FT6110 E-load (150W * 8CH, 300W * 4CH)

Multi Channel Programmable DC Electronic Load

FT6112R 150V/30A/300W * 4CH (3U)

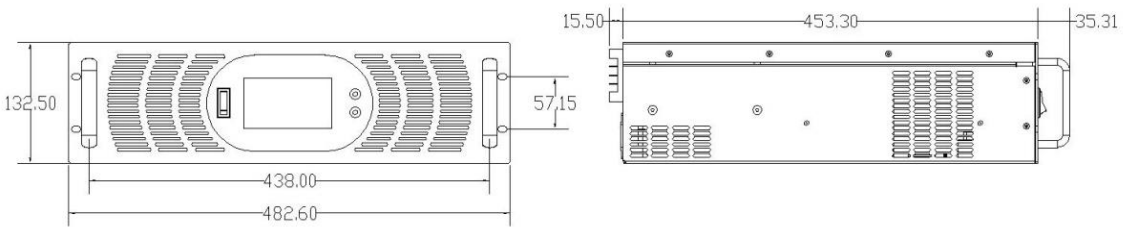
- Voltage range: 0...150 V, 0...500 V;
- Current range: 0...30 A, 0...15 A;
- Rated power: 150W * 8CH/300W * 4CH;
- Compact size, economical and affordable;
- Channels isolated, can be controlled individually or in parallel;
- Dynamic test up to 50kHz, adjustable rise/fall slew rate;
- 500kHz voltage/current sampling rate;
- Support voltage local/remote sense;
- Battery discharge test, Load effect test, Voltage/current ripple test;
- Dynamic frequency sweep;
- Sequence function, simulate complex load waveforms;
- Automatic test, display the test result in PASS/FAIL;
- OCP test, Time measurement;
- OVP, OCP, OPP, RVP, OTP;
- With LAN, RS485, facilitates multi units integration;
- Support MODBUS protocol, provide DLLs and manuals, host PC software;
- 19-inch rack-mounted 3U chassis, facilitates system integration.

General

The FT6110 series is a high-performance, cost-effective product mainly used in power supply ATE test systems. FT6110 has built-in functions such as voltage and current ripple test, dynamic frequency sweep, load effect test, LED drive test, OCP test, slew rate setting, etc., and provides a complete DLL development package. It supports C#, C++, Delphi, Labview development languages, facilitates user's secondary development.

Dimension

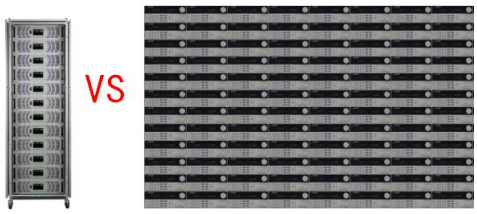
FT6110A/R cabinet dimension



FT6110 E-load (150W * 8CH, 300W * 4CH)

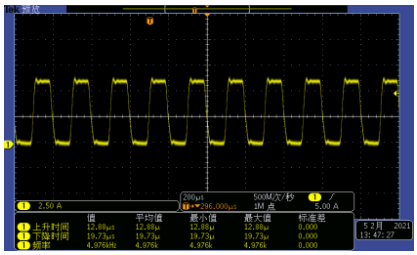
3U/8CH/150W ultra-high integration

The FT6110 series multi-channel programmable DC electronic load adopts ultra-high integration design, 8 channels in a single 3U height unit, size only 1/3 of conventional electronic load. All channels are independent and electrically isolated, can be controlled individually.



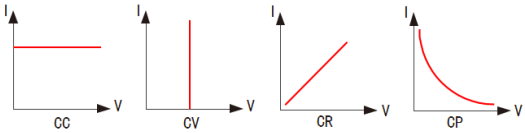
Transient test

The FT6110 series electronic loads provide programmable dynamic test function. The dynamic mode is used to simulate various load mutations and abnormal situations, and is suitable for testing the dynamic characteristics of the power supply. The dynamic test frequency can reach 50kHz, supports continuous, pulse, flip, adjustable rising/falling slew rate, and range switching.



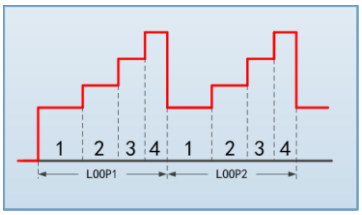
Static test

The FT6110 series multi-channel electronic loads operate in constant current, constant voltage, constant resistance and constant power modes to satisfy a wide range of test requirements.



Programmable sequence test

FT6110 series electronic loads provide sequence test function. FT6110 series support 10 sequence test files, files are linkable and editable, can be run repeatedly. A single sequence file allows for 20 test steps, users can set the load mode, load value, step time in each step. Step time ranges from 0.001s to 86400s.



