and aging test
	Car central control box	Stability and aging test
Battery	Power Battery	Discharge test
	Cell phone battery	Discharge test
	Solar battery	Discharge, efficiency and other tests
	Mobile power	Discharge test
power supply	Power supply module, power supply	Performance testing
	Regulated power supply, constant current source, constant voltage source	Performance testing
	Switching power supply	Performance testing
	Charger	Performance testing
	Power supply for medical equipment	Energy storage test
	Power supply for military, aerospace equipment, scientific research equipment	Performance testing
	UPS	Energy storage test
LED	LED drive power supply	Electrical parameters and stability test
Power electronic components	MOSFET、IGBT	Performance testing
	Capacitors, rectifiers	Performance testing
	PFC module	Performance testing
Fuse	Fuse	Fuse time test


IT8813B


IT8818-6U

IT8800 High Power DC Electronic Load

ITECH ELECTRONICS
Your Power Testing Solution

IT8811/12 Specifications

		IT8811		IT8812		IT8812B		IT8812C	
Rated (0~40℃)	Input voltage	0~120V		0~120V		0~500V		0~120V	
	Input current	0~3A	0~30A	0~3A	0~30A	0~3A	0~15A	0~6 A	0~60A
	Input power	150 W		250W		200W		250W	
	Min operating voltage	0.11V at 3A	1.1V at 30A	0.11V at 3A	1.1V at 30A	0.9V at 3A	4.5V at 15A	0.18V at 6A	1.8V at 60A
CV mode	Range	0.1~18V	0.1~120V	0.1~18V	0.1~120V	0.1~50V	0.1~500V	0.1~18V	0.1~120V
	Resolution	1 mV	10 mV	1mV	10mV	1mV	10mV	1mV	10mV
	Accuracy	±(0.05%+0.025% FS)		±(0.05%+0.025%FS)		±(0.05%+0.025%FS)		±(0.05%+0.025%FS)	
CC mode	Range	0~3A	0~30A	0~3A	0~30A	0~3A	0~15A	0~6A	0~60A
	Resolution	0.1mA	1mA	0.1mA	1mA	0.1mA	1mA	0.1mA	1mA
	Accuracy	± (0.05% + 0.05%FS)						± (0.05%+0.1%FS)	± (0.05%+0.1%FS)
CR mode*1	Range	0.05Ω~10Ω	10Ω~7.5KΩ	0.05Ω~10Ω	10Ω~7.5KΩ	0.3Ω~10Ω	10 Ω~7.5KΩ	0.05Ω~10Ω	10Ω~7.5KΩ
	Resolution	16 bit							
	Accuracy	0.01% + 0.08s	0.01% + 0.0008s	0.01% + 0.08s	0.01% + 0.0008s	0.01% + 0.08s	0.01% + 0.0008s	0.01%+0.08s	0.01%+0.0008s
CP mode*2	Range	150W		250W		200W		250W	
	Resolution	10mW							
	Accuracy	0.1% + 0.1%FS		0.1% + 0.1%FS		0.1% + 0.1%FS		0.2% + 0.2%FS	
Dynamic mode		Dynamic mode							
		CC mode							
	T1&T2	20 μs~3600s / Res:1 μs							
	Accuracy	5 μs±100 ppm							
	Rise / fall slope	0.0001~0.25A/μs	0.001~2.5 A/μs	0.0001~0.25 A/μs	0.001~2.5 A/μs	0.0001~0.1 A/μs	0.001~1 A/μs	0.0001~0.25 A/μs	0.001~2.5 A/μs
		Measuring range							
Readback Voltage	Range	0~18V	0~120V	0~18V	0~120V	0~50V	0~500V	0~18V	0~120V
	Resolution	0.1mV	1mV	0.1mV	1 mV	1mV	10 mV	0.1mV	1mV
	Accuracy	± (0.025% + 0.025%FS)							
Readback Current	Range	0~3A	0~30A	0~3A	0~30A	0~3 A	0~15A	0~6A	0~60A
	Resolution	0.01mA	0.1mA	0.01mA	0.1mA	0.01mA	0.1mA	0.1mA	1mA
	Accuracy	± (0.05% + 0.05%FS)		± (0.05% + 0.05%FS)		± (0.05% + 0.05%FS)		± (0.05% + 0.1%FS)	
Readback Power	Range	150W		250W		200W		250W	
	Resolution	10mW							
	Accuracy	± (0.1% + 0.1%FS)		± (0.1% + 0.1%FS)		± (0.1% + 0.1%FS)		± (0.2% + 0.2%FS)	
		Protected range							
Over power protection		≒160W		≒260W		≒210W		≒260W	
Over current protection		≒3.3A	≒33A	≒3.3A	≒33 A	≒3.3A	≒16.5A	≒6.6A	≒66 A
Over voltage protection		≒130V		≒130V		≒530V		≒130V	
Over temperature protection		≒85°C							
		Specifications							
Short circuit	Current	≒3.3/3A	≒33/30A	≒3.3/3A	≒33/30A	≒3.3/3A	≒16.5/15A	≒6.6 /6A	≒66 A/60A
	Voltage	0 V							
	Resistance	≒35mΩ		≒35mΩ		≒300mΩ		≒30 mΩ	
Input terminal impedance		300KΩ		300KΩ		1MΩ		300 KΩ	
Size(W*H*D)		214.5 mm* 88.2 mm* 354.6mm							

*1 Voltage/current input value is not less than 10% FS (FS for full scale)

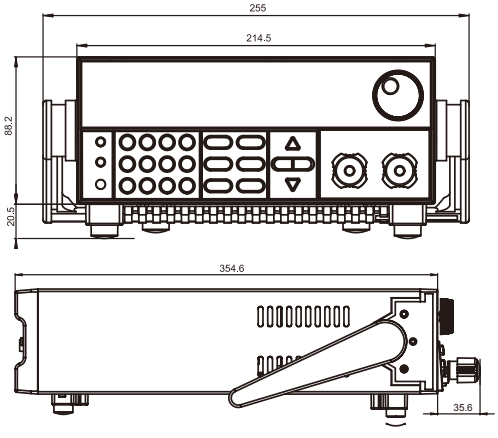
*2 Voltage/current input values is not less than 10% FS

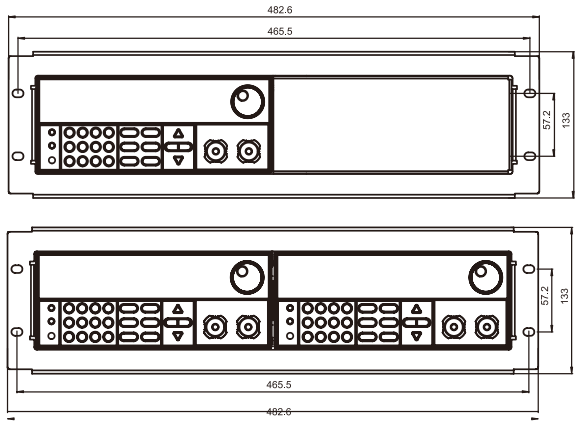
*3 Up/down slope: 10% ~ 90% current rising slope when from 0 to the maximum current

* This information is subject to change without notice

IT8811/12 Dimension figure

1/2 2U, 150 W~300 W





Unit: mm

IT8813/14 Specifications

		IT8813		IT8813B		IT8813C		IT8814		IT8814B	
Rated (0~40℃)	Input voltage	0~120V		0~500V		0~120V		0~120 V		0~500V	
	Input current	0~6A	0~60A	0~3A	0~30A	0~12A	0~120A	0~12 A	0~120 A	0~6A	0~60A
	Input power	750W		750 W		750 W		1500 W		1200 W	
	Min operating voltage	0.1Vat6A	1.0Vat60A	0.36Vat3A	3.6V at 30A	0.12V/12A	1.2V/120A	0.12Vat12A	1.2Vat120A	0.36V / 6A	3.6V / 60A
CV mode	Range	0.1~18V	0.1~120V	0.1~50V	0.1~500V	0.1~18V	0.1~120V	0.1~18 V	0.1~120V	0.1~50 V	0.1~500V
	Resolution	1mV	10mV	1mV	10mV	1mV	10mV	1 mV	10mV	1mV	10mV
	Accuracy	±(0.025%+0.05% FS)		±(0.025%+0.05%FS)		±(0.025%+0.05%FS)		±(0.025%+0.05%FS)		±(0.025%+0.05%FS)	
CC mode	Range	0~6A	0~60A	0~3A	0~30A	0~12A	0~120A	0~12A	0~120 A	0~6 A	0~60 A
	Resolution	0.1mA	1mA	0.1mA	1mA	1mA	10mA	1mA	10 mA	0.1 mA	1 mA
	Accuracy	± (0.05% + 0.05%FS)				±(0.05%+0.1%FS)		±(0.05%+0.05%FS)		±(0.05%+0.05%FS)	
CR mode*1	Range	0.02Ω~10Ω	10Ω~7.5kΩ	0.15Ω~10Ω	10Ω~7.5 KΩ	0.02Ω~10Ω	10Ω~7.5KΩ	0.01Ω~10Ω	10 Ω~7.5 kΩ	0.1 Ω~10 Ω	10 Ω~7.5 kΩ
	Resolution	16 bit									
	Accuracy	0.01% + 0.08s	0.01% + 0.0008s	0.01% + 0.08s	0.01% + 0.0008s	0.01%+0.08s	0.01%+0.0008s	0.01% + 0.08s	0.01% + 0.0008s	0.01%+0.08s	0.01%+0.0008s
CP mode*2	Range	750W		750W		750W		1500 W		1200 W	
	Resolution	10mW		10mW		10mW		100 mW		100 mW	
	Accuracy	0.2% + 0.2% FS		0.2% + 0.2% FS		0.2% + 0.2% FS		0.2% + 0.2% FS		0.2% + 0.2% FS	
Dynamic mode		Dynamic mode									
		CC mode									
	T1&T2	20μs~3600s / Res:1 μs									
	Accuracy	5μs±100 ppm									
	Rise / fall slope	0.0001~0.25A/μs	0.001~2.5 A/μs	0.0001~0.1 A/μs	0.001~1 A/μs	0.001~0.25A/us	0.01~2.5A/us	0.001~0.25 A/μs	0.01~2.5 A/μs	0.0001~0.1A/μs	0.001~1 A/μs
		Measuring range									
Readback Voltage	Range	0~18V	0~120V	0~50V	0~500V	0~18V	0~120V	0~18 V	0~120 V	0~50 V	0~500 V
	Resolution	1mV	10mV	1mV	10mV	1 mV	10 mV	1 mV	10 mV	1 mV	10 mV
	Accuracy	± (0.025% + 0.025%FS)									
Readback Current	Range	0~6A	0~60A	0~3A	0~30A	0~12A	0~120A	0~12 A	0~120 A	0~6 A	0~60 A
	Resolution	0.1mA	1mA	0.1mA	1 mA	1 mA	10 mA	1 mA	10 mA	0.1 mA	1 mA
	Accuracy	± (0.05% + 0.05%FS)		± (0.05% + 0.05%FS)		±(0.05%+0.1%FS)		± (0.05% + 0.05%FS)		± (0.05% + 0.05%FS)	
Readback Power	Range	750W		750W		750W		1500 W		1200 W	
	Resolution	10mW		10mW		10mW		100 mW		100 mW	
	Accuracy	± (0.2% + 0.2%FS)		± (0.2% + 0.2%FS)		± (0.2% + 0.2%FS)		± (0.2% + 0.2%FS)		± (0.2% + 0.2%FS)	
Protected range											
Over power protection		≒760W		≒760W		≒760W		≒1550 W		≒1250 W	
Over current protection		≒6.6A	≒66A	≒3.3 A	≒33 A	≒13.2A	≒132A	≒13.2 /12A	≒132/120A	≒6.6 A	≒66 A
Over voltage protection		≒130V		≒530V		≒130V		≒130 V		≒530 V	
Over temperature protection		≒85℃									
		Specifications									
Short circuit	Current	≒6.6/6A	≒66/60A	≒3.3/3A		≒13.2/12A	132/120A	≒13.2/12A	≒132/120A	≒6.6/16A	≒66/160A
	Voltage	0 V									
	Resistance	≒15mΩ		≒120mΩ		≒10mΩ		≒10 mΩ		≒60 mΩ	
Input terminal impedance		300KΩ		1 MΩ		300KΩ		300 KΩ		1 MΩ	
Size(W*H*D)		439 mm* 133.3 mm* 580 mm									

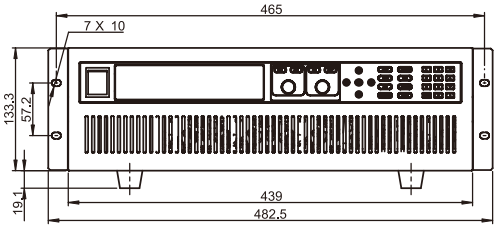
*1 Voltage/current input value is not less than 10% FS (FS for full scale)

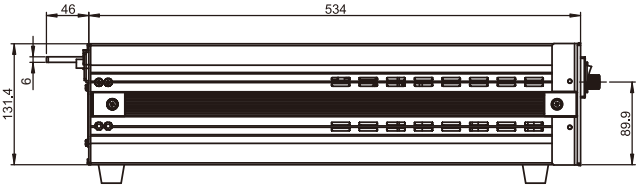
*2 Voltage/current input values is not less than 10% FS

*3 Up/down slope: 10% ~ 90% current rising slope when from 0 to the maximum current

* This information is subject to change without notice

IT8813/14/16 Dimension figure (3U, 750 W~3000W)





Unit: mm

IT8816/17 Specifications

		IT8816		IT8816B		IT8817		IT8817B	
Rated (0~40℃)	Input voltage	0~120 V		0~500 V		0~120 V		0~500 V	
	Input current	0~24 A	0~240 A	0~10 A	0~100 A	0~36 A	0~360 A	0~12 A	0~120 A
	Input power	3000 W		2.5 KW		4500 W		3.6 KW	
	Min operating voltage	0.12Vat24A	1.2Vat 240A	0.3 V at 10 A	3 V at 100 A	0.15 V at 36 A	1.5 V at 360 A	0.3 V at 12 A	3 V at 120 A
CV mode	Range	0.1~18 V	0.1~120 V	0.1~50 V	0.1~500 V	0.1~18 V	0.1~120 V	0.1~50 V	0.1~500 V
	Resolution	1 mV	10 mV	1 mV	10 mV	1 mV	10 mV	1 mV	10 mV
	Accuracy	±(0.025%+0.05% FS)		±(0.025%+0.05%FS)		±(0.025%+0.05%FS)		±(0.025%+0.05%FS)	
CC mode	Range	0~24 A	0~240 A	0~10 A	0~100 A	0~36 A	0~360 A	0~12 A	0~120 A
	Resolution	1 mA	10 mA	1 mA	10 mA	1 mA	10 mA	1 mA	10 mA
	Accuracy	± (0.05% + 0.05%FS)		± (0.05% + 0.05%FS)		± (0.05% + 0.1%FS)		± (0.05%+0.05%FS)	
CR mode*1	Range	0.01 Ω~10 Ω	10 Ω~7.5 KΩ	0.03 Ω~10 Ω	10 Ω~7.5 KΩ	0.01Ω~10Ω	10Ω~7.5KΩ	0.03Ω~10Ω	10Ω~7.5kΩ
	Resolution				16 bit				
	Accuracy	0.01% + 0.08S	0.01% + 0.0008S	0.01% + 0.08S	0.01% + 0.0008S	0.01% + 0.08S	0.01% + 0.0008S	0.01%+0.08S	0.01%+0.0008S
CP mode*2	Range	3000 W		2.5 kW		4500W		3.6kW	
	Resolution				100 mW				
	Accuracy				0.2% + 0.2% FS				
Dynamic mode					Dynamic mode				
					CC mode				
	T1&T2				20 μS~3600 S / Res:1 μS				
	Accuracy				5 μS±100 ppm				
	Rise / fall slope	0.001~0.25A/μS	0.01~2.5 A/μS	0.001~0.1 A/μS	0.01~1 A/μS	0.001~0.25A/μS	0.01~2.5 A/μS	0.001~0.1 A/μS	0.01~1 A/μS
					Measuring range				
Readback Voltage	Range	0~18 V	0~120 V	0~50 V	0~500 V	0~18 V	0~120 V	0~50 V	0~500 V
	Resolution	1 mV	10 mV	1 mV	10 mV	1 mV	10 mV	1 mV	10 mV
	Accuracy				± (0.025% + 0.025%FS)				
Readback Current	Range	0~24 A	0~240 A	0~10 A	0~100 A	0~36 A	0~360 A	0~12 A	0~120 A
	Resolution	1 mA	10 mA	1 mA	10 mA	1 mA	10 mA	1 mA	10 mA
	Accuracy	± (0.05% + 0.05%FS)		± (0.05% + 0.05%FS)		± (0.05% + 0.05%FS)		± (0.05% + 0.05%FS)	
Readback Power	Range	3000 W		2.5 KW		4500 W		3.6 kW	
	Resolution				100 mW				
	Accuracy				± (0.2% + 0.2%FS)				
					Protected range				
Over power protection		≒3050 W		≒2550 W		≒4550 W		≒3650 W	
Over current protection		≒26.4 A	≒264 A	≒11 A	≒110 A	≒39.6 A	≒396 A	≒13.2 A	≒132 A
Over voltage protection		≒130 V		≒530 V		≒130 V		≒530 V	
Over temperature protection					≒85°C				
					Specifications				
Short circuit	Current	≒26.4/24 A	≒264/240A	≒11/10 A	≒110/100 A	≒39.6 /36A	≒396/360 A	≒13.2 /12A	≒132/120 A
	Voltage				0 V				
	Resistance	≒5 mΩ		≒30 mΩ		≒4 mΩ		≒25 mΩ	
Input terminal impedance		300kΩ		1 MΩ		300 kΩ		1 MΩ	
Size(W*H*D)		439 mm* 133.3 mm* 580 mm				439 mm* 266 mm* 590 mm			

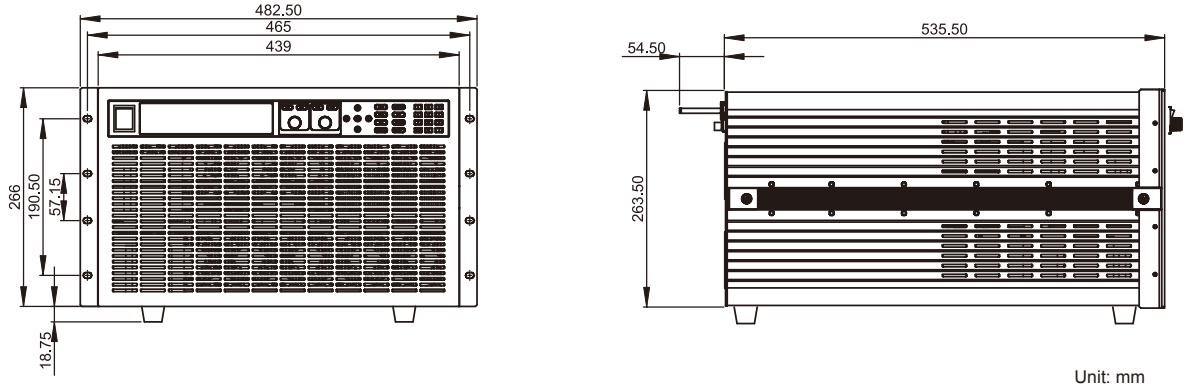
*1 Voltage/current input value is not less than 10% FS (FS for full scale)

*2 Voltage/current input values is not less than 10% FS

*3 Up/down slope: 10% ~ 90% current rising slope when from 0 to the maximum current

* This information is subject to change without notice

IT8817 Dimension figure (6U, 3.6 kW~4.5kW)



Unit: mm

IT8818 Specifications

		IT8818		IT8818B	
Rated (0~40℃)	Input voltage	0~120 V		0~500 V	
	Input current	0~48 A	0~480 A	0~15 A	0~150 A
	Input power	6 KW		5 kW	
	Min operating voltage	0.15 V at 48 A	1.5 V at 480 A	0.3 V at 15 A	3 V at 150 A
CV mode	Range	0.1~18 V	0.1~120 V	0.1~50 V	0.1~500 V
	Resolution	1 mV	10 mV	1 mV	10 mV
	Accuracy	±(0.025%+0.05% FS)	±(0.025%+0.05%FS)	±(0.025%+0.05%FS)	±(0.025%+0.05%FS)
CC mode	Range	0~48 A	0~480 A	0~15 A	0~150 A
	Resolution	1 mA	10 mA	1 mA	10 mA
	Accuracy	± (0.05% + 0.1%FS)		± (0.05% + 0.05%FS)	
CR mode*1	Range	0.005 Ω~10 Ω	10 Ω~7.5 KΩ	0.03 Ω~10 Ω	10 Ω~7.5 KΩ
	Resolution		16 bit		
	Accuracy	0.01% + 0.08S	0.01% + 0.0008S	0.01% + 0.08S	0.01%+0.0008S
CP mode*2	Range	6 kW		5 kW	
	Resolution	100 mW		100 mW	
	Accuracy	0.2% + 0.2% FS		0.2% + 0.2% FS	
			Dynamic mode		
Dynamic mode *3			CC mode		
	T1&T2		20 μS~3600 S / Res:1 μS		
	Accuracy		5 μS±100 ppm		
	Rise / fall slope	0.001~0.25A/μS	0.01~2.5 A/μS	0.001~0.1 A/μS	0.01~1 A/μS
			Measuring range		
Readback Voltage	Range	0~18 V	0~120 V	0~50 V	0~500 V
	Resolution	1 mV	10 mV	1 mV	10 mV
	Accuracy		± (0.025% + 0.025%FS)		
Readback Current	Range	0~48 A	0~480 A	0~15 A	0~150 A
	Resolution	1 mA	10 mA	1 mA	10 mA
	Accuracy	± (0.05% + 0.05%FS)		± (0.05% + 0.05%FS)	
Readback Power	Range	6 kW		5 kW	
	Resolution	100 mW		100 mW	
	Accuracy	± (0.2% + 0.2%FS)		± (0.2% + 0.2%FS)	
			Protected range		
Over power protection		≒6050 W		≒5050 W	
Over current protection		≒52.8 A	≒528 A	≒16.5A	≒165 A
Over voltage protection		≒130 V		≒530 V	
Over temperature protection			≒85°C		
			Specifications		
Short circuit	Current	≒52.8/48 A	≒528/480 A	≒16.5/15 A	≒165/150A
	Voltage		0 V		
	Resistance	≒3 mΩ	≒3 mΩ	≒20 mΩ	≒20 mΩ
Input terminal impedance			300 kΩ		1mΩ
Size(W*H*D)			439 mm* 266 mm* 590 mm		

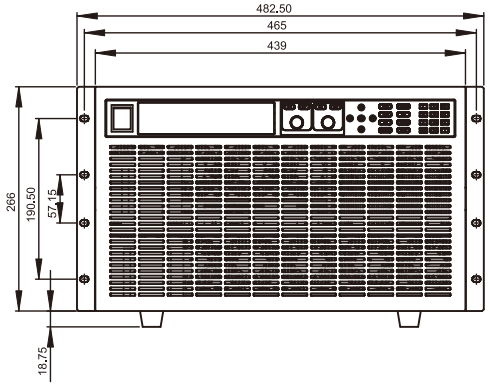
*1 Voltage/current input value is not less than 10% FS (FS for full scale)

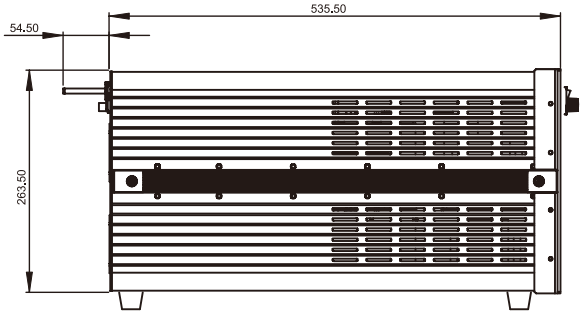
*2 Voltage/current input values is not less than 10% FS

*3 Up/down slope: 10% ~ 90% current rising slope when from 0 to the maximum current

* This information is subject to change without notice

IT8818 Dimension figure (6U, 5kW~6kW)





Unit: mm

IT8819/IT8830 Specifications

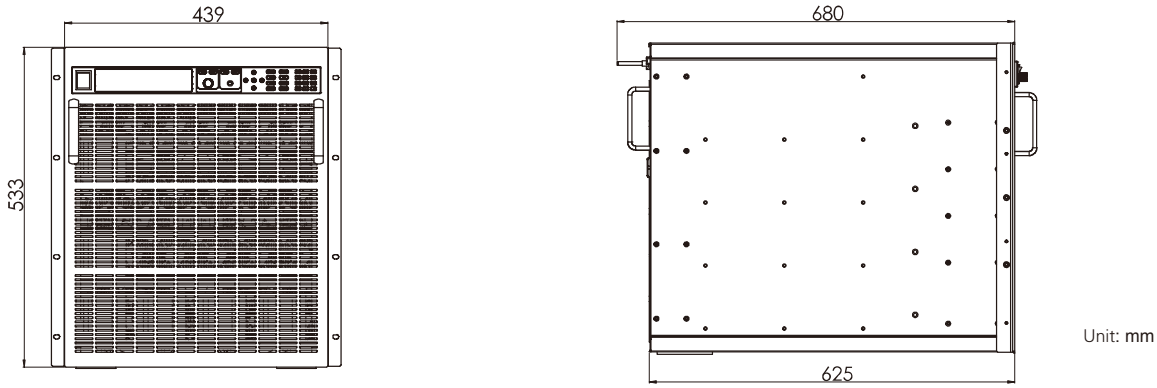
		IT8819H		IT8830		IT8830H	
Rated (0~40℃)	Input voltage	0~800V		0~120 V		0~800V	
	Input current	0~8A	0~80A	0~50A	0~500A	0~10A	0~100A
	Input power	7500W		10KW		10KW	
	Min operating voltage	0.28V/8A	2.8V/80A	0.1V/50A	1V/500A	0.3V/10A	3V/100A
CV mode	Range	0.1~80V	0.1~800V	0.1~18V	0.1~120 V	0.1~80V	0.1~800V
	Resolution	1 mV	10 mV	1 mV	10 mV	1 mV	10 mV
	Accuracy	±(0.05%+0.05%FS)	±(0.05%+0.05%FS)	±(0.025%+0.05% FS)	±(0.025%+0.05%FS)	±(0.05%+0.05%FS)	±(0.05%+0.05%FS)
CC mode	Range	0~8A	0~80A	0~50A	0~500A	0~10A	0~100A
	Resolution	1 mA	10 mA	1 mA	10 mA	1 mA	10 mA
	Accuracy	±(0.05%+0.05%FS)		±(0.05%+0.1%FS)		±(0.05%+0.05%FS)	
CR mode*1	Range	0.05Ω~10Ω	10Ω~7.5KΩ	0.005Ω~10Ω	10Ω~7.5KΩ	0.05Ω~10Ω	10Ω~7.5KΩ
	Resolution		16 bit		16 bit		16 bit
	Accuracy	0.01%+0.08S	0.01%+0.0008S	0.01%+0.08S	0.01%+0.0008S	0.01%+0.08S	0.01%+0.0008S
CP mode*2	Range	7500W		10KW		10KW	
	Resolution	1W		1W		1W	
	Accuracy	0.2%+0.25%FS		0.2%+0.2%FS		0.2%+0.2%FS	
Measuring range							
Readback Voltage	Range	0~80V	0~800V	0~18 V	0~120 V	0~80V	0~800V
	Resolution	1 mV	10 mV	1 mV	10 mV	1 mV	10 mV
	Accuracy	±(0.025%+0.025%FS)		± (0.025% + 0.025%FS)		±(0.025%+0.025%FS)	
Readback Current	Range	0~8A	0~80A	0~50A	0~500A	0~10A	0~100A
	Resolution	1 mA	10 mA	1 mA	10 mA	1 mA	10 mA
	Accuracy	±(0.05%+0.05%FS)		± (0.05% + 0.05%FS)		±(0.05%+0.05%FS)	
Readback Power	Range	7500W		10kW		10kW	
	Resolution	1W		1W		1W	
	Accuracy	±(0.2%+0.25%FS)		± (0.2% + 0.2%FS)		±(0.2%+0.2%FS)	
Protected range							
Over power protection		≒7550W		≒10.1KW		≒10.1KW	
Over current protection		≒8.8A	≒88A	≒55A	≒550A	≒11A	≒110A
Over voltage protection		≒850V		≒130V		≒850V	
Over temperature protection		≒85°C		≒85°C		≒85°C	
Specifications							
Short circuit	Current	≒8.8/8A	≒88/80A	≒55/50A	≒550/500A	≒11/10A	≒110/100A
	Voltage	0V		0V		0V	
	Resistance	≒35mΩ		≒2mΩ		≒30mΩ	
Input terminal impedance		≒2MΩ		300KΩ		2MΩ	
Size(W*H*D)		12U		12U		12U	

*1 Voltage/current input value is not less than 10% FS (FS for full scale)

*2 Voltage/current input values is not less than 10% FS

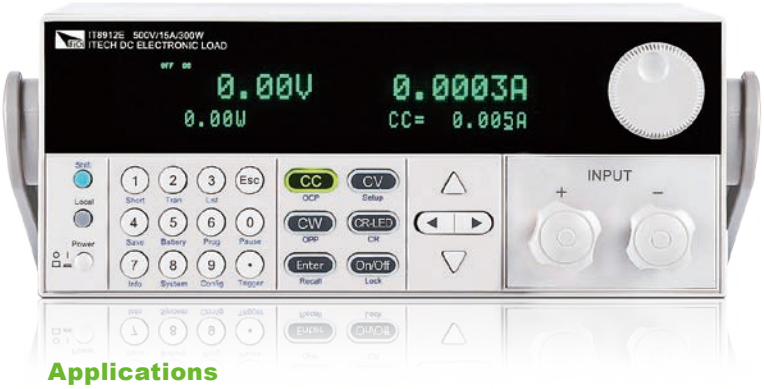
* This information is subject to change without notice

IT8819H Dimension figure



Unit: mm

IT8912E LED High Accuracy DC Electronic Load



Applications

LED test，power supply test, etc.

IT8900 series high accuracy LED testing electronic loads can simulate the real output of LED lights with different characteristics. Their specific circuit can realize CR-LED mode, adjustable frequency, duty ratio PWM dimming output port(frequency:20HZ-2KHZ). I-pp/I-max measurement function can test current ripple and start up surge current of LED constant flow source. Voltage and current testing speed can reach 50KHZ. IT8900 series provides CR-LED / CC / CV + CC / CR / CW and other working modes, built-in USB / RS232 / GPIB communication interface. Widely used in LED driver power dimming test.

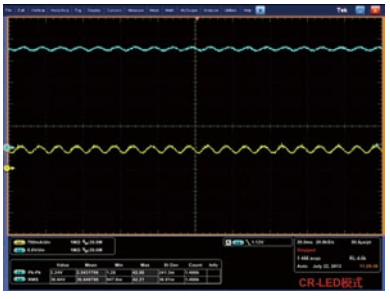
Feature

- Up to 20KHz CC dynamic mode
- Voltage resolution up to 10mV, current resolution up to 0.01mA (10uA)
- Voltage/current measurement speed up to 50KHz
- Various working modes CR-LED/CC/CV+CC/CR/CW etc,to protect LED driving power supply.
- Unique CR-LED mode, providing the perfect PWM-LED Driver test solution
- Easy programmable parameter setting, applicable for simulating LED lights with different characteristics
- Automatically judge whether the test results beyond the set specifications according to high / low limit specifications of the test parameters
- Adjustable frequency,duty ratio PWM dimming output port
- I-pp/I-max measurement function can test current ripple and start up surge current of LED constant flow source
- Battery test, auto test, short circuit and dynamic test function
- Built-in USB/RS232/GPIB interface, support VISA/USBTMC/SCPI protocol

Model	Voltage	Current	Power	Size
IT8912E	500V	15A	300W	1/2 2U

CR-LED mode

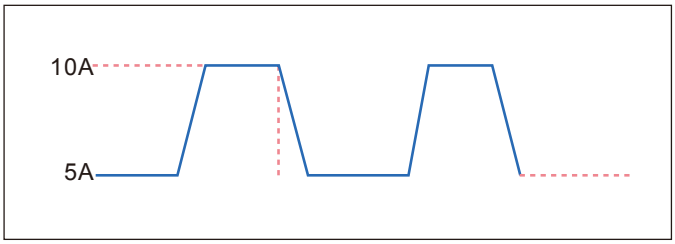
The unique CR-LED mode developed by IT8900 series is especially applicable for LED driver test. The user only needs to set the operating voltage, current and coefficient of LED driver to obtain real output parameter of LED driver. Different from universal electronic load, this adopts pure hardware circuit design without software operation by MCU module, thus increasing the speed and stability of CR mode control circuit, solving voltage and current jitter during LED driver test, increasing frequency width and realizing the load dynamic PWM dimming test.



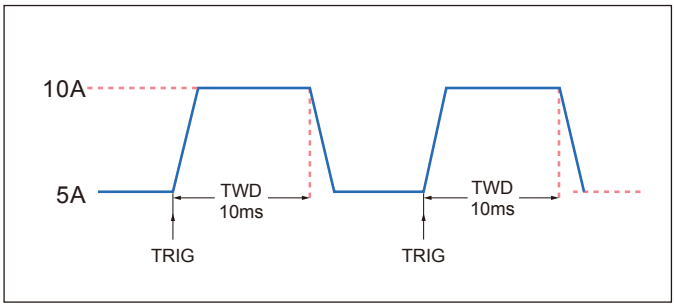
Dynamic test function (Tran)

The operation of dynamic load is periodic switch between two levels and the power supply regulation and transient response are in high and low current levels. With the change of lasting time and ascending and descending rate, the output voltage waveform can be monitored. Dynamic mode can test transient response time of power, reflecting the ability of the power for keeping itself stable during the step change of load current.

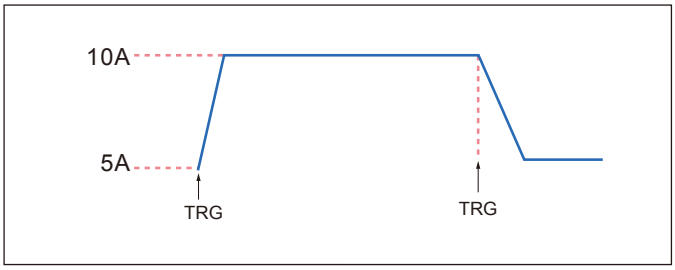
Dynamic test modes can be divided into continuous transient operation, pulsed transient operation and toggled transient operation.



Continuous Transient Operation



Pulsed Transient Operation



Toggled Transient Operation

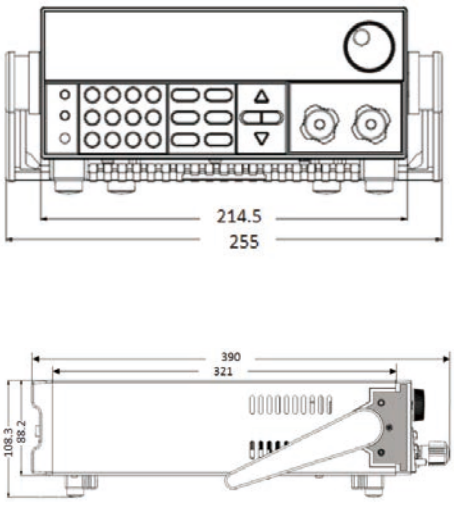
CC+CV mode

For CV + CC operation mode, it will be under CV mode when start up, LED driver IC or concatenated current-limiting resistor should be used. When the output current exceeds the rated value and reached constant current interval, CC mode will be triggered for directly driving LED. This CV+CC can be used for various LED configuration models, contributing to the flexibility of system design as well as protection for LED driver source.

PWM dimming test

For LED driver power with complex dimming technology, in addition to the conventional electrical load test, dimming test is needed. In order to realize the dimming test, it is necessary to provide the PWM pulse signal to the corresponding pin. Therefore, signal generator equipment is needed during experiment. In addition to IT8912E itself CR-LED mode, IT8912E also can output external 20Hz ~ 2kHz PWM pulse waveform for dimming features drive source testing, saving cost.

IT8912E Dimension figure



IT8912E LED High Accuracy DC Electronic Load

IT8912E Specification

Model		IT8912E							
Rated parameter (0~40℃)	Input voltage	0~500V							
	Input current	0~3A				0~15A			
	Input power	300W							
	Min operating voltage	0.72V/3A				3.6V/15A			
	Temperature Coefficient	≤100ppm/°C							
CV mode	Range	0.1~500V							
	Resolution	10mV							
	Accuracy	±(0.05%+0.05%FS)							
CC mode	Range	0~3A				0~15A			
	Resolution	0.1mA				1mA			
	Accuracy	±(0.05%+0.1%FS)				±(0.05%+0.05%FS)			
CR-LED mode	Range	Uo-L				Uo-H			
	Option	Uo	Io	coef	Rd	Uo	Io	coef	Rd
	Range	0.1~100V	0~15A	0.01~1	0.08~30Ω	0.1~500V	0~3A	0.01~1	1.8~1600Ω
CR mode[*1]	Range	0.3Ω~300Ω【0~100V/0~15A】				8Ω~7.5KΩ【0~500V/0~3A】			
	Resolution	16bit							
	Accuracy	0.2%+0.01s[*2]				0.2%+0.001s[*3]			
CP mode[*4]	Range	300W							
	Resolution	10mW							
	Accuracy	0.2%+0.2%FS							
		CC mode							
Dynamic mode	T1&T2	20μs~3600s / Res: 1μs							
	Accuracy	5μs±100ppm							
	Rise / fall slope[*5]	0.0001~0.3A/μs				0.001~1.5A/μs			
	Min rise time [*6]	≒10μs				≒10μs			
		PWM Dimming output							
Output voltage		10V							
Frequency		20Hz~2kHz							
RangeDuty cycle		10%~100%							
		Measuring range							
Voltage readback value	Range	0~500V							
	Resolution	10mV							
	Accuracy	±(0.025%+0.025%FS)							
Current readback value	Range	0~3A				0~15A			
	Resolution	0.01mA				0.1mA			
	Accuracy	±(0.05%+0.05%FS)							
Power readback value	Range	300W							
	Resolution	10mW							
	Accuracy	±(0.2%+0.2%FS)							
		Protected range							
Over power protection		≒310W							
Overcurrent protection		≒3.3A				≒16.5A			
Over voltage protection		≒530V							
Over temperature protection		≒85°C							
		Specification				300kΩ			
Short circuit	Current	≒3.3A				≒16.5A			
	Voltage	0V				0V			
	Resistance	≒240mΩ							
Input terminal impedance		≒500kΩ							
		External analog monitoring							
I-Monitor		0~10V							
Corresponding to the current		0~15A							
		AC power supply							
Voltage		110V				220V			
Frequency		50/60Hz							
Inspecting power		Max: 50VA							
Size		214.5mm*88.2mm*354.6mm							
Weight		5Kg							
Storage temperature		-20°C~70°C							

*1 Voltage/current input value is not less than 10% FS (FS for full scale)
*2 Resistance readback value range: (1/(1/R+(1/R)*0.2%+0.01),1/(1/R-(1/R)*0.2%-0.01)
a) When voltage input value is less than 10% FS: 0.2%+0.1/Vin (s);
b) When current input value is less than 10% FS, loading current precision is: ±(0.2%xVin/Rsetting+3mA);

* This information is subject to change without notice

*3 Resistance readback value range: (1/(1/R+(1/R)*0.2%+0.001),1/(1/R-(1/R)*0.2%-0.001)
a) When voltage input value is less than 10% FS：0.2%+0.05/Vin (s);
b) When current input value is less than 10% FS, loading current precision is:±(0.2%xVin/Rsetting+10mA);
*4 Voltage/current input values are not less than 10% FS
*5 Up/down slope: 10% ~ 90% current rising slope when from 0 to the maximum current
*6 The minimum rise time: 10% to 90% current rise time

Power Supply

Provide you reliable and accurate power supply

IT7600 High Performance Programmable AC Power Supply

P42~48

IT7600 series high performance programmable AC power supplies, adopt advanced digital signal processing technology, with frequency up to 10-5000 Hz, built-in all-round power meter and large-screen oscilloscope function. Power up to 54 kVA and support master-slave parallel, IT7600 can be widely used in many areas, such as new energy, home appliances, power electronics, avionics, military, the development and application of IEC Standard test and so on.

IT7300 Programmable AC Power Supply

P49~52

IT7300 series single-phase programmable AC power supply can simulates various normal and abnormal AC inputs and measures important electrical parameters of the DUT. IT7300 series can be widely applied in the electronics and electrical industry, lighting, aviation, military, specification verification of RD, the use of laboratory testing and factory production online test etc.

IT6400 Bipolar DC Power Supply / Battery Simulator

P53~55

The unique bipolar voltage/current output makes IT6400 series can be used as a bipolar power source or a bipolar electronic load. The battery simulating function is especially applicable for development and high speed production testing of portable, battery-operated products. IT6400 series can be widely used in portable battery-operated products test, mobile power pack test, LED test and other fields.

ITECH High Speed High Performance Photovoltaic Solar Simulator Power Supply

P56~61

With the built-in EN50530 / Sandia / NB/T32004 / CGC/GF004 / CGC/GF035 SAS module, IT6500C series high power DC power supply equipped with SAS1000 solar array simulation software can accurately simulate the solar array I-V curve, testing the long-time maximum power tracking performance of PV inverters under different climatic conditions.

