

IT8700 Multi-channel Programmable DC Electronic Load



Applications

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

Feature

- Removable modules for easy system configurability
- Dual-channel module can display each channel information simultaneously
- Single frame up to max.8 channels, extended frame up to max.16 channels
- Dynamic power distribution function for dual channels
- 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 exceed the set specifications
- Simultaneously perform multiple sets of electronic load modules
- OVP / OCP / OPP / OTP / anti-reverse protection function
- Built-in Ether Net / USB / RS232 communication interface
- Support anti-reverse alarm function

IT8700 series programmable DC electronic load adopts removable modules design, with single frame control 8 channels, and 16 channels with extended 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 IT9000-PV8700 software via built-in LAN / RS232 / USB interface.

IT8700, with adjustable slope, list function, automatic test and other functions, automatic test function can be set to work under CC / CV / CR / CP can be used in the application of R&D and production line.

IT8700 has self-diagnosis and comprehensive OVP, OCP, OPP, OTP, etc., ensure the operator safety.

Model	Specification	Size(D*H*W)
IT8731	80V/40A/200W	573*183*85mm
IT8732	80V/60A/400W	573*183*85mm
IT8732B	500V/20A/300W	573*183*85mm
IT8733	80V/120A/600W	573*183*85mm
IT8733B	500V/30A/500W	573*183*85mm
IT8722	80V/20A/250W*2CH	573*183*85mm
IT8722B	500V/15A/250W*2CH	573*183*85mm
IT8723	80V/45A/300W*2CH	573*183*85mm

Matching frame

IT8701	Two-load module main control unit (including three interfaces)
IT8702	Four-load module main control unit (including three 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: $50W \leq PCH1/PCH2 \leq 250W$; $PCH1+PCH2 \leq 300W$

*2: IT8700 modules should be equipped with IT8701/IT8702 mainframe

*3: Interface of mainframe: RS232, USB, Ether Net

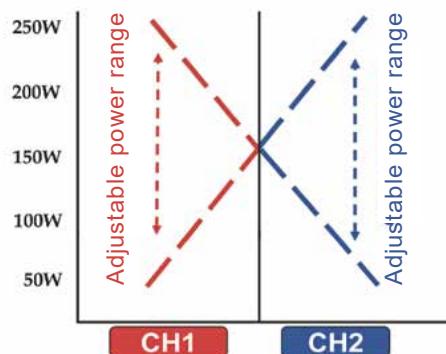
*4: For any GPIB interface option request , check with ITECH for availability.

Freely configurable modular system architecture

IT8700 adopts modular design, which has a high-performance microprocessor in every module and mainframe. It has high measurement speed because of parallel architecture. The mainframe controls each models synchronously and show the testing values in real time.

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

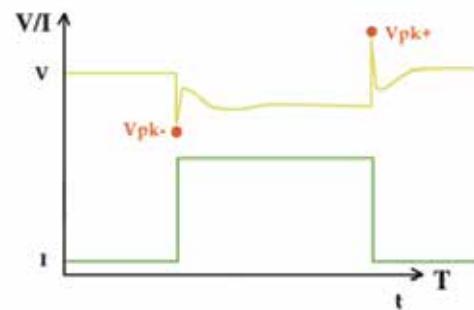
ITS5300 battery test system can be formed by IT8700, ITECH power supply, battery resistance tester and temperature data logger, which makes hundreds of channels run at the same time, record voltage and current waveforms in real-time. Test data can be exported to EXCEL.

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 value of the peak voltage V_{pk} and the peak current I_{pk} . IT8700 is with digital data acquisition function, users can easily get the values of V_{pk} and I_{pk} 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 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°C)	Input voltage	0~80V	0~500V	0~80V	0~80V	0~80V
	Input current	0~20A	0~15A	0~45A	0~45A	0~45A
	Input power	250W ^{*1}	250W ^{*1}	300W	300W	300W
	Min operating voltage	0.15V/3A	1.0V/20A	0.8V/3A	4.0V/15A	0.14V/4.5A
	Range	L: 0~18V; H: 0~80V		0.1~50V	0.1~500V	L: 0~18V; H: 0~80V
CV mode	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
	Resolution			L: 0.1mA; H: 1mA		
CR mode ^{*2}	Accuracy			±(0.05%+0.05%FS)		
	Range	L: 0.05Ω~10Ω; H: 10Ω~7.5KΩ		0.3Ω~10Ω	10Ω~7.5KΩ	L: 0.05Ω~10Ω; H: 10Ω~7.5KΩ
CP mode ^{*5}	Resolution			16bit		
	Accuracy			0.01%+0.08S ^{*3} ; H: 0.01%+0.0008S		
CP mode ^{*5}	Range	250W ^{*4}		250W ^{*4}		300W
	Resolution			10mW		
Dynamic mode	Accuracy			±(0.2%+0.2%FS)		
	T1&T2			CC mode		
Voltage readback value	Accuracy			20μS~3600S / Res: 1μS		
	Rise / fall slope ^{*6}	0.0001~0.2A/μS	0.001~1.6A/μS	0.0001~0.1A/μS	0.001~0.5A/μS	0.001~2.5A/μS
Current readback value	Min rise time ^{*7}	≈10μS		≈20μS		≈12μS
	Range			Measuring range		
Over power protection	Resolution	0~18V	0~80V	0~50V	0~500V	0~18V
	Accuracy	L: 0.1 mV; H: 1mV		L: 1 mV; H: 10mV		L: 0.1 mV; H: 1mV
Over voltage protection	Range			±(0.025%+0.025%FS)		
	Resolution	0~3A	0~20A	0~3A	0~15A	0~4.5A
Over current protection	Accuracy	L: 0.01mA; H: 0.1mA		L: 0.01mA; H: 0.1mA		L: 0.1mA; H: 1mA
	Range			±(0.05%+0.05%FS)		
Power readback value	Resolution	250W		250W		300W
	Accuracy			10mW		
Short circuit	Accuracy			±(0.2%+0.2%FS)		Protected range
	Current	≈3.3/3A	≈22/20A	≈3.3/3A	≈16.5/15A	≈5/4.5A
Input terminal impedance	Voltage			0V		
	Resistance	≈50mΩ		≈260mΩ		≈30mΩ
Size(mm)		300KΩ		≈1MΩ		300KΩ
Weight				82*183*573		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.

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

	IT8731		IT8732		IT8732B		IT8733B		IT8733									
Rated parameter (0~40°C)	Input voltage	0~80V		0~500V		0~80V		0~120A										
	Input current	0~40A		0~60A		0~20A		0~30A										
	Input power	200W		400W		300W		500W										
	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																
	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)																
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																
	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																
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																
AC Input	Voltage	220V ±10%/110V ±10%																
	Frequency	50Hz/60Hz																

^{*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