



# 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 and catch 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

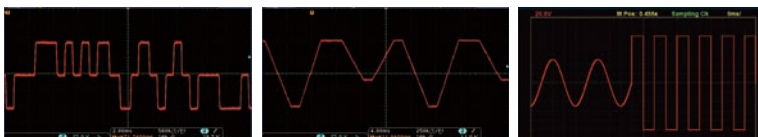
Display real-time waveforms of voltage and current under the stand-alone or parallel mode

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

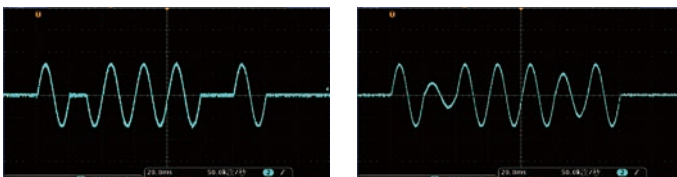
- AC voltage and DC voltage deviation simulation

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.



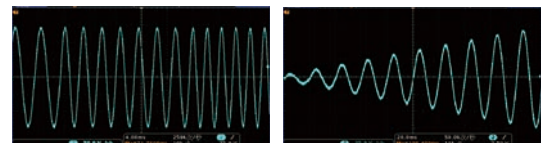
## Output frequency up to 10-5000 Hz

- 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

**Support CSV file to import waveforms**

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

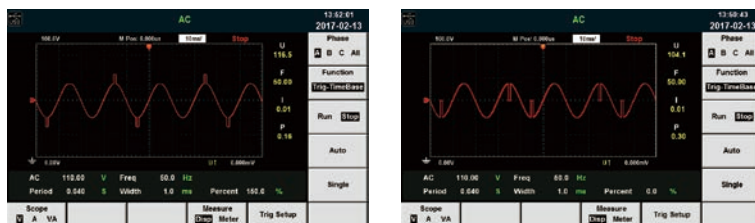
The user can edit the waveform output by the panel LIST function or can import a CSV file via the USB interface to generate waveform output. At the same time, IT7600 series provides external  $\pm 10\text{ V}$  analog interface, users can choose separate AM and FM amplitude modulation to receive external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

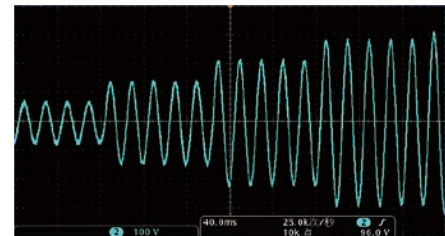


Surge wave

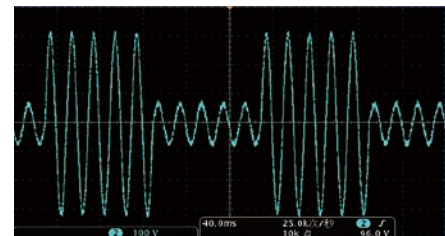
Trap wave

- 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.



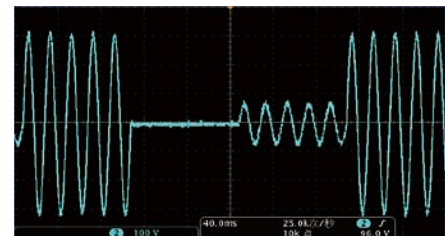
STEP



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

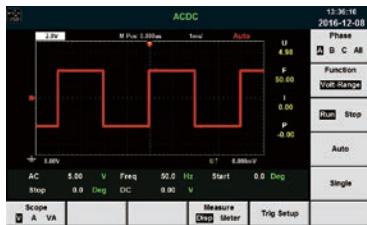
IT7600 series high-power AC / DC power supply has strong harmonic simulation capability, up to 50th harmonics. Within 10-500 Hz, IT7600 can measure 50th voltage and current harmonic. Exceed 500 Hz, IT7600 can test 20th voltage and current harmonic.



## 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

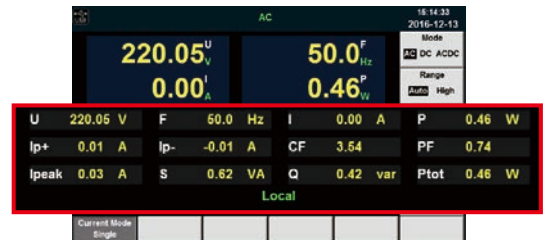


Sine waveform

## 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  $\Delta$ -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.

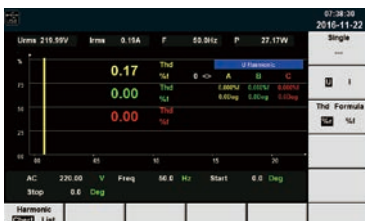
When IT7600 series realize three-phase output, IT7600 can simulate unbalanced three-phase output, expanding the scope of application.

## Strong 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



## 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

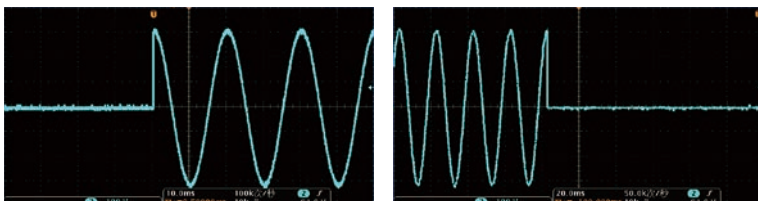


IT7600 after paralleling of 3 sets, each unit will share the test current averagely

## 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

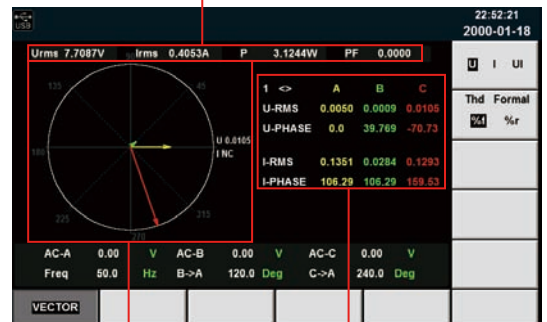
## Vector function

- 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



## 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
Range	High: 2-300 V; LOW: 1-150 V; Auto: 1-150 V / 2-300 V;		
Voltage	Resolution 10 mV	10 mV	10 mV
Accuracy*1	± 0.2%+(0.2%+0.2%×Kfreq)×FS*2		
Max Current rms	36A / 18 A (1φ) / 12 A / 6 A (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
(1φ) peak(CF=3)	108 A / 54 A (1φ) / 36 A / 18 A (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)		
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 is Slow 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 different, 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