IT6500 Wide Range High Power Programmable DC Power Supply

P62~68

From 800W to 30 kW, the whole series include more than 100 models. The maximum output voltage and current is up to 1000V and 1200A respectively. IT6500 series not only include rich measurement capabilities, high-speed response IT6500C series, but also provide high-performance, stable output IT6500D series, users can easily select according to demand.

IT6800A Single Channel Programmable DC Power Supply

P69~70

IT6800 single channel programmable DC power supply (180W-216W) with resolution 1mV/0.1mA, users can adjust the voltage/current stepping by pressing the left and right keys to moving the cursor and programs by the front panel. IT6800 supports timer function and their built-in RS232 and USB communication interfaces.

IT6700H High Voltage Wide Range Programmable DC Power Supply

P71~73

IT6700H series high-voltage DC power supply, voltage up to 1200V, IT6700H series have desktop and shelves installation function, easy to operate. IT6700H series provide list mode, built-in RS232 / USB / GPIB communication interface, rich SCPI instructions facilitate the formation of a variety of intelligent test platforms.

IT6100B High Accuracy Programmable DC Power Supply

P74~75

IT6100B series (86 ~ 1200W) high speed high precision programmable DC power supply is with ultra-high voltage rising time, resolution up to 0.1mV / 0.01mA, the latest output waveform priority mode allows rising waveform of voltage or current is with high-speed and no overshoot. IT6100B has built-in standard USB / RS232 / GPIB communication interface.

IT6100 High Performance Programmable DC Power Supply

P76~77

IT6100 series is with 0.1mV/0.1mA high resolution and high accuracy, ensure your accurate measurements. Its voltage rise speed up to 20ms, with high-speed List mode output, it can independently edit and perform the default voltage waveform to meet the high-speed test needs. IT6100 series supports SCPI communication protocol, optional interfaces are GPIB/USB/RS232 for customers.

IT6300 High Performance Triple Channels DC power supply

P78~79

IT6300 series is high-performance programmable triple channels DC power supply, each output voltage and current can be set from 0 to maximum rated output. This series supports series connection, parallel connection and synchronous functions of channel， which offer multi-purpose solutions for customers test. With built-in standard USB / RS232 / GPIB communication interface, IT6300 series greatly enhance the communication speed.

IT7600 High Power Programmable AC power supply

Applications

Military & Aerospace、Testing organizations、Power electronics、Home appliances、New energy、Scientific research & Institutions

IT7600 series high performance programmable AC power supplies, adopt advanced digital signal processing technology, with frequency up to 10-5000 Hz, built-in all-round power meter and large-screen oscilloscope function. Power up to 54 kVA and support master-slave parallel, which can provide high-capacity single-phase or three-phase AC output. IT7600 has built-in arbitrary waveform generator to simulate the harmonic and a variety of arbitrary waveforms output; also has strong exchange measurement and analysis functions. IT7600 can be widely used in many areas, such as new energy, home appliances, power electronics, avionics, military, the development and application of IEC Standard test and so on.

Feature

- 7” DSO function, which can display real-time waveforms of voltage and current under the single unit or parallel mode
- Built-in powerful single-phase or three-phase AC power meter
- Output frequency up to 10-5000 Hz, output variable rate of voltage or frequency is adjustable
- Maximum power up to 54 kVA
- Voltage up to 300 V / 600 V / 1200 V *1
- Realize AC, DC, AC+DC output modes, AC+DC can realize simulating distortion of DC Voltage *4
- Simulate arbitrary waveform output, support CSV format to import waveform
- Built-in various waveform database
- Strong master-slave paralleling makes multi-module output equalized current synchronously
- Support single / three-phase output, and can simulate unbalanced three phase output *2
- Strong harmonic simulation capability, up to 50th harmonic simulation *3
- Strong harmonic analysis function, which can measure up to 50th voltage and current harmonic. *3
- List mode can simulate civil use AC network, achieve simulation of instantaneous power interruption
- The output waveform start / stop phase angle can be set
- Support remote sense compensation function, which can improve measurement accuracy
- Relay Ctrl output function, which can achieve electrical isolation between DUT and the source
- Sweep function, which can test the efficiency of switching power supply andcatch the voltage and frequency when reaching maximum power point
- OTP, OCP (Including peak and rms values), OPP
- Built-in USB / RS232 / LAN / GPIB / CAN communication Interface
- USB on the front panel can achieve importing and exporting file functions and data storage function

*1 600 V / 1200 V coming soon, stay tuned!
*2 IT7622 / 7624 / 7626 can parallel multiple units to achieve single / three-phase output. IT7627 / 7628 can achieve single / three-phase switching output.
*3 10 Hz-500 Hz.
*4 (IT7628L, IT7630, IT7632, IT7634, IT7636) only support AC mode

Model	Voltage	Current	Power	Phase	Size
IT7622	300	6	750	1φ	3U
IT7624	300	12	1.5k	1φ	3U
IT7625	300	36	4500	1φ or 3φ	15U
IT7626	300	24	3k	1φ	6U
IT7627	300	72	9k	1φ or 3φ	24U
IT7628L	300	18	13.5k	3φ	37U
IT7628	300	144	18k	1φ or 3φ	37U
IT7630	300	36	27k	3φ	24U*3
IT7632	300	48	36k	3φ	24U*3
IT7634	300	60	45k	3φ	37U*3
IT7636	300	72	54k	3φ	37U*3

7” DSO function

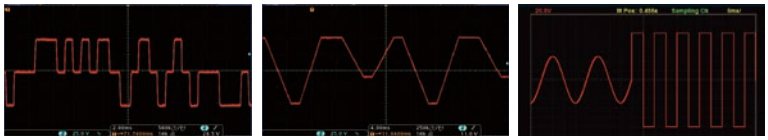
Display real-time waveforms of voltage and current under the stand-alone or parallel mode

IT7600 series high-power AC / DC power supply provide a powerful oscilloscope function by the 7” large screen. Built-in high-speed sampling measurement design realizes the display of real-time voltage and current curves. When multi-units are paralleled, IT7600 can display the status of all paralleled units, instantaneous analysis is available without an oscilloscope.

Simulate arbitrary waveform output

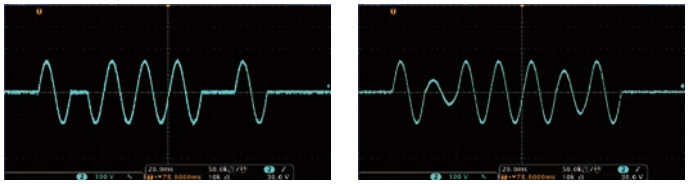
- AC voltage and DC voltage deviation simulation

  IT7600 series high power AC / DC power supply provide AC voltage and DC voltage deviation simulation functions, and can simulate arbitrary waveform output.



- Application: IEC 61000-4-11 test

  IT7600 series also can simulate IEC 61000-4-11 to do test for voltage transient drop, short circuit interruptions and voltage variations items.

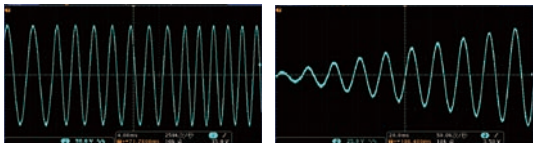


Output frequency up to10-5000 Hz

- Output variable rate of voltage or frequency is adjustable

  IT7600 series high-power AC / DC power supply output frequency is adjustable during 10-5000 Hz. IT7600 series have a wide range of applications, which not only to meet the low-frequency demand for general commercial industry, but also can be used for high frequency aerospace and military application.

IT7600 series allows users to set their own output fluctuation rate of voltage or frequency, so that the voltage or frequency regularly reach the set value step by step. It is more accurate to verify the product operation scope and also can reduce surge current of DUT when starting up.



Output frequency is incremented　　Output voltage is incremented

Achieve AC, DC, AC+DC output modes

- AC+DC can achieve offset simulation of DC Voltage

  IT7600 series high-power AC / DC power supply can achieve AC, DC, AC + DC output modes, not only provide pure AC / DC output, but also can provide AC + DC output mode to expand application and test DC bias components.

AC　　DC　　AC+DC

* (IT7628L, IT7630, IT7632, IT7634, IT7636) only support AC mode

IT7600 High Power Programmable AC power supply

Support CSV file to import waveforms

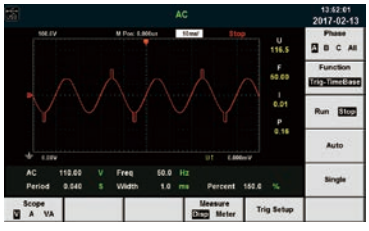
- Import a CSV file via the USB interface to generate a waveforms output

  The user can edit the waveform output by the panel LIST function or can import a CSV file via the USB interface to generate waveform output. At the same time, IT7600 series provides external ± 10 V analog interface, users can choose separate AM and FM amplitude modulation to receive external signal source.

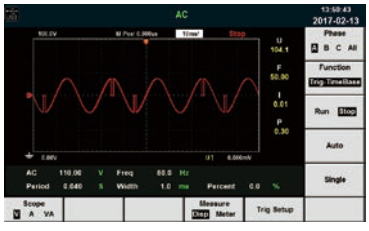
List mode

- List mode can simulate civil use AC network, achieve simulation of instantaneous power interruption

  IT7600 series high-power AC / DC power supply provide users a simple way to achieve the output parameters changing gradually or continuously through STEP mode and LIST mode. The amplitude of output voltage, frequency, phase, waveform and other parameters can also be output by controlling the internal trigger or external trigger of the instrument. Thus you can simulate a variety of power instantaneous power interruption, surge, ramp and other characteristics.



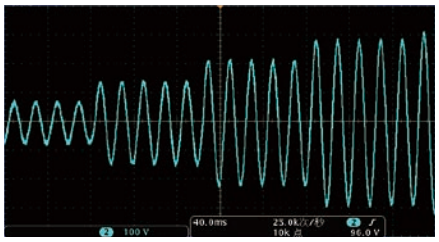
Surge wave



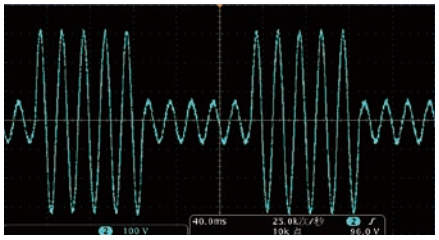
Trap wave

- Application: List mode can simulate civil use AC network

  Users can edit and simulate the situation of various power interference by IT7600 series high-power AC / DC power supply panel or program-controlled software.



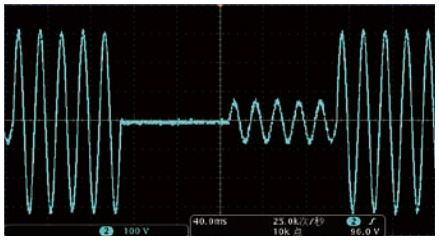
STEP



LIST

- Application: Simulation of instantaneous power interruption

  IT7600 series high-power AC / DC power supply can also effectively simulate a variety of power off.



Strong harmonic simulation capability

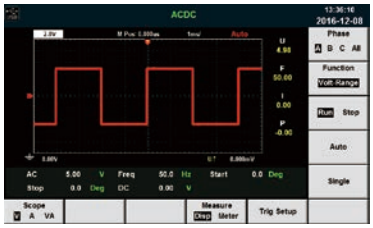
- Up to 50th harmonics

  IT7600 series high-power AC / DC power supply has strong harmonic simulation capability, up to 50th harmonics.
  Within 10-500 Hz, IT7600 can measure 50th voltage and current harmonic. Exceed 500 Hz, IT7600 can test 20th voltage and current harmonic.

Built-in abundant waveform database

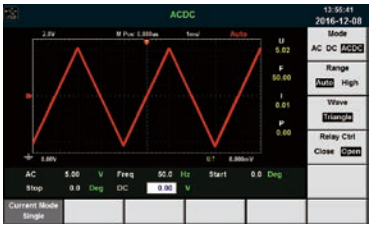
- Recall by menu and display the selected waveform on the LCD screen

IT7600 series high power AC / DC power supply provide built-in a variety of different types of waveforms, such as triangle wave, sine wave, surge at peak, trap wave, and other waveforms, the user can recall by menu and display the selected waveform on the LCD screen.

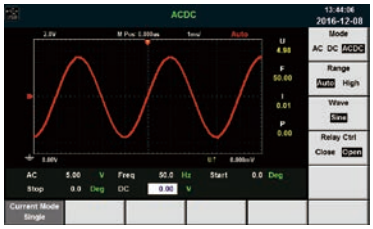


Square wave

Sawtooth wave



Triangle wave



Sine waveform

Strong harmonic analysis function

- Voltage / current harmonic measurement

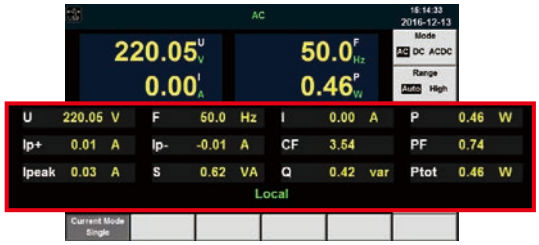
IT7600 high-power AC power supply is with powerful function in harmonic analysis, including harmonic measurements for voltage and current. For harmonic measurements, when frequency is 10-500 Hz, IT7600 can test 50th; when it's above 500 Hz, then 20th. In harmonic mode, it can do tests for U / I THD (Voltage / Current Total Harmonic Distortion) factors, as well as Phase tests. Besides, IT7600 can do multiple harmonic measurements, the results are displayed in list or histogram, so that the test results are more clear.

*This function is just for IT7622 / IT7624 / IT7626

Built-in powerful AC power meter

- Built-in powerful single-phase or three-phase AC power meter

IT7600 series high power AC / DC power supply is equipped with 16-bit high-precision measuring design, with the built-in powerful single-phase or three-phase AC power meter, it can accurately measure a variety of parameters, including rms voltage, rms current, output frequency, active power, and power factor. Users need no more a power meter, save the test cost, and shorten the complex connection operation time.



Support single / three-phase output

- Simulate unbalanced three phase output

IT7600 series high performance programmable AC / DC power supply supports single / three-phase output and can achieve test applications for three-phase AC power supply. Users can achieve Y-type and Δ-type connections according to actual requirements.

- IT7627 / IT7628 Support one key to switch single / three-phase output through the panel or software, easy to operate.
- IT7622 / IT7624 / IT7626 can also achieve three-phase AC power test applications through multiple paralleling.
- IT7628L / IT7630 / IT7632 / IT7634 / IT7636 support three-phase output.
  When IT7600 series realize three-phase output, IT7600 can simulate unbalanced three-phase output, expanding the scope of application.

Strong master-slave paralleling function

- Using power in more flexible way

The IT7600 AC / DC power supply models provide the strong (Master-Slave) parallel operation function, which enable users to extend the current / power output ability to save cost. During parallel connection operation, it only requires the setting on Master unit, and the slave unit will be controlled by the master unit automatically. This function greatly simplifies the paralleling operation.
IT7600 series have built-in synchronous On / Off input and output signals, which ensures the synchronization and equalized current output on multi modules synchronously.

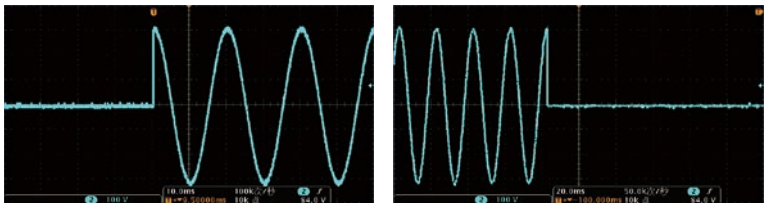
* This information is subject to change without notice

IT7600 after paralleling of 3 sets, each unit will share the test current averagely

Settable start / stop phase angle of output waveform

- Angle range: 0~360°

IT7600 series high-power AC / DC power supply can set the start phase and stop phase of the sinusoidal output waveform to meet the test requirements under different test conditions. The start phase and the stop phase are set from 0 to 360°. Inrush current of products can be tested by adjusting the phase angle, which can be applied to test switching impact current and debug rectifiers.



90° starting phase angle

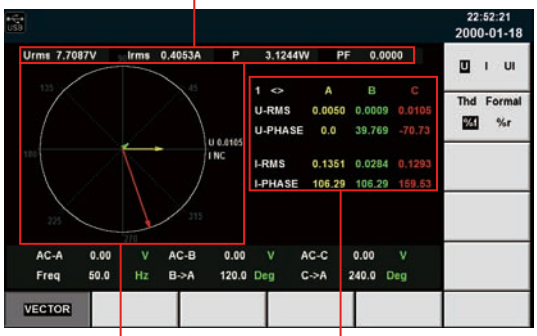
90° stop phase angle

Vector function

- Display each phase harmonic parameter and single harmonic

IT7600 series high power AC power source realize vector function under three-phase mode. Users only need to press the [Vector] key on the front panel, so that can enter the vector measurement interface.
Users can observe the vector diagram of the harmonic function parameter values in each phase, and select the single harmonic to be displayed by rotating the knob.

Current measured parameters



The maximum coordinate display

Single harmonic phase vector value

Specification

Model		IT7622	IT7624	IT7626
			AC Input	
Voltage		220 Vac±10% or 110 Vac±10%	220 Vac±10% or 110 Vac±10%	220 Vac±10%
Phase			1φ	
Frequency			47-63 Hz	
Max current		20 A / 40 A	30 A / 60 A	60 A
Power factor			0.7 (typical)	
			AC Output	
Max output power		750 VA	1.5 kVA	3 kVA
Voltage	Range		High: 2-300 V; LOW: 1-150 V; Auto: 1-150 V / 2-300 V;	
	Resolution		10 mV	
	Accuracy*1		± 0.2%+ (0.2%+0.2%×Kfreq)×FS*2	
Current	(rms)	0-6 Arms (1-150Vac)	0-12 Arms (1-150 Vac)	0-24 Arms (1-150 Vac)
		0-3 Arms (2-300Vac)	0-6 Arms (2-300 Vac)	0-12 Arms (2-300 Vac)
	(peak)	0-18 Apeak (1-150Vac)	0-36 Apeak (1-150 Vac)	0-72 Apeak (1-150 Vac)
		0-9 Apeak (2-300Vac)	0-18 Apeak (2-300Vac)	0-36 Apeak (2-300Vac)
Output phase			1φ	
Total harmonic distortion*3			≤0.5% at 10-500 Hz (Resistive Load)	
			≤2% at 501-5000 Hz (Resistive Load)	
Crest factor			3	
Power Mediation Rate			≤0.1% FS (Resistive Load)	
Load mediation rate			≤0.5% FS (Resistive Load)	
Dynamic response time			≤100 μs (typical)	
			DC Output	
Max output power		375 W	750 W	1.5 kW
Voltage output		± 212 V / ±424 V*6	± 212 V / ±424 V*6	± 212 V / ±424 V*6
Voltage resolution			10mV	
Voltage output and readback accuracy			± (0.2%+0.2% FS)*7	
Current range		3A / 1.5A	6A / 3A	12A / 6A
Current resolution			10 mA	
Current readback accuracy			± (0.3%+0.3% FS)*7	
Power meter accuracy			± (0.4%+0.4% FS)*7	
Voltage ripple	(peak)		300 mVp-p	
	(rms)		150 mVrms	
			Meter	
AC Voltage	Range		0-300 Vac	
	Resolution		10 mV	
	Accuracy		± (0.2%+0.2% FS)	
AC Current (rms)	Range	0-6 Arms	0-12 Arms	0-24 Arms
	Resolution		10 mA	
	Accuracy		± 0.3%+(0.3%+0.2%×Kfreq)×FS*2	
AC current (peak)	Range	0-18 Apeak	0-36 Apeak	0-72 Apeak
	Resolution		10 mA	
	Accuracy		± 0.3%+(0.3%+0.2%×Kfreq)×FS*2	
Power	Resolution		10 mW	
	Accuracy		± 0.4%+(0.4%+0.2%×Kfreq)×FS*2	
Phase degree	Range		0-360°	
	Resolution		1°	
	Accuracy		± 1°(45-65 Hz)*5	
Frequency	Range		10-5000 Hz	
	Resolution		0.1 Hz	
	Accuracy		± 0.1%+0.1 Hz (10 Hz-999.9 Hz) / ± 0.1%+1 Hz (1 kHz-5 kHz)*4	
			Others	
Interface			GPIB / USB / LAN / RS232 / CAN	
Dimension (W*H*D)		3U	3U	6U

* This information is subject to change without notice

IT7600 High Power Programmable AC power supply

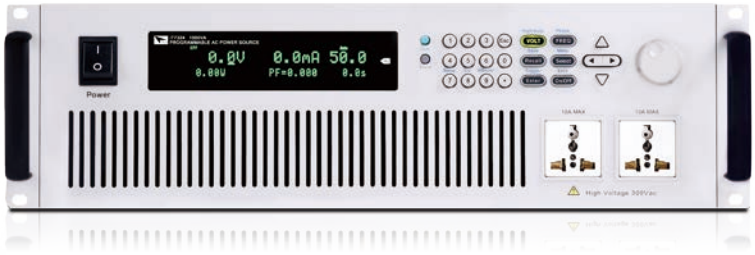
Specification

Model		IT7625	IT7627	IT7628
			AC Input	
Voltage		380 Vac±10%(Y)	380 Vac±10%(Y)	380 Vac±10%(Y)
Phase		3φ	3φ	3φ
Frequency		47-63 Hz	47-63 Hz	47-63 Hz
Max current		30 A	60 A	120 A
Power factor		0.7 (typical)	0.7 (typical)	0.7 (typical)
			AC Output	
Output phase		1φ or 3φ	1φ or 3φ	1φ or 3φ
Max output power		4.5 kVA	9 kVA	18 kVA
Max output power per phase		1.5 kVA	3 kVA	6 kVA
Voltage	Range	High: 2-300 V; LOW: 1-150 V; Auto: 1-150 V / 2-300 V;		
	Resolution	10 mV	10 mV	10 mV
	Accuracy*1	± 0.2%+(0.2%+0.2%×Kfreq)×FS*2	± 0.2%+(0.2%+0.2%×Kfreq)×FS*2	± 0.2%+(0.2%+0.2%×Kfreq)×FS*2
Max Current (1φ)	rms	36A / 18A(1φ) / 12A / 6A(3φ)*8	72 A / 36 A (1φ) *8 / 24 A / 12 A (3φ)*8	144 A / 72 A (1φ)*8 / 48 A / 24 A (3φ)*8
	peak(CF=3)	108A / 54A(1φ) / 36A / 18A(3φ)*8	216 A / 108 A (1φ) *8 / 72 A / 36 A (3φ)*8	432 A / 216 A*8 / 144 A / 72 A (3φ) *8
Total harmonic distortion*3		≤0.5% at 10-500 Hz (Resistive Load) / ≤2% at 501-5000 Hz (Resistive Load)		
Crest factor		3	3	3
Power Mediation Rate		≤0.1% FS (Resistive Load)	≤0.1% FS (Resistive Load)	≤0.1% FS (Resistive Load)
Load mediation rate		≤0.5% FS (Resistive Load)	≤0.5% FS (Resistive Load)	≤0.5% FS (Resistive Load)
Dynamic response time		≤200 μs (typical)	≤200 μs (typical)	≤200 μs (typical)
			DC Output	
Max output power		2.25 kW	4.5 kW	9 kW
Voltage output		± 212 V / ±424 V*6	± 212 V / ±424 V*6	± 212 V / ±424 V*6
Voltage resolution		10 mV	10 mV	10 mV
Voltage output and readback accuracy			± (0.2%+0.2% FS)*7	
Current range		18 A / 9 A	36 A / 18 A	72 A / 36 A
Current resolution		10 mA	10 mA	10 mA
Current readback accuracy		± (0.3%+0.3% FS)*7	± (0.3%+0.3% FS)*7	± (0.3%+0.3% FS)*7
Power meter accuracy		± (0.4%+0.4% FS)*7	± (0.4%+0.4% FS)*7	± (0.4%+0.4% FS)*7
Voltage ripple	peak/rms	500 mVp-p / 200 mVrms	500 mVp-p / 200 mVrms	600 mVp-p / 300 mVrms
			Meter	
AC Voltage	Range	0-300 Vac	0-300 Vac	0-300 Vac
	Resolution	10 mV	10 mV	10 mV
	Accuracy	± (0.2%+0.2% FS)	± (0.2%+0.2% FS)	± (0.2%+0.2% FS)
AC Current (rms)	Range	0-36 Arms	0-72 Arms	0-144 Arms
	Resolution	10 mA	10 mA	10 mA
	Accuracy	0.3%+(0.3%+0.2*KFreq)*FS*2	± 0.3%+ (0.3%+0.2%×Kfreq)×FS*2	0.3%+(0.3%+0.3*KFreq)*FS*2
AC current (peak)	Range	0-108 Apeak	0-216 Apeak	0-432 Apeak
	Resolution	10 mA	10 mA	10 mA
	Accuracy	0.3%+(0.3%+0.2*KFreq)*FS*2	± 0.3%+ (0.3%+0.2%×Kfreq)×FS*2	0.3%+(0.3%+0.3*KFreq)*FS*2
Power	Resolution	10 mW	10 mW	10 mW
	Accuracy	0.4%+(0.4%+0.2*KFreq)*FS*2	± 0.4%+ (0.4%+0.2%×Kfreq)×FS*2	0.4%+(0.4%+0.4*KFreq)*FS*2
Phase degree	Range	0-360°	0-360°	0-360°
	Resolution	1°	1°	1°
	Accuracy	±1° (45-65 Hz)*5	±1° (45-65 Hz)*5	±1° (45-65 Hz)*5
Frequency	Range	10-5000 Hz	10-5000 Hz	10-5000 Hz
	Resolution	0.1 Hz	0.1 Hz	0.1 Hz
	Accuracy	± 0.1%+0.1 Hz (10 Hz-999.9 Hz) / ± 0.1%+1 Hz (1 kHz-5 kHz)*4		
			Others	
Dimension (W*H*D)		15U	24U	37U

*1 The premise of meet voltage accuracy isSlow loop speed:10-100 Hz，Fast loop speed:10-5000 Hz;
*2 FS value, rms, Ipk and P value are different for different models;
*3 The minimum voltage of THD test is Auto: 10 Vac, High: 20 Vac;
Maximum Distortion Test has maximum current to linear load inputting 125 Vac (Auto) and 250 Vac (300 V)
*4 The lowest voltage of frequency display accuracy is 30 Vac;
*5 The test premise is Fast;
*6 The minimum set voltage can not less than 50 Vdc;
*7 Idc for different models is diffenect, so is P, Vdc are change to 424 Vdc;
*8 The use range for maximum current under the paralleling state is 90%.
*Meet CF = 3, low voltage is 90-125 Vac; high voltage is 180-250 Vac.

* This information is subject to change without notice

IT7300 Programmable AC Power Supply



Applications

Motor industry, Illumination, Aviation, Military, Lab testing, Production line test, etc.

Feature

- Precise Linear amplification technology, low noise, high stability
- High power density design, 300VA for ½ 2U, 1500VA for 3U size, save installation space
- Adjustable frequency:45HZ-500HZ
- Adjustable phase angle: 0-360°
- Settable output slew rate of voltage and frequency
- High current crest factor for surge current testing
- TRIAC Dimmer dimming / governor simulation function
- Output the changed synchronous TTL signal
- LIST mode for testing power perturbation (PLD) simulation
- Simulate the surge, trap waveform
- Voltage dip, short interruption and voltage change simulation
- Measure various electrical parameters, including RMS voltage / current, actual power, power factor, VA (apparent power), peak current and other parameters
- Measurement resolution 0.01W / 0.1mA, meet Energy Star standard requirement
- Built-in GPIB, RS-232, USB and LAN (support SCPI protocol)*1
- Support three devices connection through System Bus to achieve three-phase AC power function
- OCP,OVP,OTP,OPP

*1 IT7321 model is without GPIB interface
*2 IT7321 model does not support three phase

In order to meet the wider range of AC power supply and more complex change characteristics, engineers need more powerful and stable AC power supply to simulate the actual working environment. IT7300 series is the best solution in this area. IT7300 series can be widely applied in the electronics and electrical industry, lighting, aviation, military, R&D specification's verification, laboratory testing and factory production online test etc.

Model	Voltage	Current	Power	Phase	Size
IT7321	300V	3A	300VA	1φ	3U
IT7322	300V	6A	750VA	1φ	3U
IT7324	300V	12A	1500VA	1φ	3U
IT7326	300V	24A	3000VA	1φ	6U
IT7322H	500V	3A	750VA	1φ	3U
IT7324H	500V	6A	1500VA	1φ	3U
IT7326H	500V	12A	3000VA	1φ	6U
IT7322T	300V	6A	2250VA	3φ	15U
IT7324T	300V	12A	4500VA	3φ	24U
IT7326T	300V	24A	9000VA	3φ	24U
IT7322HT	500V	3A	2250VA	3φ	15U
IT7324HT	500V	6A	4500VA	3φ	24U
IT7326HT	500V	12A	9000VA	3φ	24U

Linear amplification technology

IT7300 Series AC Power Supply adopts advanced and high-precision linear amplification design to provide low noise and high stability output. This technology has high-speed response characteristics, stable low noise, it can simulate the abnormal power line, instantaneous voltage rise, drop and power off, and can be applied to ATE and so on.

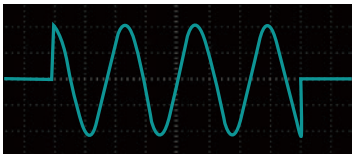
Built-in AC power meter

IT7300 series directly shows voltage RMS, current RMS, frequency, active power, power factor from panel without external power meter, saving the test cost and complex connection operation time.

No power frequency transformer power supply, low power consumption

IT7300 series AC source provide no power frequency transformer power supply with lower power consumption, it solves output problems of large volume, huge heat dissipation and low power output caused by using frequency transformer, IT7300 series also provide linear adaptation method between the current and AC voltage in AC source, which solves the problem of high energy consumption and low accuracy.

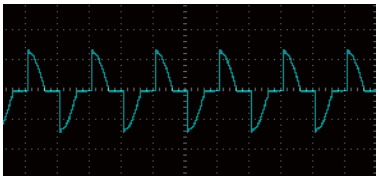
Adjustable phase angle



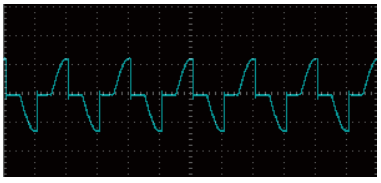
Users can set the start and stop phase angle within range of 0-360°. This function is widely used for startup and shutdown current inrush impact test or various rectifier performance tests.

TRIAC Dimmer simulation function

ITECH is the pioneer of TRIAC Dimmer function. This function is used to do dimming and speed regulating test for lamp or electric motor to ensure the products work well when controller of dimming and speed regulating is needed.



Front Phase Dimmer



Back Phase Dimmer

Sweep function

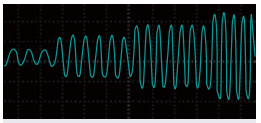
This function tests efficiency of switch power supply and gets voltage and frequency value at max power. It could change voltage and frequency by setting start voltage value, end frequency, stepping frequency and time of each step. It saves 10 files max. Voltage, frequency and current of max power will be displayed when the test is over.

Support Three-phase parallel function

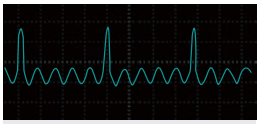
IT7300 series AC source can achieve three-phase without requiring external accessories, users can directly connect into three-phase through the back of the SYSTEM BUS, set one of them as master, the rest are slaves. The slave sends synchronous clock control signal according to each cycle of the DDS inside the device, so that the phase difference is always maintained at 120 ° and does not deviate greatly in long time running. It is flexible to meet the increase or decrease requirements of production line aging test machine numbers.

List function

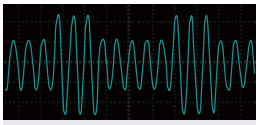
IT7300 series has built-in DDS waveform generator, very flexible waveform simulation function. Users can directly set the required power waveform through the panel keys, to simulate transient power off, surge, trap, specific phase angle on or off, AC sine wave amplitude and frequency range and other characteristics.



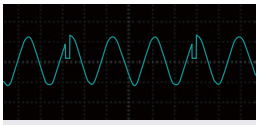
STEP mode



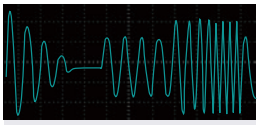
Surge waveform



PULSE mode



Trap waveform



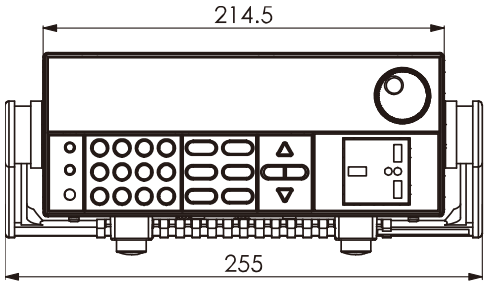
LIST mode

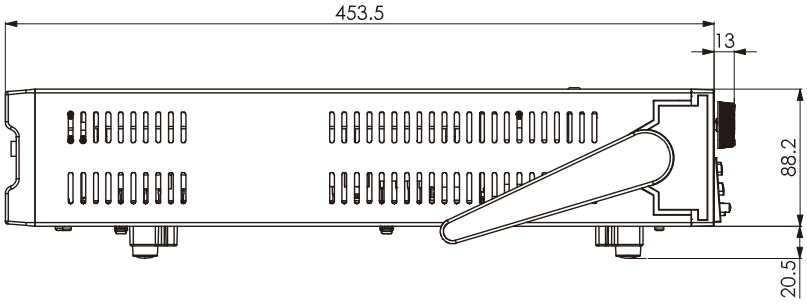
IT7300 Specifications

Model		IT7321	IT7322	IT7322H	IT7324H
INPUT					
Phase		1	1	1	1
Voltage		220Vac±10% or 110Vac±10%	220Vac±10% or 110Vac±10%	220Vac±10% or 110Vac±10%	220Vac±10% or 110Vac±10%
Frequency		47~63Hz	47~63Hz	47~63Hz	47~63Hz
Max current		6.3A(220Vac) or 10A(110Vac)	15A(220Vac) or 30A(110Vac)	15A(220Vac) or 30A(110Vac)	30A(220Vac) or 60A(110Vac)
Power factor		0.5(typical)	0.7(typical)	0.7(typical)	0.7(typical)
AC OUTPUT					
Max power		300VA	750VA	750VA	1500VA
Max current (rms)	0~150V	3A	6A	0~250V 3A	6A
	0~300V	1.5A	3A	0~500V 1.5A	3A
Max current (peak)	0~150V	9A	18A	0~250V 9A	18A
	0~300V	4.5A	9A	0~500V 4.5A	9A
Phase		1Φ/2W	1Φ/2W	1Φ/3W	1Φ/2W
Total harmonic distortion(T.H.D)		≤0.5% at 45-500Hz (Resistive Load)	≤0.5% at 45-500Hz (Resistive Load)	≤1% at 45-500Hz (Resistive Load)	≤1% at 45-500Hz (Resistive Load)
Crest factor		3	3	3	3
Power regulation		0.1% max for a ±10% line change	0.1% max for a ±10% line change	0.1% max for a ±10% line change	0.1% max for a ±10% line change
Load regulation		≤0.5%FS(Resistive Load)	≤0.5%FS(Resistive Load)	≤0.5%FS(Resistive Load)	≤0.5%FS(Resistive Load)
Response time		<100us	<100us	<100us	<100us
SETTING					
Voltage	Range	0~300V High, 150/300V Auto	0~300V High, 150/300V Auto	0-500V High, 250/500V Auto	0~500V High, 250/500V Auto
	Resolution	0.1V	0.1V	0.1V	0.1V
	Accuracy	±(0.2%+0.6V)	±(0.2%+0.6V)	±(0.2%+1.2V)	±(0.2%+1.2V)
	Temperature Coefficient	±(0.04% per degree from 25°C)	±(0.04% per degree from 25°C)	±(0.04% per degree from 25°C)	±(0.04% per degree from 25°C)
Frequency	Range	45~500Hz	45~500Hz	45~500Hz	45~500Hz
	Resolution	0.1Hz at 45-99.9Hz 1Hz at 100-500Hz	0.1Hz at 45-99.9Hz 1Hz at 100-500Hz	0.1Hz at 45-99.9Hz 1Hz at 100-500Hz	0.1Hz at 45-99.9Hz 1Hz at 100-500Hz
	Accuracy	0.1Hz	0.1Hz	0.1Hz	0.1Hz
Phase angle	Range	0~360°	0~360°	0~360°	0~360°
	Resolution	0.1°	0.1°	0.1°	0.1°
	Accuracy	±1°(45-65Hz)	±1°(45-65Hz)	±1°(45-65Hz)	±1°(45-65Hz)
MEASUREMENT					
Voltage(rms)	Range	0~300V	0~300V	0~500V	0~500V
	Resolution	0.1V	0.1V	0.1V	0.1V
	Accuracy	±(0.2%+0.6V)	±(0.2%+0.6V)	±(0.2%+1.2V)	±(0.2%+1.2V)
	Temperature Coefficient	±(0.04% per degree from 25°C)	±(0.04% per degree from 25°C)	±(0.04% per degree from 25°C)	±(0.04% per degree from 25°C)
Current(rms)	Range	L:120.0mA * M:1.200A *H:3.00A *	L:120.0mA * M:1.200A * H:6.00A *	L:120.0mA * M:1.200A * H:3.00A *	L:120.0mA * M:1.200A * H:6.00A *
	Resolution	L:0.1mA M:1mA H:10mA	L:0.1mA M:1mA H:10mA	L:0.1mA M:1mA H:10mA	L:0.1mA M:1mA H:10mA
	Accuracy	L:±(0.2%+0.6mA) M:±(0.2%+6mA)	L:±(0.2%+0.6mA) M:±(0.2%+6mA)	L:±(0.2%+0.6mA) M:±(0.2%+6mA)	L:±(0.2%+0.6mA) M:±(0.2%+6mA)
		H:±(0.2%+40mA)	H:±(0.2%+60mA)	H:±(0.2%+60mA)	H:±(0.2%+60mA)
	Temperature Coefficient	±(0.04% per degree from 25°C)	±(0.04% per degree from 25°C)	±(0.04% per degree from 25°C)	±(0.04% per degree from 25°C)
Current(peak)	Range	0~12A	0~18A	0~9A	0~24A
	Resolution	0.01A	0.01A	0.01A	0.01A
	Accuracy	±(1%+0.36A)	±(1%+0.36A)	±(1%+0.36A)	±(1%+0.36A)
	Temperature Coefficient	±(0.05% per degree from 25°C)	±(0.05% per degree from 25°C)	±(0.05% per degree from 25°C)	±(0.05% per degree from 25°C)
Power	Resolution	L:0.01W M:0.1W H:1W	L:0.01W M:0.1W H:1W	L:0.01W M:0.1W H:1W	L:0.01W M:0.1W H:1W
		L:±(0.2%+0.2W) (47HZ-65HZ)	L:±(0.2%+0.2W) (47HZ-65HZ)	L:±(0.2%+0.2W) (47HZ-65HZ)	L:±(0.2%+0.2W) (47HZ-65HZ)
	Accuracy	M:±(0.2%+2W) (47HZ-65HZ)	M:±(0.2%+2W) (47HZ-65HZ)	M:±(0.2%+2W) (47HZ-65HZ)	M:±(0.2%+2W) (47HZ-65HZ)
		H:±(0.2%+4W) (47HZ-65HZ)	H:±(0.2%+6W) (47HZ-65HZ)	H:±(0.2%+10W) (47HZ-65HZ)	H:±(0.2%+10W) (47HZ-65HZ)
	Temperature Coefficient	±(0.05% per degree from 25°C)	±(0.05% per degree from 25°C)	±(0.05% per degree from 25°C)	±(0.05% per degree from 25°C)
GENERAL					
Memory storage		10 memories	10 memories	10 memories	10 memories
Synchronous output signal		Output Signal 5V,BNC type	Output Signal 5V,BNC type	Output Signal 5V,BNC type	Output Signal 5V,BNC type
Interface (optional)		LAN,USB,RS232	LAN,USB,RS232,GPIB	LAN,USB,RS232,GPIB	LAN,USB,RS232,GPIB
Operating environment		0~40°C/20-80%RH	0~40°C/20-80%RH	0-40°C/20-80%RH	0~40°C/20-80%RH
Size		1/2 19" 2U	19" 3U	19" 3U	19" 3U
Weight		10Kg	37Kg	37Kg	37Kg

