ITECH ELECTRONICS

IT-M7723P series

1500VA Programmable AC/DC Power Supply

www.itechate.com

ITECH

The IT-M7723P is the latest Pro version in the M7700 series, offering advanced performance and innovative design for a transformative visual experience in AC/DC power supply testing. The M7723P inherits the exceptional capabilities of the M7700 series and integrates new features such as a touchscreen, oscilloscope, and built-in IEC 61000 standards, making complex testing more intelligent and efficient. It supports multiple output modes including AC, DC, and AC+DC, with a voltage range of 0-300V and a frequency range of 45Hz to 1000Hz, meeting both narrow and broad frequency testing requirements. With its compact half 2U design and powerful waveform simulation capabilities, it is the ideal choice for industries like household appliances, power modules, oil exploration, and power tools.

Output Range

- Voltage range：0-300V
- Frequency range：45Hz-1000Hz
- Power range：1500VA 1ϕ
- Unit size：1/2 2U

Key Features

Output Modes

- **Output modes:** AC/DC/AC+DC modes, flexibly addressing various testing requirements
- **Output Waveform Types:** Sine/Square/Triangle/Saw/Clipped-sine

Regulatory Compliance

- **Compliance with IEC Standards:** Built-in IEC 61000-4-11, 4-13, 4-14, 4-28 standards
- **Harmonic Simulation&Measurement:** Up to 50th harmonic waves, facilitating comprehensive testing

Advanced Functions

- **User-define mode:** Supports CSV file import, enabling complex sequence programming
- **Built-in waveforms:** Provides up to 30 harmonic distortion waveforms that can be directly accessed, simplifying test setups
- **LIST Sequencing:** Implements disturbance simulation testing for voltage dips, short interruptions and other disturbances
- **Sweep Function:** Facilitates frequency and voltage sweeping

Dimming and Phase Control

- **Dimming Function:** Provides leading and trailing edge dimming test modes
- **Phase Angle Adjustment:** Flexible setting of start and stop phase angles (0-360°)

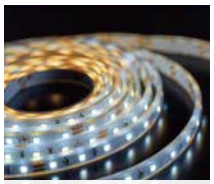
Communications Interface

- **Built-in USB and LAN interfaces**
- **Interface options:** GPIB(IT-E1205) , RS232(IT-E1207),Analog&RS485 interface(IT-E1208)

Applitcations


Power modules


Power semiconductors


LED driver


Household applicances

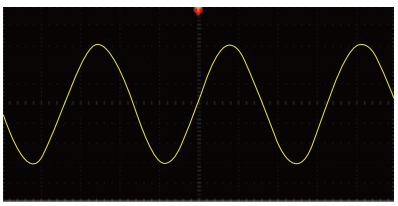

Portable stotrage devices

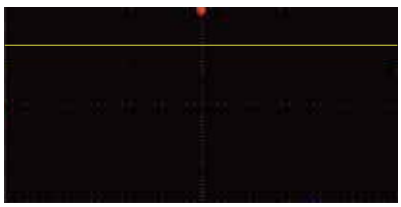
Touchscreen design with waveform-display function

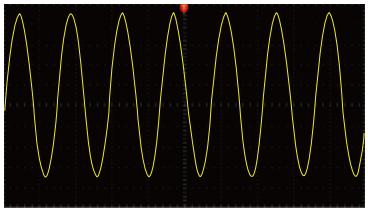
The IT-M7723P is equipped with a new touchscreen design, featuring a simple and intuitive UI interface. Combined with a keyboard knob design, it allows users to directly and quickly perform operations such as mode setting and waveform editing. The built-in digital waveform display function captures time-domain signals of voltage and current, and enables waveform screenshots and data export.

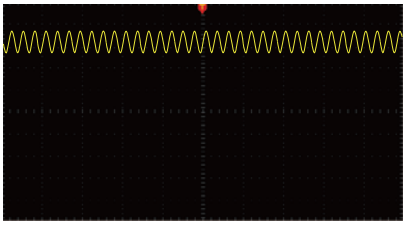
AC/DC/AC+DC Output Modes

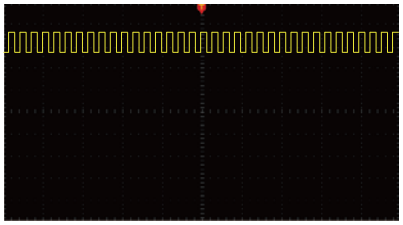
The IT-M7723P offers three output modes: AC, DC, and AC+DC. It provides pure AC/DC outputs, and by utilizing AC+DC and DC+AC output modes, it achieves "AC output superimposed with DC bias" as well as simulates "DC output waveforms with ripple". This meets the complex application needs of engineers.

