

IT8700 Electronic Load



■ Features

- Removable modules for easy system configurability
- Dynamic power distribution function for dual channels, save your cost
- Dual-channel module displays every channel information simultaneously
- Measure short-circuit peak current value
- Up to 25 kHz transient mode and 100 kHz List mode
- Measurement resolution: 0.1mV, 0.01mA (10 uA)
- Measurement speed: up to 50 kHz
- Auto-test function
- Adjustable slew rate in CC mode
- Support several load modules working at the same time
- Supports up to 16 channels with mainframe extension
- Output resolution up to 16 bits, voltmeter and ammeter reach 5 1/2 bits
- CC \ CV \ CR \ CP mode
- Highlight VFD display for both mainframe and modules
- Support USBTMC/SCPI communication protocol
- Output terminals on the rear panel
- Simulate the transient response and export measured values in time
- Built-in waveform generator and LIST mode
- Built-in LAN, GPIB, USB, RS232 interfaces

IT8700 Multi-channel Electronic Load

IT8700 series programmable DC electronic load supports up to 16 channels with mainframe extension, transient mode up to 25 kHz, which improves your test efficiency, with high resolution and accuracy, IT8700 CC, CV, CR, remote sensing, short-circuit and transient mode make your testing conveniently.





IT8700 series programmable DC electronic, loads applied in: test of AC/DC power supply with single and multiple output DC/DC converter, chargers, batteries and power electrical components. It supplies efficient way for researching, manufacturing, quality control and so on. Modular design make you install different modules into the mainframe, and control via front panel keypad, Ethernet, USB, RS232 and GPIB standard interface.

IT8700 programmable DC electronic load have 6 models of modules, with power (from 200W to 600W), current (up to 120A), voltage (up to 500V). Every load module is grounded separately to avoid short circuit damage. And with 5 1/2 digit current and voltage measurement function. Master/slave design allows all modules to work simultaneously. All modules can work in CC, CV, CR, CP mode.

IT8700 programmable DC electronic load can simulate many kinds of transient condition. You can edit load waveform by editing voltage, current, slew rate and width. With the capacity of saving up to 100 groups test parameters and status, the system can recall at any time.

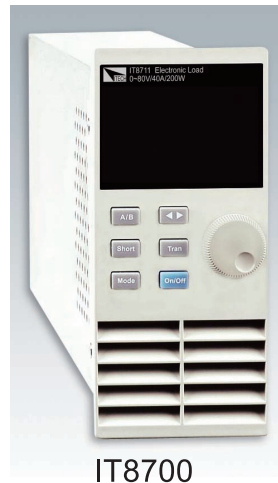
IT8700 programmable DC electronic load applies high-precision circuit of 5 1/2 digit with multi-range and 5 1/2 digit. You can test and adjust line-voltage, and simulate short-circuit testing easily via front panel keyboard. Moreover, IT8700 provide optional remote controller for the automatic production line.

IT8700 programmable DC electronic load have self-test system as well as OCP, OVP, OPP, OTP and reverse polarity protection to ensure the reliability for engineering-test and auto-test systems.