* This information is subject to change without notice

IT7321 Dimension figure





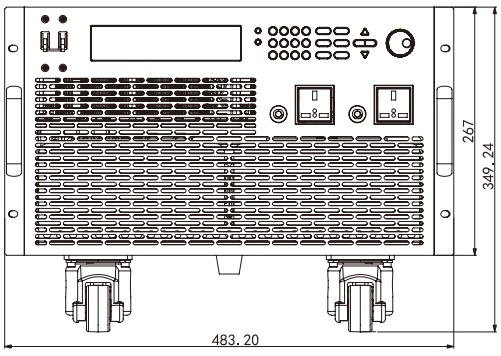
Unit: mm

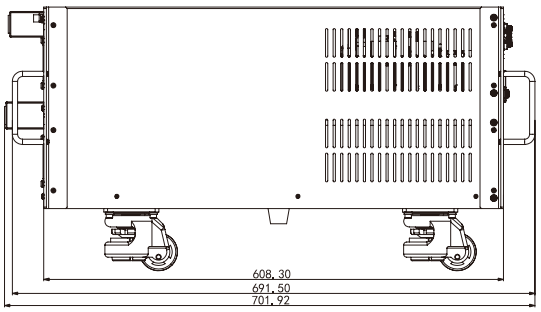
IT7300 Specifications

Model			IT7324	IT7326H	IT7326
INPUT					
Phase			1	1	1
Voltage			220Vac±10% or 110Vac±10%	220Vac±10%	220Vac±10%
Frequency			47~63Hz	47~63Hz	47~63Hz
Max current			30A(220Vac) or 60A(110Vac)	60A	60A
Power factor			0.7(typical)	0.7(typical)	0.7(typical)
AC OUTPUT					
Max power			1500VA	3000VA	3000VA
Max current (rms)	0~150V		12A	12A	24A
	0~300V		6A	6A	12A
Max current (peak)	0~150V		36A	36A	72A
	0~300V		18A	18A	36A
Phase			1Φ/2W	1Φ/2W	1Φ/2W
Total harmonic distortion(T.H.D)			≤0.5% at 45-500Hz (Resistive Load)	≤1% at 45-500Hz (Resistive Load)	≤0.5% at 45-500Hz (Resistive Load)
Crest factor			3	3	3
Power regulation			0.1% max for a ±10% line change	0.1% max for a ±10% line change	0.1% max for a ±10% line change
Load regulation			≤0.5%FS(Resistive Load)	≤0.5%FS(Resistive Load)	≤0.5%FS(Resistive Load)
Response time			<100us	<100us	<100us
SETTING					
Voltage	Range		0~300V High, 150/300V Auto	0~500V High, 250/500V Auto	0~300V High, 150/300V Auto
	Resolution		0.1V	0.1V	0.1V
	Accuracy		±(0.2%+0.6V)	±(0.2%+1.2V)	±(0.2%+0.6V)
	Temperature Coefficient		±(0.04% per degree from 25°C)	±(0.04% per degree from 25°C)	±(0.04% per degree from 25°C)
Frequency	Range		45-500Hz	45-500Hz	45-500Hz
	Resolution		0.1Hz at 45-99.9Hz 1Hz at 100-500Hz	0.1Hz at 45-99.9Hz 1Hz at 100-500Hz	0.1Hz at 45-99.9Hz 1Hz at 100-500Hz
	Accuracy		0.1Hz	0.1Hz	0.1Hz
Phase angle	Range		0~360°	0~360°	0~360°
	Resolution		0.1°	0.1°	0.1°
	Accuracy		±1°(45-65Hz)	±1°(45-65Hz)	±1°(45-65Hz)
MEASUREMENT					
Voltage(rms)	Range		0~300V	0~500V	0~300V
	Resolution		0.1V	0.1V	0.1V
	Accuracy		±(0.2%+0.6V)	±(0.2%+1.2V)	±(0.2%+0.6V)
	Temperature Coefficient		±(0.04% per degree from 25°C)	±(0.04% per degree from 25°C)	±(0.04% per degree from 25°C)
Current(rms)	Range		L:120.0mA * M:1.200A * H:12.00A *	L:120.0mA * M:1.200A * H:12.00A *	L:120.0mA * L:120.0mA * H:24.00A *
	Resolution		L:0.1mA M:1mA H:10mA	L:0.1mA M:1mA H:10mA	L:0.1mA M:1mA H:10mA
	Accuracy		L:±(0.2%+0.6mA) M:±(0.2%+6mA)	L:±(0.2%+0.6mA) M:±(0.2%+6mA)	L:±(0.2%+0.6mA) M:±(0.2%+6mA)
			H:±(0.2%+80mA)	H:±(0.2%+60mA)	H:±(0.2%+0.1A)
	Temperature Coefficient		±(0.04% per degree from 25°C)	±(0.04% per degree from 25°C)	±(0.04% per degree from 25°C)
Current(peak)	Range		0~48A	0~48A	0~96A
	Resolution		0.01A	0.01A	0.01A
	Accuracy		±(1%+0.36A)	±(1%+0.36A)	±(1%+0.36A)
Power	Temperature Coefficient		±(0.05% per degree from 25°C)	±(0.05% per degree from 25°C)	±(0.05% per degree from 25°C)
	Resolution		L:0.01W M:0.1W H:1W	L:0.01W M:0.1W H:1W	L:0.01W M:0.1W H:1W
			L:±(0.2%+0.2W) (47HZ-65HZ)	L:±(0.2%+0.2W) (47HZ-65HZ)	L:±(0.2%+0.2W) (47HZ-65HZ)
	Accuracy		M:±(0.2%+2W) (47HZ-65HZ)	M:±(0.2%+2W) (47HZ-65HZ)	M:±(0.2%+2W) (47HZ-65HZ)
			H:±(0.2%+10W) (47HZ-65HZ)	H:±(0.2%+10W) (47HZ-65HZ)	H:±(0.2%+15W) (47HZ-65HZ)
	Temperature Coefficient		±(0.05% per degree from 25°C)	±(0.05% per degree from 25°C)	±(0.05% per degree from 25°C)
GENERAL					
Memory storage			10 memories	10 memories	10 memories
Synchronous output signal			Output Signal 5V,BNC type	Output Signal 5V,BNC type	Output Signal 5V,BNC type
Interface (optional)			Output Signal 5V,BNC type	LAN,USB,RS232,GPIB	LAN,USB,RS232,GPIB
Operating environment			0~40°C/20-80%RH	0~40°C/20-80%RH	0~40°C/20-80%RH
Size			1/2 19" 3U	19" 6U	19" 6U
Weight			37Kg	103Kg	103Kg

* This information is subject to change without notice

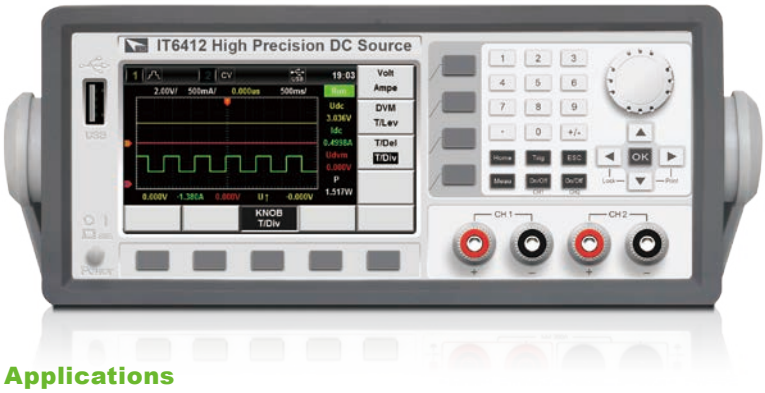
IT7324 Dimension figure





Unit: mm

IT6400 Bipolar DC Power Supply / Battery Simulator



Applications

Portable battery-powered product testing, mobile power testing, battery testing, etc.

Feature

- Maximum output power of single channel up to 150 W, output voltage max. ±60 V, output current max. ±10A
- High performance color LCD display, dual channel output display main interface *1
- Bipolar dual-range output
- Accurate Battery Simulation
- Oscilloscope waveform display (DSO)
- Ultrafast transient response time < 20 μs
- Ultrafast voltage rising time up to 150 μs *2
- Current display resolution up to 1 nA
- Ultra-small current ripple up to 2 μArms
- Built-in high accuracy DVM
- Variable output impedance
- Applicable to portable battery-powered products test
- LED test no overshoot current
- Relay out function achieves electrical isolation on terminals
- High speed AD sampling
- List function achieves voltage/current output as programmed
- Standard interface LAN/USB/GPIB

*1 IT6412 provides this function

*2 IT6432H stay tuned"

The unique bipolar voltage/current output makes IT6400 series can be used as a bipolar power source or a bipolar electronic load. The battery simulating function is especially applicable for development and high speed production testing of portable, battery-operated products. IT6400 has ultrafast transient time less than 20 μs and resolution up to 1 nA. Its new designed speed shift mode achieves voltage/current fast rising and without overshoot, rising time up to 150μs. Meanwhile, the waveform display function let the test be visible and simple. IT6400 series can be widely used in portable battery-operated products test, mobile power pack test, LED test and other fields.

Model	Voltage	Current	Power	channel
IT6411	±15V/±9V	±3A/±5A	45W	1
IT6411S	-15V~0V, 0~15V	±0.1 A	1.5 W	1
IT6412	CH1:±15V/±9V	CH1:±3A/±5A	CH1:45W	2
	CH2:0~15V/0~9V	CH2:±3A/±5A	CH2:45W	
IT6431	-15V~ 0V, 0~ 15V	±10 A	150W	1
IT6432	-30V~0V, 0~30V	±5A	150W	1
IT6433	-60V-0V,0-60V	±2.5 A	150W	1
IT6432H	-30V-0V,0-30V	±5A	150W	1
IT6433H	-60V-0V,0-60V	±2.5 A	150W	1

* IT6432H / IT6433H Stay tuned

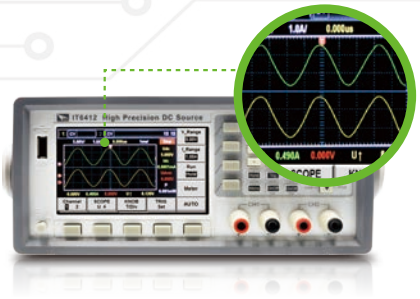
Bipolar Output

IT6400 high speed linear DC source provides bipolar output, maximum output voltage of single channel up to ± 60 V, maximum output current up to ± 10 A. IT6400 is with multi-functional and high-performance output, so that it meets various of test needs. IT6412 is a dual-channel bipolar DC source and it is available for easy-shifting dual range output with each channel. Users can switch according to test requirements, one unit IT6412 can finish mobile and charger test independently, easy to use.

IT6400 Bipolar DC Power Supply / Battery Simulator

Oscilloscope Waveform Display Function

IT6400 provides waveform display function based on sample data. The Voltage/current waveform is visible or invisible by your option, and can be adjusted by the knob. The graphic on the newly design colorful display can be saved, achieves easy and effective oscilloscope experience.



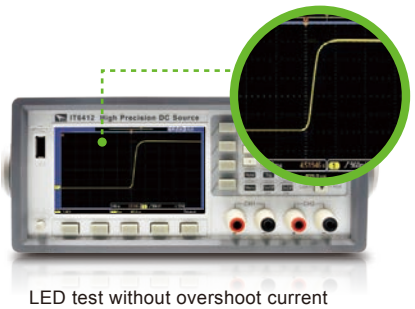
Battery Simulating Function

With the unique current bipolar design and 0~20 Ω variable output impedance, IT6400 is applicable to types of portable battery charge-discharge tests. Simulating the battery charge-discharge features and assist with other tests are also reliable. One equipment,diversified applications.

Portable battery-operated products test

Ultrafast Transient Time <20 μs

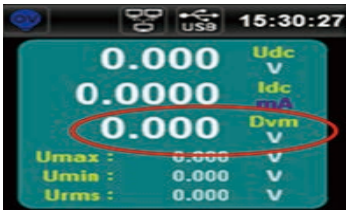
IT6400 has ultrafast transient ability, the transient time for recovering to 50 mV is less than 20 μs when 50%-100% loaded. New designed speed shift mode achieving voltage/current high speed rising waveform without overshoot, supports stable power supply, and ensures the security, especially for LED test.



LED test without overshoot current

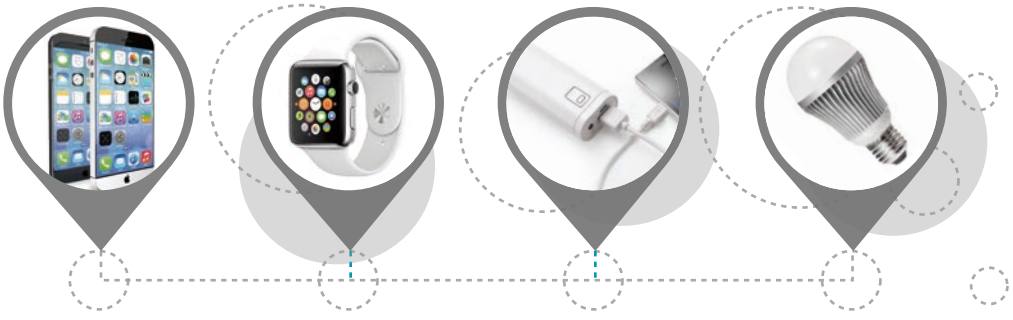
DVM Test Function

Abundant electrical basic measuring functions are available on IT6400. High accuracy DVM is built in each channel with readback resolution up to 1 mV. The measured data will be visible on specified channel screen. The changes of voltage waveform measured by DVM can be observed by oscilloscope display function.



Applications

- Portable battery-operated products test
- Mobile power pack test
- Battery protection board test
- Battery test
- LED test
- Power amplifier Test
- DC / DC converter test



IT6400 Specifications

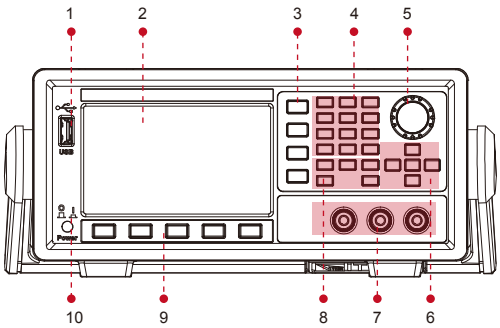
Model		IT6411		IT6411S		IT6412				IT6431		IT6432		IT6433	
Channel		1		1		2				1		1		1	
		High Range	Low Range			CH1		CH2							
Rated output (0～40 °C)	Voltage	±15V	±9V	-15V~ 0V,0~ 15V		±15V	±9V	0~15V	0~9V	-15V~ 0V,0~ 15V		-30V~0V,0~30V		-60V~0V,0~60V	
	Current	±3A	±5A	±0.1 A		±3A	±5A	±3A	±5A	±10 A		±5A		±2.5 A	
	Power	45W		1.5 W		45W				150W		150W		150 W	
Load regulation ±(%output+offset)	Voltage	≤0.01%+2mV		≤0.01%+1mV		≤0.01%+2mV				≤0.01%+3.5mV		≤0.01%+2mV		≤0.01%+2mV	
	Current	≤0.05%+1mA		≤0.05%+1mA		≤0.05%+1mA				≤0.05%+2mA		≤0.05%+1mA		≤0.05%+1mA	
Power regulation ±(%of output+offset)	Voltage	≤0.02%+2mV		≤0.02%+2mV		≤0.02%+2mV				≤0.02%+2mV		≤0.02%+2mV		≤0.02%+2mV	
	Current	≤0.05%+1mA		≤0.05%+1mA		≤0.05%+1mA				≤0.05%+1mA		≤0.05%+1mA		≤0.05%+1mA	
Setpoint resolution	Voltage	1mV		1mV		1mV				1mV		1mV		1mV	
	Current	0.1mA		10μA		0.1mA				1mA		0.1mA		0.1mA	
	OVP	10 mV		10 mV		10 mV				10 mV		10 mV		10 mV	
Readback the value resolution	Voltage	1mV		1mV		1mV				1mV		1mV		1mV	
	Current	5A Range	1mA	100mA Range	1μA	5A Range		0.1mA		10A Range	1mA	5A Range	0.1mA	5A Range	0.1mA
		5mA Range	100nA	100uA Range	1nA	5mA Range		100nA		20mA Range	1μA	5mA Range	100nA	5mA Range	100nA
Setpoint accuracy (Within 12 months)(25°C±5°C) ±(%of output+offset)	Voltage	≤0.02%+3mV		≤0.02%+3mV		≤0.02%+3mV				≤0.02%+3mV		≤0.02%+3mV		≤0.02%+4mV	
	Current	≤0.05%+2mA*1		≤0.05%+50μA*3		≤0.05%+2mA*1				≤0.05%+5mA*3		≤0.05%+2mA		≤0.05%+2mA*3	
	OVP	0.5V*2		0.5V*2		0.5V*2				0.5V*2		0.5V*2		0.5V*2	
Readback the accuracy of the value (Within 12 months)(25°C±5°C) ±(%of output+offset)	Voltage	≤0.02%+2mV		≤0.02%+2mV		≤0.02%+2mV				≤0.02%+3mV		≤0.02%+3mV		≤0.02%+4mV	
	High current	≤0.05%+2mA		≤0.05%+50μA		≤0.05%+2mA				≤0.05%+4mA		≤0.05%+3mA		≤0.05%+2mA	
	Low current	≤0.05%+2μA		≤0.05%+50nA		≤0.05%+2μA				≤0.05%+5μA		≤0.05%+2μA		≤0.05%+2uA	
Ripple (20Hz~20MHz)	Voltage	≤ 3mVp-p / 1 mV rms		≤ 3mVp-p / 1 mV rms		≤ 3mVp-p / 1 mVrms				≤4mVp-p / 1mV rms		≤4mVp-p / 1 mVrms		≤ 5mVp-p / 1 mV rms	
	Current	≤1mArms		≤2μArms		≤1mArms				≤5mArms		≤1mArms		≤1mArms	
Dynamic response time (50%-100% LOAD resumed 50 mV)		≤50μS		≤200μS		≤50μS				≤30μS		≤30μS		≤20μS	
Protective function		OVP/OCP/OTP		OVP/OCP/OTP		OVP/OCP/OTP				OVP/OCP/OTP/RVP		OVP/OCP/OTP/RVP		OVP/OCP/OTP/RVP	
Communication Interface		GPIB/USB/LAN		GPIB/USB/LAN		GPIB/USB/LAN				GPIB/USB/LAN		GPIB/USB/LAN		GPIB/USB/LAN	
Size (mm)		226mmW*88.2mmH*476.26mmD													
Weight		8KG		8KG		9KG				8KG		8KG		8KG	
						DVM									
Measuring range		-20V ~ +20V		-20V ~ +20V		-20V ~ +20V				-20V ~ +20V		-30V ~+30V		-60V — +60V	
Display value accuracy		0.02%+3mV		0.02%+3mV		0.02%+3mV				0.02%+3mV		0.02%+3mV		0.02%+5mV	
Display resolution		1mV		1mV		1mV				1mV		1mV		1mV	
Input common-mode voltage		< 50Vdc		< 100Vdc to ground		< 50Vdc				< 100Vdc to ground		<100Vdc		≥ 80 dB	
Input resistance		4.5MΩ		4.5MΩ		4.5MΩ				4.5MΩ		4.5MΩ		4MΩ	

*1 Minimum CC setting value is 2mA *2 OVP accuracy maximum error at power terminal in full load *3 Minimum CC setting value is 50μA

*This information is subject to change without notice

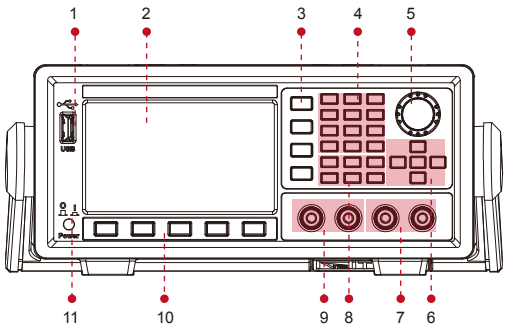
Panel introduction

IT6411/IT6432 front panel diagram and key function diagram



1 USB interface
2 Display
3 Menu key
4 Numeric key, Decimal point and"±"key
5 Rotary knob
6 Arrow keys and Enter key
7 Output positive and negative electronic ground terminal
8 Function key
9 Menu key
10 Power switch

IT6412 front panel diagram and key function diagram



1 USB interface
2 Display
3 Menu key
4 Numeric key, Decimal point and"±"key
5 Rotary knob
6 Arrow keys and Enter key
7 CH2 output terminals
8 Function key
9 CH1 output terminals
10 Menu key
11 Power switch

ITECH High Speed High Performance Photovoltaic / Solar Simulator Power Supply

Applications

Solar array simulation, Photovoltaic inverter, Micro inverters and solar chargers

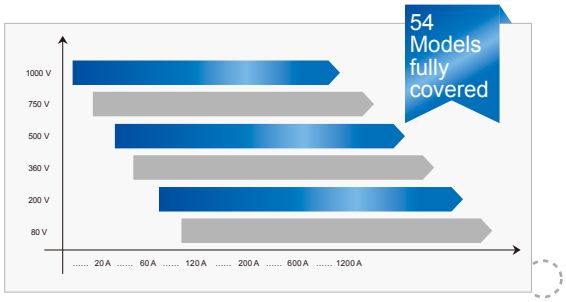
Feature

- Automatic wide range output, the voltage up to 1000V
- Power up to 100KW
- Solar array simulate I-V function (Built-in I-V curve mathematical formula)
- Simulate the output characteristics of various solar cell (monocrystalline silicon cell, polysilicon cell, thin film cell) (Fill Factor)
- Simulate I-V curve under different temperature and irradiation
- Simulate I-V curve for solar panel under shadow
- Static & dynamic MPPT efficiency test
- Built-in EN50530 / Sandia / NB/T32004 / CGC/GF004 / CGC/GF035 test program, and generate reports
- Graphical software interface, real-time test and display MPPT state of PV inverter
- Auto program control 100 I-V curves via Voc, Isc, FF, Pm and other parameter points
- 100*128 points curves and 4096 points precise programming control
- Support output impedance setting function
- Support various mode edge independent set, adjustable rising and falling time
- Fast switching between quadrants, even seamless switching can be achieved under certain conditions,, suitable for fast cell charge and discharge
- Built-in DIN 40839 & ISO-16750-2
- Standard USB/RS232/GPIB interface

ITECH newly-launched high speed high performance photovoltaic / solar simulator power supply series provide IT6500C series high power DC power supply equipped with SAS1000 solar array simulator software. It can accurately simulate the solar array I-V curve max. voltage up to 1000V and extended power up to 100kW. The solar array simulator series have the precise measurement and fast transient response design and is with high stability. With the built-in EN50530 / Sandia / NB/T32004 / CGC/GF004 / CGC/GF035 SAS module, the solar array simulator enables easy programming on test regulations, materials, Vmp, Pmp parameters, so as to simulate I-V curve characteristic output and generate reports. These benefit much in test of the static & dynamic maximum power tracking performance of photovoltaic inverters.

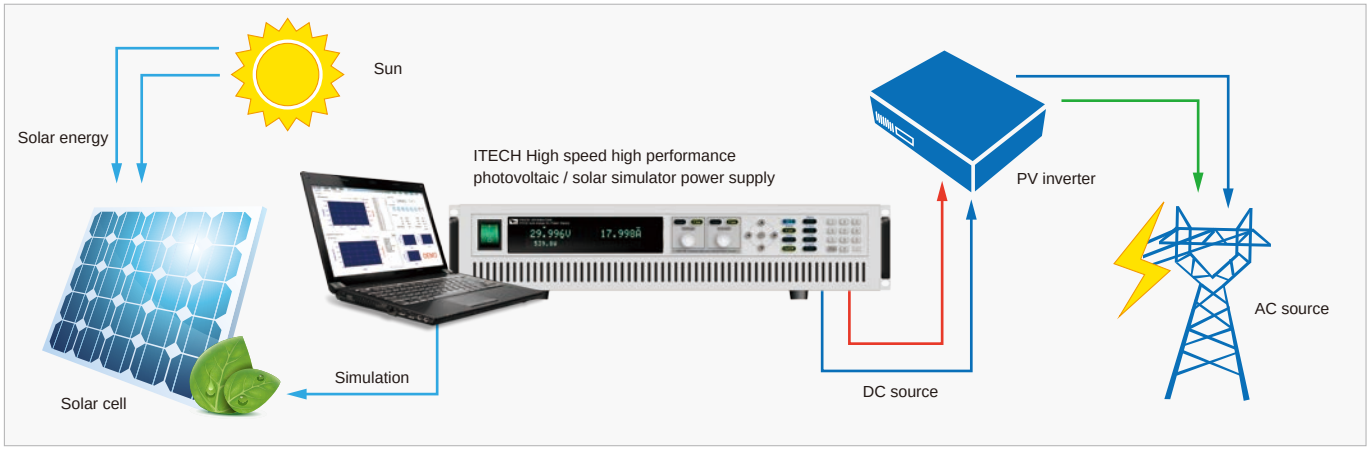
ITECH newly-launched high speed high performance photovoltaic / solar simulator power supply series also provide Shadow and Table mode. The shadow mode is provided to allow users to edit any shielded I-V curves for dynamic shadow. Under Table mode, the user can select 4096 points matrix, or store 100 I-V curves of different temperature and irradiation in the memory, and can set the implementation sequence and time of each curve, to test the long-term MPPT performance evaluation under different climates.

The solar panel output simulation under the 24-hour real environmental parameters is also available. As a solar simulator, our power supply also provides supports for micro-grid, distributed photovoltaic etc power system simulation and core equipments testing.



Applications

- Design & verify the MPPT circuit and algorithm of the PV inverter
- Verify the MPP voltage range and the full load MPP voltage range of the inverter
- Verify static maximum power tracking efficiency of the PV inverter
- Verify the MPPT performance of the inverter for dynamic curves (Built-in EN50530,Sandia,NB/T32004,CGC/GF004, CGC/GF035)
- Verify the inverter starting voltage and the maximum input voltage, the maximum input current and other electrical parameters
- Verify the MPPT mechanism of the inverter for the I-V curve when the solar cell is shaded by clouds or trees.
- Test inverter DC terminal OVP, OPP
- Verify micro-grid control center and control function of photovoltaic energy storage system
- Verify the MPPT performance of the inverter from early morning to nightfall
- Verify the total efficiency and conversion efficiency of the inverter with IT9100 power analyzer



1800W	IT6512C 80V/120A/1800W	IT6513C 200V/60A/1800W	IT6514C 360V/30A/1800W	IT6515C 500V/20A/1800W	IT6516C 750V/15A/1800W	IT6517C 1000V/10A/1800W
3kW	IT6522C 80V/120A/3kW	IT6523C 200V/60A/3kW	IT6524C 360V/30A/3kW	IT6525C 500V/20A/3kW	IT6526C 750V/15A/3kW	IT6527C 1000V/10A/3kW
6kW	IT6532C 80V/240A/6kW	IT6533C 200V/120A/6kW	IT6534C 360V/60A/6kW	IT6535C 500V/40A/6kW	IT6536C 750V/30A/6kW	IT6537C 1000V/20A/6kW
9kW	IT6542C 80V/360A/9kW	IT6543C 200V/180A/9kW	IT6544C 360V/90A/9kW	IT6545C 500V/60A/9kW	IT6546C 750V/45A/9kW	IT6547C 1000V/30A/9kW
12kW	IT6552C 80V/480A/12kW	IT6553C 200V/240A/12kW	IT6554C 360V/120A/12kW	IT6555C 500V/80A/12kW	IT6556C 750V/60A/12kW	IT6557C 1000V/40A/12kW
15kW	IT6562C 80V/600A/15kW	IT6563C 200V/300A/15kW	IT6564C 360V/150A/15kW	IT6565C 500V/100A/15kW	IT6566C 750V/75A/15kW	IT6567C 1000V/50A/15kW
21kW	IT6572C 80V/840A/21kW	IT6573C 200V/420A/21kW	IT6574C 360V/210A/21kW	IT6575C 500V/140A/21kW	IT6576C 750V/105A/21kW	IT6577C 1000V/70A/21kW
24kW	IT6582C 80V/960A/24kW	IT6583C 200V/480A/24kW	IT6584C 360V/240A/24kW	IT6585C 500V/160A/24kW	IT6586C 750V/120A/24kW	IT6587C 1000V/80A/24kW
30kW	IT6592C 80V/1200A/30kW	IT6593C 200V/600A/30kW	IT6594C 360V/300A/30kW	IT6595C 500V/200A/30kW	IT6596C 750V/150A/30kW	IT6597C 1000V/100A/30kW

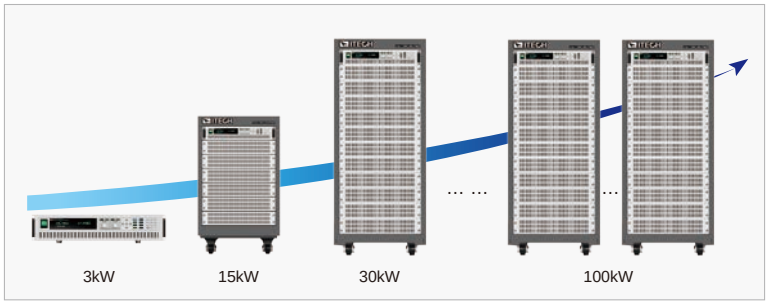
* For higher power test, please contact ITECH.

High speed high performance photovoltaic / solar simulator power supply

ITECH high speed high performance photovoltaic / solar simulator power supply, adopting IT6500C high-speed high-performance high-power DC power supply equipped with SAS1000 solar array simulator software, all series have 54 models with wide range of voltage and current, with the output up to 1000V, 1200A. One instrument can cover a wide range of application requirements, easy to choose the required models for users. Photovoltaic / solar simulator power supply supports edge time independent set for each mode, has fast switching between sourcing and sinking current, even can achieve seamless switching under certain conditions, and supports OVP, OCP, OPP, OTP, Vsense reverse and other protection functions.

Power up to 100KW

ITECH high speed high performance photovoltaic / solar simulator power supply built-in parallel connection function, power can be extended to 100KW by simple master-slave parallel mode. After paralleling, with master and slave dynamic synchronization, function is not restricted, users only need to operate on the host panel, the slave unit will automatically receive the distribution, greatly simplify the operation. The rising and falling times are adjustable and the CC / CV priority selection mode can achieve curve changes without overshoot, so that solar simulator power supply can simulate high power solar array and meet the test requirements for commercial and power station by using PV inverters.

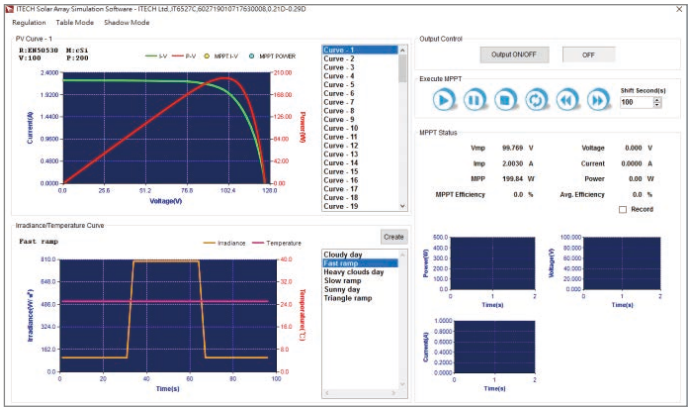


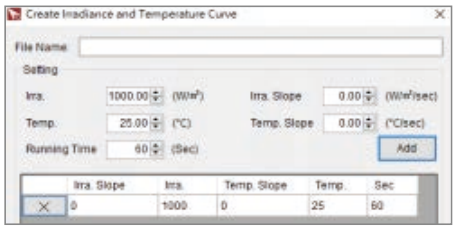
Graphical software interface

ITECH high speed high performance photovoltaic / solar simulator power supply has graphical software interface, users can easily use the software to output, measure, display the maximum power tracking status of photovoltaic inverter in real time and record value.
Built-in EN50530 / Sandia and other five kinds of regulatory testing procedures, it is convenient for users to test the static and dynamic MPPT performance of PV inverters and generate reports, so as to compare with competitors' results.
Solar simulator power supply also provides the shadow and table mode, the user can enter the 128 ~ 4096 points array to edit any shielded I-V curve to achieve dynamic shadow effect and also can store 100 I-V curves under different irradiation and temperature to test the long-term maximum power tracking performance of photovoltaic inverters under different climatic conditions.

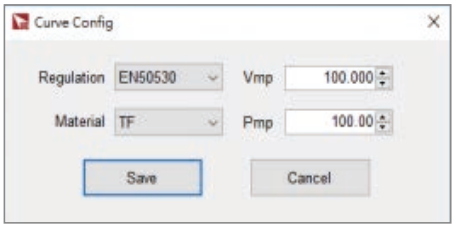
Simulate the output characteristics of various solar cell (FILL FACTOR)

Since solar cell utilization is not only related to its internal characteristics, but also related to weather, season, temperature, irradiation, cloud cover, rain and snow and other factors, solar cell has different I-V characteristics in different periods. Therefore, PV inverter must have a strategy to adjust real-time working point of the solar cell to make it always work in the vicinity of the maximum power point, this process is called MPPT. ITECH high speed high performance photovoltaic / solar simulator power supply can be used to directly simulate various real-life solar cell arrays in a laboratory test environment to test the static & dynamic MPPT performance of photovoltaic inverters.





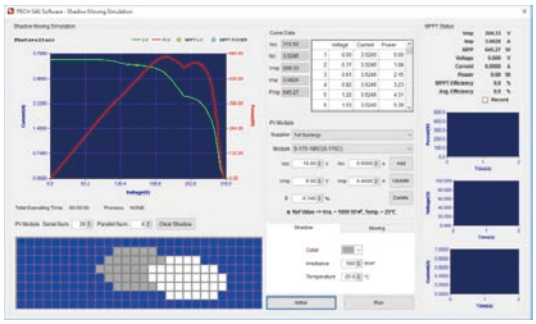
Set dwell time for each I-V curve to track MPPT and efficiency.

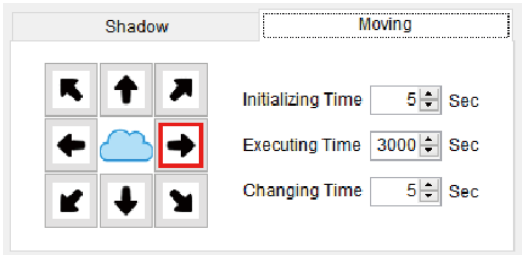


Easy to edit, save 1 - 100 I-V curves

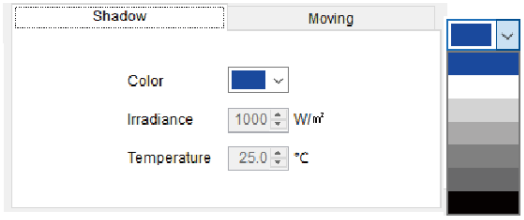
Shield I-V curve simulation （Shadow Mode）

ITECH high speed high performance photovoltaic / solar simulator power supply can help users to complete the solar array output simulation under different shadow modes, test and track real-time maximum power and performance test of the PV array. Providing various Module for the user to choose according to different supplier, users can also build their own PV module. User can define irradiation and temperature parameters of shadow, cell string set, parallel quantity and dynamic shielding the moving direction of the cloud, initialization time, running time and the time interval of cloud moving.





Select the moving direction of the cloud, initialization time, running time and the time interval of cloud moving

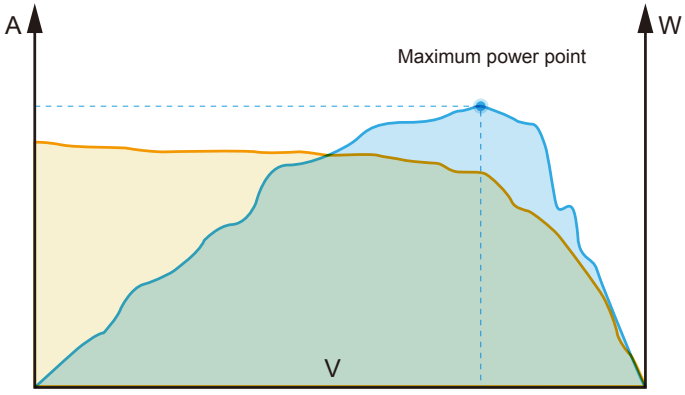


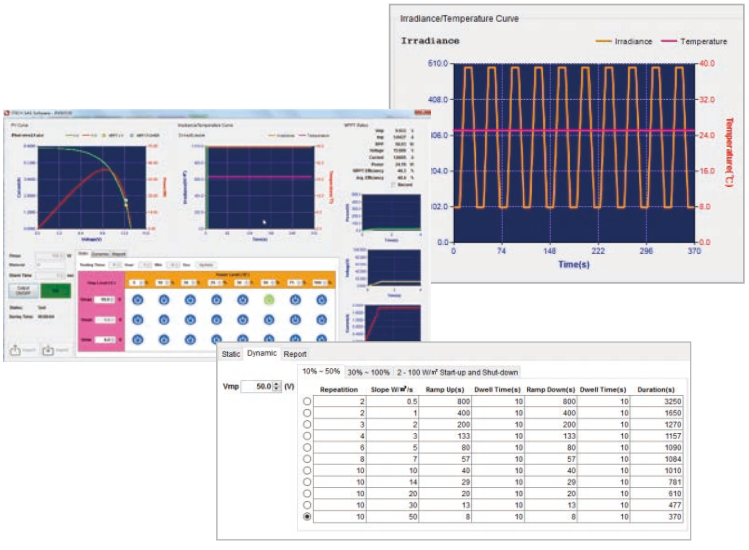
Set the irradiation and temperature parameters of clouds

Static & Dynamic MPPT performance test

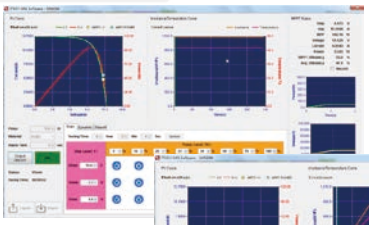
MPPT tracking performance is a very important specification of PV inverter, PV inverter needs a built-in MPPT mechanism to track real-time maximum output power of solar cell. Therefore, some of the industry's organizations have defined some "standard" test patterns to match all kinds of inverters, which allows inverter manufacturers to test and improve MPPT performance. Build-in MPPT test program of EN50530、SANDIA、NB/T32004、NB/T32004、CGC/GF004, users can set their own Vmp, Pmp, materials and other parameters, test run time and maximum run power percentage, the I-V curve and the real-time trace process are displayed on the screen to verify MPPT performance of the PV inverter, record the data during the whole test and generate report.

Test the MPPT performance of PV inverter by easy programming illumination intensity with time

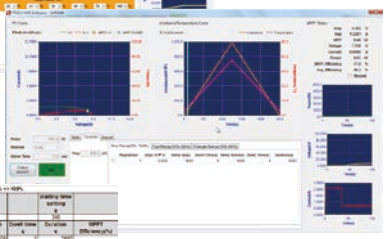




● Test example

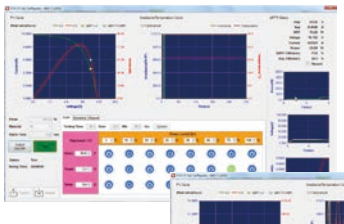


Static testing

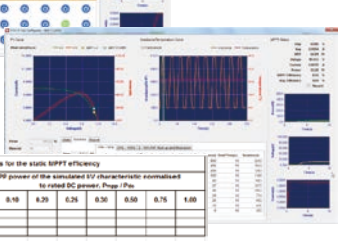


Dynamic testing

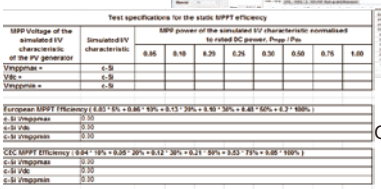
Generate a report



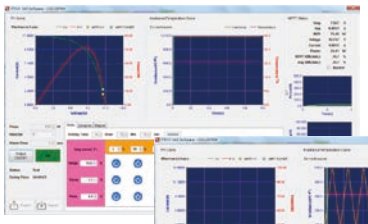
Static testing



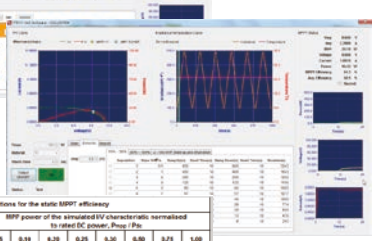
Dynamic testing



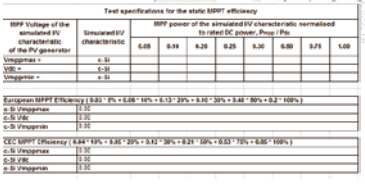
Generate a report



Static testing



Dynamic testing

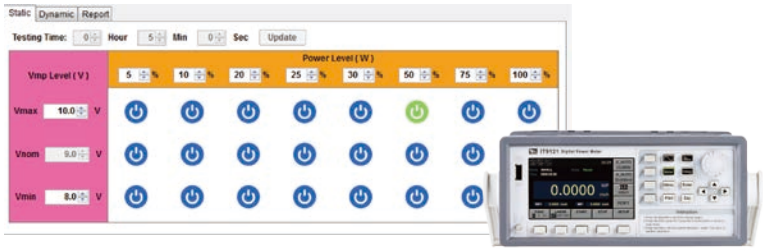


Generate a report

Power Supply

Inverter conversion efficiency test

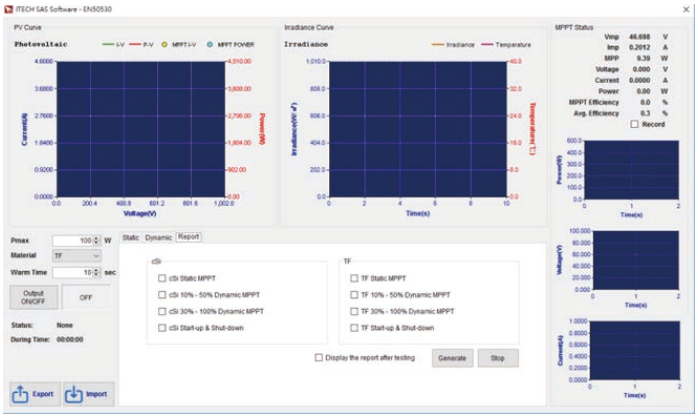
ITECH high speed high performance photovoltaic / solar simulator power supply is with built-in regulations EN50530, SANDIA, NB / T32004, NB / T32004, CGC / GF004 PV IV curve model, users can equip with IT9121 power meter to test conversion efficiency of photovoltaic inverter according to the maximum power percentage value.