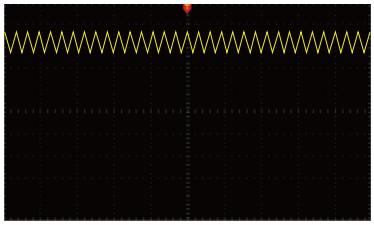

AC


DC


AC+DC
Vac=45V , dc bias=10V


DC+AC
Vdc=50V, sine ripple Vac=5V,frequency 150Hz


DC+AC
Vdc=50V, square ripple Vac=5V,frequency 150Hz

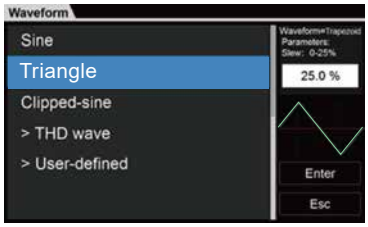

DC+AC
Vdc=50V, triangle ripple Vac=5V,frequency 150Hz

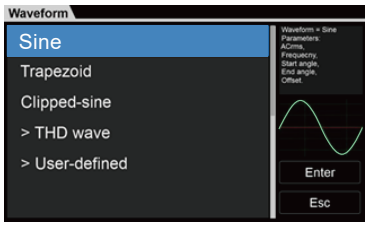
Your Power Testing Solution

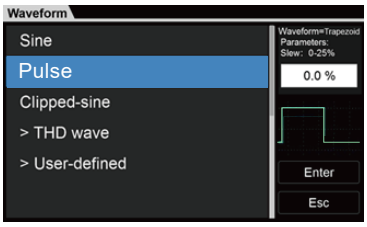
IT-M7723P 1500VA Programmable AC/DC Power Supply

Rich output waveforms: Sine/Square/Triangle/Saw/Clipped-sine

In addition to the basic sine wave, the IT-M7723P offers a variety of built-in AC waveforms, such as triangle, sawtooth, square, and clipped-sine waves. Users can select these waveforms through the menu. Combined with the device's sequence programming feature, different waveforms can be output in sequence to address complex power electronic disturbance tests.





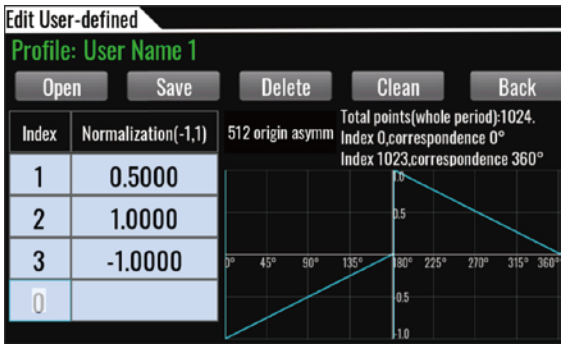


LIST/Surge&Trap/Sweep modes

The IT-M7723P series supports LIST, SWEEP, and Surge&Trap modes, allowing quick simulation of power grid disturbances such as power loss, surges, and frequency sweeps. Users can configure up to 50 steps per LIST file, selecting waveform types, setting voltage, frequency, slope, phase angles, duration, and cycles for each step. The device offers flexible testing solutions with both panel editing and CSV import capabilities.

User-define waveform functions

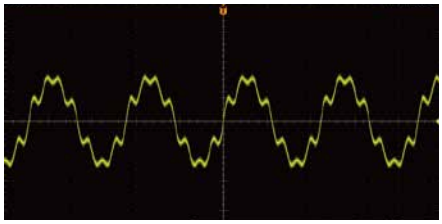
Compared to LIST mode, the waveform customization feature further enhances engineers' ability to simulate irregular disturbance waveforms, as illustrated in the example. This allows for accurate replication of real power disturbance waveforms encountered on site. By importing the required waveform data into the M7723P via a .csv file, efficient simulation can be achieved.