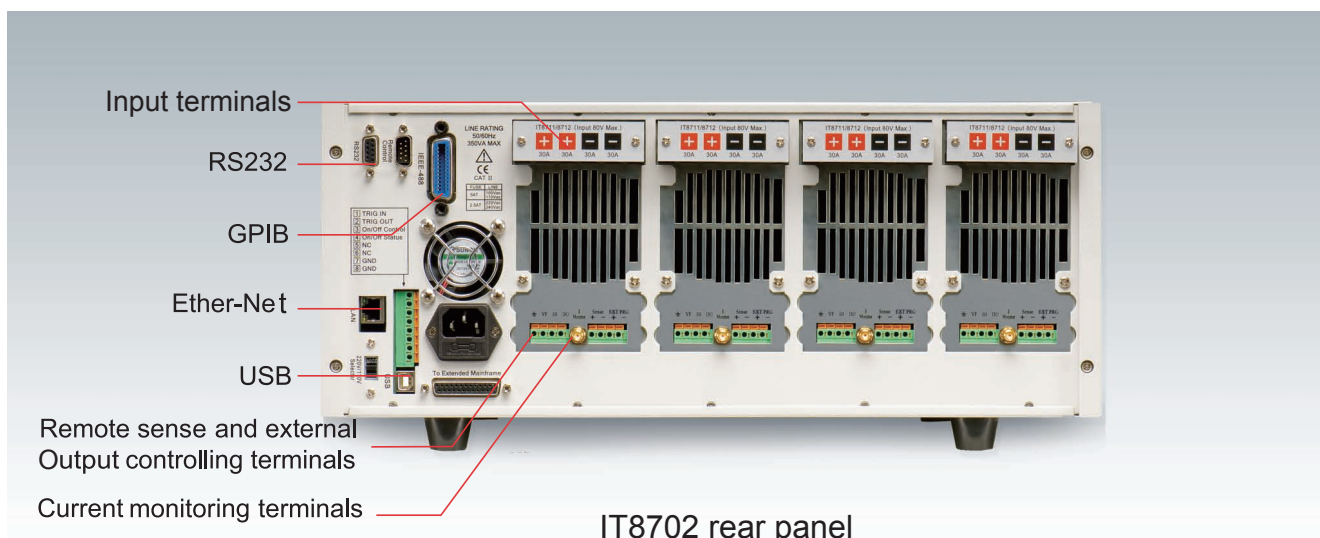
IT8700 Electronic Load

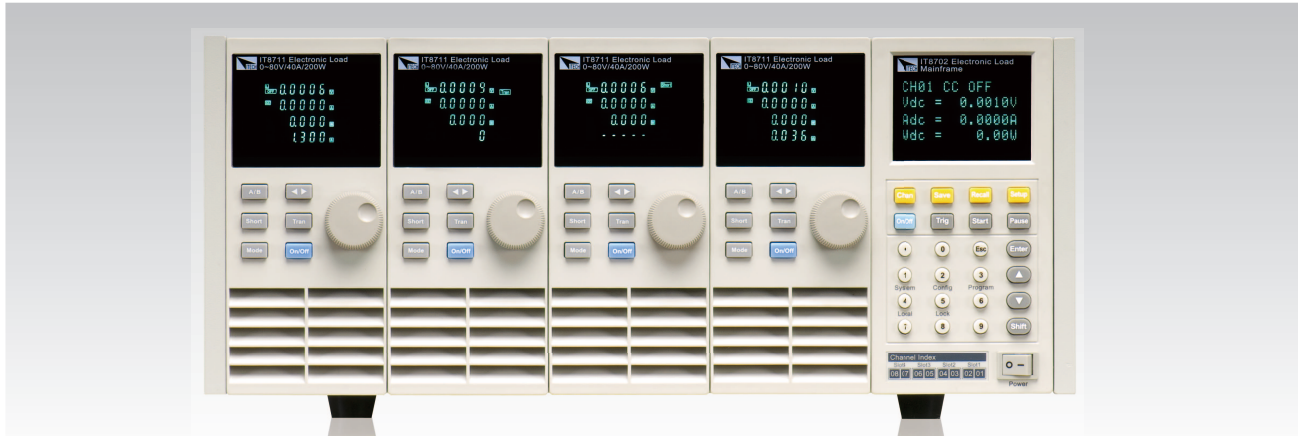
IT8731	80V/40A/200W
IT8732	80V/60A/400W
IT8732B	500V/20A/300W
IT8733	80V/120A/600W
IT8733B	500V/30A/600W
IT8722	80V/20A/Max250W-CH1 80V/20A/Max250W-CH2 *1
IT8722B	500V/15A/250W NEW
IT8723	80V/45A/Max300W-CH1 80V/45A/Max300W-CH2 *1
IT8702	Mainframe(include 4 interfaces)
IT8703	Extended mainframe

- 1: The total power of dual channel for IT8722 is 300W. If the two channels of IT8722 work at the same time, need to satisfy: $50\text{ W} \leq \text{PCH1} / \text{PCH2} \leq 2500\text{W}$; $\text{PCH1} + \text{PCH2} \leq 300\text{W}$
- 2: The modules should be equipped with IT8702 mainframe
- 3: Interface of mainframe :RS232,USB,GPIB,Ether Net



IT8700 series has voltage and current measurement function with high resolution and high accuracy, no need to add additional voltmeter and ammeter which save your cost.





1. Freely system structure configurable

IT8700 programmable DC electronic load, 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 can also test multi-output batteries synchronously.

2. Modular design

With removable module design, you can choose suitable load modules to modify the system according to your requirement. This design allows for multiple channels and is ideal for testing several units, especially power supplies with multiple outputs.