IT9121 Power Meter

Report generation

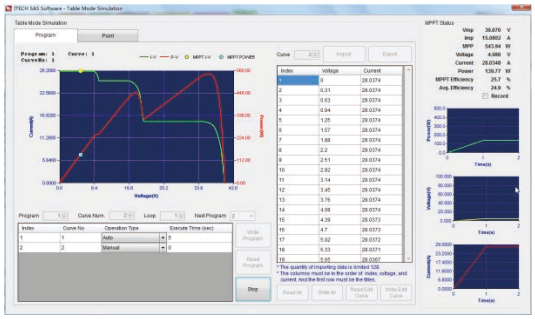
ITECH high speed high performance photovoltaic / solar simulator power supply allows users to record the measured parameters, such as voltage, current, power, watts, MPPT efficiency , sampling time interval and total length of time, etc., which facilitates the analysis of PV inverter.



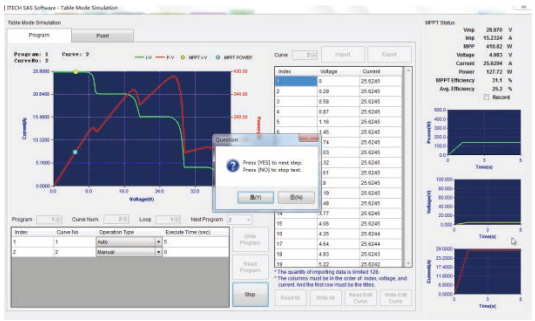
Automatic program （Table Mode）

Table Mode of ITECH high speed high performance photovoltaic / solar simulator power supply can facilitate users to quickly verify the MPPT performance of photovoltaic inverter in the R & D and quality testing. Users can define 100 curves which has 128 points on each curve, after selecting the Curve, Loop, Next program and other necessary information, the software can be test by the setting steps, report will be automatically generated after finished.

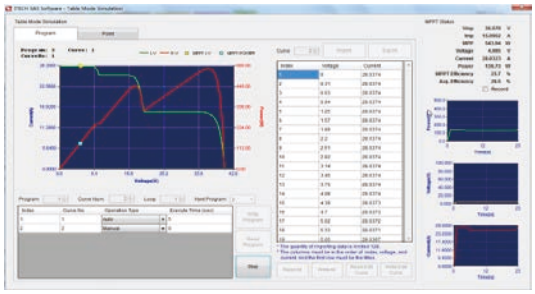
Table Program Test example



1.Run the first curve of the first program

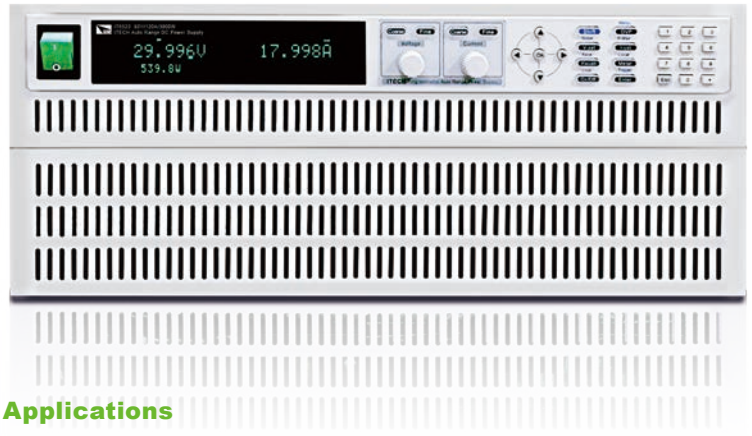


2.Run the second curve of the first program after 5s



3.Clicking next, run the first curve of next program

IT6500 Wide-range High-power DC Power Supply



With ITECH's latest technology, the IT6500 series offers a full-featured high performance power test solution. With fast response, these DC power supplies provide users with a new level of power supply performance. From 800W to 30 kW, the whole series include more than 100 models. The maximum output voltage and current is up to 1000V and 1200A respectively. With its auto ranging capability, it also has a super wide range of voltage and current applications. Users can choose the power supply that fits their testing requirements perfectly.

Applications

Electric Vehicle Battery Test、Battery Simulation、LED、Automotive Electronics、Solar Panel I-V Curve Simulation、Aerospace、Aviation、Military

Feature

- Support multiple power supplies paralleling in Master-Slave mode and ensures each power supply equally shares the load current. Extension capacity is up to 30kW output.
- Support up & down speed independently setting in different operation modes (Power supply: CV/CC/CP modes, Electronic load: CC/CP modes).Adjustable rising and falling time
- Two-quadrant current output, seamless switching between quadrants, suitable for battery rapid charging/discharging test*1*3
- Combined with IT-E500 power dissipater unit, can meet discharge test demand up to 90kW *1
- Built-in DIN 40839, ISO-16750-2, SAEJ1113-11, LV124 and ISO2184 standard voltage curve for automobile power net *2
- Solar panel I-V curve simulation function *4
- LIST mode programming
- Variable output impendence function *1
- Low ripple and low noise
- High resolution and high accuracy
- Support multiple protections ; Power Supply: OVP,OCP,OPP,OTP; Electronic Load: OCP,OPP,OTP, Vsense Reverse protection, turn-off protection, input under voltage protection
- Remote sense function
- Analog control interfaces
- Built-in USB/RS232/CAN/GPIB/LAN interfaces

*1 IT6500C series have this function

*2 IT6500C series have this function, IT6512 and IT6513 are built-in DIN 40839, ISO-16750-2

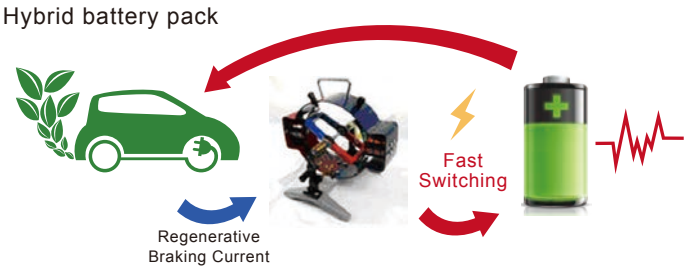
*3 To achieve perfect battery charge & discharge function, please purchase IT9320 charge & discharge test system software

*4 Optional SAS1000 software, only IT6500C equip with optional software

Continuous source & sink testing

For traditional two-quadrant power supply, there will be a short jump and discontinuity across positive and negative currents. As a high-speed two-quadrant power supply, IT6500C (1800W-30kW) series has Loop-Mode function so as to realize high-speed current transition between power supply mode and electronic load mode, to achieve fast switching between sourcing and sinking current, even can achieve seamless switching under certain conditions, thus avoiding overshoot of voltage or current. That enables it to be suitable for fast battery charging and discharging measurements without sacrificing accuracy and can be widely used in energy storage device testing, such as batteries, battery encapsulation and battery protection panel etc.

Electric Vehicle Battery Test- Braking Current Regenerative Simulation



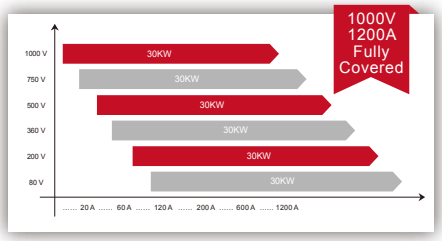
For practical electric vehicle (EV) battery test, the ultra-realistic simulation of regenerative braking current is necessary, the whole test should be finished within 10ms. So the simulation result depends on the response speed of the relating testing device.

1. Traditional solution: Adopt two single units, such as DC Power Supply + Electronic Load, which is of complex configuration, low efficiency and thus can't meet the testing requirements;

2. ITECH solution: IT6500C provides fast and seamless switching across current outputting and sinking, combined with IT-E500 power dissipater unit, IT6500C can meet the testing requirements easily. It is an ideal solution for EV braking current's regenerative battery test.

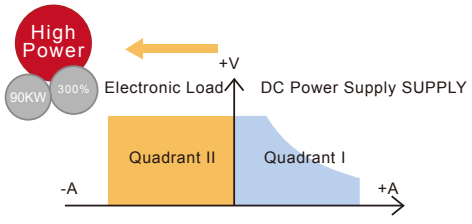
Wide-range & High-power

The IT6500 series wide-range of high-power DC power supplies offers a large range of models. From 800W to 30 kW, the whole series include more than 100 models, the maximum output voltage and current is up to 1000V and 1200A respectively. At the same time, it also has super wide range of voltage and current applications. In combination with the IT-E501 power dissipater unit, the current sinking capacity of IT6500C can be 100%, 200%, 300% and the power sinking up to 300% of the Sourcing capability.



With the power dissipater unit, loading capability is expanded

IT6500C series can be used as both a power supply and an electronic load. It greatly enlarges the current sinking range of the power supplies. It enables sinking of current and power, thus it can be applied to applications requiring fast current sink test and batteries charging /discharging test. Each IT-E500 series power dissipater unit provides up to 3kW power sinking capability for the IT6500C series power supply. To meet higher power discharging test demand, multiple power dissipater units' can be paralleled. The IT-E500 series power dissipater unit can extend the current sinking capability 100%, 200%, 300% of the source range and the power sinking capability up to 300% of the Power sourcing capability. (Max. Power sink is 90kW). Meeting demanding requirements of high power discharging test.



IT6500 Wide-range High-power DC Power Supply

Model	Specification	Size
IT-E502	80V/120A/3KW	3U
IT-E503	200V/60A/3KW	3U
IT-E504	360V/30A/3KW	3U
IT-E505	500V/20A/3KW	3U
IT-E506	750V/15A/3KW	3U
IT-E507	1000V/10A/3KW	3U

Fast response

Independent settable slew rate in different modes

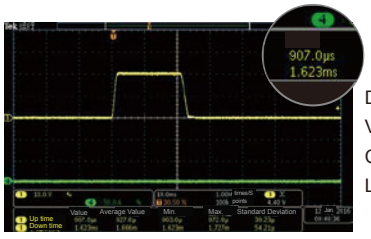
IT6500C series can be used as a power supply and an electronic load. As a power supply, CV, CC, CP modes are available. As an electronic load, CC and CP mode are available. IT6500C supports independent adjustable rise/fall time setting in different modes.

For every single model of IT6500C/D series, no matter it is a single unit or multiple units paralleled together, the rise and fall time of each power supply in IT6500C/D series are the same. Take IT6522C as an example:

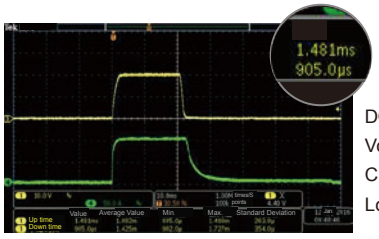
- Within 30V voltage range, with 0-90% load, up and down speed＜3ms
- Falling time of no load with voltage at full scale:

Without power dissipater unit, falling time ＜ 30ms
With power dissipater unit, falling time ＜ 5ms

- Dynamic response time ＜3ms



DC ratings of single unit IT6522C:80V/120A/3000W
Voltage ratings: 10V
Current ratings: 120A
Load Current: 0A

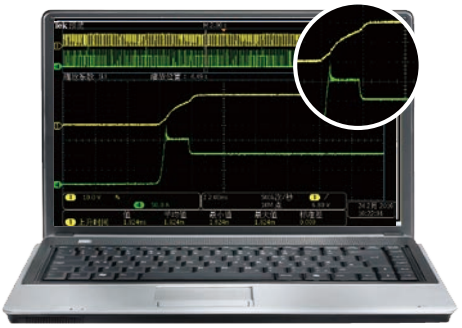


DC ratings of single unit IT6522C: 80V/ 120A/3000W
Voltage ratings: 10V
Current ratings: 120A
Load Current: 100A

No matter whether it is in the power supply mode (CV, CC, CP) or in the electronic load mode (CC, CP), IT6500 series has adjustable rise and fall time, and the settable range is 1ms-24h.

Fast curve changing without overshoot CC & CV Priority Function

To conquer the demanding testing requirements existing for a long time in various applications, ITECH developed an innovative industry-leading CV & CC priority concept. The IT6500 is available for high-speed test applications with-out overshoot. Users can chose the desired output mode. Voltage high-speed mode or current no overshoot mode by choosing the loop response speed and loop operation mode. It is suitable for high-power integrated circuit test, charging/ discharging test, military, solar array simulation and the transient simulation/ characteristic of automotive electronics.



Fast voltage built with turn-on over range inrush current
(CV-High, CC-Low, CV takes precedence)

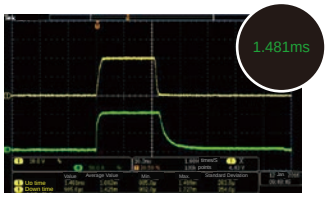
Battery charging / discharging test with seamless and no overshoot switching
(CV-High, CC-High, CC takes precedence)

Maintain excellent performance after paralleling

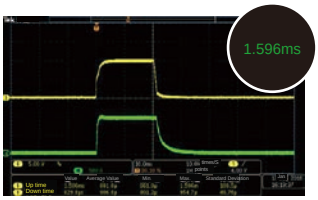
Built-in paralleling of multiple power supplies with even current distribution

IT6500 has built-in paralleling capability up to 30kW. At the same time, IT6500C supports multiple power supplies paralleling together in master-slave mode. Even further it can ensure that each power supply equally shares the load current and they all remain in the desired mode. In the traditional sense, when paralleling power supplies together, different power supplies will operate in different operation modes. For instance, when two sets of power supplies are paralleled together, one will offer a majority of current in CC mode, and the other will offer only a small part of current in CV mode, which will degrade certain power supplies' performance specifications. The even current distribution ability of the IT6500 ensures each power supply equally shares the load current without degrading the performance specifications. When paralleling multiple IT6500 the combined system has all the same functions as a standalone unit. That is a great way to add power flexibility to your test system. What is particularly unusual is that after the expansion of power, IT6500C can still maintain the excellent dynamic characteristics of the single unit to meet the I-V characteristic curve testing demanding a variety of high-power high-speed applications.

Low voltage & high current test

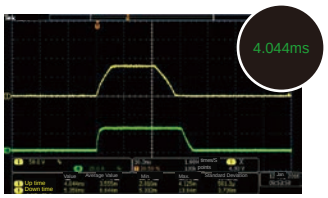


Standalone set IT6522C
80V,120A, 3000W
Voltage ratings: 10V
Current ratings: 120A
Load current: 100A

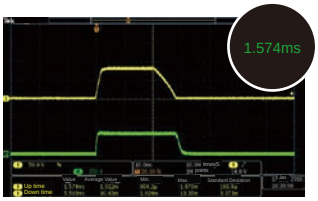


8 sets of IT6522C paralleling together
Voltage ratings: 10V
Current ratings: 960A
Load current: 800A

High voltage & low current test

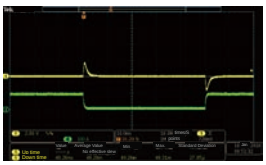


Standalone set unit IT6522C
80V, 120A, 3000W
Voltage ratings: 80V
Current ratings: 120A
Load current: 30A



8 sets of IT6522C paralleling together
Voltage ratings: 80V
Current ratings: 960A
Load current: 300A

Dynamic response test



Standalone set IT6522C
80V, 120A, 3000W
Voltage ratings: 10V
Current ratings: 120A
Load current:
Level A=10A
Level B=100A
F=10 Hz

8 sets of IT6522C paralleling together
Voltage ratings: 10V
Current ratings: 960A
Load current:
Level A=100A
Level B=800A
F=10Hz

* Figure: Voltage-Yellow, Current-Green

From the tests, we conclude:
1. Voltage rise time: 8 units of IT6522C paralleling together, the voltage rise time is faster than single unit operation.
2. Fall time: parallel units remain the same as single unit.
3. Dynamic response waveforms: parallel units remain the same as single unit

Multiple built-in interfaces

In conventional high power test instrument, extra interfaces add cost. In the IT6500 series all the implemented interfaces are built-in standard. Simplifying the configuration process and adding flexibility to change interface used without adding additional cost.

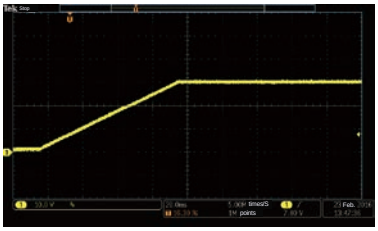
Cost saving	IT6500C	IT6500D	IT6512 IT6513	IT6502D IT6512A IT6513A
Analog control interfaces	√	√	√	√
USB	√	√	√	√
RS232	√	√	√	√
RS485	-	-	√	√
GPIB	√	√	√	√
LAN	√	√	-	-
CAN	√	√	-	-

IT6500 Wide-range High-power DC Power Supply

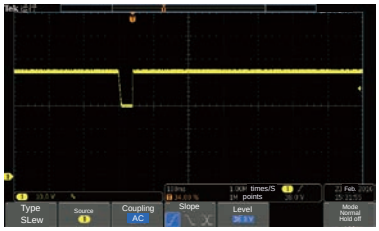
Simple programming on the front panel (List)

In list mode, the IT6500 series can store, recall and run the preset customized program sequences via front panel programming. Users can edit the voltage/current value & the time of each step in advance and provide the power supply with a trigger signal. Then the preset sequences/waveform will be executed automatically according to the defined LIST. That's especially suitable for the applications such as DC/DC converters, inverters voltage drop test, engine start-up simulation, battery charging/discharging tests, product life cycle tests and aircraft test etc.

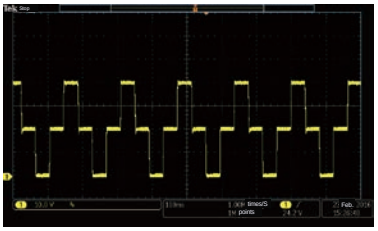
Waveforms programmed with IT6500 series by engineers



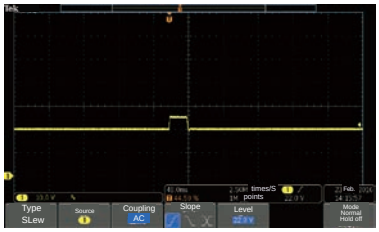
Soft Start Testing



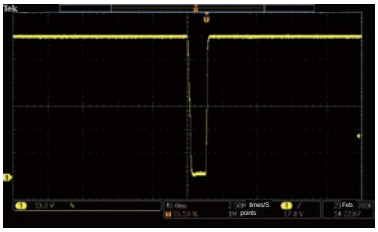
D/D Converter Sag Testing



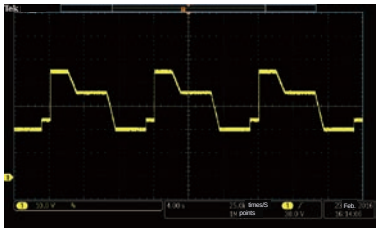
Voltage Step Waveform



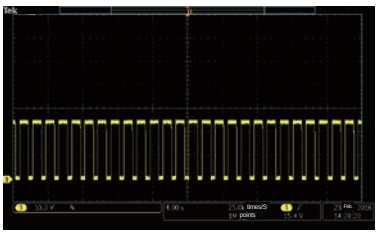
D/D Converter Surge Testing



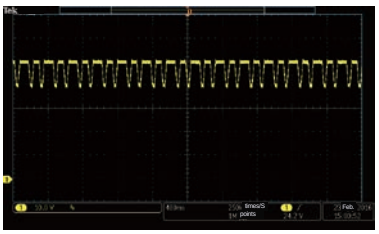
D/D Converter Cycle drop Testing



Life Cycle Testing



Pulse Charge of Battery



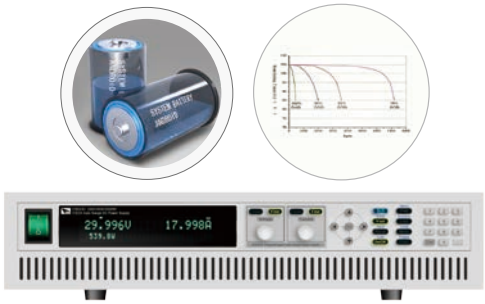
Line Regulation Testing

*Output test with no load

Functions for special applications

Programmable output impendence

In battery charging and discharging test, the changes of internal resistance should be taken into account. For enhancing test precision, IT6500C series power supply provides built-in internal resistance setting function which can simulate battery operation status in real-case.



Multiple actual working status simulation of batteries

Solar panel I-V curve simulation function

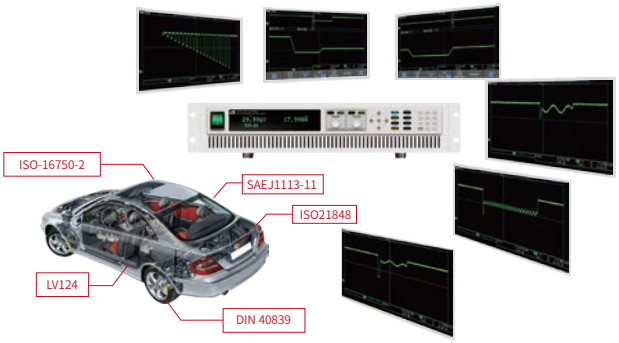
I-V curve output of the solar array can be influenced by climate factors such as light, temperature etc. The IT6500C series has built-in solar panel I-V curve simulation function, support maximum open-circuit current and maximum short-circuit current. 16 I-V curves in different conditions can be stored and recalled in IT6500 through setting the parameters, e.g. Voc, Isc, Vmp, Imp etc. It can be applied in MPPT (maximum power point tracking) performance tests for solar inverters, micro-inverters, and solar chargers. Controlled from a PC, the IT6500C can simulate even more detailed I-V curve. Up to 1024 points can be edited.

Optional SAS1000 software, only IT6500C equip with optional software

* Figure: Voltage-Yellow, Current-Green

Built-in DIN40839 & ISO-16750-2 test sequences

The automobile electronics devices must tolerate the dropouts or surges from power turn-on or turn-off transient. For these tests, it is necessary to simulate the worst-case power transient conditions. IT6500C series power supply provide built-in DIN40839, ISO-16750-2, SAEJ1113-11, LV124 and ISO21848 testing curves. Users can select any built-in curve to do the DUT performance test directly according to their demand. 12V, 24V and 48V are available for choice.



Full protections

Integrating protection measures into test instruments is critical and high cost especially in high power test. To provide fully protections for DUTs, IT6500 series integrate multiple fast protection measures.

These protection capabilities include:

- CC & CV Priority Function to avoid unwanted overshoot
- Power Supply mode: OVP,OCP,OPP
- Electronic Load mode: OCP,OPP,OTP (IT6500C)
- Turn-off protection
- Under voltage protection (UVP)

IT6500 full range of specifications and models list

800W	**IT6502D** 80V/60A/800W					
1200W	**IT6512/A** 80V/60A/1200W	**IT6513/A** 150V/30A/1200W				
1800W	**IT6512C/D** 80V/120A/1800W	**IT6513C/D** 200V/60A/1800W	**IT6514C/D** 360V/30A/1800W	**IT6515C/D** 500V/20A/1800W	**IT6516C/D** 750V/15A/1800W	**IT6517C/D** 1000V/10A/1800W
3kW	**IT6522C/D** 80V/120A/3kW	**IT6523C/D** 200V/60A/3kW	**IT6524C/D** 360V/30A/3kW	**IT6525C/D** 500V/20A/3kW	**IT6526C/D** 750V/15A/3kW	**IT6527C/D** 1000V/10A/3kW
6kW	**IT6532C/D** 80V/240A/6kW	**IT6533C/D** 200V/120A/6kW	**IT6534C/D** 360V/60A/6kW	**IT6535C/D** 500V/40A/6kW	**IT6536C/D** 750V/30A/6kW	**IT6537C/D** 1000V/20A/6kW
9kW	**IT6542C/D** 80V/360A/9kW	**IT6543C/D** 200V/180A/9kW	**IT6544C/D** 360V/90A/9kW	**IT6545C/D** 500V/60A/9kW	**IT6546C/D** 750V/45A/9kW	**IT6547C/D** 1000V/30A/9kW
12kW	**IT6552C/D** 80V/480A/12kW	**IT6553C/D** 200V/240A/12kW	**IT6554C/D** 360V/120A/12kW	**IT6555C/D** 500V/80A/12kW	**IT6556C/D** 750V/60A/12kW	**IT6557C/D** 1000V/40A/12kW
15kW	**IT6562C/D** 80V/600A/15kW	**IT6563C/D** 200V/300A/15kW	**IT6564C/D** 360V/150A/15kW	**IT6565C/D** 500V/100A/15kW	**IT6566C/D** 750V/75A/15kW	**IT6567C/D** 1000V/50A/15kW
21kW	**IT6572C/D** 80V/840A/21kW	**IT6573C/D** 200V/420A/21kW	**IT6574C/D** 360V/210A/21kW	**IT6575C/D** 500V/140A/21kW	**IT6576C/D** 750V/105A/21kW	**IT6577C/D** 1000V/70A/21kW
24kW	**IT6582C/D** 80V/960A/24kW	**IT6583C/D** 200V/480A/24kW	**IT6584C/D** 360V/240A/24kW	**IT6585C/D** 500V/160A/24kW	**IT6586C/D** 750V/120A/24kW	**IT6587C/D** 1000V/80A/24kW
30kW	**IT6592C/D** 80V/1200A/30kW	**IT6593C/D** 200V/600A/30kW	**IT6594C/D** 360V300A/30kW	**IT6595C/D** 500V/200A/30kW	**IT6596C/D** 750V/150A/30kW	**IT6597C/D** 1000V/100A/30kW

*For more power, please contact ITECH

IT6500 Specifications

		IT6522C	IT6522D	IT6523C	IT6523D	IT6524C	IT6524D
Rated output	Voltage	0～80V	0～80V	0～200V	0～200V	0～360V	0～360V
(0~40°C)	Current	0～120A	0～120A	0～60A	0～60A	0～30A	0～30A
	Power	0～3000W	0～3000W	0～3000W	0～3000W	0～3000W	0～3000W
Programmableoutput impedance	Range	0～2.1333Ω	-	0～13Ω	-	0～43.2Ω	-
Power regulation	Voltage	≤0.01%+10mV	≤0.01%+10mV	≤0.01%+20mV	≤0.01%+20mV	≤0.01%+40mV	≤0.01%+40mV
± (%of Output+Offset)	Current	≤0.01%+60mA	≤0.01%+60mA	≤0.1%+30mA	≤0.1%+30mA	≤0.01%+15mA	≤0.01%+15mA
Load regulation	Voltage	≤0.01%+30mV	≤0.01%+30mV	≤0.01%+50mV	≤0.01%+50mV	≤0.01%+135mV	≤0.01%+135mV
± (%of Output+Offset)	Current	≤0.05%+120mA	≤0.05%+120mA	≤0.05%+60mA	≤0.05%+60mA	≤0.05%+30mA	≤0.05%+30mA
Setpoint resolution	Voltage	10mV	10mV	10mV	10mV	10mV	10mV
	Current	10mA	10mA	10mA	10mA	10mA	10mA
Readback the value resolution	Voltage	10mV	10mV	10mV	10mV	10mV	10mV
	Current	10mA	10mA	10mA	10mA	10mA	10mA
Setpoint accuracy *1 (Within 12 months)(25°C±5°C) ±(%of output+offset)	Voltage	≤0.05%+30mV	≤0.05%+30mV	≤0.05%+100mV	≤0.05%+100mV	≤0.05%+135mV	≤0.05%+135mV
	Current	≤0.2%+120mA	≤0.2%+120mA	≤0.2%+60mA	≤0.2%+60mA	≤0.2%+30mA	≤0.2%+30mA
Readback the accuracy of the value *2 (Within 12 months)(25°C±5°C) ±(%of output+offset)	Voltage	≤0.05%+30mV	≤0.05%+30mV	≤0.05%+100mV	≤0.05%+100mV	≤0.05%+135mV	≤0.05%+135mV
	Current	≤0.2%+120mA	≤0.2%+120mA	≤0.2%+60mA	≤0.2%+60mA	≤0.2%+30mA	≤0.2%+30mA
Ripple	Voltage	≤80mVp-p	≤80mVp-p	≤200mVp-p	≤200mVp-p	≤360mVp-p	≤360mVp-p
(20Hz~20MHz)	Current	≤0.05%+60mArms	≤0.05%+60mArms	≤50mArms	≤50mArms	≤0.05%+30mArms	≤0.05%+30mArms
Rising time (no load) *3	Voltage	≤10ms	≤30ms	≤15ms	≤100ms	≤50ms	≤250ms
Falling time (full load) *3	Voltage	≤10ms	≤20ms	≤15ms	≤20ms	≤55ms	≤70ms
Parallel number of power dissipater		≤3台	-	≤3台	-	≤3台	-
Size (mm)		483mmW×105.4mmH×640.8mmD					
Weight		17Kg					

		IT6525C	IT6525D	IT6526C	IT6526D	IT6527C	IT6527D
Rated output	Voltage	0～500V	0～500V	0～750V	0～750V	0～1000V	0～1000V
(0~40°C)	Current	0～20A	0～20A	0～15A	0～15A	0～10A	0～10A
	Power	0～3000W	0～3000W	0～3000W	0～3000W	0～3000W	0～3000W
Programmableoutput impedance	Range	0～83.333Ω	-	0～188Ω	-	0～333.33Ω	-
Power regulation	Voltage	≤0.01%+50mV	≤0.01%+50mV	≤0.01%+75mV	≤0.01%+75mV	≤0.01%+100mV	≤0.01%+100mV
± (%of Output+Offset)	Current	≤0.01%+10mA	≤0.01%+10mA	≤0.1%+7.5mA	≤0.1%+7.5mA	≤0.01%+5mA	≤0.01%+5mA
Load regulation	Voltage	≤0.01%+100mV	≤0.01%+100mV	≤0.01%+200mV	≤0.01%+200mV	≤0.01%+375mV	≤0.01%+375mV
± (%of Output+Offset)	Current	≤0.05%+20mA	≤0.05%+20mA	≤0.05%+15mA	≤0.05%+15mA	≤0.05%+10mA	≤0.05%+10mA
Setpoint resolution	Voltage	100mV	100mV	100mV	100mV	100mV	100mV
	Current	10mA	10mA	1mA	1mA	1mA	1mA
Readback the value resolution	Voltage	100mV	100mV	100mV	100mV	100mV	100mV
	Current	10mA	10mA	1mA	1mA	1mA	1mA
Setpoint accuracy (Within 12 months)(25°C±5°C) ±(%of output+offset)	Voltage	≤0.05%+200mV	≤0.05%+200mV	≤0.05%+300mV	≤0.05%+300mV	≤0.05%+375mV	≤0.05%+375mV
	Current	≤0.2%+20mA	≤0.2%+20mA	≤0.2%+15mA	≤0.2%+15mA	≤0.2%+10mA	≤0.2%+10mA
Readback the accuracy of the value (Within 12 months)(25°C±5°C) ±(%of output+offset)	Voltage	≤0.05%+200mV	≤0.05%+200mV	≤0.05%+300mV	≤0.05%+300mV	≤0.05%+375mV	≤0.05%+375mV
	Current	≤0.2%+20mA	≤0.2%+20mA	≤0.2%+15mA	≤0.2%+15mA	≤0.2%+10mA	≤0.2%+10mA
Ripple	Voltage	≤500mVp-p	≤500mVp-p	≤750mVp-p	≤750mVp-p	≤1.5Vp-p	≤1Vp-p
(20Hz~20MHz)	Current	≤40mArms	≤40mArms	≤30mArms	≤30mArms	≤0.05%+10mArms	≤0.05%+10mArms
Rising time (no load)	Voltage	≤40ms	≤200ms	≤50ms	≤250ms	≤70ms	≤300ms
Falling time (full load)	Voltage	≤25ms	≤30ms	≤20ms	≤20ms	≤30ms	≤30ms
Parallel number of power dissipater		≤3台	-	≤3台	-	≤3台	≤3台
Size (mm)		483mmW×105.4mmH×640.8mmD					
Weight		17Kg					

*1 The setting value accuracy refers to adopting panel keys or communication instructions to achieve accuracy setting; when using external analog programming, the programming accuracy is 1%.
*2 The read-back value accuracy refers to adopting panel display or communication instruction to achieve read-back accuracy; when using external analog monitor, the monitoring precision is 1%。
*3 Rising and falling time refers to in the ON state, enable internal standard power dissipater, settling time for setting value from one value to another value.

*This information is subject to change without notice

IT6800A Single Channel Programmable DC Power Supply

IT6800 single channel programmable DC power supply (180W-216W) with resolution 1mV/0.1mA, users can adjust the voltage/current stepping by pressing the left and right keys to moving the cursor and programs by the front panel.OVP/OTP protection. IT6800 supports timer function and their built-in RS232 and USB communication interfaces offer you a convinience testing experience.

Applications

Laboratory testing, production testing, maintenance testing

Feature

- Support panel programming, numeric keypad operation
- High accuracy and resolution 1mV/0.1mA
- Outputs according to the programmed voltage and current values
- Adjust the voltage and current via knob
- Lower ripple and noise
- Remote sense
- Built-in RS232 / USB/ GPIB interface *1
- Intelligent fan control, save energy and reduce noise

*1Only IT6800B series is built-in GPIB

Model	Voltage	Current	Power	Interface
IT6831A	18V	10A	180W	USB/RS232
IT6832A	32V	6A	192W	USB/RS232
IT6832B	32V	6A	192W	USB/RS232/GPIB
IT6833A	72V	3A	216W	USB/RS232
IT6833B	72V	3A	216W	USB/RS232/GPIB
IT6835A	50V	4A	200W	USB/RS232
IT6835B	50V	4A	200W	USB/RS232/GPIB

*IT6800A single channel series is standard model, IT6800B single channel series is optional if you need GPIB interface.

Support panel programming function (List)

IT6800A/B Series single channel Programmable DC Power Supply generates a variety of output change sequences by sequentially operating each single step value and time. The parameters in the sequence include time units, single-step voltage, single-step current, single-step time, and the next step, looping steps, saving files, and so on. After the sequential operation is completed, when a trigger signal is received, the power is turned on until the sequence operation is completed or another trigger signal is received again.

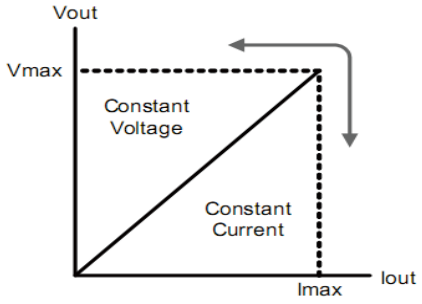
Input timer

IT6800A/B series supply Input timer function, users can start this function in the Menu and set the time, starting timer from the power output on, after arriving at the setting time, power will automatically turn off the output. Timing time setting range 0.1 ~ 9999.9S or 0.1 ~ 9999.9M

IT6800A Single Channel Programmable DC Power Supply

CV/ CC automatic conversion function

With this function, the power supply can be operated continuously from constant voltage mode to constant current mode switching as the load changes



Remote sense function

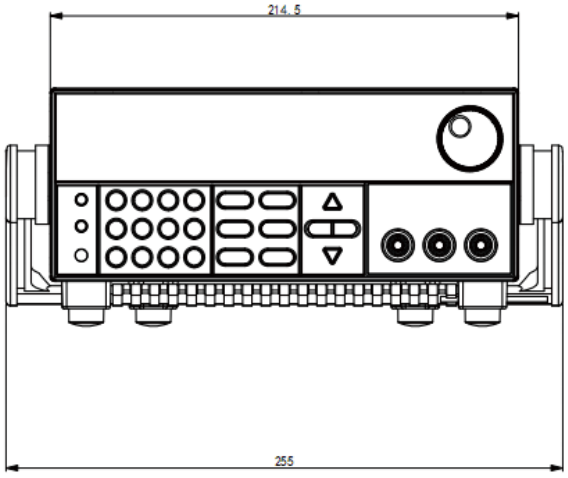
In order to avoid the Voltage drop caused by the length of the wire connecting the load, the remote test allows measurement directly on the terminal of the test object to improve the measurement accuracy. S +, S is the remote measurement terminal, +, - is the output positive and negative terminals. When using the remote measurement function, it is necessary to disconnect the wires connected to the "+, -" terminals and lead S +, S to the DUT.

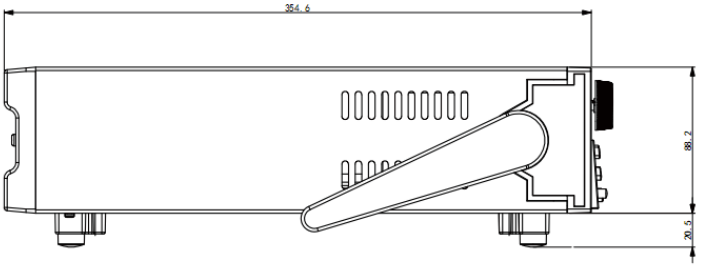
IT6800A/B Specifications

		IT6831A	IT6832A/B	IT6833A/B	IT6835A/B
Rated output (0°C-40 °C)	Voltage	0～18V	0～32V	0～72V	0～50V
	Current	0～10A	0～6A	0～3A	0～4A
	Power	180W	192W	216W	200W
Load regulation ±(%of Output+Offset)	Voltage	≤0.01%+6mV	≤0.01%+5mV	≤0.01%+4mV	≤0.01%+5mV
	Current	≤0.1%+5mA	≤0.01%+3mA	≤0.01%+2mA	≤0.1%+3mA
Line regulation ±(%of Output+Offset)	Voltage	≤0.02%+6mV	≤0.01%+5mV	≤0.01%+4mV	≤0.02%+5mV
	Current	≤0.1%+5mA	≤0.01%+3mA	≤0.01%+2mA	≤0.1%+3mA
Programming resolution	Voltage	1mV	1mV	1mV	1mV
	Current	0.1mA(＜10A)/1mA(≥10A)	0.1mA	0.1mA	0.1mA
Readback resolution	Voltage	1mV	1mV	1mV	1mV
	Current	0.1mA(＜10A)/1mA(≥10A)	0.1mA	0.1mA	0.1mA
Programming accuracy (Within 12 months, 25°C±5°C)±(%of Output+Offset)	Voltage	≤0.04%+8mV	≤0.04%+8mV	≤0.04%+8mV	≤0.04%+8mV
	Current	≤0.1%+12mA	≤0.1%+8mA	≤0.1%+5mA	≤0.1%+8mA
Readback accuracy (Within 12 months, 25°C±5°C)±(%of Output+Offset)	Voltage	≤0.04%+8mV	≤0.04%+8mV	≤0.04%+8mV	≤0.04%+8mV
	Current	≤0.1%+12mA	≤0.1%+8mA	≤0.1%+5mA	≤0.1%+8mA
Ripple(20HZ-20M)	Voltage	≤4mVp-p and 1.5mVrms	≤4mVp-p and 1mVrms	≤4mVp-p and 1mVrms	≤3mVp-p and 1mVrms
	Current	＜7mArms	＜6mArms	＜5mArms	≤6mArms
Transient response time (recovered to 75mV)		≤100us(Typical value)			
Size (mm)		214.5mmW*88.2mmH*354.6mmD			

*IT6800A single channel series is standard model, IT6800B single channel series is optional if you need GPIB interface.
* This information is subject to change without notice.

IT6800A/B Dimension figure





Unit: mm

IT6700H High Voltage Wide Range Programmable DC Power Supply

IT6700H series high-voltage DC power supplies is with maximum output power 3000W, voltage up to 1200V, IT6700H series have desktop and shelves installation function, easy to operate. IT6700H series provide list mode, built-in RS232 / USB / GPIB communication interface, rich SCPI instructions facilitate the formation of a variety of intelligent test platforms.

Applications

Battery fluctuation simulation test, battery charger, high voltage ultra-high speed diode, electrolytic capacitor, electromechanical control field and ATE test system

Model	Voltage	Current	Power	Size
IT6722	80V	20A	400W	1/2 2U
IT6722A	80V	20A	400W	1/2 2U
IT6723G	600V	5A	850W	1/2 2U
IT6723B	150V	20A	850W	1/2 2U
IT6723C	32V	110A	850W	1/2 2U
IT6723	80V	40A	850W	1/2 2U
IT6723H	300V	10A	850W	1/2 2U
IT6724B	150V	20A	1500W	1/2 2U
IT6724C	32V	100A	1500W	1/2 2U
IT6724H	300V	10A	1500W	1/2 2U
IT6724G	600V	5A	1500W	1/2 2U
IT6724	80V	40A	1500W	1/2 2U
IT6726B	160V	40A	3000W	2U
IT6726C	32V	220A	3000W	2U
IT6726H	300V	20A	3000W	2U
IT6726G	600V	10A	3000W	2U
IT6726V	1200V	5A	3000W	2U

Feature

- Voltage up to 1200V
- VFD display
- Various models for high voltage or high current are Optional
- Output switch ON/OFF control
- Safety terminal
- List mode, edit change waveforms of voltage and current
- Remote sense
- Built-in RS232/USB/GPIB *1

*1:IT6722A is without GPIB interface

Battery fluctuation simulation test

Battery charging needs high-precision voltage and stable current output to simulate the battery charge and discharge process. IT6700H series can accurately describes the battery charge and discharge process, which is applied in areas need high voltage and low flow direct current, such as battery fluctuation simulation tests, battery chargers, high voltage ultra-high speed diodes, electrolytic capacitors, electromechanical control, and ATE test systems, etc.

