

Model 5500 Universal UPS Test System



*Universal UPS/Inverter Test System for Testing Power Supplies
with AC Outputs Found in UPS & Inverters*

Features

- Digital measurement system (DMS)
 - 2 waveform digitizers
 - 2×16, 100MHz multiplexer
 - Expandable input measurement channels
- Maximum configuration flexibility
- Turn-key test system with included test controller
 - *emPower*[™] test executive

Applications

The 5500 UPS Test System is an advanced ATE test platform similar to the 5600 Power Supply Tester, but targeted exclusively for uninterruptible power supplies (UPSs). It contains two unique instruments: a Digital Measurement System and an Electronic AC Load, the combination of which provides far more comprehensive testing of UPS than ever before possible.

Advanced Testing Capability

To insure that the UPS is tested with a variety of “real-world” loading conditions, an electronic AC load is provided. Through programmable control of both power-factor and crest-factor, the load allows checking UPS performance at a number of operating envelope or worst-case limits, rather than just at nominal ratings. Complementing the Load is the Digital Measurement System (DMS). This instrument replaces several single-function measurement instruments through its ability to extract multiple measurements from a single digitized waveform. Accordingly, the two instruments combine to allow more thorough testing of UPSs than ever before possible in a production tester.

Lower Testing Costs

The 5500 establishes a new standard in lowering unit test costs. Significantly improved tester throughput is achieved by combining a minimum ensemble of instruments tightly integrated into a powerful 32-bit, multi-threaded test executive containing a speed-optimized test execution engine. Unit test times are often cut to half that of older-generation test systems.



Model 5500 Single cabinet Universal UPS Tester

Enterprise Network-Ready

In today’s manufacturing environment, a tester must interface seamlessly with the enterprise network that increasingly controls both test program delivery and test results data collection. Global manufacturers, in particular, need real-time status of productivity and quality from remote facilities. All of this is now available with the *emPower*[®] Test Executive; an open-architected application specifically designed with such enterprise needs in mind.

Model 5500 Universal UPS Test System Specifications

SYSTEM CONTROL	
PC	1.7 GHz Processor
Memory	128 MB
Drives	20 GB HD, 1.44 MB FD, 48 X CD-ROM
I/O	6 USB, 2 Serial, 1 Parallel, 1 RJ-45 network port
Monitor	15" Flat Panel
Accessories	Mouse & Keyboard

SOFTWARE	
Operating System	Windows 98, ME, 2000, XP
Test Executive	emPower - An integrated environment for creating, debugging, running and collecting data during functional testing of power supplies. Includes a test routine library and interactive instrument panels. Fully network compatible
Custom Test Program Languages	To extend the user-modifiable test routine library written in Visual Basic, test programs can also be written in any language supporting MS Active X control interface, including LabVIEW and LabWindows CVI

STIMULUS INSTRUMENTATION OPTIONS			
AC Electronic Loads		AC Sources	
Power	4.5, 9.0 and 13.5 kVA	Power	6.0 (1/3 ϕ), 10 (1/3 ϕ) kVA
RMS Current	30, 60, 90 A	Voltage	135/270, 200/400 (opt) VAC
Peak Current	90, 180, 270 A	RMS Current	@ 135V: 44.74 A
RMS Voltage	50 to 350 V	Peak Current	170, 180 A
Max Peak Voltage	500V	Frequency	45 to 5000 Hz
Frequency	45 to 440 Hz	DC Sources (Bulk)	
Modes	CC, CV, CR, CP, SC	Power	5.0, 10, 15 kW
Crest Factor	1.414 to 3.5	Voltage	to 500 V
Power Factor	0 to 1, lead/lag	Current	to 500, 1000, 1400 A
DC Electronic Loads		DC Sources (Bias)	
Power	300 W modules, up to 6 per chassis	Power	400 W, up to 6 per chassis
Voltage	0.7 to 80 V, 2.1 to 450 V	Voltage	10, 60, 80, 400 V
Current	60 A	Current	60, 16, 12, 3 A