3. Auto-test

When applied in automatic production testing, you can judge whether the test parameters of DUT are within the specification limits and adjust according to the GO/NG output states.

4. Powerful communication interfaces

IT8702 mainframe has built-in GPIB/Ethernet/USB/RS232 complete communication interfaces. In appliance of the auto-testing system, you can carry out data communication through SCPI/VISA/USBTMC standard communication protocols to control modules' testing.

5. The best resolution and accuracy

Compared to similar products, IT8700 series have the best features high resolution of 0.1 mV / 0.01 mA which help you get high accurate data. Moreover, up to 50kHz measurement speed makes your testing rapid and accurate.

IT8700 Multi-channel Electronic Load

IT8722 firstly apply the technology that one module takes two channels with dynamic distribution power. User can adjust the power of the two channels according to the testing requirement (total power \leq 300W).

6. High-speed transition and list mode with 100kHz
 List mode, user can finish various waveforms test by editing every step width and slew rate to create complex sequences.

7. Dynamic power distribution mode

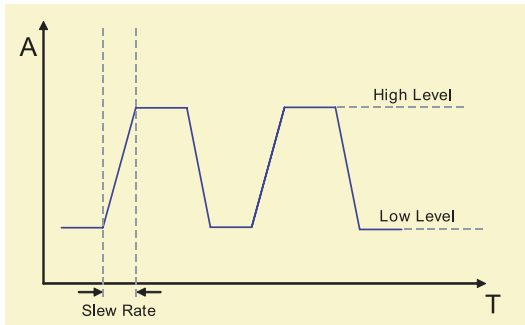
Usually, one module require high power while another require low power in battery testing. IT8722 allows you to distribute the power among all slots arbitrarily (150W/150W)—(1W/299W) within the total power(300W)—helping you make full use of the load's power.

IT8732B and IT8733B measurement voltage can up to 500V.

IT8733 provide maximum current of 120A which is the most effective testing instrument for high power testing.

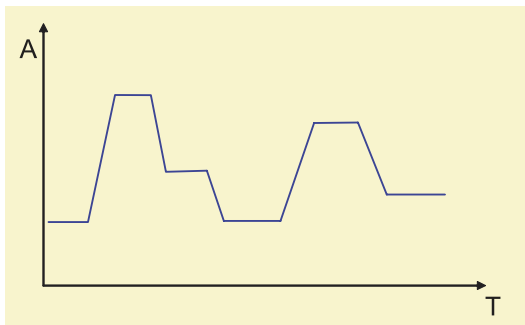
Dynamic Mode:

Dynamic mode enables the module to periodically switch between two load-levels. A power supply's regulation and transient characteristic can be evaluated by monitoring the supply's output voltage waveform under varying combinations of load levels, frequency, duty cycle and slew rate. IT8700 can supply transient operation not only in CC mode, but also in CV, CR mode. Transient operation can be used in test integral response of the circuit, e.g. the current changes when the disk driver run and stop. Transient operation can simulate these condition.



LIST Mode:

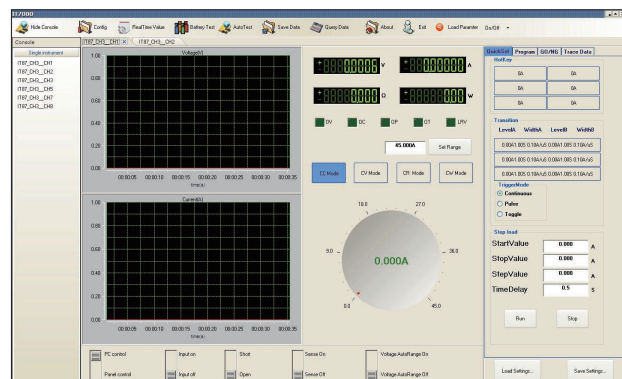
Not limited to just switching between two levels, list mode helps you generate more complex sequences of input changes with several different levels.



IT8700 LIST mode measurement speed can up to 100KHz.