Small size big function, more flexible

IT6700H is with small size, up to 3000W power output volume is with only 1/2 2U, it can be placed in the standard cabinet, even for desktop, save much space.

Voltage up to 1200V, reasonable design make high voltage test more secure

IT6700H high voltage DC series highest voltage is up to 1200V. In the LED, battery, DC / DC converters and other industries, high voltage is the basic needs for the power supply. IT6700H high-voltage DC power supply series can not only be applied to above industry's testing, but also meet ultra-high voltage requirements of the special test. Engineers have been concerned about the safety of high voltage testing, ITECH is in such as the design of security terminals and other details to ensure the safety of the test.

Ultra wide range design

The maximum power is not the maximum voltage multiplied by the maximum current. Take one of the models as an example, IT6726H DC power supply maximum power is 3000W, the maximum voltage and current reached 300V and 20A, a model can replace 2 units or more general power supplies.

IT6700H Specifications

		IT6722A	IT6722	IT6723	IT6723B	IT6723C	IT6723G
Rated output (0～40 °C)	Voltage	0~80V	0~80V	0~80V	0~150V	0~32V	0~600V
	Current	0~20A	0~20A	0~40A	0~20A	0~110A	0~5A
	Power	400W	400W	850W	850W	850W	850W
Load regulation	Voltage	≤0.01%+5mV	≤0.01%+5mV	≤0.01%+10mV	≤0.01%+40mV	≤0.01%+5mV	≤0.01%+100mV
	Current	≤0.1%+5mA	≤0.1%+5mA	≤0.1%+10mA	≤0.1%+10mA	≤0.1%+10mA	≤0.1%+10mA
Line regulation	Voltage	≤0.01%+2.5mV	≤0.01%+2.5mV	≤0.01%+10mV	≤0.01%+30mV	≤0.01%+5mV	≤0.01%+50mV
	Current	≤0.1%+2.5mA	≤0.1%+2.5mA	≤0.1%+10mA	≤0.1%+10mA	≤0.1%+10mA	≤0.1%+10mA
Programming resolution	Voltage	10mV	10mV	10mV	100mV	10mV	100mV
	Current	10mA	10mA	10mA	10mA	10mA	10mA
Readback resolution	Voltage	10mV	10mV	10mV	100mV	10mV	100mV
	Current	10mA	10mA	10mA	10mA	10mA	10mA
Programming accuracy	Voltage	≤0.01%+10mV	≤0.01%+10mV	≤0.03%+20mV	≤0.03%+100mV	≤0.03%+10mV	≤0.03%+200mV
	Current	≤0.1%+10mA	≤0.1%+10mA	≤0.1%+40mA	≤0.1%+20mA	≤0.1%+60mA	≤0.1%+20mA
Readback accuracy	Voltage	≤0.01%+20mV	≤0.01%+20mV	≤0.03%+20mV	≤0.03%+200mV	≤0.03%+20mV	≤0.03%+200mV
	Current	≤0.1%+20mA	≤0.1%+20mA	≤0.1%+40mA	≤0.1%+20mA	≤0.1%+60mA	≤0.1%+20mA
Ripple	Voltage	≤50mVp-p	≤50mVp-p	≤100mVp-p	≤150mVp-p	≤100mVp-p	≤300mVp-p
	Current	≤15mArms	≤15mArms	≤50mArms	≤30mArms	≤150mArms	≤30mArms
Rise Time	No load	≤300ms	≤300ms	≤300ms	≤300ms	≤300ms	≤300ms
	Full load	≤1s	≤1s	≤500ms	≤1s	≤500ms	≤1s
Fall time	No load	≤500ms	≤500ms	≤5s	≤5s	≤5s	≤5s
	Full load	≤300ms	≤300ms	≤150ms	≤200ms	≤150ms	≤200ms
Size (mm)		214.5W×88.2H×354.6D	214.5W×88.2H×354.6D	214.5W×88.2H×445D	214.5W×88.2H×445D	214.5W×88.2H×445D	214.5W×88.2H×445D
Weight		2.5KG	2.5KG	6Kg	6Kg	6Kg	6Kg

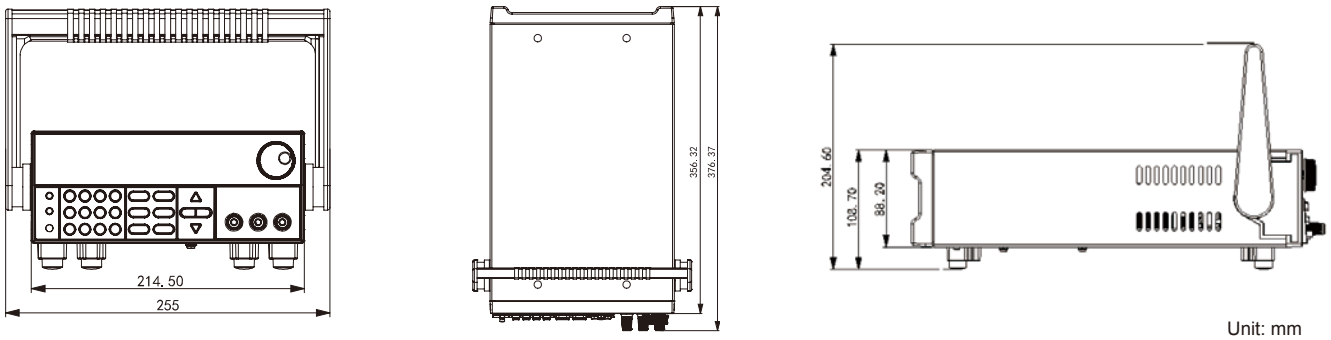
		IT6723H	IT6724	IT6724B	IT6724C	IT6724G	IT6724H
Rated output (0～40 °C)	Voltage	0~300V	0~80V	0~150V	0~32V	0~600V	0~300V
	Current	0~10A	0~40A	0~20A	0~110A	0~5A	0~10A
	Power	850W	1500W	1500W	1500W	1500W	1500W
Load regulation	Voltage	≤0.01%+100mV	≤0.01%+10mV	≤0.01%+40mV	≤0.01%+5mV	≤0.01%+100mV	≤0.01%+100mV
	Current	≤0.1%+10mA	≤0.1%+10mA	≤0.1%+10mA	≤0.1%+10mA	≤0.1%+10mA	≤0.1%+10mA
Line regulation	Voltage	≤0.01%+50mV	≤0.01%+10mV	≤0.01%+30mV	≤0.01%+5mV	≤0.01%+50mV	≤0.01%+50mV
	Current	≤0.1%+10mA	≤0.1%+10mA	≤0.1%+10mA	≤0.1%+50mA	≤0.1%+10mA	≤0.1%+10mA
Programming resolution	Voltage	100mV	10mV	100mV	10mV	100mV	100mV
	Current	10mA	10mA	10mA	10mA	10mA	10mA
Readback resolution	Voltage	100mV	10mV	100mV	10mV	100mV	100mV
	Current	10mA	10mA	10mA	10mA	10mA	10mA
Programming accuracy	Voltage	≤0.03%+200mV	≤0.03%+20mV	≤0.03%+100mV	≤0.03%+10mV	≤0.03%+200mV	≤0.03%+200mV
	Current	≤0.1%+20mA	≤0.1%+40mA	≤0.1%+20mA	≤0.1%+60mA	≤0.1%+20mA	≤0.1%+20mA
Readback accuracy	Voltage	≤0.03%+200mV	≤0.03%+20mV	≤0.03%+200mV	≤0.03%+20mV	≤0.03%+200mV	≤0.03%+200mV
	Current	≤0.1%+20mA	≤0.1%+40mA	≤0.1%+20mA	≤0.1%+60mA	≤0.1%+20mA	≤0.1%+20mA
Ripple	Voltage	≤250mVp-p	≤100mVp-p	≤150mVp-p	≤100mVp-p	≤300mVp-p	≤250mVp-p
	Current	≤40mArms	≤50mArms	≤30mArms	≤150mArms	≤30mArms	≤40mArms
Rise Time	No load	≤300ms	≤300ms	≤300ms	≤300ms	≤300ms	≤300ms
	Full load	≤1s	≤500ms	≤1s	≤500ms	≤1s	≤1s
Fall time	No load	≤5s	≤5s	≤5s	≤5s	≤5s	≤5s
	Full load	≤150ms	≤150ms	≤200ms	≤150ms	≤200ms	≤150ms
Size (mm)		214.5W×88.2H×445D	214.5W×88.2H×445D	214.5W×88.2H×445D	214.5W×88.2H×445D	214.5W×88.2H×445D	214.5W×88.2H×445D
Weight		6Kg	6Kg	6Kg	6Kg	6Kg	6Kg

*This information is subject to change without notice

		IT6726B	IT6726G	IT6726H	IT6726V	IT6726C
Rated output (0～40 °C)	Voltage	160V	0~600V	0~300V	0~1200V	0~32V
	Current	40A	0~10A	0~20A	0~5A	0~220A
	Power	3000W	3000W	3000W	3000W	3000W
Load regulation	Voltage	≤0.01%+50mV	≤0.01%+100mV	≤0.01%+100mV	≤0.01%+200mV	≤0.01%+50mV
	Current	≤0.1%+10mA	≤0.1%+10mA	≤0.1%+10mA	≤0.1%+20mA	≤0.1%+30mA
Line regulation	Voltage	≤0.01%+40mV	≤0.01%+50mV	≤0.01%+50mV	≤0.01%+100mV	≤0.01%+50mV
	Current	≤0.1%+10mA	≤0.1%+10mA	≤0.1%+10mA	≤0.1%+20mA	≤0.1%+10mA
Programming resolution	Voltage	100mV	100mV	100mV	100mV	10mV
	Current	10mA	10mA	10mA	10mA	10mA
Readback resolution	Voltage	100mV	100mV	100mV	100mV	10mV
	Current	10mA	10mA	10mA	10mA	10mA
Programming accuracy	Voltage	≤0.03%+200mV	≤0.03%+200mV	≤0.03%+200mV	≤0.04%+400mV	≤0.03%+30mV
	Current	≤0.1%+40mA	≤0.1%+20mA	≤0.1%+30mA	≤0.1%+20mA	≤0.2%+100mA
Readback accuracy	Voltage	≤0.03%+200mV	≤0.03%+200mV	≤0.03%+200mV	≤0.04%+400mV	≤0.03%+30mV
	Current	≤0.1%+40mA	≤0.1%+20mA	≤0.1%+30mA	≤0.1%+20mA	≤0.2%+100mA
Ripple	Voltage	≤250mVp-p	≤200mVp-p	≤300mVp-p	≤600mVp-p	≤200mVp-p
	Current	≤50mArms	≤50mArms	≤50mArms	≤50mArms	≤320mArms
Rise Time	No load	≤500mS	≤500mS	≤500mS	≤500mS	≤500mS
	Full load	≤2S	≤2S	≤2S	≤2S	≤2S
Fall time	No load	≤10S	≤10S	≤10S	≤10S	≤10S
	Full load	≤400mS	≤400mS	≤400mS	≤400mS	≤400mS
Size (mm)		482.5W×88.2H×548.9D				
Weight		16Kg	16Kg	16Kg	16Kg	16Kg

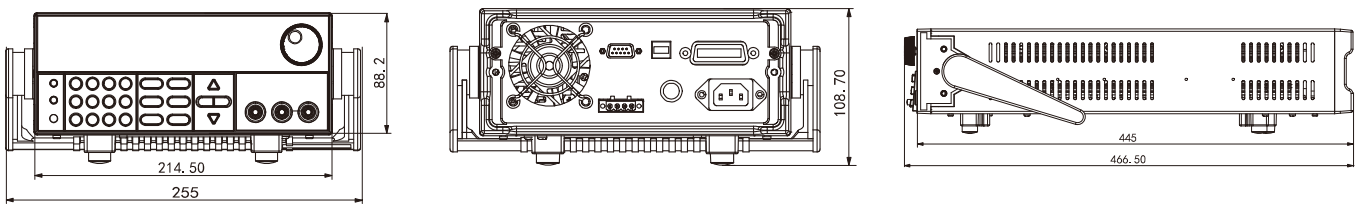
*This information is subject to change without notice

IT6722/IT6722ADimension figure



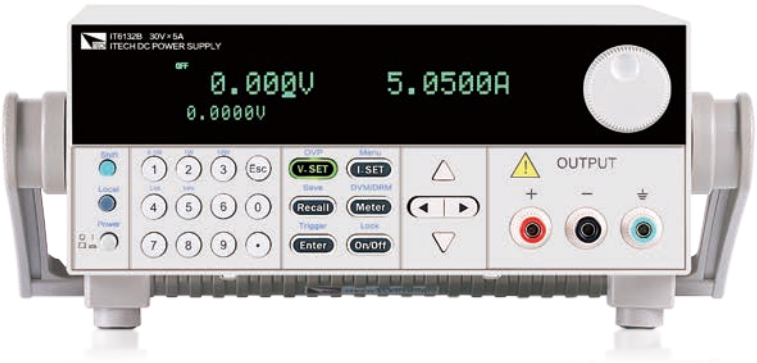
Unit: mm

IT6723H/IT6724H/T6723GDimension figure



Unit: mm

IT6100B High Accuracy Programmable DC Power Supply



IT6100B series (86 ~ 1200W) high speed high precision programmable DC power supply is with ultra-high voltage rising time, resolution up to 0.1mV / 0.01mA, the latest output waveform priority mode allows rising waveform of voltage or current is with high-speed and no overshoot, which is widely used in aerospace power modules and other high-precision test occasions. IT6100B has built-in USB / RS232 / GPIB communication interface and the panel supports List programming, which can provide multi-purpose solution according to customer design and testing demands, easy to use.

Applications

Aerospace power module testing, circuit board testing, medical equipment testing, electronic rectifier testing, etc.

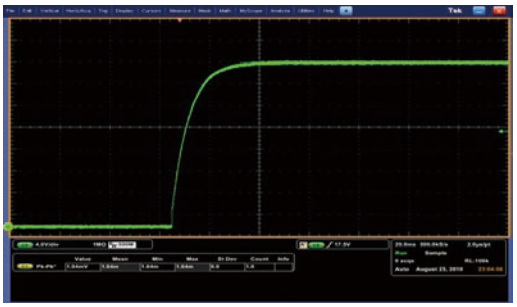
Feature

- Output linear adjustment, high speed, reliable, low noise
- High accuracy and resolution
- High voltage rising edge
- Built-in 5½ digital voltmeter and Ohmmeter
- Memory capacity: 100 groups
- List mode
- Timer function (0.01~60000S)
- Remote sense interface to compensate line voltage
- Built-in RS232/USB/GPIB interface and support SCPI protocol

Model	Voltage	Current	Power	Size
IT6121B	20V	5A	100W	1/2 2U
IT6122B	32V	3A	96W	1/2 2U
IT6123B	72V	1.2A	86W	1/2 2U
IT6132B	30V	5A	150W	1/2 2U
IT6133B	60V	2.5A	150W	1/2 2U
IT6162B	20V	50A	1000W	2U
IT6164B	30V/60V	40A/20A	1200W	2U

High voltage rise speed

Comparing with general high speed power supplies, IT6100B series power supplies reduce their ripple and noise to the lowest level. Their high voltage rise speed suits for all high speed and precise testing occasions.



Digital voltage milliohmeter

IT6100B series has built-in precision digital voltage ohmmeter
Digital ohmmeter: Provide four-wire method to measure resistance, measurement range: 0 ~ 1KΩ
Digital voltmeter: A 5½ voltmeter is provided to measure the external voltage, measurement range: 0 ~ 40V

IT6100B Specifications

		IT6121B	IT6122B	IT6123B	IT6132B	IT6133B
DC output range	Voltage	0~20V	0~32V	0~72V	0~30V	0~60V
	Current	0~5A	0~3A	0~1.2A	0~5A	0~2.5A
	Power	100W	96W	86.4W	150W	150W
Line regulation	Voltage	<0.01%+1mV	<0.01%+1mV	<0.01%+1mV	<0.01%+1mV	<0.01%+2mV
	Current	<0.05%+1mA	<0.05%+1mA	<0.05%+1mA	<0.05%+1mA	<0.05%+0.05mA
Load regulation	Voltage	<0.01%+2mV	<0.01%+2mV	<0.01%+2mV	<0.01%+2mV	<0.01%+2mV
	Current	<0.05%+0.1mA	<0.05%+0.1mA	<0.05%+0.1mA	<0.05%+1.5mA	<0.05%+0.5mA
Ripple and noise (20HZ-7MHZ)	Voltage	<1mv Vrms/<3mv Vpp	<1mv Vrms/<3mv Vpp	<1mv Vrms/<4mv Vpp	<1mv Vrms/<4mv Vpp	<1mv Vrms/<5mv Vpp
	Current	<3mA rms	<3mA rms	<3mA rms	<4mA rms	<3mA rms
Programming resolution	Voltage	1mV	1mV	1mV	1mV	1mV
	Current	0.1mA	0.1mA	0.1mA	0.1mA	0.1mA
Programming accuracy	Voltage	±0.03%+3mV	±0.03%+3mV	±0.03%+6mV	±0.03%+3mV	±0.03%+6mV
	Current	±0.05%+2mA	±0.05%+2mA	±0.05%+1mA	±0.05%+2.5mA	±0.05%+1.5mA
Display value resolution	Voltage	0.1mV	0.1mV	0.1mV	0.1mV	0.1mV
	Current	0.01mA	0.01mA	0.01mA	0.01mA	0.01mA
Read back accuracy	Voltage	±0.02%+3mV	±0.02%+3mV	±0.02%+5mV	±0.02%+3mV	±0.02%+5mV
	Current	±0.05%+2mA	±0.05%+2mA	±0.05%+1mA	±0.05%+2.5mA	±0.05%+1.5mA
Transient response (typical)						
Load changes		<200us	<200us	<200us	<200us	<200us
50% -100% Load back to less than 75mV						
Set the change voltage to rise		<20ms	<20ms	<20ms	<20ms	<20ms
Set the voltage from 0% to 100%, voltage change from 10% to 90% of the time						
Set the change voltage to drop		<200ms	<150ms	<150ms	<250ms	<200ms
Set the voltage from 0% to 100%, voltage change from 10% to 90% of the time						
Overvoltage protection	Range (typical)	1~19V	1~31V	1~71V	1~29V	1~59V
	Accuracy (typical)	± (setting value * 0.5% + 0.5V)				
	Response time (typical)	<10ms				
DVM(DC)						
Display value accuracy		±0.02%+10mV				
Display resolution		0.1mV when less than 10V; 1mV when more than 10V				
Enter the differential mode voltage range		0~40Vpk				
Enter the common mode voltage range		0~30Vpk				
Common mode rejection ratio		<0.1%				
Weight		7Kg				

		IT6162B	IT6164B	
DC output range	Voltage	0~20V	0~30V	0~60V
	Current	0~50A	0~40A	0~20A
	Power	1000W	1200W	
Line regulation	Voltage	≤0.02%+2mV	≤0.02%+2mV	
	Current	≤0.1%+2mA	≤0.1%+2mA	
Load regulation	Voltage	≤0.01%+10mV	≤0.01%+10mV	
	Current	≤0.1%+10mA	≤0.1%+10mA	
Ripple and noise (20HZ-207MHZ)	Voltage	≤ 4mVp-p / 1.2 mV rms	≤ 5mVp-p / 1.2 mV rms	
	Current	≤15mArms	≤15mArms	
Programming resolution	Voltage	1mV	1mV	
	Current	1mA	1mA	
Programming accuracy (Within 12 months、25°C±5°C) (%of Output+Offset)	Voltage	≤0.02%+2mV	≤0.02%+6mV	
	Current	≤0.1%+25mA	≤0.1%+15mA	
Display value resolution	Voltage	1mV	1mV	
	Current	1mA	1mA	
Read back accuracy (Within 12 months、25°C±5°C) (%of Output+Offset)	Voltage	≤0.02%+2mV	≤0.02%+6mV	
	Current	≤0.05%+15mA	≤0.05%+15mA	
Rise time (no load)		≤1ms	≤1ms *1	≤2ms *1
Rise time (full load)		≤1ms	≤1ms *1	≤2ms *1
Fall time (no load)		≤50ms	≤50ms *1	≤120ms *1
Fall time (full load)		≤1ms	≤1ms *1	≤2ms *1
Dynamic response time		≤200us	≤200us *2	
Protective function		OVP/OCP/OTP		
Communication Interface		GPIB/USB/RS232		
Size (mm)		429mmW*88.2mmH*354.6mmD	483mmW*85.4mmH*664.12mmD	
Weight		30Kg		

*1 Output waveform changes 10% -90% of the time
*2 Load changes 50-100%, the time from output voltage recovers to set value of 75mV
*This information is subject to change without notice

IT6100 High Performance Programmable DC Power Supply

Applications

Aerospace power module testing, circuit board testing, medical equipment testing, electronic rectifier testing, etc.

Feature

- Linear programmable power
- High-light VFD screen
- Lower ripple and lower noise
- Built-in 5 1/2 digital voltmeter
- Support SCPI communication protocol
- Optional GPIB/USB/RS232 interfaces
- Higher accuracy and higher resolution
- Free PV6100 monitoring software
- List mode operation ， ensuren quick switch of output voltage and current
- Installation suitable for 19" standard rack

Model	Voltage	Current	Power	Size
IT6151	5.2V	60A	312W	2U
IT6152	20V	27A	540W	2U
IT6153	30V	18A	540W	2U
IT6154	60V	9A	540W	2U

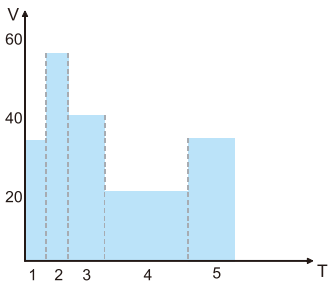
IT6100 series is with 0.1mV/0.1mA high resolution and high accuracy, can ensure your accurate measurements requirements. Its voltage rise speed up to 20ms, with high-speed List mode output, it can independently edit and perform the default voltage waveform to meet the high-speed test needs. IT6100 series has built-in 5 1/2 digital voltmeter and milliohm meter, which can measure additional signals. IT6100 series supports SCPI communication protocol, optional interfaces are GPIB/USB/RS232 for customers.

IT6100 series power supply is designed to meet the test requirements that general supplies can not achieve. High-speed and high-precision features make production line' capacity greatly improved, different from the conventional high speed power supply, IT6100 ensures low ripple and noise while meeting the high speed requirements.

Compared to the conventional power supply, IT6100 provides a lot of advanced and useful functions, including List mode output, built-in 5 digits voltage meter, ohmmeter and other functions.

Built-in precision voltage Ohm table 0.1mV / 0.1mA, users can measure output voltage and current values easily and accurately without complicated settings.

Using the standard SCPI communication protocol, engineers can use GPIB,USB or RS232 to do programming control. With 19 inches standard size, making IT6100 series power supply the most convenient DC power supply for laboratory and production line test.



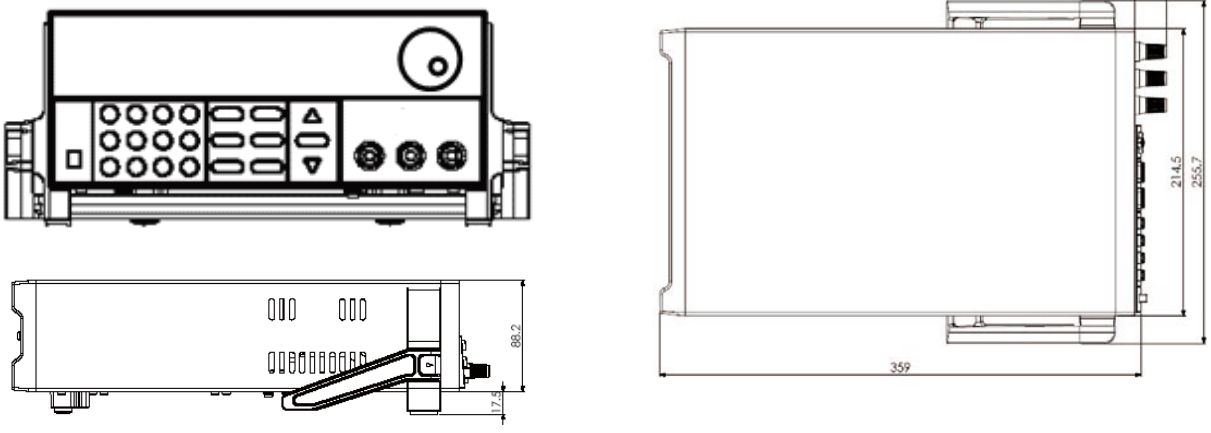
List programmable voltage waveform

IT6100 Specifications

		IT6151	IT6152	IT6153	IT6154
Rated output (0～40 ℃)	Voltage	0~5.2V	0~20V	0~30V	0~60V
	Current	0~60A	0~27A	0~18A	0~9A
	Power	312W	540W	540W	540W
Load regulation ±(%ooutput+offset)	Voltage	<0.05%+30mV	<0.05%+20mV		<0.01%+10mV
	Current	<0.1%+10mA	<0.1%+5mA		<0.1%+2mA
Power regulation ±(%ofoutput+offset)	Voltage	<0.02%+1mV	<0.02%+1mV		<0.02%+2mV
	Current	<0.1%+1mA	<0.01%+1mA		<0.01%+0.1mA
Setpoint resolution	Voltage	0.1mV	0.5mV		0.5mV
	Current	1mA	1mA		1mA
Read back the value resolution	Voltage	0.1mV	0.1mV		0.5mV
	Current	1mA	0.1mA		1mA
Setpoint accuracy (Within 12 months)(25℃±5℃) ±(%of output+offset)	Voltage	0.02%+2mV	<0.02%+6mV		≤0.02%+12mV
	Current	<0.1%+30mA	<0.1%+15mA		<0.05%+10mA
Read back the accuracy of the value ±(%of output+offset)	Voltage	0.02%+1.5mV	0.02%+3mV		0.02%+6mV
	Current	<0.05%+15mA	<0.05%+10mA		<0.05%+5mA
Ripple (20Hz~20MHz)	Voltage	4mVp-p	4mVp-p		5mVp-p
	Current	15mArms	5mArms		3mArms
Temperature Coefficient (0℃~40℃) ±(%of output+offset)	Voltage	0.02%+2mV	0.02%+5mV		0.02%+10mV
	Current	<0.1%+30mA	<0.1%+15mA		<0.05%+5mA
Read back the temperature coefficient of value	Voltage	0.02%+2mV	0.02%+5mV		0.02%+10mV
	Current	<0.1%+20mA	≤0.05%+10mA		≤0.05%+5mA
Response time	Set the voltage to rise	<20ms	<20ms		<20ms
	Set the voltage drop	<800ms	<500ms		<500ms
	Current dynamic load	<200us	<200us		<200us
Size (mm)	429mmW×88.2mmH×354.6mmD				

*This information is subject to change without notice

IT6100 Dimension figure



Unit: mm

IT6300 High Performance Triple Channels DC Power Supply

Applications

School/educational laboratories, production lines test, maintenance testing

IT6300 series is high-performance programmable triple channels DC power supply, each output voltage and current can be set from 0 to maximum rated output. This series supports series connection, parallel connection and synchronous functions of channel, which offer multi-purpose solutions for customers test. IT6300 series is with high resolution 1mV / 1mA and remote sense function, which make the test more accurate. With built-in standard USB / RS232 / GPIB communication interface, IT6300 series greatly enhance the communication speed, and customers also can adjust the digital step value by using the cursor to facilitate the operation.

Feature

- Triple adjustable voltage output, isolated 3 channels
- Optional serial/ parallel/ track mode *1
- The voltage and current for each channel can be displayed at the same time
- Small size of 1/2 2U
- VFD display
- Panel function keys with backlight display
- Adjust the digital step value via cursor
- Output switch control
- High accuracy, high resolution and high stability
- Remote measurement function, compensation online pressure drop *2
- Comprehensive protection functions
- Intelligent fan control to reduce noise
- Built-in RS232/USB/GPIB communication interface for part of the models

*1: Table 1 for details *2: IT6300A/B

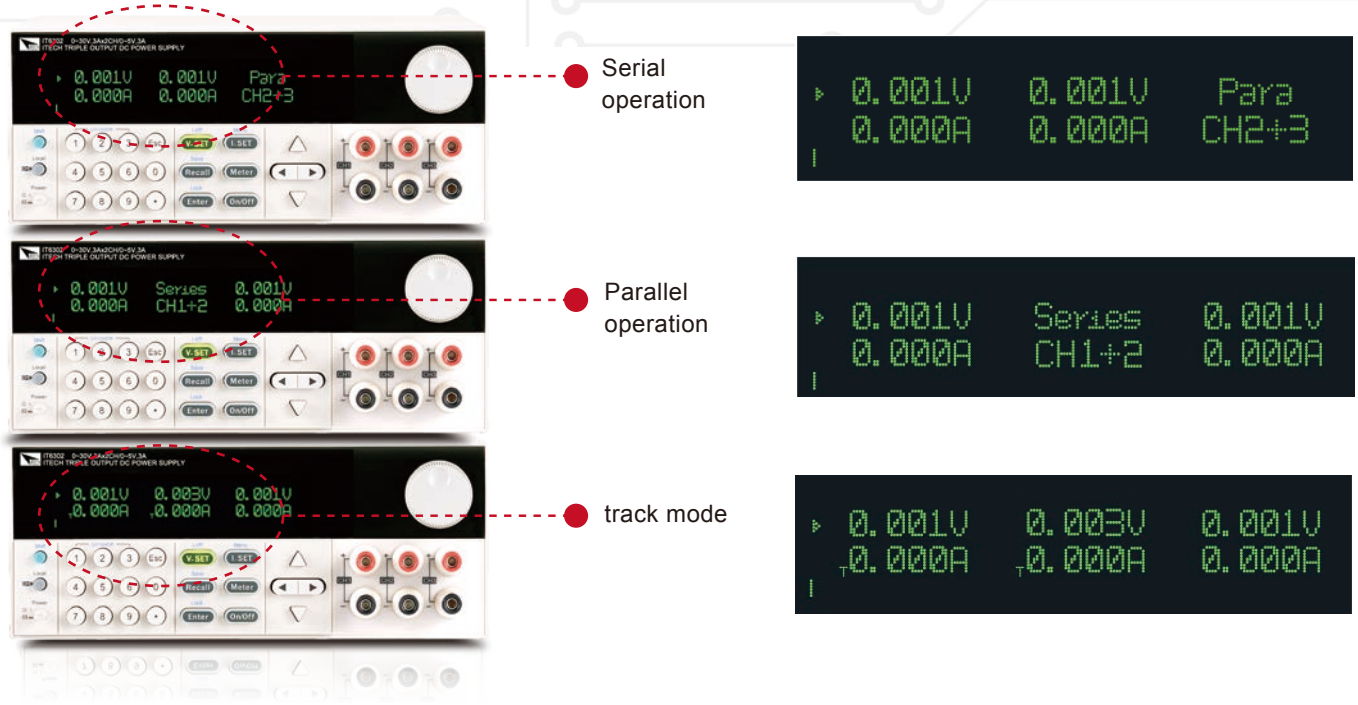
Track mode (Synchronous output)

CH1 and CH2, CH2 and CH3, or all three channels to be set as track mode, if any one channel parameter changed, the corresponding parameters of the other channels will also change in direct proportion. For example, set up voltage and current of CH1 and CH2 to be CH1: 4V, 1A; CH2:8V, 2A. Set CH1 and CH2 in track mode, in output off and Meter state, VFD is shown below:

* In the setting state, if the voltage of CH1 is set to 2V, the voltage of CH2 will be automatic synchronization to 4V (proportional)

	Specification	Interface	Protection	Channel Setting
IT6322B	30V/3A/90W*2CH 5V/3A/15W*1CH	USB/GPIB/RS232	OVP, OTP	Serial, parallel or synchronous use is optional
IT6332B	30V/6A/180W*2CH 5V/3A/15W*1CH	USB/GPIB/RS232	OVP, OTP	Serial, parallel or synchronous use is optional
IT6333B	60V/3A/180W*2CH 5V/3A/15W*1CH	USB/GPIB/RS232	OVP, OTP	Serial, parallel or synchronous use is optional
IT6322	30V/3A/90W*2CH 5V/3A/15W*1CH	Optional USB/GPIB/RS232	Limited voltage, limited current and OTP	Support serial or parallelconnection

*This information is subject to change without notice



IT6300 Specifications

		IT6322			IT6302			IT6322A /B			IT6332A /B			IT6333A /B		
		CH1	CH2	CH3	CH1	CH2	CH3	CH1	CH2	CH3	CH1	CH2	CH3	CH1	CH2	CH3
Rated output*1	Voltage	0~30V	0~30V	0~5V	0~30V	0~30V	0~5V	0~30V	0~30V	0~5V	0~30V	0~30V	0~5V	0-60V	0~60V	0~5V
	Current	0~3A	0~3A	0~3A	0~3A	0~3A	0~3A	0~3A	0~3A	0~3A	0~6A	0~6A	0~3A	0~3A	0~3A	0~3A
	Power	90W	90W	15W	90W	90W	15W	90W	90W	15W	180W	180W	15W	180W	180W	15W
Load regulation*2	Voltage	≤0.01%+3mV			≤0.01%+4mV			≤0.01%+3mV			≤0.01%+3mV			≤0.01%+3mV		
	Current	≤0.01%+3mA			≤0.2%+3mA			≤0.1%+3mA			≤0.01%+3mA			≤0.01%+3mA		
Power regulation*2	Voltage	≤0.01%+3mV			≤0.01%+4mV			≤0.01%+3mV			≤0.01%+3mV			≤0.01%+3mV		
	Current	≤0.01%+3mA			≤0.2%+3mA			≤0.1%+3mA			≤0.01%+3mA			≤0.01%+3mA		
Setting resolution	Voltage	1mV			10mV			1mV			1mV			1mV		
	Current	1mA			1mA			1mA			1mA			1mA		
Readback resolution	Voltage	1mV			10mV			1mV			1mV			1mV		
	Current	1mA			1mA			1mA			1mA			1mA		
Setpoint accuracy*3	Voltage	±0.03%+10mV			≤0.06%+20mV			≤0.03%+10mV			≤0.03%+10mV			≤0.03%+10mV		
	Current	±0.1%+5mA			≤0.2%+10mA			≤0.1%+5mA			≤0.1%+8mA		≤0.1%+5mA	≤0.1%+5mA		
Readback value accuracy*3	Voltage	±0.03%+10mV			≤0.06%+20mV			≤0.03%+10mV			≤0.03%+10mV			≤0.03%+10mV		
	Current	±0.1%+5mA			≤0.2%+10mA			≤0.1%+5mA			≤0.1%+8mA		≤0.1%+5mA	≤0.1%+5mA		
Ripple and noise	Voltage	≤1mVrms/3mVp-p			≤5mVp-p/1mVrms			≤1mVrms/3mVp-p			≤1mVrms/4mVp-p		≤1mVrms/3mVp-p	≤1mVrms/4mVp-p		≤1mVrms/3mVp-p
	Current	≤3mArms			≤6mArms			≤3mArms			≤5mArms		≤4mArms	≤4mArms		
Serial operation	Serial error	≤0.05%+10mA			≤0.2%+15mA											
Parallel operation	Voltage	≤0.02%+5mV			≤0.2%+30mV			≤0.02%+5mV			≤0.02%+5mV			≤0.02%+10mV		
Setpoint accuracy	Current	≤0.1%+20mA			≤0.2%+25mA			≤0.1%+20mA			≤0.1%+30mA			≤0.1%+30mA		
Size		214.5mm*88.2mm*354.6mm			214.5mm*88.2mm*354.6mm			214.5mm*88.2mm*354.6mm			214.5mm*88.2mm*453.1mm			214.5mm*88.2mm*453.1mm		
weight		7.7Kg			7.1Kg			7.7Kg			15Kg			15Kg		

*1:(0℃ - 40℃)　　*2:(%of output+offset)　　*3: (12-mouth validity) (25 °C ± 5 °C) (%of output+offset)

*This information is subject to change without notice

Other Test Equipment

Provide your comprehensive test solution

IT9100 Power Meter

P81~84

IT9121 power meter can be easily used for measuring the voltage, current, power, frequency, harmonics and other parameters. Whether you need basic power measurement, or more high-end frequency, harmonic and accumulation measurement and other functions, it can provide you with the most stable and reliable, comprehensive and accurate solutions. It is widely applied in test of motors, household appliances, UPS, etc.

IT5100 Battery Internal Resistance Tester

P85~87

IT5100 series battery internal resistance testers are high in precision, resolution and speed. IT5100 resolution is up to 0.1 μΩ and voltage resolution is 10 μV. IT5100 is with built-in GPIB/USB/LAN interfaces, support SCPI protocol, and can be widely used in various batteries' testing, such as lithium batteries of mobile phone and Unmanned Aerial Vehicles, power batteries, storage batteries and etc.

IT9100 Power Meter

Applications

Motors, household appliances, UPS ,etc.

Feature

- 4.3-inch color LCD (TFT)
- Input range: 1000 Vrms / 50 Arms
- Harmonic components
- The accuracy of voltage and current measurement is up to 0.1%
- The voltage, current, power, harmonics and other parameters can be measured at the same time
- The power meter has a function of harmonic measurement, and can be used for measuring up to 50 harmonics
- The power meter has rich and powerful accumulation functions, and can be used for measuring electric energy purchased or sold from/to the grid.
- The USB interfaces is available, the user can save data into external storage
- Standard built-in USB, GPIB, RS232 and Ethernet communication interfaces

Model	Voltage	Current	Power
IT9121	600V	20A	1/2 2U
IT9121C	600V	50A	1/2 2U
IT9121H	1000V	20A	1/2 2U

IT9100 power meter can provide a maximum input of 1000 Vrms and 50 Arms and measurement bandwidth of 100 KHz, and can be easily used for measuring the voltage, current, power, frequency, harmonics and other parameters. Whether you need basic power measurement, or more high-end frequency, harmonic and accumulation measurement and other functions, it can provide you with the most stable and reliable, comprehensive and accurate solutions. It is widely applied in test of motors, household appliances, UPS, etc.

Self-define Interface display style

IT9100 power meter provides a 4.3-inch color high-resolution TFT LCD for the user, and real-time values can be displayed with high brightness and remarkable colors even in a dark test environment. In addition, the IT9100 power meter provides multiple interface display styles (View1, View4 and View12). The user can customize the screen display parameter type and display sequence. The humanized design meets engineers' measurement demands in different tests.

Abundant measurement function

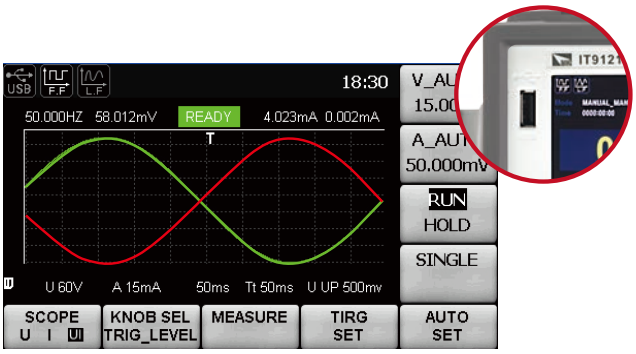
IT9100 power meter can measure all AC and DC parameters, including active power, reactive power, apparent power, power factor, voltage, current, frequency, phase difference, etc.. IT9100 provides integrated measurement and up to 50 times of the harmonic measurement function. It is widely used in electronic motors, home appliances PCB board, UPS power supply and other test areas.

Oscilloscope function

IT9100 power meter can display the waveform basing on sampling data. You can choose to display or hide the waveform of the input voltage and current. Oscilloscope function of IT9100 power meter allows users to directly observe the display fluctuations of voltage, current and power trends when testing household appliances performance, and can set the display trends, waveforms, values, histograms. Users can directly capture the waveform and record the value without external oscilloscope via external USB storage interface.

Integral measurement function

IT9100 Power Integration feature measures the sold / purchased power with the grid interconnections. IT9100 power meter provides current integration and active power integration (Wh). IT9100 automatically switches the range and performs the integral measurement accurately according to the size of the input level in the mode of buying electricity and selling electricity.



Harmonic Measurement

IT9100 power meter has a bandwidth of 100 kHz, which can realize high-speed harmonic measurement within a wider dynamic range. In the harmonic mode, the voltage, the current, the active power, reactive power and phase of each harmonic and the factor of total harmonic distortion (THD) can be tested.

Line and frequency filtering

IT9100 filters out useless frequency components in the signal, improves the waveform purity, thereby improving the accuracy of the test. Frequency filtering filters out the high frequency components of the interference, making the measured frequency parameters more accurate.