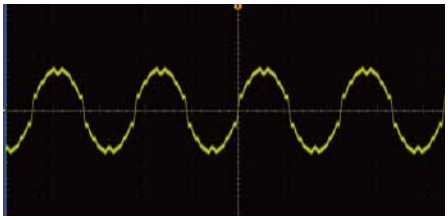
Up to 50th Harmonics Simulation and Measurement

The IT-M7723P features up to 50 times harmonic simulation and measurement capabilities (with a base frequency of 50Hz), widely used in the harmonic characteristic analysis of power modules, LED drivers, and household appliances to help engineers optimize and improve product performance. Harmonic measurement offers two display modes: data list and bar graph, clearly showing the proportion of each harmonic.

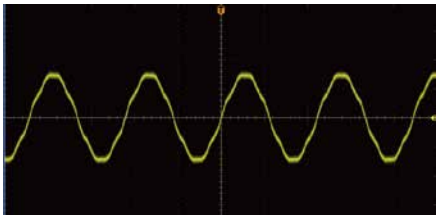
The IT-M7723P has 30 built-in preset harmonic waveforms, allowing test engineers to quickly access and enhance testing efficiency.



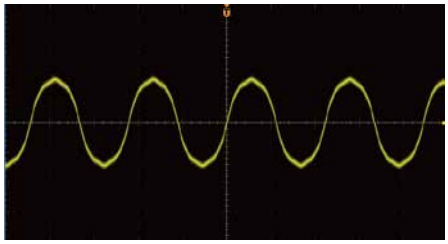
Non-linear



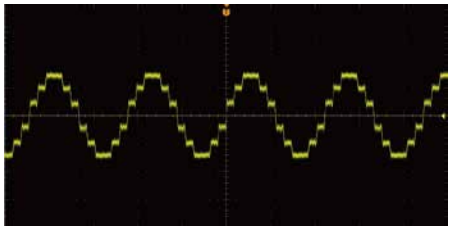
Linear distortion



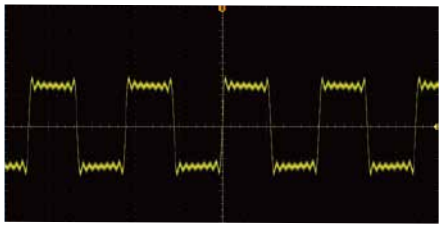
Coil transformer self-excitation



Peak spike



Stepper frequency converter



Square wave UPS

Dimming Functions

The IT-M7723P supports leading and trailing phase angle adjustments for dimming or speed testing. By setting the phase angle and adjusting waveform edges, users can regulate active power and light intensity, ensuring product quality with dimmer or speed control use.

Leading-edge dimming

Trailing-edge dimming

Your Power Testing Solution

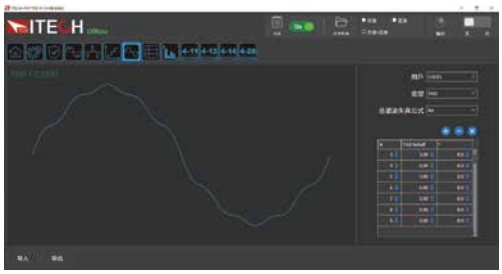
IT-M7723P 1500VA Programmable AC/DC Power Supply

Built-in IEC61000-4-11/4-13/4-14/4-28 standards

The IT-M7723P includes built-in IEC61000-4-11, 4-13, 4-14, and 4-28 standards for regulatory testing.Users can directly access test regulations and also modify test content based on regulatory requirements.

Free&Intuitive PV7700P software

PV7700P is a free PC software designed specifically for the IT-M7723P, easily downloadable from the ITECH official website. PV7700P offers an intuitive remote control interface, supporting parameter configuration, test file management, and data recording, further enhancing operational convenience.