IT8702 and IT8703 combination



software

		IT8731		IT8732		IT8732B		IT8733	
Input rating	Voltage	0 ~ 80 V		0 ~ 80 V		0 ~ 500 V		0 ~ 80 V	
	Current	0 ~ 4 A	0 ~ 40 A	0 ~ 6 A	0 ~ 60 A	0 ~ 3 A	0 ~ 20 A	0 ~ 12 A	0 ~ 120 A
(0~40 °C)	Power	200 W		400 W		300 W		600 W	
	MOV	0.1 V at 4 A	1 V at 40 A	0.15 V at 6 A	1.5 V at 60 A	0.7 V at 3 A	4.5 V at 20 A	0.18 V at 12 A	1.8 V at 120 A
CV mode	Range	0 ~ 18 V	0 ~ 80 V	0 ~ 18 V	0 ~ 80 V	0 ~ 18 V	0 ~ 500 V	0 ~ 18 V	0 ~ 80 V
	Resolution	1 mV	10 mV	1 mV	10 mV	1 mV	10 mV	1 mV	10 mV
CC mode	Accuracy	± (0.05 % + 0.02 % FS) ± (0.05 % + 0.025 % FS)		± (0.05 % + 0.02 % FS) ± (0.05 % + 0.025 % FS)		± (0.05 % + 0.02 % FS) ± (0.05 % + 0.025 % FS)		± (0.05 % + 0.02 % FS) ± (0.05 % + 0.025 % FS)	
	Range	0 ~ 4 A	0 ~ 40 A	0 ~ 6 A	0 ~ 60 A	0 ~ 3 A	0 ~ 20 A	0 ~ 12 A	0 ~ 120 A
CR mode	Resolution	16 bit		16 bit		16 bit		16 bit	
	Accuracy	0.01 % + 0.08 S	0.01 % + 0.0008 S	0.01 % + 0.08 S	0.01 % + 0.0008 S	0.01 % + 0.08 S	0.01 % + 0.0008 S	0.01 % + 0.08 S	0.01 % + 0.0008 S
CP mode	Range	200 W		400 W		300 W		600 W	
	Resolution	10 mW		10 mW		10 mW		10 mW	
Dynamic mode	Accuracy	± (0.2 % + 0.2 % FS)		± (0.2 % + 0.2 % FS)		± (0.2 % + 0.2 % FS)		± (0.2 % + 0.2 % FS)	
	Rise/fall slope	0.0001 ~ 0.25 A / μS		0.0001 ~ 0.25 A / μS*		0.0001 ~ 0.1 A / μS		0.0001 ~ 0.25 A / μS	
Voltage feedback	Range	0 ~ 18 V	0 ~ 80 V	0 ~ 18 V	0 ~ 80 V	0 ~ 18 V	0 ~ 500 V	0 ~ 18 V	0 ~ 80 V
	Resolution	0.1 mV	1 mV	0.1 mV	1 mV	0.1 mV	10 mV	0.1 mV	1 mV
Current feedback	Accuracy	± (0.025 % + 0.025 % FS)							
	Range	0 ~ 4 A	0 ~ 40 A	0 ~ 6 A	0 ~ 60 A	0 ~ 3 A	0 ~ 20 A	0 ~ 12 A	0 ~ 120 A
Power feedback	Resolution	0.01 mA	0.1 mA	0.1 mA	1 mA	0.01 mA	0.1 mA	0.1 mA	1 mA
	Accuracy	± (0.05 % + 0.05 % FS)		± (0.05 % + 0.05 % FS)		± (0.05 % + 0.05 % FS)		± (0.05 % + 0.1 % FS) ± (0.1 % + 0.1 % FS)	
OPP	Range	200 W		400 W		300 W		600 W	
	Resolution	10 mW		10 mW		10 mW		10 mW	
OCP	Accuracy	± (0.1 % + 0.1 % FS)		± (0.1 % + 0.1 % FS)		± (0.1 % + 0.1 % FS)		± (0.2 % + 0.2 % FS)	
	Range	≈ 200 W		≈ 400 W		≈ 300 W		≈ 600 W	
OVP	Accuracy	≈ 4.4 A	≈ 44 A	≈ 6.6 A	≈ 66 A	≈ 3.3 A	≈ 22 A	≈ 13.2 A	≈ 132 A
	Range	≈ 82 V		≈ 82 V		≈ 510 V		≈ 82 V	
OTP	Accuracy	≈ 85 °C		≈ 85 °C		≈ 85 °C		≈ 85 °C	
	Range	≈ 25 mΩ		≈ 25 mΩ		≈ 220 mΩ		≈ 15 mΩ	
Short circuit	current (CC)	≈ 4.4 / 4 A	≈ 44 / 40 A	≈ 6.6 / 6 A	≈ 66 / 60 A	≈ 3.3 A	≈ 22 A	≈ 13.2 / 12 A	≈ 132 / 120 A
	Voltage (CV)	0 V							
Input Impedance	Resistance (CR)	≈ 25 mΩ		≈ 25 mΩ		≈ 220 mΩ		≈ 15 mΩ	
	Dimension (W*H*D)	82 * 183 * 573 mm		82 * 183 * 573 mm		82 * 183 * 573 mm		82 * 183 * 573 mm	