The waveform before turned on line filtering

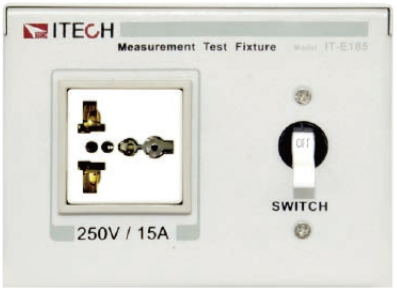
The waveform after turned on line filtering

Current sensor input

IT9100 power meter provides voltage 0~1000V, the current 0~50A measuring value range. For current measurements above 20A, voltage input type current clamp or current sensor are all usable. IT9100 allows users to choose 50mV-2V (EX1) or 2.5V-10V (EXT2) range

IT-E185 Power meter fixture

IT-E185 is an optional accessory , it can facilitate wiring test of IT9100 power meter for users.



Specification

General Specification	
Model	IT9121 & IT9121C & IT9121H
AC input voltage	100 VAC — 240 VAC 47-63 Hz
Warm-up time	Above 30 minutes
Operating environment	Temperature : 5℃— 40℃ Humidity : 30% RH— 75% RH（No condensation） Altitude : 2000 m or less 2000 m
Storage environment	Temperature : -20℃— 50℃ Humidity : 30% RH— 75% RH（No condensation） Altitude : 2000 m or less 2000 m
Installation	Indoors
Safety	IEC 61010-1, EN 61010-1, Measurement CAT Ⅱ
Maximum power consumption	50 VA

Screen Display	
	Detailed Information
Display type	Dimension：4.3-inch color TFT display Full screen pixel：480（horizontal）*272（vertical）points Waveform display pixel： 384（horizontal）*194（vertical）points Operating temperature： -20℃~ 70℃ Storage temperature： -30℃~ 80℃ Value display：matrix display

Input		
Item		Specifications
Input terminal type		voltage；plug-in terminal （safety terminal）
Input type		Current Direct input: large binding post External current sensor input DB9 connector
Input type		Voltage: Floating input through resistive voltage divider Current: Floating input through shunt
Voltage	Crest factor 3	IT9121：15V/30V/60V/150V/300V/600V IT9121C：15V/30V/60V/ 150V/300V/600V IT9121H：5V/ 30V/ 60V/150V/300V/600V/1000V(CF=1.5)
	Crest factor 6	IT9121：7.5V/15V/30V/75V/150V/300V IT9121C：7.5V/15V/30V/75V/150V/300V IT9121H：7.5V/15V/30V/75V/150V/300V/500V(CF=3
Direct Current input	Crest factor 3	IT9121：5mA/10mA /20mA /50mA /100mA / 200mA /0.5A/1A/2A/5A/10A/20A IT9121C：1A/2A/5A/10A/20A/50A IT9121H：5mA/10mA /20mA /50mA /100mA / 200mA /0.5A/1A/2A/5A/10A/20A
	Crest factor 6	T9121：2.5 mA /5mA/10mA/25mA/50mA/100mA/ 250mA/0.5A/1A/2.5A/5A/10A. IT9121C：1A/2A/5A/10A/20A/50A IT9121H：2.5 mA /5mA/10mA/25mA/50mA/100mA/ 250mA/0.5A/1A/2.5A/5A/10A.
External Current sensor input (/EX1)	Crest factor 3	IT9121：2.5V/5V/10 V IT9121C：5V/10 V IT9121H：2.5V/5V/10 V
	Crest factor 6	IT9121：1.25V/2.5V/5V IT9121C：2.5V/5V IT9121H：1.25V/2.5V/5V
External Current sensor input (/EX2)	Crest factor 3	IT9121：50mV/100mV/200mV/500mV/1V/2V IT9121C：100 mV /250 mV /500 mV /1V/2.5V IT9121H：50mV/100mV/200mV/500mV/1V/2V
	Crest factor 6	IT9121：25mV/50mV/100mV/250mV/500mV/1V IT9121C：50 mV /125 mV /250 mV /0.5V/1.25V IT9121H：25mV/50mV/100mV/250mV/500mV/1V

Input impedance	Voltage: Input resistance: Approx. 2 MΩ, input capacitace: Approx.13 pF (in parallel with the resistance) current: • Direct input range 5 mA ~ 200 mA: Input resistance: Appro x 505 mΩ Input inductance: Appro x 0.1 μH • Direct input range 0.5A ~ 20 A: Input resistance: Appro x 5 mΩ Input inductance: Appro x 0.1 μH • Sensor input: Input resistance:Appro x 100 kΩ（2.5 V ~ 10 V） Input resistance:Appro x 20 kΩ（50 mV ~ 2 V）
Input bandwidth	DC, 0.5 Hz ~ 100kHz
Line filter	select OFF, cut off frequency of 500 Hz
Frequency filter	select OFF, cut off frequency of 500 Hz
Range	range of each unit can be set separately
A/D converter	Simultaneous conversion voltage an current inputs Resolution: 18-bit Maximum conversion rate: 10 μs

Voltage and Current Accuracy	
Item	Specifications
Requirements	temperature：23 ± 5℃ humidity：30~75% RH Input waveform: Sine wave crest factor: 3, common-mode voltage: 0 V Number of displayed digits: 5 digits (6 digits when including the decimal point) Frequency filter : Turn on to measure voltage or current of 200 Hz or 30 minutes after warm-up time has passed After zero-level compensation or measurement range is changed
Accuracy	DC: ± (0.1% of reading + 0.2% of range) 10 Hz ≤ f ＜ 45 Hz：± (0.1 % of reading + 0.2 % of range) 45 Hz ≤ f ≤ 66 Hz：± (0.1 % of reading + 0.1 % of range) 66 Hz ＜ f ≤ 1kHz：± (0.1 % of reading + 0.2 % of range) 1 kHz ＜ f ≤ 10 kHz： ± (0.07 *f) % of reading + 0.3% of range) 10 kHz ＜ f ≤ 100 kHz： ± (0.5 % of reading + 0.5 % of range) ± [{0.04x(f-10)}% of reading

Active Power Accuracy	
Item	Specifications
Requirements	same as the conditions for voltage and current. Power factor:1
Accuracy	DC: (0.1 % of reading + 0.2 % of range) 10Hz ≤ f ＜ 45 Hz：± (0.3 % of reading + 0.2 % of range) 45 Hz ≤ f ≤ 66 Hz：± (0.1 % of reading + 0.1 % of range) 66 Hz ＜ f ≤ 1kHz：± (0.2 % of reading + 0.2 % of range) 1 kHz ＜ f ≤ 10 kHz： ± (0.1 % of reading + 0.3 % of range) ± [{0.067x(f-1)}% of reading] 10 kHz ＜ f ≤ 100 kHz： ± (0.5 % of reading + 0.5 % of range) ± [{0.09x(f-10)}% of reading]
Influence of power factor	when power factor (λ)=0 (S:apparent power) • ± 0.2 % of S for 45 Hz ≤ f ≤ 66 Hz • ± {(0.2 + 0.2 × f) % of S } for up to 100 kHz as reference data f is frequency of input signal in kHz when 0 < λ < 1 (Φ: phase angle of the Voltage and current) (power reading)×[(power reading error%)+(power range %)×(power range/indicated apparent power value)+{tanΦ×(influence when λ=o)%}]
When the line filter is turned ON	45 ~ 66 Hz: Add 0.3 % of reading < 45 Hz: Add 1 % of reading
Temperature coefficient	same as the temperature coefficient for voltage and current
Accuracy when the crest factor is set to 6	accuracy obtained by doubling the measurement range error for the accuracy when the crest factor is set to 3
Accuracy of apparent power S	voltage accuracy +current accuracy
Accuracy of reactive power Q	accuracy of apparent power + $[(\sqrt{1.0004} - \lambda 2) - (\sqrt{1 - \lambda 2})]$ ×100 %

Accuracy of power factor λ	± [(λ-λ/1.0002)+ | cosø-cos{ø+sin-1 (influence from the power factor when λ = 0%/100)} |] ±1digit when voltage and current are at the measurement range rated input
Accuracy of phase difference Φ	± [| ø-cos-1(λ/1.0002) | +sin-1(influence from the power factor when λ = 0 %/100)] ± 1digit when voltage and current are at the measurement range rated input

Voltage, Current and Power Measurements

Item	Specifications
Measurement method	Digital sampling method
Crest factor	3 or 6
Wiring system	(one element model): single-phase , two-wire(1 P2 W)
Range select	select manual or auto ranging
Auto range	auto-range increase auto-range decline

	Name	Symbols And Meanings
Measurement parameters	Voltage current	Select RMS (the effective RMS value of voltage andcurrent)、MEAN:(the rectified mean value calibrated to the RMS value of the voltage and the true RMS value of the current)、RMN (rectified mean value of voltage and current DC:(simple average of voltage and current) AC: alternating current、PP: (peak value of voltage and peak value of current)
	Active power [W]	P
	Reactive power [var]	Q
	Apparent power [VA]	S
	Power factor	λ
	Phase di fference (°)	φ
	Frequency (Hz)	fU(FreqU) : voltage frequency fI(FreqI) : current frequency
	Max/min of voltage (V)	Upk+: voltage positive peak Upk-: voltage negative peak
	Max/min of current (A)	Ipk+: current positive peak Ipk-: current negative peak
	Crest factor	CfU: crest factor of voltage CfI: crest factor of current
	Integration	TM: integration time, WP: sum of positive and negative watt hour, WP+: positive power sum, WP-: negative power sum, q: sum of positive and negative ampere-hour, q+: positive ampere -hour sum, q-: negative ampere-hour sum
Measurement synchronization source	Select voltage , current, or the entire period of the data updata interval for the signal used to achieve synchronization during measurement.	
Line filter	Select OFF or ON (cut off frequency at 500 Hz)	
Peak measurement	Measures the peak (max, min) value of voltage, current or power from the instantaneous current or instantaneous power that is sampled.	

Frequency Measurement

Item	Specifications	
Measurement item	Voltage or current frequencies applied to one selected input element can be measured	
Frequency test range	Varies depending on the data update interval (see description given later) as follows	
	Data update interval	Measurement range
	0.1 s	25 Hz ≤ f ≤ 100 kHz
	0.25 s	10 Hz ≤ f ≤ 100 kHz
	0.5 s	5 Hz ≤ f ≤ 100 kHz
	1 s	2.5 Hz ≤ f ≤ 100 kHz
	2 s	1.5 Hz ≤ f ≤ 50 kHz
	5 s	0.5 Hz ≤ f ≤ 20 kHz
Frequency filter	Select OFF or ON (cut off frequency of 500 Hz)	
Accuracy	Requirements : When the input signal level is 20 % or more of the measurement range and the crest factor is set to 3 (40 % or more if the crest factor is set to 6).	

Harmonic Measurement

Measured item	All installed elements
Method	PLL synchronization method
Frequency range	Fundamental frequency of the PLL source is in the range of 10 Hz to 1.2 kHz
PLL source	Select voltage of current of each input element
FFT data length	1024

	Name	Symbols and Meanings	
measurement parameter	Voltage (V)	U(k) : voltage effective value of Kth harmonic	U(Total) voltage effective value
	Current (A)	I(k) : curent effective value of Kth harmonic	I(Total) : curent effective value
	Active power (W)	P(k) : active power of Kth harmonic	P(Total) : Active power
	Apparent power (VA)	S(k) : apparent power of Kth harmonic	S(Total) : total apparent power
	Reactive power (var)	Q(k) : reactive power of Kth harmonic	Q(Total) : total reactive power
	Power factor	λ(k) : power factor of Kth harmonic	λ(Total) : Total power factor
	Phase difference	φ(k) : phase difference between voltage and current of Kth harmonic φU(k) voltage phase difference between Kth harmonic(UK) and fundamental wave(U1) φI(k) : current phase difference between Kth harmonic(IK) and fundamental wave(I1)	φ:total phase difference
	Harmonic distortion factor(%)	Uhdf(k) : Voltage ratio of Kth harmonic(Uk) and fundmental wave(U1) current Ihdf(k) : ratio of Kth harmonic （Ik） and fundmental wave(I1) active power Phdf(k) : ratio of Kth harmonic(Pk)and fundmental wave (P1)or total distortion wave(Ptotal) or Total distortion wave(Itotal) or total distortion wave(Utotal)	
	（THD）total harmonic distortion	Uthd : voltage ratio of total harmonic and fundmental wave(U1) or total distortion wave(Utotal). Ithd : current ratio of total harmonic and fundmental wave(I1) or total distortion wave(Itotal). Pthd : active power ratio of total harmonic and fundmental wave(P1) or total distortion wave(Ptotal)	
Window function	Rectangle		

Note

- This function is only available for IT9121, optional function for IT9121E.
- K is a integer from 0 to upper limit of harmonic analyse times. 0th means DC parameter.
- User can configure the maximum number of harmonic times manually or auto-decided by equipment, taking the minmum value between the two methods.
- IT9121 can measure up to 50th harmonic.

Fundamental Frequency

Fundamental frequency	Sample rate	Window width	Upper limit of* analysis orders
10 Hz ~ 75 Hz	f * 1024	1	50
75 Hz ~ 150 Hz	f * 512	2	32
150 Hz ~ 300 Hz	f * 256	4	16
300 Hz ~ 600 Hz	f * 128	8	8
600 Hz ~ 1200 Hz	f * 64	16	4

* the upper limit of analysis orders can be decreased

Accuracy

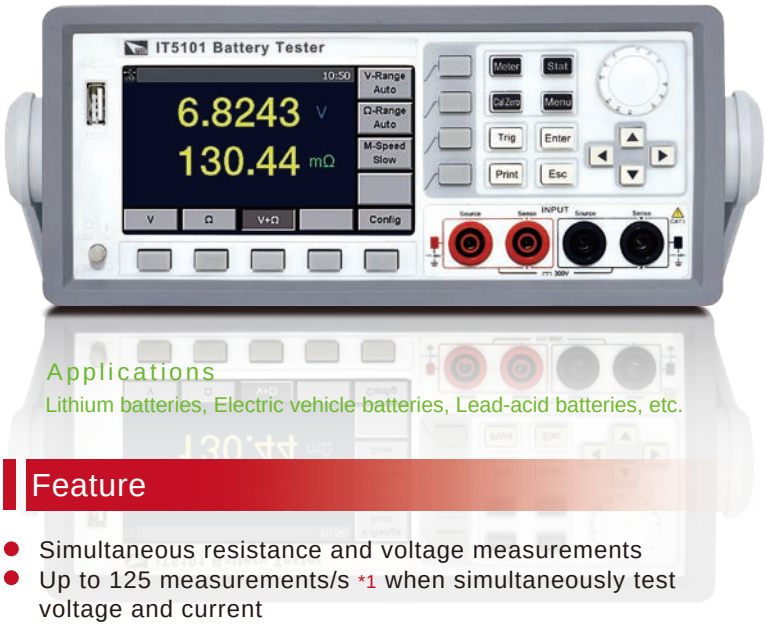
* When line filter is off, the accuracy shown below is the sum of reading and range errors

Frequency	Voltage	Current	Power
10 Hz ≤ f ＜ 45 kHz	0.15%of reading +0.35%of range	0.15%of reading +0.35%of range	0.15%of reading +0.50%of range
45 Hz ≤ f ≤ 440 kHz	0.15%of reading +0.35%of range	0.15%of reading +0.35%of range	0.20%of reading +0.50%of range
440 Hz ＜ f ≤ 1 kHz	0.20%of reading +0.35%of range	0.20%of reading +0.35%of range	0.40%of reading +0.50%of range
1 kHz ＜ f ≤ 2.5 kHz	0.80%of reading +0.45%of range	0.80%of reading +0.45%of range	1.56%of reading +0.60%of range
2.5 kHz＜ f ≤ 5 kHz	3.05%of reading +0.45%of range	3.05%of reading +0.45%of range	5.77%of reading +0.60%of range

Interface

- USB
- GPIB
- Ethernet
- RS232

IT5100 Battery Internal Resistance Tester



Applications

Lithium batteries, Electric vehicle batteries, Lead-acid batteries, etc.

IT5100 series of battery internal resistance testers are high in precision, resolution and speed. IT5100 adopts AC 4-terminal sensing, so it can be more accurate when testing battery internal resistance and voltage.Its resolution is up to to 0.1 μΩ and voltage resolution is 10 μV. Through the external U-disk, it can do long-time statistics calculation. Its built-in comparator function can automatically analyze battery's specifications to check standard qualification, pass rate, thus IT5100 is very suitable for battery testing and sorting. IT5100 is with built-in GPIB/USB/LAN interfaces, support SCPI protocol, and can be widely used in various batteries' testing, such as lithium batteries of mobile phone and unmanned Aerial Vehicles, power batteries, storage batteries and etc.

Feature

- Simultaneous resistance and voltage measurements
- Up to 125 measurements/s *1 when simultaneously test voltage and current
- 4.3 inch LCD color display
- Voltage measurement: 10 μV to 1000 V
- Resistance measurement:
  IT5101: 150 μΩ to 3000 Ω
  IT5101E: 15 mΩ to 3 Ω
- Automatic or manual testing of measuring ranges
  IT5101:3 voltage ranges, 7 resistance ranges
  IT5101E:3 voltage ranges, 2 resistance ranges
- Built-in GPIB, USB, LAN interfaces with SCPI support
- Statistics calculation and data storage function
- Comparator function:HI/IN/Lo analysis results
- Zero adjustment function
- AC 4-terminal measurement
- Measuring result alarm

*1. In Ex_fast mode

Model	Voltage	Resistance	Size
IT5101	-300V~+300V	3mΩ~3000Ω	1/2 2U
IT5101E	-300V~+300V	300mΩ~3Ω	1/2 2U
IT5101H	-1000V~+1000V	3mΩ~3000Ω	1/2 2U

Measure accuracy, resolution and speed

- High Accuracy
  Resistance: ±0.01%±0.01% FS
  Voltage: ±0.4%±0.05% FS
- High resolution
  Resistance: 0.1 μΩ
  Voltage: 10 μV

* The resolution is only for IT5101,IT5101E resolution is 1 μΩ.

- High speed
  Resistance+Voltage simultaneously sampling time < 8 ms
  Single sampling time (Resistance or Voltage) < 4 ms

Applications

- High-voltage battery pack test, e.g. electric vehicles, lithium battery etc.
- Battery module testing
- Large (low-resistance) cell testing
- High-speed mass production testing of button batteries
- UPS inspection
- Internal resistance and voltage testings of lithium batteries
- Deterioration & life assessment of alkaline batteries, lead-acid battery
- Various contact resistance test
- Fuel cell testing
- Resistance (ESR) test of super capacitor

IT5100 Battery Internal Resistance Tester

Multifunction ensures measurement accuracy

- **Abnormal measurement inspection**
  Detect contact failure and disconnection of test probe, improve the credibility of the measurement
- **Averaging function**
  To ensure test stability and reliability, Every 2-16th calculations, there is an averaging
- **AC 4 terminal method**
  Impedance measurement uses AC 4-terminal method, the measurement is not affected by the wiring impedance of the test wiring.

Comparator function

- Test resistances & voltage simultaneously
- An alarm signal will be generated when the actual value exceeds the preset (Hi/Lo) range.
- Alternative setting method
- Manual comparator
- Two setting methods
- Comparator function: absolute value comparison and relative value comparison.

IT5101/E provides built-in comparator function, the function can distinguish whether the test parameters are compliant with the related standard and automatically counts the pass/fail rate.

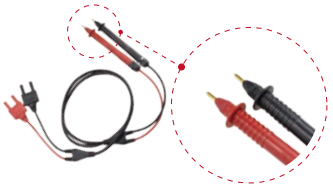
Support statistics calculation function

Combined with an external USB disk, IT5101 can be used for statistical calculation.The data storage capacity is up to 1000 groups, which greatly simplifies the process and provides convenience to quality control.

Optional accessories

ITECH provides multiple optional accessories for IT5100 series battery testers, including 4 types of testing wires with different probes and zero adjustment board.

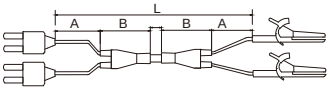
4 types of optional testing wires (600 Vdc max.)



IT-E601
pin type lead

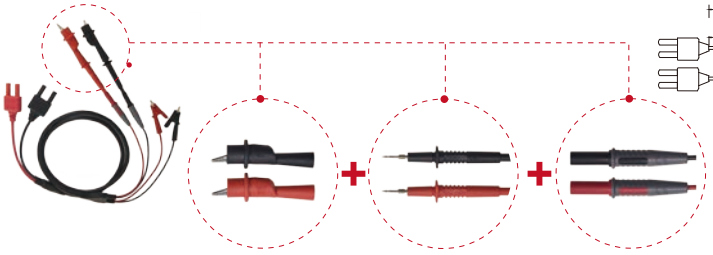
IT-E602
large clip type lead

IT-E603
pin type lead

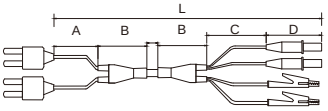


A: 100 mm
B: 59.7 mm
L: 1219.4 mm
DC: 600 V

IT-E605
zero adjustment board
(For pin testing wire)



IT-E604



A: 100 mm
B: 59.7 mm
C: 150 mm
D: 67 mm
L: 1269.4 mm
DC: 600 V

PC Application Software

Measurement data can be transferred to a PC and stored as CSV files.

Num	Voltage	Resistance	Voltage State	Resistance State	Date/Time
0	4.99471	0.0546145	0	0	01-07/20:16
1	4.99505	0.5614076	0	0	01-07/20:16
2	4.99517	0.5672807	0	0	01-07/20:16
3	4.99517	0.0548138	0	0	01-07/20:16
4	4.99522	0.0213158	0	0	01-07/20:16
5	4.99519	0.0311247	0	0	01-07/20:16
6	4.99526	0.5600239	0	0	01-07/20:16
7	4.99527	0.0548351	0	0	01-07/20:16

IT5100 Specifications

Model		IT5101		IT5101E	IT5101H		
Voltage value				Measuring range			
	Range	-6V~+6V	-60V~+60V	-300V~+300V	-10V~+10V	-100V~+100V	-1000V~+1000V
	Resolution	10μV	0.1mV	1mV	20uV	0.2mV	2mV
	Accuracy	±(0.01%+0.01%FS)			±(0.01%+0.01%FS)		
	Temperature drift	±(0.001%+0.001%FS)/℃			±(0.001%+0.001%FS)/℃		
Resistance value valuevalue	Range/Resolution	3mΩ/0.1μΩ		/	3mΩ/0.1μΩ		
	Range/Resolution	30mΩ/1μΩ		/	30mΩ/1μΩ		
	Range/Resolution	300mΩ/10μΩ		300mΩ/10μΩ	300mΩ/10μΩ		
	Range/Resolution	3Ω/0.1mΩ		3Ω/0.1mΩ	3Ω/0.1mΩ		
	Range/Resolution	30Ω/1mΩ		/	30Ω/1mΩ		
	Range/Resolution	300Ω/10mΩ		/	300Ω/10mΩ		
	Range/Resolution	3000Ω/0.1Ω		/	3000Ω/0.1Ω		
	Accuracy	±(0.4%+0.05%FS)		±(0.4%+0.05%FS)	±(0.4%+0.05%FS)		
		±(0.4%+0.1%FS) (3mΩRange)			±(0.4%+0.1%FS) (3mΩRange)		
	Temperature drift	±(0.04%+0.005%FS)		±(0.04%+0.005%FS)	±(0.04%+0.005%FS)		
		±(0.04%+0.01%FS) (3mΩRange)			±(0.04%+0.01%FS) (3mΩRange)		

Specification	
Response time	10ms
	(The response time is a reference when measuring pure resistance, which varies depending on the device to be measured)
Input resistance	≥1mΩ
Rated input	DC±300V
Communication Interface	GPIB/USB/LAN
Operating temperature	0°C~40°C 80%RH below (No condensation)
Storage temperature	-10°C~50°C 80%RH below (No condensation)
Size	384*230*105 (mm)
weight	2.4KG

1. Add ±0.01%FS for Med, Add ±0.02%FS for Fast, Add ±0.03%FS for Ex_fast
2. 3mΩ range: Add ±0.1%FS for Med, Add ±0.2%FS for Fast, Add ±0.5%FS for Ex_fast
3. Above data is applicable to > 5%FS condition

*This information is subject to change without notice

Test System

Provide you a stable and efficient test system

ITS9500 Power Supply Test System

P89~94

ITS9500 Power Supply Test System is a convenient, practical and cost-efficient test system designed for switching power supply test. This system adopts a new scheme, overcoming the shortcoming of traditional test system, which is characterized by bulk size, high price, difficult to operate and maintain. Inside the 5U size, this system can provide test results superior to traditional large cabinet test system, this saving the space as well as the cost for customers.

ITS5300 Battery Charge & Discharge Test System

P95~101

ITS5300 battery charge and discharge test system is designed for a variety of power batteries (lead acid, nickel hydrogen, lithium batteries, super capacitors, hydrogen fuel cells, etc.) for performance testing. Real-time monitoring voltage, resistance and temperature and other parameters of single cell can achieve system' overvoltage, under voltage, overcurrent, overheating protection and the battery pack equalization charge and discharge on single cell, and can simulate electric vehicle' various equivalent conditions on the battery pack.

IT9380 Solar Battery Test Software

P102~103

IT9380 solar battery test software is the professional software aims to solar IV characteristic. With combination of ITECH programmable electronic loads IT8700/IT8800/IT8900, the solar battery test system is built up. It can test solar battery IV characteristic under kinds of Spectrums and light sources, and supports long time automatic testing.

Portable AC Charging Device Test System

P104~105

ITECH provides professional charging device test system with on-cable control device, which is a safe, reliable and efficient test for the portable electric vehicle charging devices. The entire set adopts flexible hardware framework, integrates necessary hardware test equipment together, to facilitate customer control costs and improve test efficiency.

Automotive Junction Box Test System

P106

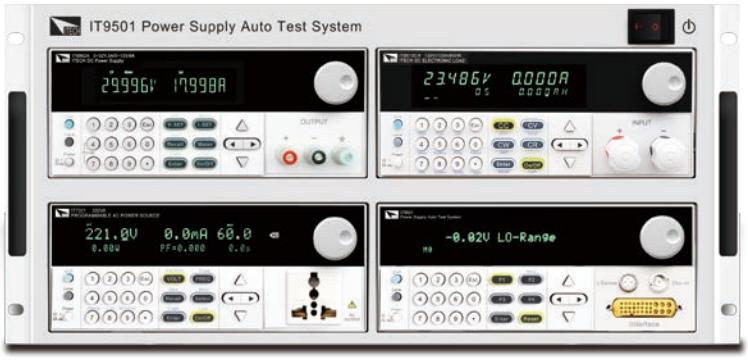
Automotive junction box (automotive electrical central controller) integrates the whole car's fuse, circuit breaker, relay and so on. It is the vehicle electronic circuit control center. ITECH automotive junction box test system is established by high performance programmable electronic load, power supply and speical-designed IT9360 software.

Charging Station / Car Charger Test Solution

P107~110

Charging stations and car charger play important roles for the popularity of new energy vehicles. As a leading test and measurement solution supplier in the field of new energy, ITECH offers professional charging station / car charger test solution, fully meets the testing needs of different types of car charger, and simplifies operation. The test solution is with unique and important function.

ITS9500 Power Supply Test System



Applications

Test AC and DC Power Supply, Power Adapter, Charger, Car Charger, etc.

Feature

Standard 5U unit integrates DSO, electronic loads, programmable AC power supplies, programmable DC power supplies, noise analyzers, timing analyzers, digital electric meters, oscilloscope, I/O card and other instruments, ITS9500 can be installed on the counter top or inside a standard cabinet.

- Best cost-effective unit
- Modular design for easy maintenance
- Over 20 test items
- Simultaneous operation of 8 ways at maximum
- A power supply unit which can test several single outputs at one time
- Test program management/editing function
- Statistic report output/editing function
- Multi-level authority setting function
- User authority setting
- System accesses record
- Bar Code Reader supported by the software
- Optional external fixture for improving test speed
- Meet the ENERGY STAR measurement specification

ITS9500 Power Supply Test System is a convenient, practical and cost-efficient test system designed for switching power supply test. This system adopts a new scheme, overcoming the shortcoming of traditional test system, which is characterized by bulk size, high price, difficult to operate and maintain. Inside the 5U size, this system can provide test results superior to traditional large cabinet test system, which saving the space as well as the cost for customers.

Thanks to the extensive product line of ITECH, users can choose the most suitable instrument to build the ITS9500 test system based on their needs, thus providing the maximum flexibility and scalability for system configuration

ITS9500 test system can be applied for tests of products such as power supply unit, LED drive power and battery charger. The system provides over 20 test items and through the powerful automatic test software of ITS9500, users can select test items based on the characteristics of the device under test to easily complete the test process. The test software provides two types of user interface, the processional type and the simple type to easily meet varied demands of different users.

Small size and cost-efficiency

ITS9500 power supply test system integrates all necessary instruments for integrated switching power supply test in the limited space and is compacter than other similar products.

The system, different from traditional large and expensive power supply test system, can be used in production as well as R&D stages.

Test items

ITS9500 power test system provides perfect test items for users, and different from traditional test system, users are not required to have program editing ability to operate the system. Users only have to choose the test items from over 40 test items provides by the system based on their needs and the system will complete the test process in sequence.

Input tests	Output tests	Protection tests
Input output test	Static test	Output OCP test
Input voltage ramp test	Dynamic test	Output OVP, UVP test
Input frequency ramp test		Short circuit protection test
Input power disturbance test		OPP test
Power-off protection test		Low voltage protection test
Input RMS current test		
Input peak current test		

Time series/dynamic tests	Stability test	Special tests
Turn on time	Power effect test	Extended measurement test
Rise time	Load effect test	Discharge test
Turn off time	Mixed effect test	Analog output control
Fall time		PWM output control
Overcharge voltage test		Can bus read/write
Surge current test		GPIB read/write
		RS232 read/write
		I2C read/write
		TTL signal control
		Relay control
		Bar code reader

Modular design for easy maintenance

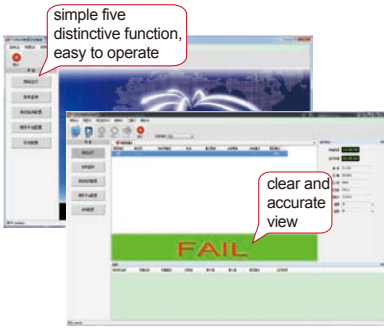
ITS9500 power supply test system adopts traditional modular design, forming an easy and multi-functional power supply test platform. This facilitates future repair and maintenance, and reduces the influence to the production line.

Combine 8 kinds of instruments in one to meet diversified testing demands

Easy operation and clear result display

ITS9500 test software, working together with the test system, can realize functions as editing, operation, test, and data analysis of power test items.
ITS9500 test software supports Chinese and English and provides two types of user interfaces, the processional type and the simple type to easily meet varied demands of different users.

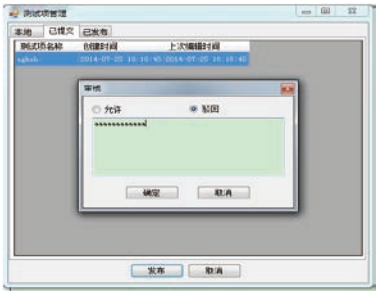
- The operation interface of the software is simple and clean with five distinctive function modules, and even users without programing ability can master the operation easily.
- The status of final test results, which is PASS or FAIL, will be highlighted on the interface to ensure a clear and accurate view for operators.



Flexible choice to meet varied demands

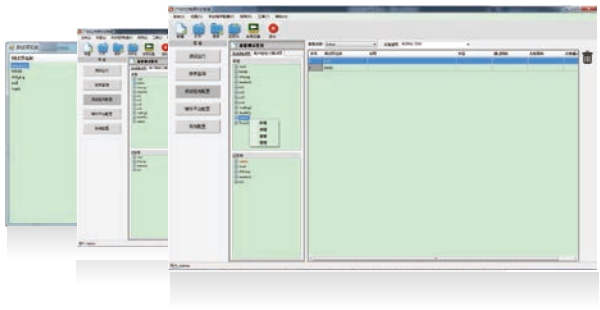
- Test item editing function

ITS9500 test system provides test item editing function. In addition, to test items coming with the system, users can create new test items to meet test demands of all power supply units.



Test item editing function

ITS9500 test system enables users to connect several edited test items to form a test program. The system will carry out test in sequence, thus significantly reducing the test time.



Support simultaneous operation of several systems

One set of ITS9500 system test software can support simultaneous operation of six systems at maximum.

Comprehensive and various analysis tools

Self-defined report template

ITS9500 test system supports users to save the test data in the form of a test report and the report format can be self-defined, thus significantly reducing time.

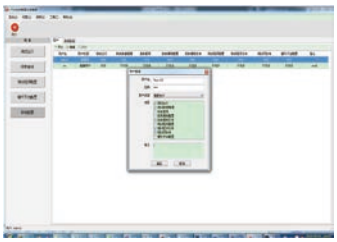
Report management

On the “Report Inquiry” interface of ITS9500 test system, user can inquiry/edit/print reports by inputting the report number or scanning the bar code.

Perfect and safe management system

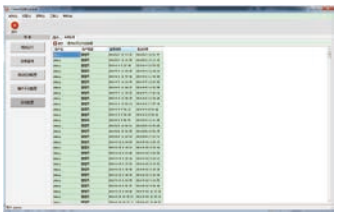
Set user authority

User management” enables users to set authorities for different users



System log

The system log will record the login information of users, including user name, type, login/logoff time.

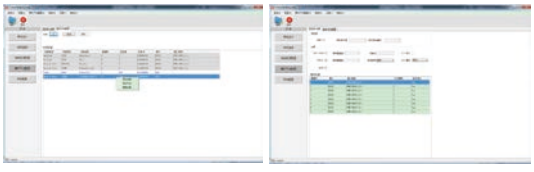


Test item/program management

User can understand the release, review and edit of test items as well as the operation of test program.

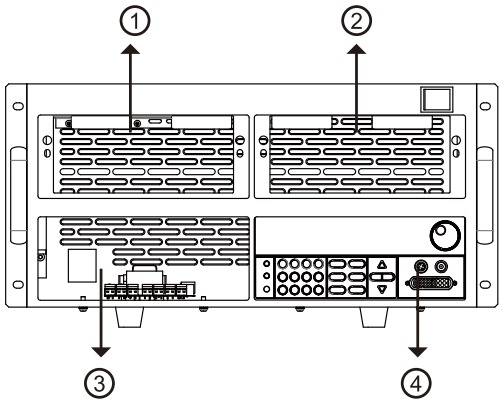
Hardware configuration

Through the “Hardware configuration” function, users can choose equipment from the instrument list to configure the system and connect bar code/fixture to realize automatic test.

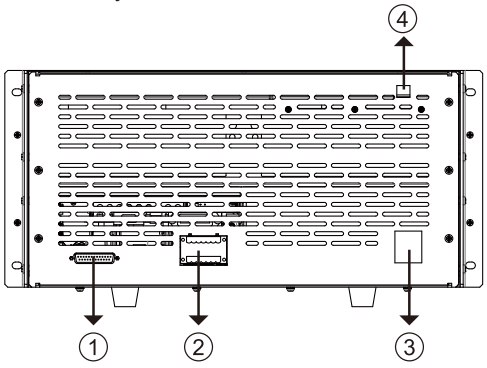


High performance hardware configuration

ITS9500 power supply test system adopts flexible hardware framework integrating necessary hardware test devices, thus facilitating input cost control and test efficiency improvement.



1,2,3 and 4 can be used for connecting OVP power, AC/DC power, electric load, switch analyzer, etc.



1.Scalable I/O
2.Relay output (10~16 IO Pin)
3.AC power input
4. USB communication port

Programmable AC power supply

ITS9500 power supply test system's configured AC power can cover 300VA-54kVA power supply products.
With precision liner amplification technology, output of very pure AC power can be realized; distortion factor lower than 0.5%; simulate normal and abnormal AC inputs and measurement key electrical performance parameters of device under test.
Easy operation, perfect protection and self-diagnose function make it reliable product for you.

Programmable DC power supply

ITS9500 power supply test system's configured DC power can cover 100W-30KW power supply products.
Automatic gear technology, for regulating the voltage and current; high accuracy and high resolution, low ripple and low noise; LIST editing function, for application in the voltage drop test of DC-DC converter and inverter, battery charge and product life cycle test. It can be applied in the over-voltage protection test.

DC electronic load

ITS9500 power supply test system's configured electronic load can cover 150W-500kW load products.
Four operating modes (CC, CV, CR, CW), for meeting test demands of different power products; high speed and programmable dynamic load characteristics, for testing the stability of power power products; arbitrary waveform simulation function (LIST), for observing whether the device under test can be operated normally in the application field; short current test function; sense function, for ensuring accuracy of long distance measurement; and perfect protection, your priority for test.

Switch analyzer

Switch analyzer is an important part of hardware of ITS9500 power supply test system. This product integrates the product functions of oscilloscope, data acquisition card, IO card and power meter, thus facilitating performance tests of switching power supply and reducing cost and space for customers.

Rich optional accessories

IT-E256	Extended keyboard
IT-E181	Power test system fixture Four channels synchronous test
IT-E182	Power test system fixture Four sequential test
IT-E187	Relay card
IT-E190-6A	Current sensor
IT-E190-15A	Current sensor
IT-E190-25A	Current sensor
IT-E190-40A	Current sensor
IT-E190-60A	Current sensor

IT-E181 is a fixture which can work with ITS9500 test system to realize multiple-channel test. It can connect 4 test systems and test 4 devices under test with the same specification, thus significantly improving the production efficiency and reducing production cost for custommers. IT-E181 supports test for several types of charge interface and visual display fo the test interface are supported.
IT-E256 extended keyboard can be used for controlling the start and stop of ITS9500 system test program, avoid clicking mouse. The system is compact and easy to use, thus improving test effciency.

IT-E256

LED drive power test

ITS9500 power supply system is the best test system for LED power as it can measure several devices under test at one time, thus significantly improving the capacity of production line.
The system is provided with test items for devices under test with performance optimization (LED drive power for lighting or backlight). Users only have to define test conditions and specifications on the standard test items for test.
Optimized test scheme covers the following 6 types of power test requirement: output characteristic test for detection of general performance of device under test; input characteristic test for detection of input parameters of power supply, protection test for testing the protection circuit which triggers the power supply; real-time and transient measurement of transient status of power supply at turn-on and turn-off, and voltage RMP time at turn-on and turn-off of measurement power; stabilty test for detection of stability of device under test during the change of input power and load; comprehensive test, providing test environment and other special functions.

Recommended configuration

Measuring range	Low voltage model
Power	300W
Output voltage	500V

Vehicle-mounted charger test scheme

ITS9500 test system is provided with automatic gear technology to regulate voltage and current with high accuracy and resolution, low ripple and noise. LIST editing function provides input/output characteristics, efficiency and protection item test for vehicle-mounted charger, thus greatly reducing time.

Car charger

Recommended configuration

Measuring range	Low voltage model	Low voltage economy model
Power	250W	150W
Output voltage	120V	72V

DC-DC power supply test scheme

DC-DC power is widely used in military industry, communication equipment, vehicle, electronics and aerospace. ITS9500 test system is particularly suitable for high-efficient automatic test of DC-DC power. With the powerful function of ITS9500, stable and reliable test process can be realized and accurate test data can be obtained.

DO-DC module

Recommended configuration

Measuring range	Low voltage model	Low voltage economy type	High voltage model
Power	250W	150W	300W
Output voltage	120V	72V	500V

AC-DC power supply test scheme

With continuous technological development, the application of switching power supply will generate harmonic interface on input electric power, in turn, the harmonic wave of electric power will affect the electronic product. The disturbance test of ITS9500 power supply automatic test system is for test of influence of power supply fluctuation, and is a good helper for engineers.

Switching power supply

Recommended configuration

Measuring range	Low voltage model	Low voltage economy model	High voltage model
Power	250W	150W	300W
Output voltage	120V	72V	500V

ITS5300 Battery Charge & Discharge Test System

Applications

battery charge / discharge performance test, battery cycle life test, battery capacity test, quality check, production testing, etc.

ITS5300 battery charge and discharge test system is designed for a variety of power batteries (lead acid, nickel hydrogen, lithium batteries, super capacitors, hydrogen fuel cells, etc.) for performance testing. Real-time monitoring voltage, resistance and temperature and other parameters of single cell can achieve system' overvoltage, under voltage, overcurrent, overheating protection and the battery pack equalization charge and discharge on single cell, and can simulate electric vehicle's various equivalent conditions on the battery pack.

In response to the demand of mass testing for a production line, ITS5300 Test System can be used in performance testing of a hundred or more battery packs or 200 cells in the battery packs at a time, remarkably improving the testing efficiency and capacity of the production line. With flexible step editing and optimized protection functions, ITS5300 Test System caters to a variety of testing demands. ITS5300 supports CC/CP/CR discharge mode, CC/CV charge mode, pulse charge & discharge modes and DCIR/ACIR. Meanwhile, it can generate a charge & discharge curve and store parameters such as internal resistance ("IR"), capacity, voltage and current so as to conduct a complete analysis of battery.

ITS5300 Test System is composed of ITECH power supply, industrial computer, electronic load, battery internal resistance tester and temperature logger as well as battery testing software.

The system is characterized by high degree of automation and outstanding reliability, making it the best choice for users demanding battery testing.