SYSTEM MEASUREMENT					
Measurement	Range	Resolution	Accuracy	Instrument	Use
UUT Input					
AC RMS Volts	14, 140, 350 V	0.004% FS	0.1% R + 0.065% FS	DMS	PF Compliance
AC RMS Current	40, 400 A	0.01, 0.1 A	0.25% FS	AC Source	Crest Factor, PF Compliance
AC RMS Current	35, 70, 100 A	1, 2, 3 mA	0.2% R + 0.05% FS	DMS	Crest Factor, PF Compliance
AC Peak Current	50, 100, 150 A	1, 2, 3 mA	0.2% R + 0.05% FS	DMS	Crest Factor, UUT Peak Inrush
AC True Power	2, 20 kW	1, 10 kW	0.5% FS	AC Source	Efficiency
AC True Power	5, 10, 15 kW	0.15, 0.3, 0.45 W	0.25% R + 0.1% FS	DMS	Efficiency
UUT Output					
DC Volts	\pm 2, 20, 200, 500 V	0.003% FS	0.01% R + 0.01% FS	DMS	Battery Charger Loading, Serial Port Levels
Peak to Peak Noise ¹	\pm 100 mV, 500 mV, 5 V	0.02% FS	1.0% R + 2.0% FS	DMS	Battery Charger Output Noise
Ripple RMS	70 mV, 350 mV, 3.5 V	0.012% FS	1.0% R + 0.5% FS	DMS	Battery Charger Output Noise
DC Peak Voltage	\pm 20, 200, 500 V	0.012% FS	1.0% R + 0.02% FS	DMS	Battery Charger Output Transient
AC RMS Volts	14, 140, 350 V	0.003% FS	0.1% R + 0.065% FS	DMS	Output Accuracy
AC RMS Current	30 A ²	30 mA ²	0.2% FS	AC Load	Output Loading Tests
AC Peak Current	90 A ²	180 mA ²	0.5% FS	AC Load	Output Loading Tests
AC True Power	3000 W ²	3 W ²	0.5% FS	AC Load	Efficiency, Output Loading Tests
Power Factor	0 to 1 Lead/Lag	0.001	0.5% FS	AC Load	Compliance
Crest Factor	1.0 to 3.5	0.0035	0.5% FS	AC Load	Output Loading Tests
Timing	0 to 7 minutes	100 nS	0.02% R + 200 ns	DMS	General Timing
Frequency	10 Hz to 5 MHz	1/100 ns	0.016% R	DMS	Output frequency
Waveform					
Vertical	See DC specs	See DC specs	See DC specs	DMS	Off-line switcher output waveshape test
Horizontal	512 to 4096 sample	10 μ S	0.02% R + 20 μ s		
THD (2-64 th)	0 to 100%	0.01%	1% R	\pm 20, 200, 500 V	Compliance
UUT Input-to-Output					
Efficiency	0 to 100%	0.13%	1.5% R	AC Load/AC Source	Compliance, process control
Phase Angle	0 to 360°	0.1%	0.5° @ 60 Hz	DMS	Off-line UPS switchover
I/O Module (Expandable to 8)					
Input Channels	16, external (front panel) selected, differential inputs for UUT measurements. 8 internally selected, differential inputs for measurements of loads and sources. \pm 500V isolation between channels.				
General Purpose Relays	8 DPDT with 5 A/30 VDC & 120/240 VAC rating. 16 relay drivers.				
Digital Outputs	16, open collector, isolated, 100 mA/70 VDC/0.5 W-rated.				
Digital Inputs	8, two groups of four with common programmable threshold of \pm 10V.				

¹ With optional Isolated Shunts ² If multiple AC loads, multiply by number in parallel

PHYSICAL					
Configuration	Size (HxWxD)	VPO	Weight	Operating Temp	Facility Power
Single Bay	57 x 23 x 30 in (1448 x 584 x 762 mm)	49-inch	~500 lbs/cabinet	0-50° C max power derates > 38°	All US and Intl. options available
Dual Bay	57 x 46 x 30 in (1448 x 1168 x 762 mm)	49-inch	~1000 lbs/cabinet	0-50° C max power derates > 38°	All US and Intl. options available