Load effect test

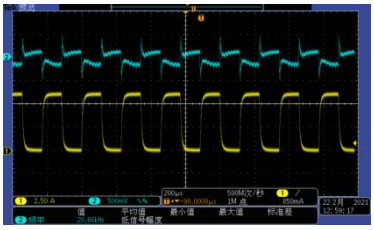
The load effect test function provides users with multiple sets of load parameters and stable time settings. After the test is completed, the results of load regulation, voltage change rate and power supply DC internal resistance will be provided directly.

Ripple test

FT6110 series supports voltage ripple (Vpp) and current ripple (Ipp) measurement, with a bandwidth of 10Hz～250kHz. Within the measurement bandwidth, the ripple measurement has high accuracy and fine repeatability. Ripple generally includes two different frequency ranges: power frequency ripple and switching ripple. The ripple result is a composite result of the superposition of the two ripples.

50kHz dynamic frequency sweep

With dynamic frequency sweep, users can manually or automatically continuous adjust the load frequency, the highest frequency can reach 50kHz. This test function can capture the maximum (Vp+) and minimum (Vp-) voltage peaks of the tested power supply under the worst conditions.

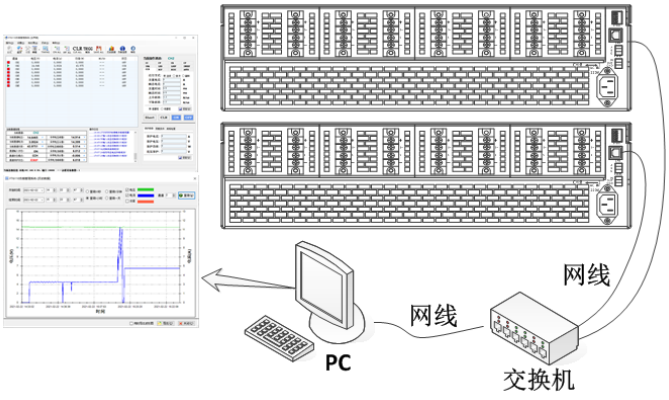


Automatic test

FT6110 series multi-channel electronic loads allow for automatic testing. A single test file allows for 100 test steps, and users can set the load mode, load value, test item, upper/lower limit of the test item, and running time for each step. The running time ranges from 0.1s to 86400s. Users simply plug and unplug the product, the load will automatically test and judge, final test result will be displayed in the form of PASS or FAIL.

Integration and programming

The FT6110 series electronic loads have LAN, RS485 interfaces for system integration of multiple units. FT6110 supports Modbus protocol, and provides programming manuals and DLL development package. It supports C#, C++, Delphi, Labview development languages, facilitates user's secondary development. The product comes with a demo software, which can perform all functions of the load system, as well as waveform display and data storage.



FT6110 E-load (150W * 8CH, 300W * 4CH)

Model options

Model	Specification	Notes
FT6110	FT6110 module cabinet	A/R series modules are not to be mixed
FT6111A	150V/30A/150W electronic load module	A series
FT6112A	150V/30A/300W electronic load module	A series
FT6113A	500V/15A/300W electronic load module	A series
FT6114A	600V/15A/300W electronic load module	A series
FT6116A	150V/30A/600W electronic load module	A series
FT6111R	150V/30A/150W electronic load module	R series
FT6112R	150V/30A/300W electronic load module	R series
FT6113R	500V/15A/300W electronic load module	R series
FT6114R	600V/15A/300W electronic load module	R series
FT6116R	150V/30A/600W electronic load module	R series

Model A/E type difference		
Features	FT6110A	FT6110R
Max channels	8	8
Test modes	CC,CV,CR,CP	CC,CV,CR,CP
Sampling rate	250kHz	500kHz
Sampling resolution	12Bits	16Bits
Sampling accuracy	Voltage: 0.1%+0.1%F.S.	Voltage: 0.025%+0.025%F.S.
	Current: 0.1%+0.1%F.S.	Current: 0.05%+0.05%F.S.
Programming resolution	12Bits	16Bits
Programming accuracy	Voltage: 0.1%+0.1%F.S.	Voltage: 0.025%+0.025%F.S.
	Current: 0.1%+0.1%F.S.	Current: 0.05%+0.05%F.S.
CC transient mode	50kHz	50kHz
Slew rate	Adjustable	Adjustable
Short circuit simulation	√	√
Von	√	√
Voltage compensate	√	√
Battery discharge test	√	√
Load effect test		√
Ripple test		√
Dynamic frequency sweep		√
OCP test	√	√
Time measurement		√
Automatic test	√	√
Sequence test	√	√
Protection	OCP,OVP,OPP,OTP,RV,LVP	OCP,OVP,OTP,OPP,RV,LVP
Communication port	LAN，RS485	LAN，RS485
Communication protocol	MODBUS	MODBUS
External IO input/output	√	√
DLL development package	√	√
PC software	√	√