Feature

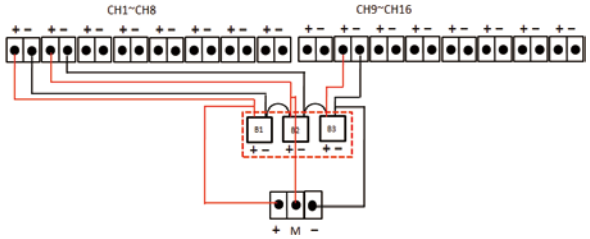
- Balanced charging and discharging capacity, designed for battery module / cell test.
  - Charge mode: CC / CV / pulse charge
  - Discharge mode: CC / CR / CP / pulse discharge
  - Voltage range: 0 - 1200V
  - Current range: 0 - 1500A
  - Power range: 0 - 600 kW
- Fast response and high-speed sampling rate, sampling rate and data storage time down to 1ms.
- High reliability and high precision guarantee absolute measurement accuracy within the broad voltage/current range, making the test system more efficient in use.
  - Voltage: 0.025% +0.025%F.S
  - Current: 0.05% +0.05%F.S
- With online / offline battery AC resistance test function, and with battery DC resistance test function, can analyze the internal resistance of the single or whole cell
- Standard modular design not only makes it easy for hardware extension and follow-up maintenance but also expand its applications.
- Real-time online monitoring on single module resistance, voltage and temperature. Support cell battery AC internal resistance analysis and battery pack DC internal resistance analysis.
- A complete alarm and protection setup for effectively preventing overcharge, over-discharge and other unexpected faults.
- Adopt GPIB communication, support multi-system extension (ITS5300-001 adopts USB communication).
- Multi-channel independent control.
- Hundreds of channels of battery charge and discharge at the same time
- V / I current sampling rate: 50KHZ (Sample a point every 20us)
  With online / offline battery AC resistance test function, and with battery DC resistance test function, the single cell or overall battery resistance can be analyzed.

Battery resistance test

Different types of battery internal resistance is different, and even the same type of batteries have different IRs due to distinct internal chemical characteristics. Internal resistance is an important technical indicator of battery performance. In general, the smaller the internal resistance is, the higher the discharge capacity will be, or vice versa.

ACIR Testing

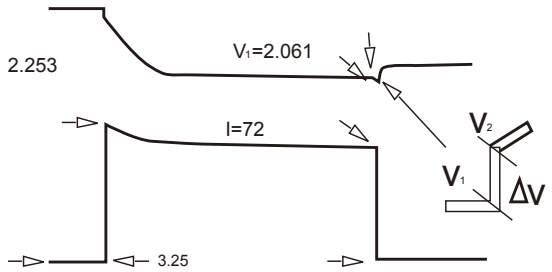
A battery pack is typically a set of any number of cells configured in series. A sharp difference between cells may greatly impair the battery pack's discharge performance. Therefore, measurement and systematic analysis of cell IR is also an integral part of battery performance test. IR is not constant and may change over time during charge/discharge. The online ACIR testing feature is designed for rapidly and accurately identifying the dynamic IR variation in each cell so as to determine whether the battery has failed.



Schematic Diagram of ACIR Testing

DCIR Testing

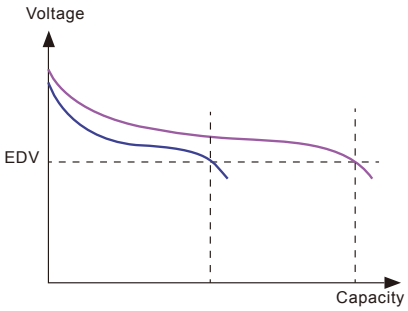
DCIR is typically used in testing high-capacity batteries or accumulators since low-capacity batteries are incapable of loading 40A-80A current within 2-3s. DC discharge is a measurement similar with storage battery. In DCIR testing, the DCR is calculated from the current and voltage differences between two different currents.



$$R_I = \frac{\Delta V}{I} = 375$$

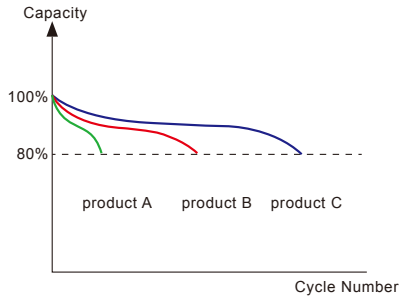
Battery Capacity Testing

Battery capacity is typically measured in ampere-hour. Measured battery capacities will differ with discharge rates applied. Generally, battery life will be shortened by high-rate discharge; Thus, discharge capacity is usually measured at a low discharge rate (e.g. 0.2C). Meanwhile, battery tends to be damaged by deep discharge. Battery capacity refers to the effective capacity calculated from the initial voltage to the cut-off voltage.



Battery Cycle Life Testing

With the increase in charge/discharge cycles, IR will increase due to internal oxidation, preventing the battery from discharging stored power and in turn end the battery life. Battery cycle lift (one charge + one discharge constitute one cycle) is influenced by discharge rate, temperature, end-of-charge/discharge voltage and other factors (see the below figure). Lithium battery typically has 300-500 charge & discharge cycles. IEC and other regulations stipulate that for a standard lithium battery, the remaining capacity after 500 charge & discharge cycles must be 60% or more of the initial capacity. Therefore, charge & discharge cycle testing is an important way to evaluate and measure battery lifecycle.

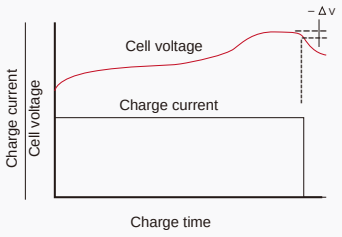


Battery Cycle Number Testing

Battery Temperature Measurement

For battery packs of different structures, temperature sensors of various quantities should be placed at different measurement points which are usually exposed to greatest variation in temperature.

Since high-temperature cells are placed densely, a considerable heat accumulate at the center and less on the edge, increasing the temperature imbalance between each two cells. As a result, battery modules and cells will differ from each other in performance, which will in turn impair the performance uniformity and service life of battery. Therefore, in an aging test of battery, real-time monitoring of temperature variation is a useful method for accurately evaluating the battery performance.

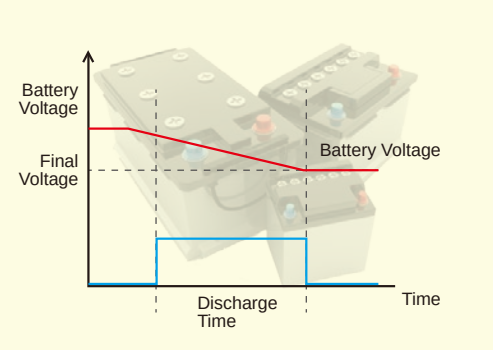


Battery Temperature Measurement

Battery Charge/Discharge Performance Test

By evaluating a battery's charge/discharge performance, we may effectively simulate the actual working conditions of the battery.

The charge process of a battery typically consists of four stages, including the preliminary charge, constant current charge, topping charge and trickle charge. During the discharge process, high-rate discharge does't not tend to last long. Therefore, simulation of variable pulse discharge current has emerged as a new tendency for developing novel battery charge/discharge testing systems. What's more, the simulation must be so flexible that it can meet various usage requirements of the user.



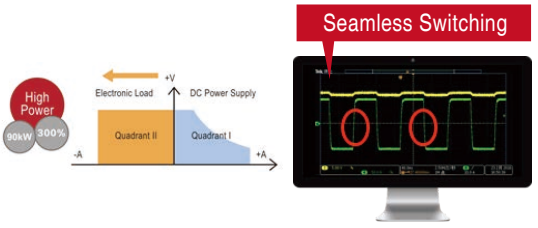
Balanced Battery Fast Charging & Discharging

As one type of power source, serial battery is widely used in various fields, but the serial structure will lead to the individual cells can not be automatically equalized in charge & discharge. The only way for extra energy is dissipated in the form of heat. That not only damage the battery cell, but also greatly affect battery performance and life.

Through real-time monitoring on single battery voltage, for the unbalanced voltage battery cell which has great difference on voltage from other battery cells in the same group, ITS5300 can realize battery cell independently charging and discharging to increase the available capacity of the battery pack and prolong its life.

Fast charge and discharge test

In the process of battery charging and discharging, high-speed current changes can be considered almost seamless switching, in order to test the changed process of battery current, you need a machine that can both sink current and release current. As a high-speed two-quadrant power supply, IT6500C (1800W-30kW) series has Loop-Mode function so as to realize high-speed current transition between power supply mode and electronic load mode, to achieve fast switching between sourcing and sinking current, even can achieve seamless switching under certain conditions, thus avoiding overshoot of voltage or current.



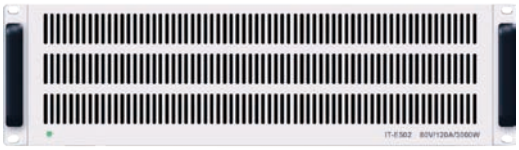
ITS5300 Battery Charge & Discharge Test System

Modular Design

ITS5300 Test System is composed of industrial computer, electronic load, power supply, IR tester and temperature logger.
By addressing the limitation of conventional single test, the system develops professional test steps to help users radically improve the testing efficiency.
Moreover, the system software can be used to conduct a synchronous remote control of each system configuration.
With a modular design, the system allows users to select out of their true testing demands the most suitable devices for integration into an automated test platform, thus producing system architecture with highest flexibility and extendibility.

DC electronic load

ITS5300 test system equips with ITECH programmable DC electronic load or power dissipater, used to discharge battery

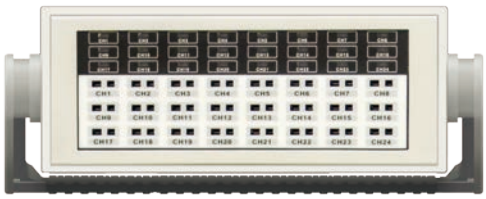


Temperature Logger

ITS5300 Test System integrates an ITECH multi-channel temperature logger used for temperature monitoring.

ITECH multi-channel temperature logger is available for monitoring temperature via 24 channels at a time. The specifications of the temperature logger are as follows: measurement range -200°C - 2000°C, measurement accuracy 0.5°C and resolution 0.01°C.

The superior performance of temperature logger makes it possible for ITS5300 Test System to acquire temperature data effectively and accurately and for wide application of the system in testing of batteries of all kinds.



Programmable DC Power Supply

ITS5300 test system equips with ITECH programmable DC power supply, used to charge single cell or battery pack

IR Tester

ITS5300 Test System is provided with an optional ITECH IR tester used for monitoring the voltage and IR of cells in a battery pack.
ITECH IR tester works with the most sophisticated AC discharge testing technology, capable of accurately measuring battery voltage and IR and having an automatic evaluation on battery parameters.

Professional System Software

ITS5300 Test System is equipped with a battery charge/discharge testing software developed on the basis of user specifications. By editing test steps, the user may perform constant current charge, constant pressure charge and constant current/power/resistance discharge tests on multi-channel cells or battery packs.
Furthermore, the software will help the user monitor cell voltage, temperature and IR, produce charge/discharge curves and monitor and store relevant data.

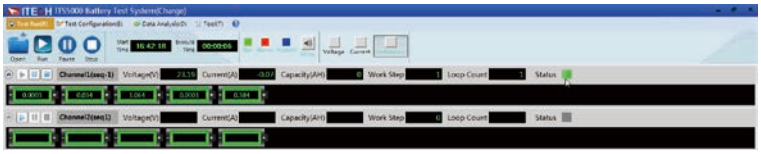
Various security measures

Power-off Memory Protection

ITS5300 Test System is superior over integrated charge & discharge device in which a power-off memory feature while the latter has single protection configuration only.
Power-off memory feature is the most cutting-edge and perfect protection function developed by ITECH and perfect protection function developed by ITECH and designed for time-consuming aging tests. With the protection function, previously acquired data can be effectively stored intactly in case of unexpected power off or computer crash during a time-consuming aging test and the user may proceed with the test program from the faulty link after the system back to normal. In this way, repeated tests are avoided for higher efficiency.
Likewise, if the power-off state continues for long, the system will automatically cut off the active charge/discharge circuit so as to prevent overcharge and over-discharge and guarantee the safety and reliability of battery testing.

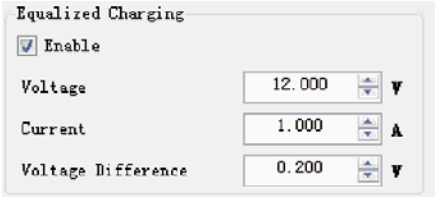
Complete Charge & Discharge Protection

During the aging test of a battery, the user should perform real-time monitoring of cells and battery pack and cut off the circuit for protection purposes when the preset conditions are satisfied so as to prevent overcharge and over-discharge. ITS5300 Test System allows the user to observe the status of battery pack and cells in all channels on the same interface and to present abnormality or normality of each cell in different colors. The system is designed with such protection features as cell under-voltage, overvoltage, over-temperature and battery pack overvoltage, under-voltage and reverse polarity.



User-defined Balanced Charging & Discharging Conditions

ITS5300 battery test system provides settable charging and discharging conditions in each work step. Including the parameters of each cell in battery pack, e.g. voltage, current and differential voltage. Once the differential voltage among the battery cells reach its pre-set value, the bipolar power supply in the system will operate independently charging and discharging automatically to the unbalanced cell.

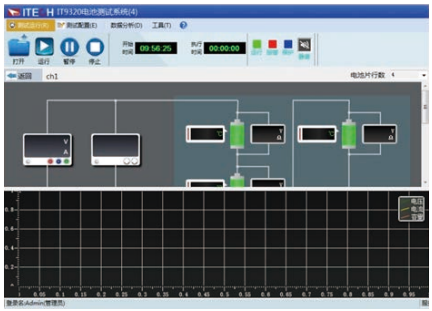


Real-time Charging & Discharging Monitor of Each Channel

A battery pack is typically a set of cells connected in series which exhibit different characteristics during charge and discharge. For this reason, monitoring of cells is of great importance.

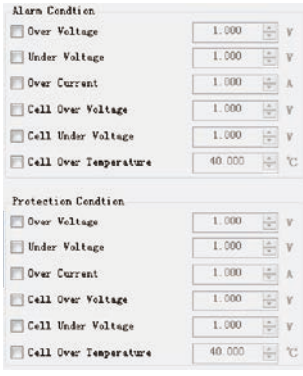
Apart from key parameters of each channel, ITS5300 test system may install a thermograph and IR tester to realize real-time monitoring of cell voltage, IR and temperature.

During the test, user can clearly observe the test information of each channel through the software. The software has intuitive colored block charts to symbolize normality or abnormality of cell characteristics and give early warning where necessary, including channel configuration, cell voltage, current, discharge capacity and other parameters. That is not only easy for observation and record, but also improves the testing reliability.



User-defined Protection Conditions

ITS5300 battery test system allows for user-defined end-of-discharge conditions. All permissible parameters of the system can be used as limiting conditions for alarm and power-off protection. In case of satisfaction of any of such conditions, the system will stop discharge automatically.

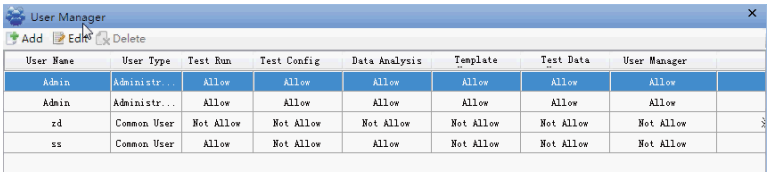


Data Backup Function

Adopt database, ITS5300 battery test system is much more reliable and stable. That not only improves testing data safety, but also prevents testing data loss from computer crash.

Configuration of User Access Levels

System operations mainly consist of editing and operation of test program and data analysis. For better controlling operation of the system by different personnel, the system is provided with the feature of user access level configuration. With this feature, the user may assign QC, R&D and production personnels with different access levels so as to prevent unauthorized modification or system program and in turn guarantee the system reliability and safety.

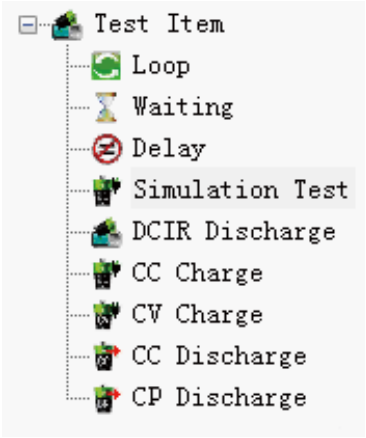


User Name	User Type	Test Run	Test Config	Data Analysis	Template	Test Data	User Manager
Admin	Administr...	Allow	Allow	Allow	Allow	Allow	Allow
Admin	Administr...	Allow	Allow	Allow	Allow	Allow	Allow
zd	Common User	Not Allow	Not Allow	Not Allow	Not Allow	Not Allow	Not Allow
ss	Common User	Allow	Not Allow	Allow	Not Allow	Not Allow	Not Allow

Variety in Step Editing

ITS5300 Test System provides the users with an array of charge/discharge modes such as CC/CP/CR discharge mode and it can simulate constant voltage charge and constant current charge modes.

Various end-of-discharge conditions contribute to improvement of testing safety and prevention of over-discharge and overcharge of battery. The “AND” + “OR” logical relation may be established among time, capacity and voltage end-of-discharge conditions to cater to more complex testing requirements.



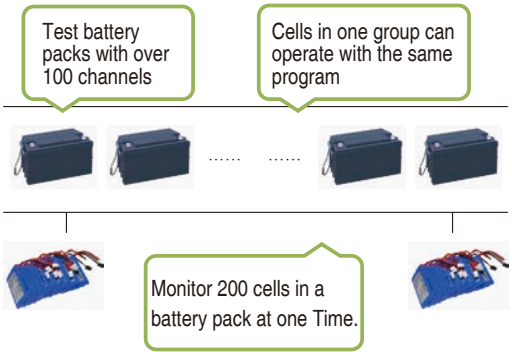
Order	Step Command
1	Simulation Test
2	CV Charge
3	CC Charge
4	CC Discharge
5	CP Discharge
6	Loop
7	Simulation Test

User-friendly and Robust Edit Interface of Test Program

ITS5300 Test System software is equipped with a user-friendly user interface. The simple and compact edit interface allows you to execute complex test program without mastery of any programming language, making programming as easy as filling out documents.

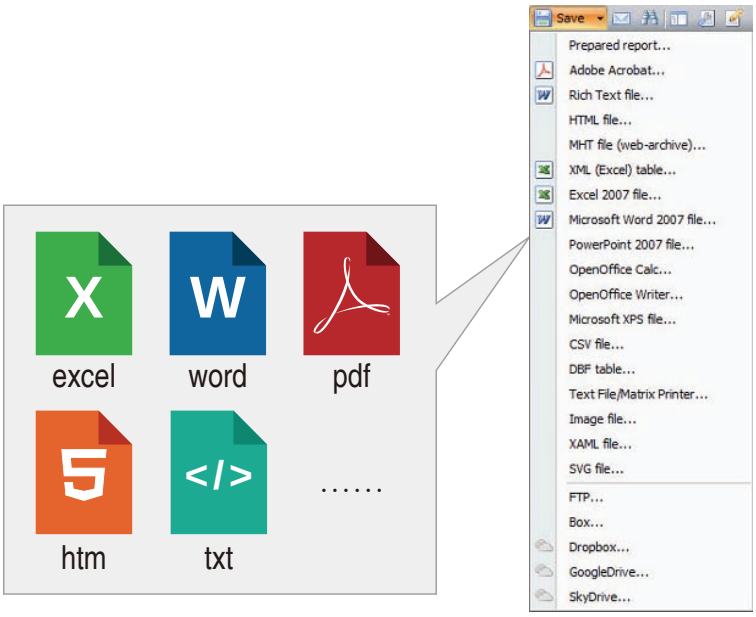
Multi-Battery Pack Simultaneous Test

Hundreds of batteries are produced a day in a battery production line. So a multi-channel test system is required for testing many batteries at a time. ITS5300 Test System can divide a battery piece into 10 groups, each group configured with 200 measurement points. Different battery groups may be configured with different test programs but all channels in one group share the same test program, which simplifies the operation and improves the productivity.



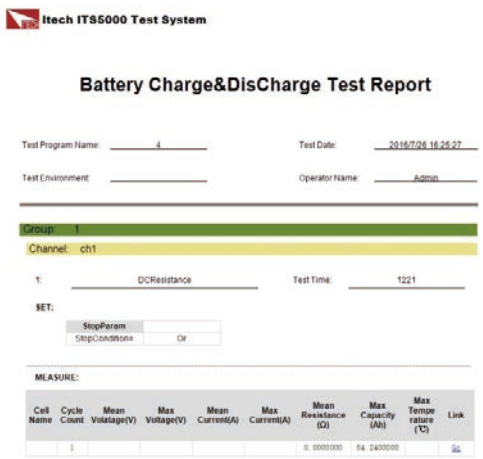
Support various data output format

Test results can be exported in various format for subsequent statistics and analysis. Such as excel, word, htm, pdf, txt formats etc.



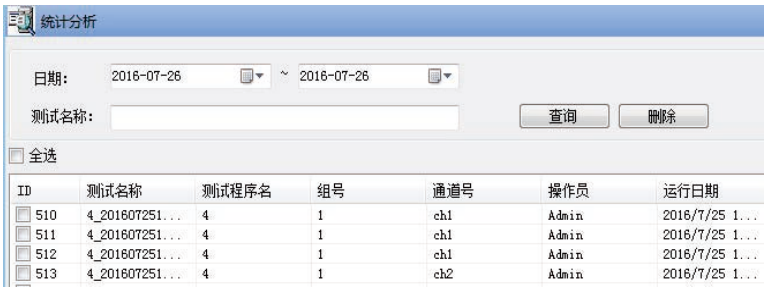
Reporting and analysis functions

The ITS5300 system provides a variety of data and curve display functions. The report can record the real-time curve of the battery test, for example, voltage, current, temperature, internal resistance curve changes over time and the original recorded data. Users can easily obtain the required chart.



Data Query

Test data tables are named by date and time automatically and can be screened by different conditions for easy search.



IT9380 Solar Battery Test Software

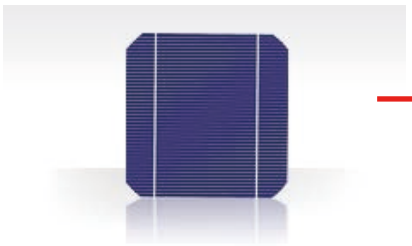
IT9380 solar battery test software is the professional software aims for solar IV characteristic. With combination of ITECH programmable electronic loads IT8700/IT8800/IT8900, the solar battery test system is built up. It can test solar battery IV characteristic under kinds of Spectrums and light sources, and supports long time automatic testing. With the ambient temperature and sunlight irradiance changing, the IV characteristics and conversion efficiency of the solar battery will change. When the ambient temperature goes up, the shape of I-V curve will change at the same time and filling factor will go down.Also the conversion efficiency will decline. Sunlight irradiance increases,output power inreases, then higher conversion efficiency for solar battery. All the above factors determine that the IV characteristics of solar batteries must be ensured the accurate test results by measuring voltage at multi-points in a period of time.

Feature

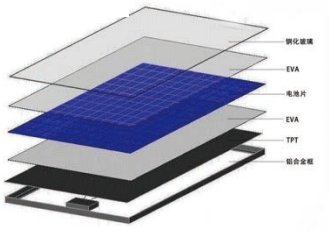
- Work with IT8700/IT8800/IT8900 series electronic loads for different DUTs
- Set up testing interval and time period, the software manages periodic scan during time period, automatic testing
- Support multi-channel testing at the same time, free to switch the interface of each channel
- Testing data can be exported to save in excel format

Functions & specification requirements

Equipment Name	Function Requirements	Specification Requirements	Recommended models
DC Electronic Load	1.High voltage and current measurement speed 2.High accuracy and high resolution	Single channel test	IT8800/IT8900 series
		Multi-channel test	IT8700 series



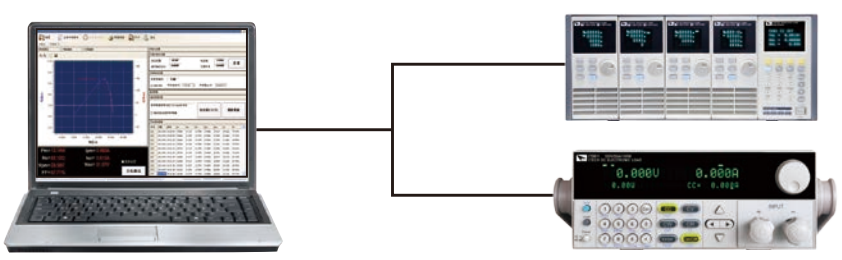
solar cells

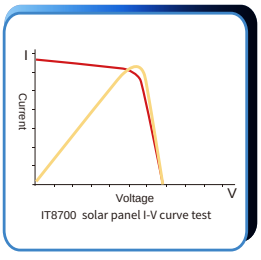


Solar cell components

Solar array

System structure





IT9380 Solar Battery Test Software

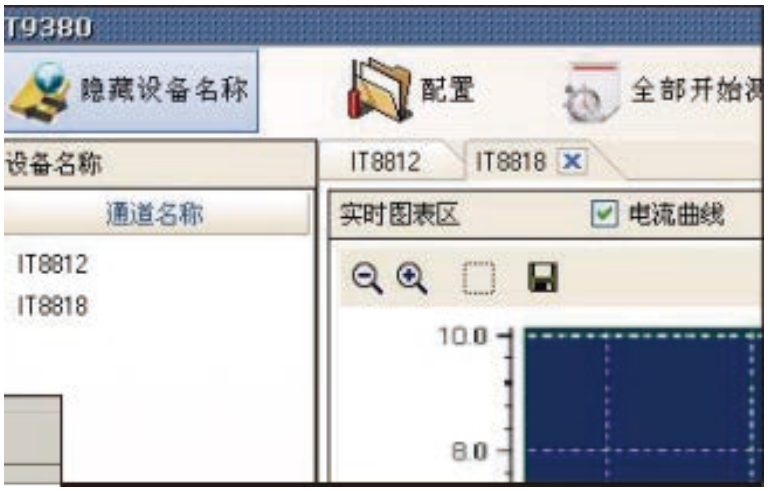
ITECH ELECTRONICS
Your Power Testing Solution

Test items

Test Parameters
Short circuit current(Ishort)
Open circuit voltage(Vopen)
Peak power(Pmax)
Peak power point voltage(Vpmax)
Peak power point current(Ipmax)
Peak power point resistance(Rpmax)
Fill factor(FF)

IT9380 Support connecting multiple units

IT9380 software supports multi-channel testing, It can monitor IT8700/IT8800/IT8900 in multiple channels running solar batteries testing by one computer and switch freely among the controlling interfaces.

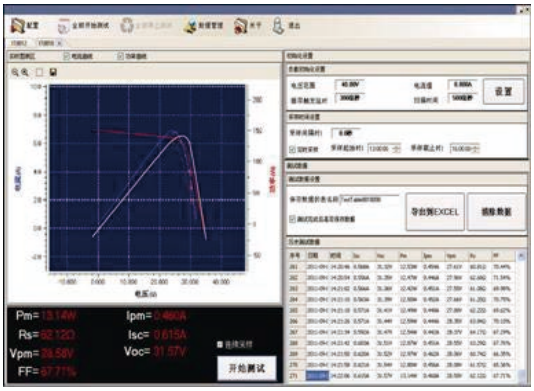


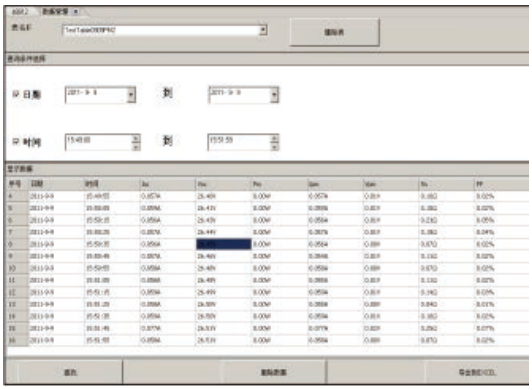
IT9380 Support Long Time Periodic Testing

Besides single test,IT9380 support multiple tests,the testing time interval and time range are available to set. The software automatically scans based on the time interval as the preset process.

Powerful Data Management

IT9380 software has batch data preservation function, you can delete or export/save your testing data in the data management interface.





IT9380 Support Multi-channel Simultaneously Testing

IT9380 software can control start/stop testing of E-loads.In multi-set connection,IT9380 software can simultaneously control electronic loads start or stop testing by clicking the “Start”/”Stop” after you set the parameter of each channel.

Test System

Portable AC Charging Device Test System

Application

AC charging control device testing

As important ancillary equipment for the rapid development of new energy electric vehicles, electric vehicle charging devices are an important prerequisite for the rapid development of electric vehicle industry. Portable charging devices are one of the driving forces for the development of electric vehicle components. As a leading supplier of test and measurement solutions in the field of new energy, ITECH provides professional charging device test system with on-cable control device, which is a safe, reliable and efficient test for the portable electric vehicle charging devices.

Thanks to ITECH's extensive line of power and load products, users can choose the most appropriate instrument for their test system based on their needs, providing maximum flexibility and scalability to the system's architecture. The entire set adopts flexible hardware framework, integrates necessary hardware test equipment together, to facilitate customer control costs and improve test efficiency. System operating software is English version, running on Windows98 / 2000 / XP / 7 operating system, open editing platform, the user can edit their own test steps, easy to complete the test. ITS9500-based custom system specifically for electric vehicle AC / DC charging compatibility test.

Hardware part

Integration of AC power, AC loads, power analyzers, oscilloscopes and interface cards and other test equipment.

Software par

For national standards

- GB/T 18487.1-2015 Electric vehicles conductive charging systems - Part 1: General requirements
- GB/T 18487.2-2001 Electric vehicles conductive charging systems Electric vehicles and AC / DC power connection requirements
- GB/T 18487.3-2001 Electric vehicles conductive charging systems Electric vehicles and AC / DC charger (station)
- GB/T 20234.1-2015 Electric vehicles conductive charging connecting devices Part 1: General requirements
- GB/T 20234.2-2015 Electric vehicles conductive charging connecting devices Part 2: AC charging interface

- Provide standard test items, the user can also use this open platform to write their own test projects on their own according to different test requirements.

Feature

- Modular design, it can be built according to different needs, convenient, easy to maintain, and full-featured, suitable for electric car and home charger test platform Achieve editorial, operational testing and data analysis functions mentioned in the national standard test items
- High test accuracy, perfect test items
- Multi-level management authority setting function, to ensure system stability
- Statistical report output and editing capabilities
- Simulate CC and CP abnormalities of interface part, achieve logic protection action mechanism test
- Fill in the blank interface, without editing capabilities
- Provide more than 20 test functions, a number of security testing, security and stability, high test accuracy

Software configuration

ITECH professional testing software is with operator-friendly interface, just tick the test items, without having the programming ability, which makes the operation simpler and clear, easy to use. Software provides customized test report editing and output capabilities, the output can be used directly as a client's report.

Hardware Configuration

- AC source
  IT7600 series、IT7300 series
- AC electronic load
  IT 8600 series

Measuring range	AC power supply	AC electronic load
16A	IT7626/IT7628L/IT7326 IT7630/IT7632IT7634	IT8616/IT8617/IT8624
32A	IT7630/IT7632IT7634 IT7627/IT7636/IT7628	IT8617/IT8624/IT8625/ IT8626/IT8627IT8628
63A	IT7627/IT7636/IT7628	IT8625/IT8626/IT8627/ IT8628

Hardware Configuration

Charging mode 2
When the electric car is charged using connection B of charging mode 2, it is recommended that the control pilot circuit shown in Figure A to check and judge charging connection device and the rated current parameter.

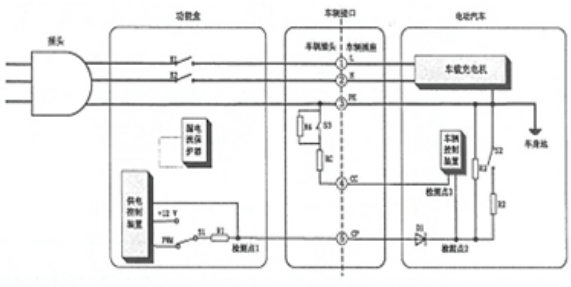


Figure A Charging mode 2 connections B control pilot circuit schematic

ITECH bases on "GB / T18487.1-2015 Electric Vehicle Conductive Charging System Part 1: General Requirements" and "Electric Vehicle Charging Interoperability Testing Specifications" proposed charging control box test solution.

Test items

Test type	Test items
Security testing	• Analog leakage current test • Analog ground connection abnormality test • Output over current protection test
Charge control voltage test	• Detection point 1 12V voltage error detection • Detection point 1 9V voltage error detection • Detection point 1 6V voltage error detection
Charge control signal test	• Frequency error test • Duty cycle error test • Rise time error test • Fall time error test
Charge Control Timing Test	• Charge control timing test, and simulate full connection, semi-connected and unconnected state
Connection abnormal simulation	• Charging Station Detection Point 1 Voltage Abnormal simulation • Output Over Current Abnormal Simulation
Efficiency testing	• Test the efficiency of household chargers
Disturbance test	• Superimposed different sub-harmonic, frequency limit and voltage limit, voltage dips and other tests

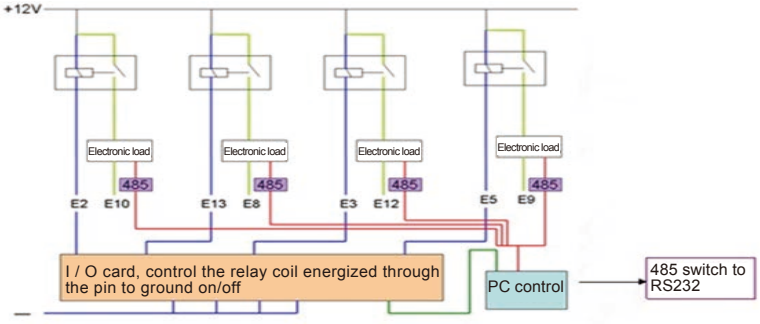
Automotive Junction Box Test System

Automotive junction box (automotive electrical central controller) integrates the whole car's fuse, circuit breaker, relay and so on. It is the vehicle electronic circuit control center. ITECH automotive junction box test system is established by high performance programmable electronic load, power supply and speical-designed IT9360 software.

ITECH Test solution advantage

- Structure: Modular design, easy to move and disassemble.When one channel fails, will not affect the operation of the system
- Heat dissipation: Intelligent fan, good heat dissipation and low
- noise
- Function: High level automation

  Communication: Remote control via the computer, easy to show test results,reduce labor cost

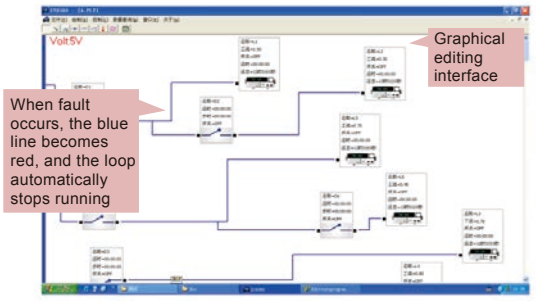


System test items

- Long time working stability
- Relay life test
- Fuse test
- Temperature monitor and fault alarm
- Other performance index

In addition to these test items, this test solution also provides powerful software features:

- Editable relay on-off timing
- Editable load current and run timing. Such as editing a cycle (load 5A on 5s off 10s), and then set the running time of such cycles
- When failure occurs for one channel, fault alarm will be shown on software interface.
- The failured channel stops running, and other channels continue running
- Each channel name can be edited, such as channel DUT is wiper, channel name is wiper
- Software operation interface displays voltage, current,temperature,run time,running status,load status,I/O status,and so on



Test data include voltage,current,time and other information,can be exported in excel format to save.

Charging Station
Car Charger Test Solution

Charging stations and car charger play important roles for the popularity of new energy vehicles. As a leading test and measurement solution supplier in the field of new energy, ITECH offers professional charging station / car charger test solution, fully meets the testing needs of different types of car charger, and simplifies operation.The test solution is with unique and important function.

Meet with the GB standards

- ITECH test solution meets with GBT18487.1 Electric vehicle conduction charging system Part 1 General requirements 2015
- GBT20234.1 Electric vehicle conduction charging use connecting device Part 1 General requirements 2015
- GBT20234.2 Electric vehicle conduction charging use connecting device Part 2 AC charging connector 2015
- GBT20234.3 Electric vehicle conduction charging use connecting device Part 3 DC charging connector 2015
- GBT27930 Communication protocol 2015 between electric vehicle non-vehicular conduction type charger and Battery management system
- QCT895-2011 Electric vehicle conduction type car charger

Advantages

- Modular design, customized auto-test system
- High-power electronic load can reach up to 600kW, fully meet test requirements of high-power DC charging station
- Built-in standard test items
- Compatible with multiple protocols for charging station, applicable to chargers with different communication protocol
- Fill-in-blank user interface, no need programming ability
- Customized test report

Testing software

ITECH professional test software is with user-friendly operation interface, users just check the test items, no need programming ability, so that the operation is more simple and clear, easy to get started.

Recommended test equipment

■ AC Power Supply

● IT7600 Series

Output range:
0-300V/0-144A/0-54kVA
Frequency Range: 10-5kHz

● IT7300 Series

Output range:
0-500V/0-12A/0-3kVA

■ DC Power Supply

● IT6700H Series

Output range (stand-alone):
0~1200V/0~110A/0~3000W

● IT6500 Series

Output range (stand-alone):
0 ~ 30kW
2-quadrant current seamless switching

■ AC Electronic Load

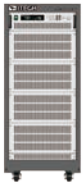
● IT8600 Series

Input range:
0-420V/0-160A/0-14.4kVA
Measurement:
V,I,PF,CF,P,Q,S,F,R,Ip+/-,THDv

■ DC Electronic Load

● IT8900 Series

Input range:
0-1200V/0-2500A/0-600kW
Six working modes:
CC/CV/CR/CP/CV+CC/CR-LED



● IT8700 Series

User-installable modules, extension frame to achieve 16 channels testing simultaneously

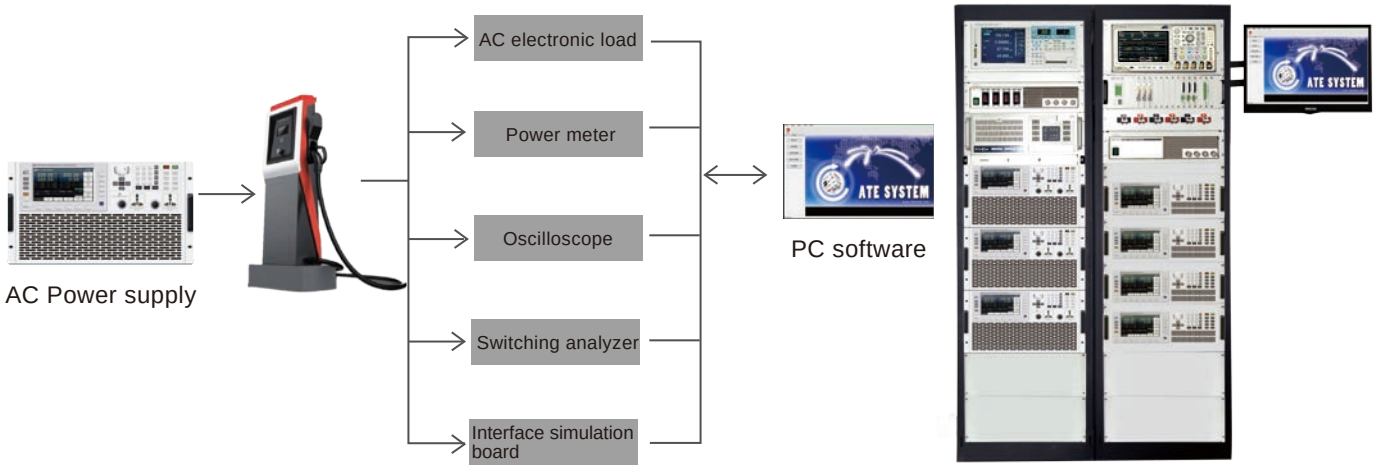
● IT8800 Series

Input range:
0-800V/0-500A/0-10kW

Charging Station / Car Charger Test Solution

AC Charging Station Test Solution

AC charging station outputs AC and is converted to DC by on-board charger to charge the electric vehicle battery.