		IT8733B		IT8722		IT8723	
Input rating	Voltage	0 ~ 500 V		0 ~ 80 V		0 ~ 80 V	
	Current	0 ~ 3 A	0 ~ 30 A	0 ~ 3 A	0 ~ 20 A	0 ~ 3 A	0 ~ 20 A
(0~40 °C)	Power	500 W		250 W		250 W	
	MOV	0.54 V / 3 A	5.4 V / 30 A	0.15 V at 3 A	1 V at 20 A	0.15 V at 3 A	1 V at 20 A
CV mode	Range	0 ~ 18 V	0 ~ 500 V	0 ~ 18 V	0 ~ 80 V	0 ~ 18 V	0 ~ 80 V
	Resolution	1 mV	10 mV	1 mV	10 mV	1 mV	10 mV
CC mode	Accuracy	± (0.05 % + 0.02 % FS) ± (0.05 % + 0.025 % FS)		± (0.05 % + 0.02 % FS) ± (0.05 % + 0.025 % FS)		± (0.05 % + 0.02 % FS) ± (0.05 % + 0.025 % FS)	
	Range	0 ~ 3 A	0 ~ 30 A	0 ~ 3 A	0 ~ 20 A	0 ~ 3 A	0 ~ 20 A
CR mode	Resolution	16 bit		16 bit		16 bit	
	Accuracy	0.01 % + 0.08 S	0.01 % + 0.0008 S	0.01 % + 0.08 S	0.01 % + 0.0008 S	0.01 % + 0.08 S	0.01 % + 0.0008 S
CP mode	Range	500 W		250 W		250 W	
	Resolution	10 mW		10 mW		10 mW	
Dynamic mode	Accuracy	± (0.2 % + 0.2 % FS)		± (0.2 % + 0.2 % FS)		± (0.2 % + 0.2 % FS)	
	Rise/fall slope	0.0001 ~ 0.1 A / μS	0.001 ~ 1 A / μS	0.0001 ~ 0.2 A / μS	0.001 ~ 2 A / μS	0.0001 ~ 0.2 A / μS	0.001 ~ 2 A / μS
V Measurement	Range	0 ~ 18 V	0 ~ 500 V	0 ~ 18 V	0 ~ 80 V	0 ~ 18 V	0 ~ 80 V
	Resolution	1 mV	10 mV	0.1 mV	1 mV	0.1 mV	1 mV
C Measurement	Accuracy	± (0.025 % + 0.025 % FS)					
	Range	0 ~ 3 A	0 ~ 30 A	0 ~ 3 A	0 ~ 20 A	0 ~ 3 A	0 ~ 20 A
P Measurement	Resolution	0.01 mA	0.1 mA	0.01 mA	0.1 mA	0.01 mA	0.1 mA
	Accuracy	± (0.05 % + 0.05 % FS)		± (0.05 % + 0.05 % FS)		± (0.05 % + 0.05 % FS)	
Protection range	Range	≈ 500 W		≈ 250 W		≈ 250 W	
	Resolution	10 mW		10 mW		10 mW	
Specifications	Accuracy	± (0.2 % + 0.2 % FS)		± (0.1 % + 0.1 % FS)		± (0.1 % + 0.1 % FS)	
	Range	≈ 3.3 A		≈ 33 / 30 A		≈ 3.3 A	
Short circuit	current (CC)	≈ 3.3 / 3 A	≈ 33 / 30 A	≈ 3.3 / 3 A	≈ 33 / 30 A	≈ 3.3 / 3 A	≈ 33 / 30 A
	Voltage (CV)	0 V					
Input Impedance	Resistance (CR)	≈ 180 mΩ		≈ 50 mΩ		≈ 50 mΩ	
	Dimension (W*H*D)	82 * 183 * 573 mm		82 * 183 * 573 mm		82 * 183 * 573 mm	