FT6110 E-load (150W * 8CH, 300W * 4CH)

Specification table												
Model	FT6111A		FT6112A		FT6113A		FT6111R		FT6112R		FT6113R	
Channels	4,6,8		2,3,4		2,3,4		4,6,8		2,3,4		2,3,4	
Voltage	150V		150V		500V		150V		150V		500V	
Current	30A		30A		15A		30A		30A		15A	
Power	150W		300W		300W		150W		300W		300W	
Min Voltage	1.6V@30A		1V@30A		5V@15A		1.6V@30A		1V@30A		5V@15A	
Constant Current (CC)												
Range	3A	30A	3A	30A	3A	15A	3A	30A	3A	30A	3A	15A
Resolution	0.75mA	7.5mA	0.75mA	7.5mA	0.75mA	7.5mA	0.05mA	0.5mA	0.05mA	0.5mA	0.025mA	0.25mA
Accuracy	0.1%+0.1%F.S.		0.1%+0.1%F.S.		0.1%+0.1%F.S.		0.05%+0.05%F.S.		0.05%+0.05%F.S.		0.05%+0.05%F.S.	
Constant Voltage (CV)												
Range	30V	150V	30V	150V	100V	500V	30V	150V	30V	150V	100V	500V
Resolution	7.5mV	37.5mV	7.5mV	37.5mV	25mV	125mV	0.5mV	2.5mV	0.5mV	2.5mV	2mV	8.5mV
Accuracy	0.1%+0.1%F.S.		0.1%+0.1%F.S.		0.1%+0.1%F.S.		0.025%+0.025%F.S		0.025%+0.025%F.S		0.025%+0.025%F.S	
Constant Resistance (CR)												
Range					0.35Ω～15kΩ		0.05Ω～5kΩ		0.05Ω～5kΩ		0.35Ω～15kΩ	
Accuracy	0.5%+0.002R		0.5%+0.002R		0.5%+0.02R		0.5%+0.002R		0.5%+0.002R		0.5%+0.02R	
Constant Power (CP)												
Range	150W		300W		300W		150W		300W		300W	
Accuracy	0.1%+0.15%		0.1%+0.15%		0.1%+0.15%		0.1%+0.15%		0.1%+0.1%F.S.		0.1%+0.1%F.S.	
Dynamic												
T1&T2	10us～60s		10us～60s		10us～60s		10us～60s		10us～60s		10us～60s	
Resolution	2us		2us		2us		2us		2us		2us	
Accuracy	1us+20ppm		1us+20ppm		1us+20ppm		1us+20ppm		1us+20ppm		1us+20ppm	
Slew Rate	0.6A/ms～1A/us		0.6A/ms～2A/us		0.6A/ms～0.8A/us		0.6A/ms～1A/us		0.6A/ms～2A/us		0.6A/ms～0.8A/us	
Current Measurement												
Range	3A	30A	3A	30A	3A	15A	3A	30A	3A	30A	3A	15A
Resolution	0.75mA	7.5mA	0.75mA	7.5mA	0.75mA	7.5mA	0.05mA	0.5mA	0.05mA	0.5mA	0.025mA	0.25mA
Accuracy	0.1%+0.1%F.S.		0.1%+0.1%F.S.		0.1%+0.1%F.S.		0.05%+0.05%F.S.		0.05%+0.05%F.S.		0.05%+0.05%F.S.	
Voltage Measurement												
Range	30V	150V	30V	150V	100V	500V	30V	150V	30V	150V	100V	500V
Resolution	7.5mV	37.5mV	7.5mV	37.5mV	25mV	125mV	0.5mV	2.5mV	0.5mV	2.5mV	2mV	8.5mV
Accuracy	0.1%+0.1%F.S.		0.1%+0.1%F.S.		0.1%+0.1%F.S.		0.025%+0.025%F.S		0.025%+0.025%F.S		0.025%+0.025%F.S	
Ripple Measurement												
Range	*	*	*	*	*	*	30V	150V	30V	150V	100V	500V
Bandwidth	*	*	*	*	*	*	10Hz～250kHz		10Hz～250kHz		10Hz～250kHz	
Accuracy	*	*	*	*	*	*	0.03%+2mV	0.03%+10mV	0.03%+2mV	0.03%+10mV	0.03%+6mV	0.03%+30mV