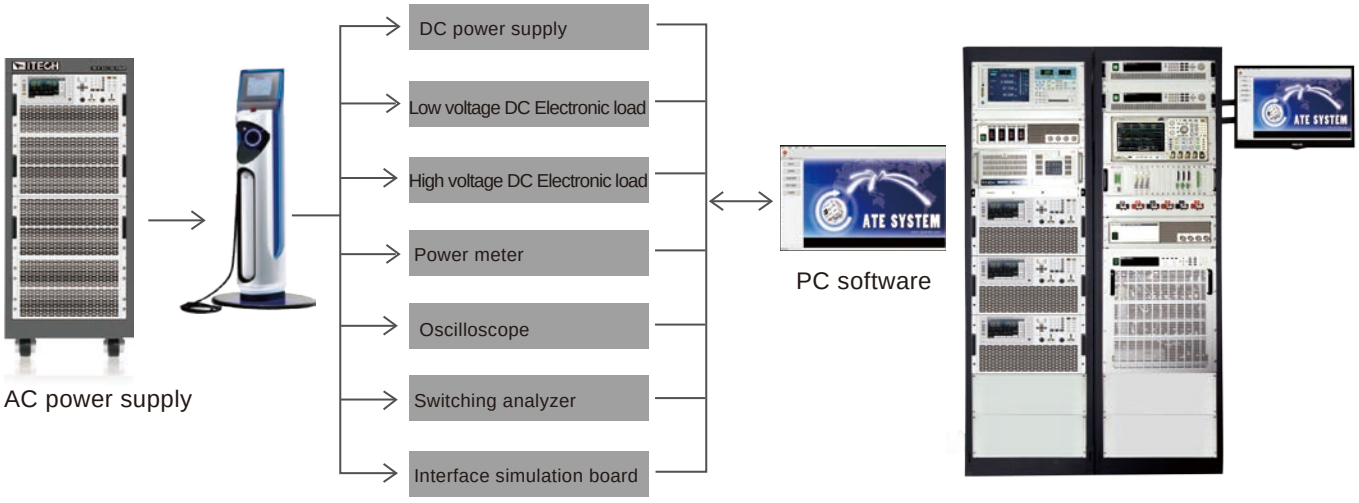


Test Items

	Sequence	Test Items	Sequence	Test Items
AC charging station	1	Test before power-on	8	Communication test
	2	Power on test	9	Over current protection test
	3	Control conductive test	10	Leakage current protection test
	4	open/close test with loads	11	Input over voltage protection test
	5	Input/output performance test	12	Input under voltage protection test
	6	Measured data compliance test	13	Abnormal connection test
	7	Display function test	14	Emergent stop function test

DC Charging Station Test Solution

As a fast-charging product, DC Charging station has high output power and voltage, so only high power and high voltage DC load can satisfy its testing demand.

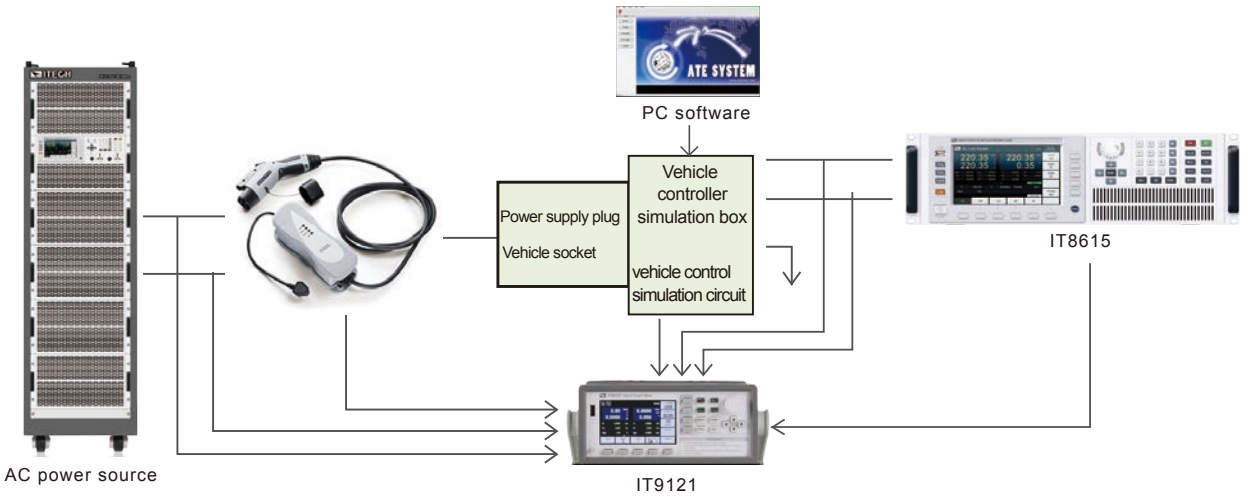


Test Items

	Sequence	Test Items	Sequence	Test Items
DC Charging Station	1	Output voltage deviation test	12	Input over voltage protection test
	2	Output current deviation test	13	Input under voltage protection test
	3	Regulated voltage & current accuracy test	14	Output over voltage protection test
	4	Ripple coefficient test	15	Output short circuit protection test
	5	Efficiency test	16	Inrush current test
	6	Power factor test	17	Battery reverse connection test
	7	Unbalanced equalizing current test	18	Abnormal connection test
	8	Voltage and current limit test	19	Emergent stop function test
	9	Display function test	20	Soft-start test
	10	Input function test	21	Discharge test
	11	Communication test		

Charge control box test program

Electric vehicle charging control box is mainly used for small current (less than 10A) for electric cars slow charging. ITECH provides charging control box test solution based on《GB / T18487.1-2015 electric vehicle conduction charging system first part: General requirements》and《electric vehicle conduction charge interoperability test specification》.



Test Items

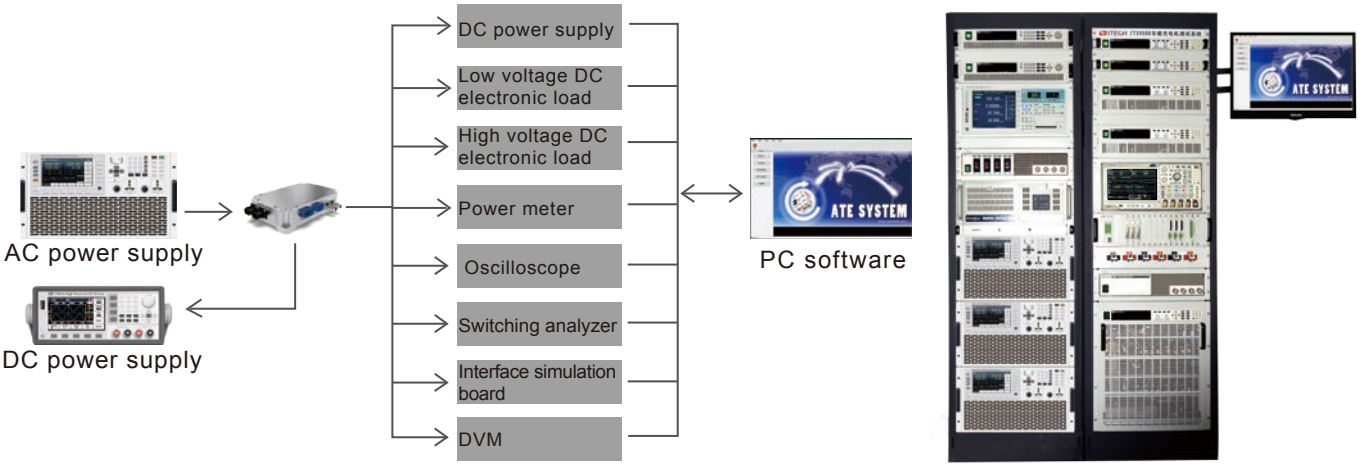
Sequence	Test type	Test items
1	Security test	Simulate leakage current test
2		Simulate ground connection abnormality test
3		Output over current protection test
4	Charge control voltage test	Test point 1 12V voltage error test
5		Test point 1 9V voltage error test
6		Test point 1 6V voltage error test
7	Charge control signal test	Frequency error test
8		Duty cycle error test
9		Rise time error test
10		Fall time error test

Sequence	Test type	Test items
11	Charge control timing test	Charge control timing test, and simulate full-connected, semi-connected and unconnected state
12	Connection exception simulation	Charging Station Detection Point 1 Voltage Abnormal simulation
13		Output Over Current Abnormal Simulation
14	Efficiency test	Test the efficiency of household chargers
15	Disturbance test	Superposition different harmonics, frequency limitation, voltage limitation, voltage dips and other tests

Charging Station / Car Charger Test Solution

Car Charger and Charging Interface Test

EV battery Charger can be classified into on-board charger and external charger. ITECH on-board charger test system includes electronic load for discharging battery, AC source for simulating grid supply, oscilloscope, power mater and professional software to guarantee the complete test for charger.



Test items

	Test type	Test item	GB/Test outline test item
Input	Input & Output Test	Charge Input Output Test	Power-on inrush current Efficiency Test Power Factor Test Power Test Voltage& Current Test
	StaticTest	Charge Static Test	Ripple and Noise Test Output Voltage & Current Test
	Line Regulation Test	Charge Line Regulation Test	Input Voltage Deviation Test Input Current Deviation Test
	AC Cycle Dropout Test	Charge Cycle Droput Test	AC Cycle Dropout Test
	Power Line Disturbance Test	Charge Power Line Disturbance Test	Power Line Disturbance Test
	Input Voltage Frequency Limitation Test	Charge Vin Fin Range Test	Input Voltage Frequency Range Test
Output	Load Regulation Test	Charge Load Regulation Test	Output Voltage Deviation Test Output Current Deviation Test
	Output Voltage Range Test	Charge Vout Range Test	Output Voltage Range Test
	Voltage Limit Test	Charge Voltgae Limit Test	Voltage Limit Test
	Current Limit Test	Charge Current Limit Test	Current Limit Test
	Total Regulation Test	Charge Total Regulation Test	Regulated Voltage Accuracy Test Regulated Current Accuracy Test
Protection	Input Voltage OVP UVP Test	Charge Input OVP Protect Test	Input UVP Test Input OVP Test
	Output Voltage OVP UVP Test	Charge Output OVP Protect Test	Output UVP Test Output OVP Test
	Short Circuit Protection Test	Charge Short Protect Test	Short Circuit Protection Test
	Communication Interrupt Test	Charge Communication Interrupt Test	Communication Interrupt Test
	Reversed Connection Protection Test	Charge Transposition Protect Test	Reversed Connection Protection Test
	Parameter Configuration Error Protection Test	Charge Config Param Test	Parameter Configuration Error Protection Test
Time Sequence Test	Turn On Test	Charge Turn On Test	Inrush Current Test Overshoot Voltage Test Steady State Current Test Turn On Time Test, Rise Time Test
	Turn Off Test	Charge Turn Off Test	Turn Off Time Test, Fall Time Test
Special tests	Reliability Test (Life Cycle Test)	Charge Reliably Test	Reliability Test (Life Cycle Test)

Optional Accessories

Simulation interface monitoring cable

IT-E161
0-10V input/output, simulation interface cable for monitoring and setting, used to control and read back power status
Applicable model:
IT6100 series

Digital interface monitoring cable

IT-E162
Digital interface cable for monitoring and setting, it can use digital port to control power output state, especially suitable for industrial application.
Applicable model:
IT6100 series

IT-E163
0-10V input/output, simulation interface cable for monitoring and setting, used to control and read back load status
Applicable model:
IT8500 series

IT-E133
GPIB communication cable, support SCPI protocol
Applicable model:
IT6800 series

IT-E134
GPIB communication cable, support SCPI protocol
Applicable model:
IT8500 series

IT-E135
GPIB communication cable, support SCPI protocol
Applicable model:
IT6100 series, IT6322

Test line

IT-E301/10A

IT-E301/240A
IT-E301/120A

IT-E30110-AB	10A / 1m/ Alligator clips - Banana plugs A pair of red and black test line
IT-E30110-BB	10A /1m / Banana plugs - Banana plugs A pair of red and black test line
IT-E30110-BY	10A /1m / Banana plugs - Y-type terminals A pair of red and black test line
IT-E30312-YY	30A /1.2m / Y-type terminals - A pair of red and black test line
IT-E30320-YY	30A / 2m / Y-type terminals - A pair of red and black test line
IT-E30615-OO	60A/ 1.5m / Ring terminals - A pair of red and black test line
IT-E31220-OO	120A / 2m / Ring terminals - A pair of red and black test line
IT-E32410-OO	240A / 1m / Ring terminals - A pair of red and black test line
IT-E32420-OO	240A / 2m / Ring terminals - A pair of red and black test line
IT-E33620-OO	360A / 2m / Ring terminals - A pair of red and black test line

Optional keyboard

IT-253 Keyboard
Help IT8500 series electronic load to complete Auto-test function
Applicable model:
IT8500 series

IT-254
Keyboard
Coordinating IT8500+ series electronic load to realize automatic testing function
Applicable model:
IT8500+ series

Communication interface

IT-E121 RS232 Communication interface, with RS232 standard communication cable
IT-E122 USB Communication interface, with USB standard communication cable
Applicable models: IT6100, IT6800, IT6322, IT6302, IT8500+, IT8500

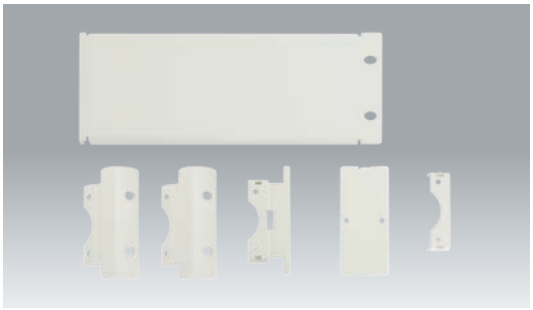
IT-E123 RS485 Communication interface, with RS485 interface
Applicable models: IT8500+, IT8500, IT6800, IT6100, IT6322

1/2 2UDouble units installation picture

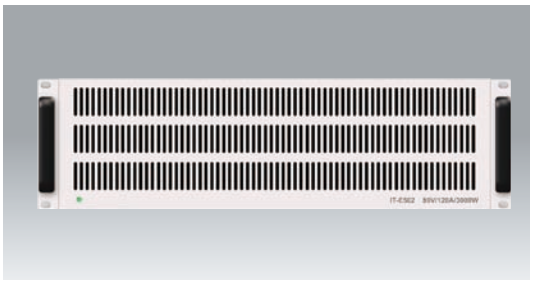
Rack shelves kit

IT-E152 Rack mount kit
Applicable models: IT8200 and IT6700 series

IT-E153B Rack mount kit
Applicable models: IT8700 series



IT-E151A 19 Rack mount kit
Applicable models: ITECH ½2U size model, please consult with ITECH for more details



Power dissipater
Applicable models: IT6500C

Model	Specification	Size
IT-E502	80V/120A/3KW	3U
IT-E503	200V/60A/3KW	3U
IT-E504	360V/30A/3KW	3U
IT-E505	500V/20A/3KW	3U
IT-E506	750V/15A/3KW	3U
IT-E507	1000V/10A/3KW	3U

Optional Accessories

IT-E601
Pin type lead
Rubber straight plug – Probe crown round head
Applicable models: IT5100

IT-E602
Large clip type lead
Rubber straight plug – Alligator clips
Applicable models: IT5100

IT-E603
Pin type lead
Rubber straight plug – Probe double pin plugs
Applicable models: IT5100

IT-E604
Black straight plug - Universal pen + Alligator clip
Applicable models: IT5100

IT-E605
Zero adjustment board (suitable for different probe)
Applicable models: IT5100

IT-E181
system fixture
Applicable models: IT9500

Current sensor

IT - E185 (option)
Measuring fixture box (250 V / 15 A), easy wiring test
Applicable models: IT9100

IT-E190-6A (option)
Current sensor
Applicable models:
IT9100, IT9500

IT-E190-15A (option)
Current sensor
Applicable models:
IT9100, IT9500

IT-E190-25A (option)
Current sensor
Applicable models:
IT9100, IT9500

IT-E190-40A (option)
Current sensor
Applicable models:
IT9100, IT9500

IT-E190-60A (option)
Current sensor
Applicable models:
IT9100, IT9500

ITECH is selling model list

AC electronic load

IT8600 AC/DC Electronic Load
Built-in communication interface: USB / GPIB / LAN / front USB — P05

Model	Specification	
IT8615	50~420Vrms / 20Arms / 1800VA / 1φ	NEW
IT8615L	15~260Vrms / 20Arms / 1800VA / 1φ	NEW
IT8616	50~420Vrms / 40Arms / 3600VA / 1φ	NEW
IT8617	50~420Vrms / 60Arms / 5400VA / 1φ or 3φ	NEW
IT8624	50~420Vrms / 80Arms / 7200VA / 1φ	NEW
IT8625	50~420Vrms / 100Arms / 9000VA / 1φ	NEW
IT8626	50~420Vrms / 120Arms / 10.8kVA/ 1φ	NEW
IT8627	50~420Vrms / 140Arms / 12.6kVA/ 1φ	NEW
IT8628	50~420Vrms / 160Arms / 14.4kVA/ 1φ	NEW

DC electronic load

IT8300 Regenerative DC Electronic Load
Main frame has built-in communication interface: RS232 / USB / RS485 / CAN / LAN — P09

Model	Specification	
IT8311	80V/ 170A / 3.5kW	NEW
IT8321	80V/ 340A / 7kW	NEW
IT8331	80V/ 510A / 10.5kW	NEW
IT8341	80V/ 1020A/ 21kW	NEW
IT8351	80V/ 1530A/ 31.5kW	NEW
IT8361	80V/ 2040A/ 42kW	NEW
IT8371	80V/ 2550A/ 52.5kW	NEW
IT8381	80V/ 3060A/ 63kW	NEW
IT8391	80V/ 3570A/ 73.5kW	NEW
IT8312	800V/ 20A/ 3.5kW	NEW
IT8322	800V/ 40A/ 7kW	NEW
IT8332	800V/ 60A/ 10.5kW	NEW
IT8342	800V/ 120A/ 21kW	NEW
IT8352	800V/ 180A/ 31.5kW	NEW
IT8362	800V/ 240A/ 42kW	NEW
IT8372	800V/ 300A/ 52.5kW	NEW
IT8382	800V/ 360A/ 63kW	NEW
IT8392	800V/ 420A/ 73.5kW	NEW

IT8700 Multi-channel Programmable DC Electronic Load
Main frame has built-in communication interface: RS232 / USB / GPIB / Ether Net — P18

Model	Specification
IT8731	80V/40A/200W
IT8732	80V/60A/400W
IT8732B	500V/20A/300W
IT8733	80V/120A/600W
IT8733B	500V/30A/500W
IT8722	80V/20A/250W*2
IT8722B	500V/15A/300W*2
IT8723	80V/45A/300W*2
IT8702	Four host box
IT8703	Expansion frame

*1 IT8722/IT8722B two-way total power is 300W, the two-way simultaneous work need to meet: (50W≤PCH1/PCH2≤250W；PCH1+PCH2≤300W)
*2 IT8700 modules should be equipped with IT8702 mainframe

IT8900 High performance high power programmable DC electronic load
Built-in communication interface: USB / GPIB / RS232 / LAN — P22

Model	Specification	
IT8912-600-480	600V/480A/12kW	NEW
IT8912-1200-240	1200V/240A/12kW	NEW
IT8915-150-960	150V/960A/15kW	NEW
IT8918-600-720	600V/720A/18kW	NEW
IT8918-1200-360	1200V/360A/18kW	NEW
IT8922-150-1440	150V/1440A/22.5kW	NEW
IT8924-600-960	600V/960A/24kW	NEW
IT8924-1200-480	1200V/480A/24kW	NEW
IT8930-150-1920	150V/1920A/30kW	NEW

IT8900 High performance high power programmable DC electronic load
Built-in communication interface: USB / GPIB / RS232 / LAN — P22

Model	Specification	
IT8930-600-1200	600V/1200A/30kW	NEW
IT8930-1200-600	1200V/600A/30kW	NEW
IT8936-600-1440	600V/1440A/36kW	NEW
IT8936-1200-720	1200V/720A/36kW	NEW
IT8945-150-2500	150V/2500A/45kW	NEW
IT8948-600-1920	600V/1920A/48KW	NEW
IT8948-1200-960	1200V/960A/48KW	NEW
IT8960-150-2500	150V/2500A/60KW	NEW
IT8960-600-2400	600V/2400A/60KW	NEW
IT8960-1200-1200	1200V/1200A/60KW	NEW
IT8972-600-2500	600V/2500A/72KW	NEW
IT8972-1200-1440	1200V/1440A/72KW	NEW
IT8990-150-2500	150V/2500A/90KW	NEW
IT89108-600-2500	600V/2500A/108KW	NEW
IT89108-1200-2160	1200V/2160A/108KW	NEW

IT8800 High Power DC Electronic Load
Built-in communication interface: USB / GPIB / RS232 — P28

Model	Specification
IT8811	120V150W30A/150W
IT8812	120V/30A/250W
IT8812B	500V/15A/200W
IT8812C	120V/60A/250W
IT8813	120V/60A/750W
IT8813C	120V/120A/750W
IT8813B	500V/30A/750W
IT8814	120V/120A/1500W
IT8814B	500V/60A/1200W
IT8816	120V/240A/3000W
IT8816B	500V/100A/2500W
IT8817	120V/360A/4500W
IT8817B	500V/120A/3600W
IT8818	120V/480A/6000W
IT8818B	500V/150A/5000W
IT8819H	800V/80A/7500W
IT8830	120V/500A/10KW
IT8830B	500V/200A/10KW
IT8830H	800V/100A/10KW
IT8831	120V/750A/15KW
IT8831B	500V/300A/15KW
IT8831H	800V/150A/15KW
IT8832	120V/1000A/20KW
IT8832B	500V/400A/20KW
IT8832H	800V/200A/20KW
IT8833	120V/1500A/25KW
IT8833B	500V/500A/25KW
IT8833H	800V/250A/25KW
IT8834B	500V/600A/30KW
IT8834H	800V/300A/30KW
IT8835B	500V/700A/35KW
IT8835H	800V/350A/35KW
IT8836H	800V/400A/40KW
IT8837H	800V/450A/45KW
IT8838B	500V/1000A/50KW
IT8838H	800V/500A/50KW
IT8839B	500V/1100A/55KW
IT8839H	800V/600A/55KW

IT8912E LED High Accuracy DC Electronic Load
Built-in communication interface: USB / GPIB / RS232 — P38

Model	Specification
IT8912E	500V/15A/300W

IT8500+ Programmable DC Electronic Load
Optional communication interface: RS485 / RS232 / USB

Model	Specification
IT8511+	120V/30A/150W
IT8511A+	150V/30A/150W
IT8511B+	500V/15A/150W
IT8512+	120V/30A/300W
IT8512A+	150V/30A/300W
IT8512B+	500V/15A/300W
IT8512C+	120V/60A/300W
IT8512H+	800V/5A/300W
IT8513A+	150V/60A/400W
IT8513C+	120V/120A/600W

Built-in communication interface: RS232 / USB

Model	Specification
IT8514B+	500V/60A/1500W (Standard RS232/USB)
IT8514C+	120V/240A/1500W (Standard RS232/USB)
IT8516C+	120V/240A/3000W (Standard RS232/USB)

IT8500 Programmable DC Electronic Load
Optional communication interface: GPIB / RS232 / USB

Model	Specification
IT8510	120V/20A/120W
IT8511	120V/30A/150W
IT8512	120V/30A/300W
IT8512B	500V/15A/300W
IT8512C	120V/60A/300W
IT8513B	500V/30A/600W
IT8513C	120V/120A/600W
IT8514B	500V/60A/1200W
IT8514C	120V/240A/1200W
IT8514F	60V/240A/1200W
IT8515B	500V/60A/1800W
IT8515C	120V/240A/1800W
IT8516B	500V/120A/2400W
IT8516C	120V/240A/2400W
IT8516E	120V/240A/3000W
IT8518E	60V/240A/6KW
IT8518B	500V/120A/5000W
IT8518C	60V/240A/5000W
IT8518F	60V/480A/5000W

IT8200 Digital Control DC Electronic Load

Model	Specification
IT8211	60V/30A/150W

Programmable AC power supply

IT7600 high performance programmable AC power supply
Built-in communication interface: USB / RS232 / GPIB / LAN / CAN / front USB P42

Model	Specification	
IT7622	300V/6A/750VA,1φ	NEW
IT7624	300V/12A/1500VA,1φ	NEW
IT7625	300V/36A/4500VA,1φ or 3φ	NEW
IT7626	300V/24A/3000VA,1φ	NEW
IT7627	300V/72A/9000VA,1φ or 3φ	NEW
IT7628L	300V/18A/13.5kVA,3φ	NEW
IT7628	300V/144A/18kVA,1φ or 3φ	NEW
IT7630	300V/36A/27kVA,3φ	NEW
IT7632	300V/48A/36kVA,3φ	NEW
IT7634	300V/60A/45kVA,3φ	NEW
IT7636	300V/72A/54kVA,3φ	NEW

IT7300 Programmable AC Power Supply
Built-in communication interface: USB / RS232 / GPIB / LAN P49

Model	Specification
IT7321	150V/300V , 3A/1.5A , 300VA , 1φ
IT7322	150V/300V , 6A/3A , 750VA , 1φ
IT7324	150V/300V , 12A/6A , 1500VA , 1φ
IT7326	150V/300V , 24A/12A , 3000VA , 1φ
IT7322H	250V/500V , 3A/1.5A , 750VA , 1φ
IT7324H	250V/500V , 6A/3A , 1500VA , 1φ
IT7326H	250V/500V , 12A/6A , 3000VA , 1φ
IT7322T	150V/300V , 6A/3A , 2250VA , 3φ
IT7324T	150V/300V , 12A/6A , 4500VA , 3φ
IT7326T	150V/300V , 24A/12A , 9000VA , 3φ
IT7322HT	250V/500V , 3A/1.5A , 2250VA , 3φ
IT7324HT	250V/500V , 6A/3A , 4500VA , 3φ
IT7326HT	250V/500V , 12A/6A , 9000VA , 3φ

Programmable DC power supply

IT6400 Bipolar DC Power Supply / Battery Simulator
Built-in communication interface: GPIB / USB / LAN // front USB interface P53

Model	Specification	
IT6411	±15V/±9V/ ±3A/±5A 45W	NEW
IT6411S	-15V-0V,0-15V/±0.1 A/1.5 W	NEW
IT6412	±15V/±9V/ ±3A/±5A 45W	NEW
	0-15V/0-9V/±3A/±5A 45W	NEW
IT6431	-15V-0V,0-15V/±10 A/150 W	NEW
IT6432	-30V-0V,0-30V/±5A/150W	NEW
IT6433	-60V-0V,0-60V/±2.5 A/150 W	NEW

IT6500 Wide-range High-power DC Power Supply
Built-in communication interface: USB / RS232 / RS485 / GPIB P62

Model	Specification
IT6502D	80V/60A/800W
IT6512	80V/60A/1200W(Contains List, DIN waveforms)
IT6512A	80V/60A/1200W
IT6513	150V/30A/1200W(Contains List, DIN waveforms)
IT6513A	150V/30A/1200W

Built-in communication interface: USB / RS232 / CAN / GPIB / LAN

Model	Specification	
IT6512C	80V/120A/1800W	NEW
IT6512D	80V/120A/1800W	NEW
IT6513C	200V/60A/1800W	NEW
IT6513D	200V/60A/1800W	NEW
IT6514C	360V/30A/1800W	NEW
IT6514D	360V/30A/1800W	NEW
IT6515C	500V/20A/1800W	NEW
IT6515D	500V/20A/1800W	NEW
IT6516C	750V/15A/1800W	NEW
IT6516D	750V/15A/1800W	NEW
IT6517C	1000V/10A/1800W	NEW
IT6517D	1000V/10A/1800W	NEW
IT6522C	80V/120A/3KW	NEW
IT6522D	80V/120A/3KW	NEW

Built-in communication interface: USB / RS232 / CAN / GPIB / LAN		
Model	**Specification**	
IT6523C	200V/60A/3KW	NEW
IT6523D	200V/60A/3KW	NEW
IT6524C	360V/30A/3KW	NEW
IT6524D	360V/30A/3KW	NEW
IT6525C	500V/20A/3KW	NEW
IT6525D	500V/20A/3KW	NEW
IT6526C	750V/15A/3KW	NEW
IT6526D	750V/15A/3KW	NEW
IT6527C	1000V/10A/3KW	NEW
IT6527D	1000V/10A/3KW	NEW
IT6532C	80V/240A/6KW	NEW
IT6532D	80V/240A/6KW	NEW
IT6533C	200V/120A/6KW	NEW
IT6533D	200V/120A/6KW	NEW
IT6534C	360V/60A/6KW	NEW
IT6534D	360V/60A/6KW	NEW
IT6535C	500V/40A/6KW	NEW
IT6535D	500V/40A/6KW	NEW
IT6536C	750V/30A/6KW	NEW
IT6536D	750V/30A/6KW	NEW
IT6537C	1000V/20A/6KW	NEW
IT6537D	1000V/20A/6KW	NEW
IT6542C	80V/360A/9KW	NEW
IT6542D	80V/360A/9KW	NEW
IT6543C	200V/180A/9KW	NEW
IT6543D	200V/180A/9KW	NEW
IT6544C	360V/90A/9KW	NEW
IT6544D	360V/90A/9KW	NEW
IT6545C	500V/60A/9KW	NEW
IT6545D	500V/60A/9KW	NEW
IT6546C	750V/45A/9KW	NEW
IT6546D	750V/45A/9KW	NEW
IT6547C	1000V/30A/9KW	NEW
IT6547D	1000V/30A/9KW	NEW
IT6552C	80V/480A/12KW	NEW
IT6552D	80V/480A/12KW	NEW
IT6553C	200V/240A/12KW	NEW
IT6553D	200V/240A/12KW	NEW
IT6554C	360V/120A/12KW	NEW
IT6554D	360V/120A/12KW	NEW
IT6555C	500V/80A/12KW	NEW
IT6555D	500V/80A/12KW	NEW
IT6556C	750V/60A/12KW	NEW
IT6556D	750V/60A/12KW	NEW
IT6557C	1000V/40A/12KW	NEW
IT6557D	1000V/40A/12KW	NEW
IT6562C	80V/600A/15KW	NEW
IT6562D	80V/600A/15KW	NEW
IT6563C	200V/300A/15KW	NEW
IT6563D	200V/300A/15KW	NEW
IT6564C	360V/150A/15KW	NEW
IT6564D	360V/150A/15KW	NEW
IT6565C	500V/100A/15KW	NEW
IT6565D	500V/100A/15KW	NEW
IT6566C	750V/75A/15KW	NEW
IT6566D	750V/75A/15KW	NEW
IT6567C	1000V/50A/15KW	NEW
IT6567D	1000V/50A/15KW	NEW
IT6572C	80V/840A/21KW	NEW
IT6572D	80V/840A/21KW	NEW
IT6573C	200V/420A/21KW	NEW
IT6573D	200V/420A/21KW	NEW
IT6574C	360V/210A/21KW	NEW
IT6574D	360V/210A/21KW	NEW
IT6575C	500V/140A/21KW	NEW
IT6575D	500V/140A/21KW	NEW
IT6576C	750V/105A/21KW	NEW
IT6576D	750V/105A/21KW	NEW

Built-in communication interface: USB / RS232 / CAN / GPIB / LAN		
Model	**Specification**	
IT6577C	1000V/70A/21KW	NEW
IT6577D	1000V/70A/21KW	NEW
IT6582C	80V/960A/24KW	NEW
IT6582D	80V/960A/24KW	NEW
IT6583C	200V/480A/24KW	NEW
IT6583D	200V/480A/24KW	NEW
IT6584C	360V/240A/24KW	NEW
IT6584D	360V/240A/24KW	NEW
IT6585C	500V/160A/24KW	NEW
IT6585D	500V/160A/24KW	NEW
IT6586C	750V/120A/24KW	NEW
IT6586D	750V/120A/24KW	NEW
IT6587C	1000V/80A/24KW	NEW
IT6587D	1000V/80A/24KW	NEW
IT6592C	80V/1200A/30KW	NEW
IT6592D	80V/1200A/30KW	NEW
IT6593C	200V/600A/30KW	NEW
IT6593D	200V/600A/30KW	NEW
IT6594C	360V300A/30KW	NEW
IT6594D	360V300A/30KW	NEW
IT6595C	500V/200A/30KW	NEW
IT6595D	500V/200A/30KW	NEW
IT6596C	750V/150A/30KW	NEW
IT6596D	750V/150A/30KW	NEW
IT6597C	1000V/100A/30KW	NEW
IT6597D	1000V/100A/30KW	NEW

*1 Power dissipater must equip with IT6500C series to use
*2 IT6500C is high speed multi-function DC power supply, IT6500D is stable multi-function DC power supply

IT6000 high-power DC power supply Built-in communication interface: RS232 / USB / RS485 / CAN / LAN		
Model	**Specification**	
IT6005-80-170	80V/170A/5KW	NEW
IT6010-80-340	80V/340A/10KW	NEW
IT6015-80-510	80V/510A/15KW	NEW
Built-in communication interface: RS232 / GPIB		
Model	**Specification**	
IT6005B-80-170	80V/170A/5KW	NEW
IT6010B-80-340	80V/340A/10KW	NEW
IT6015B-80-510	80V/510A/15KW	NEW

IT6900A Wide -range Programmable DC Power Supply Built-in communication interface: USB / RS232 / GPIB	
Model	**Specification**
IT6922A	60V/5A/100W
IT6932A	60V/10A/200W
IT6933A	150V/5A/200W
IT6942A	60V/15A/360W
IT6952A	60V/25A/600W
IT6953A	150V/10A/600W
Built-in communication interface: USB / RS232 / GPIB / RS485 / external analog	
Model	**Specification**
IT6922B	60V/5A/100W
IT6932B	60V/10A/200W
IT6942B	60V/15A/360W
IT6952B	60V/25A/600W
IT6953B	150V/10A/600W

IT6800A / B Dual range programmable DC power supply
Built-in communication interface: RS232 / USB

Model	Specification
IT6861A	20V/5A/100W 8V/9A/72W
IT6862A	32V/3A/96W 12V/6A/72W
IT6863A	72V/1.5A/108W 32V/3A/96W
IT6872A	35V/4A/140W 15V/7A/105W
IT6873A	0-75V,2A/0-32V,4A
IT6874A	0-150V,1.2A/0-60V,2A

Built-in communication interface: RS232 / USB / GPIB

Model	Specification
IT6861B	20V/5A/100W 8V/9A/72W
IT6862B	32V/3A/96W 12V/6A/72W
IT6863B	72V/1.5A/108W 32V/3A/96W
IT6872B	35V/4A/140W 15V/7A/105W
IT6873B	75V/2A/150W 32V/4A/128W
IT6874B	150V/1.2A/180W 60V/2A/120W

IT6800A/B Single Channel Programmable DC Power Supply P69
Built-in communication interface: RS232 / USB

Model	Specification
IT6831A	18V/10A/180W
IT6832A	32V/6A/192W
IT6833A	72V/3A/216W
IT6835A	50V/4A/200W

Built-in communication interface: RS232 / USB / GPIB

Model	Specification
IT6832B	32V/6A/192W
IT6833B	72V/3A/216W
IT6835B	50V/4A/200W

IT6800 High Performance DC Power Supply
Optional communication interface: GPIB / RS232 / USB

Model	Specification
IT6821	18V/5A/90W
IT6822	32V/3A/96W
IT6823	72V/1.5A/108W
IT6831	18V/10A/180W
IT6832	32V/6A/192W
IT6833	72V/3A/216W
IT6834	150V/1.2A/180W

IT6700H High Voltage DC Power Supply P71
Built-in communication interface: USB / RS232 / GPIB

Model	Specification
IT6722	80V/20A/400W
IT6722A	80V/20A/400W，without GPIB
IT6723B	150V/20A/850W
IT6723C	32V/110A/850W
IT6723	80V/40A/850W
IT6723G	600V/5A/850W
IT6723H	300V/10A/850W
IT6724C	32V/110A/1500W
IT6724	80V/40A/1500W
IT6724B	150V/20A/1500W
IT6724H	300V/10A/1500W
IT6724G	600V/5A/1500W
IT6726B	160V/40A/3KW
IT6726C	32V/220A/3KW
IT6726H	300V/20A/3KW
IT6726G	600V/10A/3KW
IT6726V	1200V/5A/3KW

IT6700 DC Power Supply

Model	Specification
IT6720	60V/5A/100W
IT6721	60V/8A/180W

IT6100B High Accuracy DC Power Supply P74
Built-in communication interface: USB / RS232 / GPIB

Model	Specification
IT6121B	20V/5A/100W
IT6122B	32V/3A/96W
IT6123B	72V/1.2A/86W
IT6132B	30V/5A/150W
IT6133B	60V/2.5A/150W
IT6162B	20V/50A/1000W
IT6164B	30V/40A/1200W 60V/20A/1200W

IT6100 DC Power Supply P76
Optional communication interface: USB / RS232 / GPIB

Model	Specification
IT6151	5.2V/60A/312W
IT6152	20V/27A/540W
IT6153	30V/18A/540W
IT6154	60V/9A/540W
IT6162	20V/48A/1000W
IT6163	30V/32A/1000W
IT6164	60V/16A/1000W

IT6300 Triple Channels DC power supply P78

Model	Specification
IT6302	30V/3A/90W*2CH Optional communication interface:USB/RS232
	5V/3A/15W*1CH Optional communication interface:USB/RS232
IT6322	30V/3A/90W*2CH Optional communication interface:USB/GPIB/RS232
	5V/3A/15W*1CH Optional communication interfaceUSB/GPIB/RS232

Built-in communication interface: USB / RS232

Model	Specification
IT6322A	30V/3A/90W*2CH 5V/3A/15W*1CH
IT6332A	30V/6A/180W*2CH 5V/3A/15W*1CH
IT6333A	60V/3A/180W*2CH 5V/3A/15W*1CH

Built-in communication interface: USB / RS232 / GPIB

Model	Specification
IT6322B	30V/3A/90W*2CH 5V/3A/15W*1CH
IT6332B	30V/6A/180W*2CH 5V/3A/15W*1CH
IT6333B	60V/3A/180W*2CH 5V/3A/15W*1CH

Power meter P81

IT9100 Power Meter
Built-in communication interface: USB / GPIB / RS232 / Ethernet communication interface
Front USB interface

Model	Specification
IT9121	600V/20A AC power meter (with harmonic measurement)
IT9121C	600V/50A NEW
IT9121E	600V/20A
IT9121H	1000V/20A NEW
IT-E185	Power meter test fixture

Battery tester P85

IT5100 Battery tester
Built-in communication interface: GPIB / USB / LAN // front USB interface

Model	Specification
IT5101	-300V~+300V/3mΩ~3000Ω
IT5101E	-300V~+300V/300mΩ~3Ω
IT5101H	-1000V~+1000V/3mΩ~3000Ω NEW

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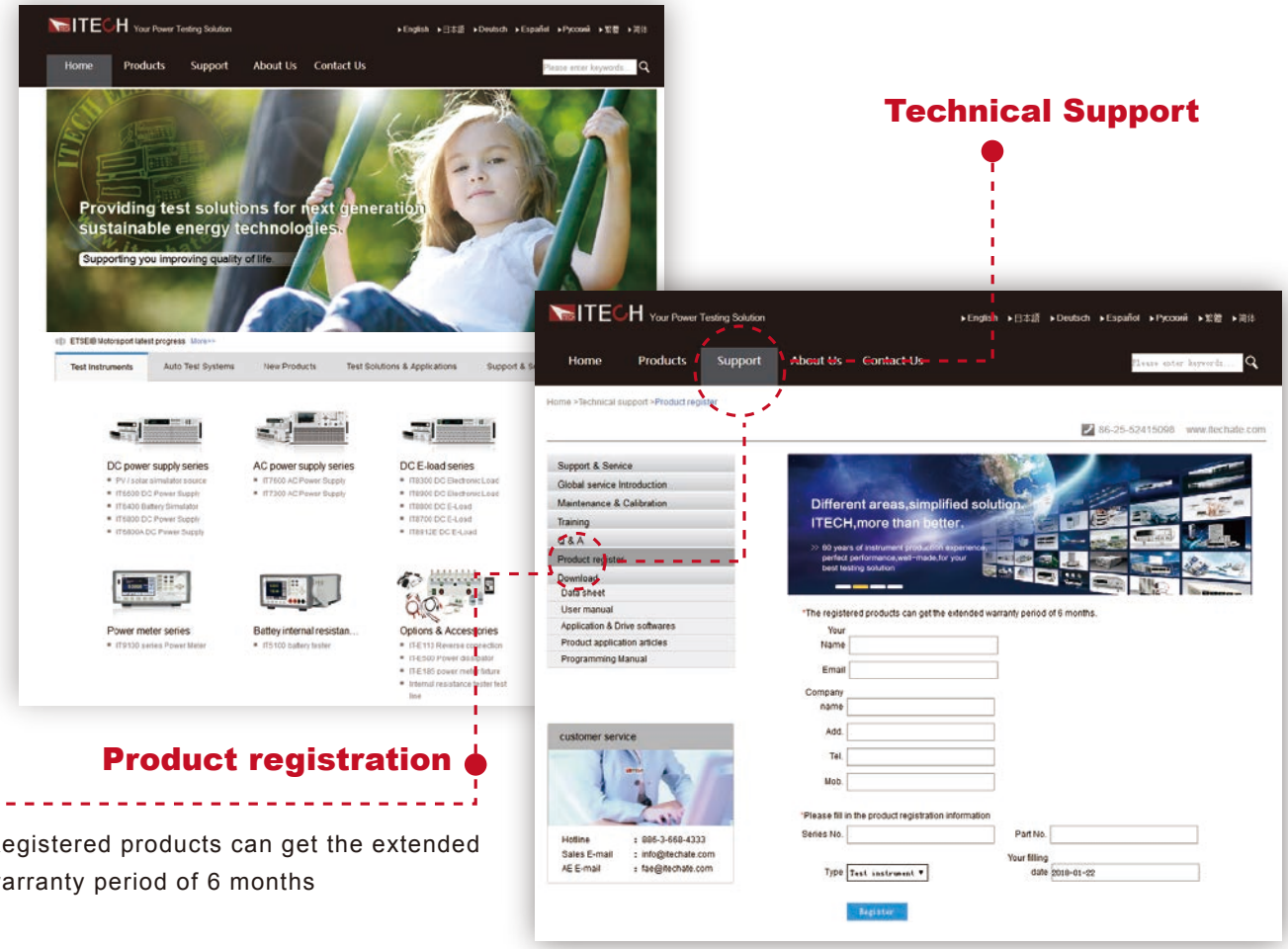

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