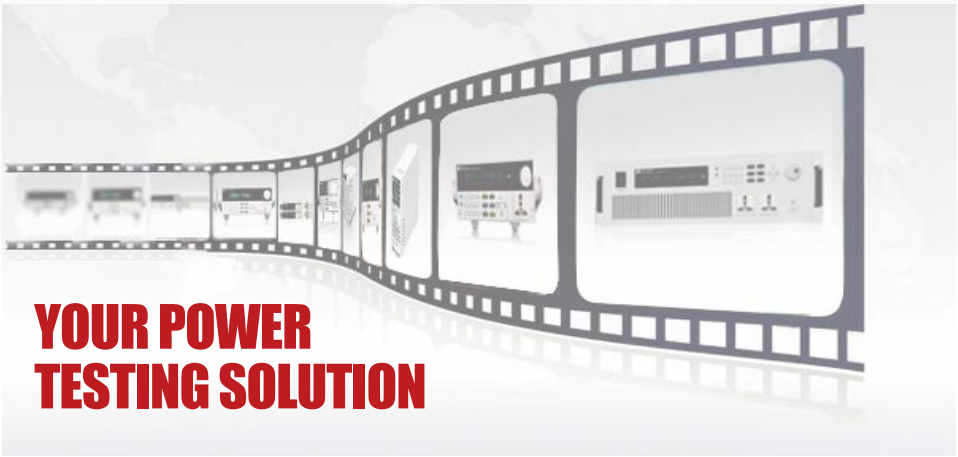
Options

Appearance	Models	Instructions
	IT-E1205	GPIB communication card
	IT-E1207	RS232/CAN communication card
	IT-E1208	Analog/RS485 communication card
	IT-E158A	Rack mount kit for installation of two units in an ITECH cabinet
	IT-E158B	Rack mount kit for installation of two units in an non-ITECH cabinet
	IT-E158C	Rack mount kit for installation of single unit in an ITECH cabinet
	IT-E158D	Rack mount kit for installation of single unit in an non-ITECH cabinet

Rear panel with optional interfaces

		IT-M7723P
AC Input		
Voltage		100～240Vac
Phase		Single-phase
Frequency		47～63Hz
Max.Current		20A
Power Factor		0.99(Typical)
AC Output		
Max. Output Power		1500VA
Max. Output Voltage		300V
Output Phase		Single-phase
Current Range(Rms)		15A
Current Range(Peak)		45A
Output Frequency Range		45～1000Hz
Phase Angle Degree Range		0～359.9°
THD*1*3		≤0.3% at f=45～100Hz;≤1% at f=101～800Hz;≤ (0.15%f-0.2)% at f=801～1000Hz
Crest Factor		3
Line Regulation*3		≤0.06%
Load Regulation*3		≤0.2%
Output Voltage(V_{AC})	Resolution	0.1V
	Accuracy	±(0.2%+0.2% F.S.)
Frequency	Resolution	0.1Hz
	Accuracy	±0.1%
Phase Angle Degree Range	Resolution	0.1°
	Accuracy	0.5°
DC Offset Value		20mVdc
Efficiency		83% (Typical)
DC Output		
Max. Output Power		1500W
Max. Output Voltage		±400Vdc
Maximum Output Current (Rms)		±15A
DC Voltage(V_{DC})	Accuracy	±(0.2%+0.2% F.S.)
Dynamic Response Time		≤0.5ms(Full load of 10~90%)
Meter		
AC Voltage(V_{AC})	Range	0～300V
	Resolution	0.1V
	Accuracy	±(0.25%+0.25% F.S.)
AC Current (Rms, High range)	Range	0.1～15A
	Resolution	10mA
	Accuracy	±(0.25%+0.25% F.S.)
AC Current (Rms, Low range at 100Hz)	Range	0.1～1250 mA
	Resolution	0.1mA
	Accuracy	±(0.25%+0.25% F.S.)
	Range	0～50A
	Resolution	10mA
	Accuracy	±(0.4%+0.8% F.S.)
DC Voltage	Accuracy	±(0.25%+0.25% F.S.)
DC Current (High range)	Accuracy	±(0.25%+0.355% F.S.)
DC Current (Low range)	Accuracy	±(0.25%+0.355% F.S.)
Frequency	Range	45～1000Hz
	Resolution*5	0.1Hz
	Accuracy*2	±0.1%
Power *4 (S)	Resolution	100mVA
	Accuracy	±(0.5%+0.5% F.S.)
Other		
Dimension(WxHxD)		215 x 88.2 x 450 mm
Weight		9 KG

*1：The minimum voltage for THD testing is 100Vac.
*2: The minimum usable voltage for accurate frequency display during testing is 100Vac.
*3: Testing is conducted with a purely resistive load.
*4: This specification applies at frequencies ≤800Hz.
*5: Frequency resolution is applicable in the range of 45-99.9Hz.



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